5°

CONGRESSO
INTERNACIONAL
SOBRE

AMBIÊNCIAS

5ᵀᴴ INTERNATIONAL CONGRESS ON AMBIANCES

08 a 11 OCT 2024 • LISBON - RIO DE JANEIRO • PORTUGAL - BRAZIL

SENSORY EXPLORATIONS

AMBIANCES IN A CHANGING WORLD

VOLUME **1**

LISBON

UNIVERSIDADE
LUSÓFONA

ambiances

RÉSEAU INTERNATIONAL
INTERNATIONAL NETWORK

UFRJ

Edited by
Mohammed Boubezari
Cristiane Rose Duarte
Ethel Pinheiro

Cover Design © Inês Torres

5° CONGRESSO INTERNACIONAL SOBRE

AMBIÊNCIAS

5ᵀᴴ INTERNATIONAL CONGRESS ON AMBIANCES

SENSORY EXPLORATIONS

AMBIANCES IN A CHANGING WORLD

Lisbon and Rio de Janeiro, October 8th to 11th.

Edited by
Mohammed Boubezari **|** Cristiane Rose Duarte **|** Ethel Pinheiro

UNIVERSIDADE
LUSÓFONA

ambiances
| RÉSEAU INTERNATIONAL
INTERNATIONAL NETWORK **|**

UFRJ

The congress is organised by Lusófona University in Lisbon, The Federal University of Rio de Janeiro (Universidade Federal do Rio de Janeiro) in Rio de Janeiro with the help of the International Ambiances Network, Scientific and Thematic Network of the French Ministry of Culture.

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Contents - Lisboa

Congress Organization

Chairs

LISBON
Mohammed Boubezari

RIO DE JANEIRO
Cristiane Rose Duarte
Ethel Pinheiro

Steering Committee

Mohammed Boubezari, Cristiane Rose Duarte, Damien Masson,
Ethel Pinheiro and Nicolas Remy.

Organising Committee

LISBON
Walber Angeline Neto, Isabel Barbas, Joaquim Borges Martins, Mohammed Boubezari,
Paulo Coutinho, Serkan Can Hatıpoğlu, Ghadir Hummeid, Sílvia Suárez.

RIO DE JANEIRO
Alda Ferreira, Barbara Thomaz, Cândida Zigoni, Felipe Barros, Fernanda Freitas,
Fernando Mathias, Ilana Sancovschi, Katia de Paula, Lígia Castanheira, Nataly Carvalho,
Pamela Paris, Sonia Fragozo, Taiane Marcela Alves.

Scientific Committee

Amal ABUDAYA , Laboratoire AAU, CRESSON, France
Peter ADEY, Royal Holloway University of London, UK
Pascal AMPHOUX, Laboratoire AAU, CRESSON, France
Niels ALBERTSEN, Aarhus School of Architecture, Denmark
Suzel BALEZ, Laboratoire AAU, CRESSON, France
Olivier BALAŸ, Laboratoire AAU, CRESSON, France
Giselle Arteiro Nielsen AZEVEDO, Universidade Federal do Rio de Janeiro – UFRJ, Brazil
Alia BEN AYED, Ecole Nationale d'Architecture et d'Urbanisme, Laboratoire ERA, Tunisia
Paola BERENSTEIN JACQUES, Universidade Federal da Bahia, Brazil
Arnold BERLEANT, Long Island University, USA
Emeline BAILLY, CSTB, France
Mikkel BILLE, Roskilde University, Denmark
João BORGES DA CUNHA, Universidade Lusófona, Lisbon, Portugal
Anne BOSSE, Laboratoire AAU, Crenau, France
Mohammed BOUBEZARI, Universidade Lusófona, Lisbon, Portugal
Laure BRAYER, Laboratoire AAU, CRESSON, France
Jose-Luis CARLES, Universidad Autonoma de Madrid, Spain

Congress Organization

Grégoire CHELKOFF, Laboratoire AAU, CRESSON, France
Carlos SMANIOTTO COSTA, Universidade Lusófona, Lisbon, Portugal
Claude DEMERS, UQAM, Canada
Laurent DEVISME, Laboratoire AAU, Crenau, France
Cristiane Rose DUARTE, Universidade Federal do Rio de Janeiro – UFRJ, Brazil
Fabiana DULTRA BRITTO, Universidade Federal da Bahia, Brazil
Tim EDENSOR, University of Manchester, UK
Gleice Azambuja ELALI, Universidade Federal do Rio Grande do Norte, Brazil
Auxiliadora GALVEZ PEREZ, San Pablo C.E.U EPS Faculty of Architecture, Spain
Matthew GANDY, University of Cambridge, UK
Tonino GRIFFERO, University of Rome, Tor Vergata, Italy
David HOWES, Université Concordia, Canada
Helmi JÄRVILUOMA-MÄKELÄ, University of Eastern Finland, Finland
Andrea JELIC, KU Leuven, Belgium
Evelyn Werneck LIMA, Universidade Federal do Estado do Rio de Janeiro, Brazil
Thomas LEDUC, Laboratoire AAU, Crenau, France
Laurent LESCOP, Laboratoire AAU, Crenau, France
Philippe LIVENEAU, Laboratoire AAU, CRESSON, France
Théa MANOLA, Laboratoire AAU, CRESSON, France
Théo MARCHAL, Laboratoire AAU, CRESSON, France
Damien MASSON, Université de Cergy-Pontoise, France
Diogo MATEUS, Universidade Lusófona, Lisbon, Portugal
Olfa MEZIOU, Ecole Nationale d'Architecture et d'Urbanisme, Laboratoire ERA, Tunisia
Cybelle Salvador MIRANDA, Universidade Federal do Pará, Brazil
Cristina PALMESE, Universidad Europea de Madrid, Spain
Evangelia PAXINOU, Laboratoire AAU, CRESSON, France
Ethel PINHEIRO, Universidade Federal do Rio de Janeiro – UFRJ, Brazil
Andrea Queiroz REGO, Universidade Federal do Rio de Janeiro – UFRJ, Brazil
Nicolas REMY, Université de Thessalie, Greece
Luís Cláudio RIBEIRO, Universidade Lusófona, Lisbon, Portugal
Ignacio REQUENA, Laboratoire AAU, Crenau, France
Myriam SERVIERES, Laboratoire AAU, Crenau, France
Luiz de Jesus Dias da SILVA, Universidade Federal do Pará, Brazil
Paul SIMPSON, University of Plymouth, UK
Daniel SIRET, Laboratoire AAU, Crenau, France
Aleksandar STANIČIĆ, TU Delft, Holland
Shanti SUMARTOJO, Monash University, Australia
Vera Regina TANGARI, Universidade Federal do Rio de Janeiro – UFRJ, Brazil
Jean-Paul THIBAUD, Laboratoire AAU, CRESSON, France
Rachel THOMAS, Laboratoire AAU, CRESSON, France
Vincent TOURRE, Laboratoire AAU, CRESSON, France
Nicolas TIXIER, Laboratoire AAU, CRESSON, France
Carolina VASILIKOU, University of Reading, UK
Maísa VELOSO, Universidade Federal do Rio Grande do Norte, Brazil
Martin WELTON, Queen Mary University of London, UK
Izabella WIECZOREK, University of Reading, UK

The **International Ambiances Network** is an academic and scientific initiative dedicated to studying architectural and urban ambiances. It brings together researchers, practitioners, and institutions worldwide to explore the sensory dimensions of built environments. Established within the UMR 1563 Ambiances Architectures Urbanités, it fosters interdisciplinary approaches integrating architecture, urban planning, sociology, environmental psychology, and engineering sciences.

The network's activities focus on several key areas:

• **Quadrennial international congresses**, providing a platform to share recent research on urban and architectural ambiances. Since its inception, congresses have been held in cities such as Grenoble (2008), Montreal (2012), Volos (2016), Online Congress (2020) and Lisbon and Rio de Janeiro (2024), covering topics from sensory perception to ambiance-centered design methodologies.

• **Scientific seminars and events**, regularly organized to encourage in-depth exchanges between researchers and practitioners, enhancing the collective understanding of ambiance-related challenges.

• **Collaborative research projects,** involving teams from about thirty international academic institutions, addressing topics such as sound, light, thermal ambiances, and their impact on urban living quality.

With a community of over 1,100 members across more than 60 countries, the network actively contributes to structuring and disseminating knowledge on ambiances. It relies on an online resource platform to share publications, methodological tools, and case studies, serving as a reference for researchers and professionals.

In collaboration with several organizations, such as the **French National Centre for Scientific Research (CNRS)** and other international institutions, the network plays a key role in advancing ambiance-sensitive design practices, emphasizing multisensory and inclusive approaches.

For more information about its initiatives, publications, and events, visit the official website: *https://www.ambiances.net*

Editorial

In 2024, the 5th International Congress on Ambiances will be held from October 8 to 11 in two universities located in two different countries and on two distinct continents: in Lisbon, Portugal, with Lusófona University, and in Rio de Janeiro, Brazil, with the Federal University of Rio de Janeiro (Universidade Federal do Rio de Janeiro).

This conference brings together scientific contributions from academics, practitioners, artists, doctoral students and researchers working on architectural and urban ambiances, drawing on multidisciplinary expertise from fields as diverse as anthropology, architecture, landscape, computer science, cultural studies, design, engineering, geography, musicology, psychology, sociology, urban studies, etc. Together they demonstrate the variety of themes and issues in this field of study, presenting the latest research, projects, and methodological approaches.

By focusing on the sensitive quality of spaces, Ambiances create layers of meaning on a conductive scale that eases the apprehension of everyday life, where the cultural and affective dimensions are translatable by the situated bodily experience, on a macroscopic scale, which intersects diverse cultures, rhythms and knowledge.

The study of Urban Ambiances has shown that the practical, experimental and relational nature of human-urban coexistence is one of the possible ways to overcome the dichotomies and fragilities posed by current dilemmas, such as the difficulty of urban mobility in various metropolises, social asymmetries, territorial conflicts at local level or the lack of public spaces enabling the satisfactory development of everyday life. At the same time, research into ambiances opens different possibilities for rethinking the way we occupy the world, because ambiances are agents that enable associative forms of sharing public spaces: they intensify social relations and make convivial relations less discordant.

After the Congresses in Grenoble (Creating an Atmosphere, 2008), Montreal (Ambiances in Action, 2012), Volos (Ambiances, Tomorrow: The Future of Ambiances, 2016), and the online 4th edition (Ambiances, Alloaesthesia: Senses, Inventions, Worlds, 2020), this 5th edition explores the sensory aspects of ambiances in a changing world.

In its fifth quadrennial congress, the objective is to outline the state of new conceptual, methodological, and practical issues in relation to architectural and urban ambiances. The focus will be open to the contemporary themes of our scientific community, but it also also wishes to welcome and work on new sensory exploration in a world in constant transformation.

The aim is to examine how contemporary environmental, social, technological, political, and ethical changes can interact with sensitive worlds, their environments, bodies, senses, and the ways in which people experience them. The Congress on Ambiances aims to foster a "barn of discussions" on experiences, based on themes that highlight sensitivity and the cultural landscape, urban and micro-urban politics, local arts and interventions, the body and the senses, design strategies, adaptation processes, among others.

The 5th International Congress on Ambiances is organized into thematic sessions, presentations and lectures, exploring current concerns, debates, theories, policy issues and cultural practices in this vast and fascinating area.

Mohammed Boubezari
Cristiane Rose Duarte
Ethel Pinheiro

Keynote Speakers

TONINO GRIFFERO

Tonino Griffero is full professor of Aesthetics (Tor Vergata University of Rome) and editor of book series such as "Sensibilia" (Milan), "Atmospheric Spaces" (Milan) and the e-journal "Lebenswelt".

Recent Books: Atmospheres. Aesthetics of Emotional Spaces, London-New York 2014; Quasi-Things. The Paradigm of Atmospheres, Albany 2017; Places, Affordances, Atmospheres. A Pathic Aesthetics, London-New York 2019; The Atmospheric "We". Moods and Collective Feelings, Milan 2021; & Michael Arbib, Atmosphere(s) for Architects, Manhattan (Kansas) 2023; Being a Lived Body. From a Neo-Phenomenological Point of View, London-New York 2024.

As co-editor: & G. Moretti, Atmosphere/Atmospheres. Testing a New Paradigm, Milan 2018; & G. Francesetti, Psychopathology and Atmospheres. Neither Inside nor Outside, Newcastle upon Tyne 2019; & M. Tedeschini, Atmospheres and Aesthetics. A Plural Perspective, Basingstoke 2019.

Lisbon, October 8, 2024.
Live broadcast in the congress amphitheater in Rio de Janeiro.

RITA VELLOSO

Arquiteta com mestrado em Filosofia pela Universidade Federal de Minas Gerais e doutorado em Filosofia pela Universidade Federal de Minas Gerais, tendo efetuado estágio doutoral na McGill University, Montreal, CA. É professora da Escola de Arquitetura da UFMG, onde atua no Programa de Pós-graduação em Arquitetura e Urbanismo, coordena grupos de pesquisa e orienta trabalhos de pós-graduação. É pesquisadora do CNPq. Dedica-se à pesquisa nas áreas de Arquitetura e Urbanismo, com ênfase em Teoria da Arquitetura, História e Teoria da Cidade, e na relação entre arquitetura e filosofia, tanto estética como política, em especial naquela construída por Walter Benjamin, Guy Debord e Henri Lefevbre, no campo filosófico e por Manfredo Tafuri, no campo arquitetural. Autora do livro Urbano-Constelação.

Rio de Janeiro, October 9, 2024.
Live broadcast in the congress amphitheater in Lisbon.

Keynote Speakers

SABINE KNIERBEIN

Sabine Knierbein, European Urban Studies (PhD) and Internationale Urbanistik (PD), is Professor at the Interdisciplinary Centre for Urban Culture and Public Space, Faculty of Architecture and Planning, TU Wien, Austria. She also holds a journeywomen's certificate for landscape gardening. In urban studies, Sabine explores everyday life and urbanization; the political and democracy; disruptive precarity, innovation and crises; and intersectional urban research methodology. She is co-editor of Public Space and the Challenges of Urban Transformation in Europe (2014); Public Space and Relational Perspectives: New Challenges for Architecture and Planning (2015); City Unsilenced: Urban Resistance and Public Space in the Age of Shrinking Democracy (2017), Public Space Unbound: Urban Emancipation and the Post-Political Condition (2018), Care and the City: Encounters with Urban Studies (2022) and Unsettled Urban Space: Routines, Temporalities and Contestations (2023), all with Routledge. Her monograph "Everyday Life and Urban Studies. Moving With Lefebvre Towards the 21st Century" is currently in preparation (forthcoming 2026, Routledge). In spring 2020, Knierbein was appointed Visiting Professor for Urban Political Geography at the Social Geography Lab (LAGeS, www.lages.eu) at the Department of History, Archeology, Geography, Arts and Performance (SAGAS) of the University of Florence in Italy, where she has been affiliated as a guest researcher in 2021. In 2022, she was a Visiting Fellow at the Centre of Urban Design at Hafen City University Hamburg in Germany while in 2023 she was an Erasmus Guest Researcher at Leuphana University in Lüneburg in Germany. Based on her habilitation treatise entitled "Critique of Everyday Life in the 21st Century. Lived Space and Capitalist Urbanization", Sabine obtained her venia in "Urban Studies / Internationale Urbanistik" at the Technische Universität Wien in Austria.

Lisbon, October 10, 2024.
Live broadcast in the congress amphitheater in Rio de Janeiro.

FRANCESCO CARERI

Francesco Careri co-founded in 1995 the practice of Stalker, experiencing actions, research and exhibitions. Since 2005 he is Associate Professor of Urban and Architectural Design in Roma Tre University where he is co-director of the Master Environmental Humanities, and where he runs the Civic Arts course, a peripatetic laboratory grounded in walking explorations of emerging phenomena. His main publications are : Constant's New Babylon, una Città Nomade, Testo & Immagine 2001; Walkscapes. Walking as an Aesthetic Practice, Editorial Gustavo Gili 2002; Pasear, detenerse, Gustavo Gili 2016; Stalker/Campus Rom, Altrimedia 2017 with Lorenzo Romito; Nomadismo Architettura Ospitalità, Bordeaux Edizioni, Roma 2020; C.I.R.C.O. Un immaginario di città ospitale, Bordeaux Edizioni, Roma 2021, with Laboratorio CIRCO, Hospedar-se, Puente, Barcelona 2023.

Rio de Janeiro, October 11, 2024.
Live broadcast in the congress amphitheater in Lisbon.

LISBON SESSIONS

Index of Authors
VOLUME 1 | LISBON

Index of Authors
VOLUME 1 | LISBON

LOO
SENSORY EXPLORATIONS, AMBIANCES IN A CHANGING WORLD

Session L00 brings together a series of diverse and non-thematized presentations, offering participants the opportunity to explore ongoing work, interdisciplinary reflections, and innovative projects from various fields. Unlike the other sessions, which focus on specific themes, this session is characterized by its openness to a wide variety of subjects and approaches.

The open presentations highlight emerging ideas and new perspectives, fostering dialogue and exchange among participants. This diversity is essential for encouraging cross-disciplinary discussions and nurturing potential collaborations between different fields.

In this session, the aim is to provide an open platform for the dissemination and sharing of ideas, creating a space conducive to the exploration of new or developing concepts. It is intended for researchers, practitioners, and creators who wish to present contributions that do not necessarily fit within the thematic frameworks of the other sessions.

MULTI-DISCIPLINARY CONTRIBUTIONS TO ATMOSPHERE/AMBIANCE

CONTRIBUTOS MULTIDISCIPLINARES PARA ATMOSFERA/AMBIENTE

Serkan Can Hatıpoğlu
Faculty Member
Eskisehir Technical University
serkanch@eskisehir.edu.tr

Mustafa Bekmezci
Faculty Member
Istanbul Kultur University
m.bekmezci@iku.edu.tr

Gökçe Ketizmen
Associate Professor
Eskisehir Osmangazi University
gonal@ogu.edu.tr

Mehmet İnceoğlu
Associate Professor
Eskisehir Technical University
mehmeti@eskisehir.edu.tr

ABSTRACT

This study examines the complex domain of atmosphere/ambiance, emphasizing its development and importance in many academic fields from 2000 to 2023. By examining significant contributions, it highlights the term "atmosphere" as primarily employed in literature. Analysis of citation patterns reveals a substantial surge in scholarly attention after 2020, primarily driven by English-speaking academic circles. The multidisciplinary aspect of atmospheric studies is apparent, since geography, urban design, philosophy, and cultural studies have made significant contributions. The incorporation of novel methodologies from many fields enhances the body of architectural literature, strengthening both theoretical frameworks and practical implementations in the realms of design and urban planning. This thorough examination highlights the increasing influence of atmospheric studies on environmental policy, urban growth, and the preservation of cultural landscapes. The research highlights the importance of ongoing interdisciplinary involvement to enhance our comprehension of the intricate relationship between the environment, space, and human experience.

KEYWORDS: Atmosphere. Ambiance. Aura. Multi-disciplinary Perspectives.

RESUMO

Este estudo examina o complexo domínio da atmosfera/ambiente, enfatizando o seu desenvolvimento e importância em muitos campos académicos de 2000 a 2023. A análise dos padrões de citação revela um aumento substancial da atenção académica após 2020, impulsionado principalmente pelos círculos académicos de língua inglesa. A vertente multidisciplinar dos estudos atmosféricos é evidente, uma vez que a geografia, o desenho urbano, a filosofia e os estudos culturais deram contributos significativos. A incorporação de novas metodologias de vários campos melhora o corpo da literatura arquitetónica, fortalecendo tanto os quadros teóricos como as implementações práticas nas áreas do design e do planeamento urbano. Este exame minucioso realça a crescente influência dos estudos atmosféricos na política ambiental, no crescimento urbano e na preservação das paisagens culturais. A investigação destaca a importância do envolvimento interdisciplinar contínuo para melhorar a nossa compreensão da intrincada relação entre o ambiente, o espaço e a experiência humana.

PALAVRAS-CHAVE: Atmosfera. Ambiente. Aura. Perspectivas Multidisciplinares.

1. INTRODUCTION

Atmosphere is associated with the exploration of places or situations and their ambiance/aura with affective charge. Following the renowned philosophical study of Böhme (1993) on atmosphere and new aesthetics, Zumthor (2006) garnered attention for his contributions to architectural discourse. In the field of geography, Anderson

(2009) integrated affect into the study of atmosphere, while Stewart (2011) continued to explore the evolving interest in atmosphere within the discipline of anthropology. Thibaud (2011) further advanced the direction of urban studies toward the atmosphere. Until the 2015s, most studies focused more on conceptual frameworks that were aligned with philosophical foundations, rather than on methodological approaches to grasp manifestations of atmosphere in social life. Subsequently, relational and transformational processes between subject and object through atmosphere have started to be studied in several analytical ways. These initiatives attracted the attention of researchers, prompting them to pursue the studies being conducted and to initiate their own studies in the field of atmosphere. Although Ambiences (International Journal), as one of the most crucial contributions to literature, was established in 2013, their special issues commenced in 2015 and continued as follows:

- 2015 Experiential Simulation
- 2016 Ambiance and history of architecture: the built environment in our sensory expérience and imagination
- 2017 Animating public space? Between urban programming and citizen activation
- 2018 Expérimentation, Ambiance, Architecture
- 2019 Phenomenographies. Describing urban and architectural atmospheres
- 2020 Staging Atmospheres: Theatre and the Atmospheric Turn - Volume 1
- 2021 Staging Atmospheres: Theatre and the Atmospheric Turn - Volume 2
- 2022 Underground Atmospheres. Renewing the debate
- 2023 Migration d'ambiances et expériences habitants

A number of special issues (from various journals) pertaining to the atmosphere are outlined below:

- Emotion, Space and Society (2015) Special Issue: "Staging atmospheres: Materiality, culture, and the texture of the in-between"
- Architectural Design (2016) Special Issue: "Contemporary Moods in Architecture"
- Journal of Architectural Education (2019) Special Issue: "Atmospheres"
- Art Style | Art & Culture International Magazine (2023) Special Issue: "Atmosphere and Mood: Two Sides of the Same Phenomenon"
- In parallel with the publication of well-known journals, numerous books were released with the aim of fostering collaboration amongst researchers:
- Bille & Sorensen (2016). (in mostly archaeological aspects)
- Schroer & Schmitt (2017) (written from an ethnographic and anthropological perspective)
- Sumartojo & Pink (2018) (by scholars from design research)

The growing corpus of literature on the atmosphere (with such special issues and books), including works on its practical aspects, evinces a rising interest in this research domain. In the wake of these studies, articles have been published in a considerable number of other journals and book chapters have appeared in various books, even on different subjects (e.g., for literary studies: Hatıpoğlu, 2023; for studies on cinema: Hatıpoğlu & Hacıömeroğlu, 2024). The process mentioned above suggests that academics are approaching their work related to these issues with considerable enthusiasm, particularly in the period following 2020. The current literature on atmosphere reveals a plethora of studies from a multitude of disciplines.

The majority of sources engaged in the study of the atmosphere cite fundamental works such as Böhme (1993), Anderson (2009), and Griffero (2014). These sources are widely regarded as pivotal in establishing the field as a significant area of academic inquiry. Nevertheless, after the theoretical framework section of the studies, a divergence of approaches is evident in the subsequent construction of the research. Therefore, a range of disciplines adopts distinct perspectives and methodologies to investigate the atmosphere, contributing to the existing literature. Given the considerable contributions made to the field, a comprehensive examination of how the atmosphere is perceived within academic circles necessitates an investigation into how different disciplines focus on atmosphere, the level of intensity at which it is examined, and its overall impact across a wide range of disciplines. As one of the first attempts, Pfister (2019) examined its evolution in a range of disciplines, including theology, philosophy, geography, sociology, psychology and architecture. He also explored the question of how atmospheres might be described and how to deepen the perception of atmospheres through marketing research. However, there are other related academic fields beyond his attention. Furthermore, there is still a paucity of knowledge regarding the variety of disciplines and their impact on the literature. Consequently, this study seeks to address the following questions:

- What is the distribution of interest regarding the types of publications (e.g. books, book sections, journal articles, etc.)?
- How many citations do journal articles receive between 2000-2023?
- What is the distribution of publications in terms of language?
- How has interest in the field of atmosphere and ambiance been shaped over the years?
- What are the distinct disciplines that arise, and how might these be grouped?
- How many articles do disciplines publish and what is their impact on the existing literature?
- What percentage of disciplines are represented in highly influential publications?

2. PROCEDURE

The publications were gathered using a range of methods over three years.

- Initially, the top 200 journals were identified in the categories of 'Architecture', 'Art and Humanities' and 'Social Science' from the 'ScimagoJR' database. A total of 67 magazines were selected for analysis, as they were deemed to have the potential to address the subject of atmosphere. A comprehensive review was conducted of all issues of each journal between 2000-2023. Articles that were directly or indirectly related to the atmosphere were collected.
- The list has been augmented with studies not previously included, drawn from the extensive bibliography of the 'Atmospheric Spaces' Community, comprising 109 pages.
- The members of the 'International Ambiences Network' related to ambiance/atmosphere were examined individually in the 'Members' section. Their publications on atmosphere/ambiance are meticulously documented in the archive of the first author of this study.
- The publications of members of KOIAS (Kobe Institute for Atmospheric Studies), the Center for Sensory Studies, and numerous other academic communities were subjected to a rigorous review process. Those deemed to be of particular relevance have been incorporated into the final collection of atmosphere-related publications.
- Research projects and centers that build bridges with atmosphere/ ambiance, such as The Resonance Project and Affective Societies, were investigated. Related publications were also consulted in order to gain further insight.

Finally, a comprehensive archive has been assembled, containing over 20.000 studies. In the course of this research, the corpus of publications was limited to articles published between 2000 and 2023 that include "atmosphere/ambiance/ aura" in their titles. The resulting body of work was then classified by discipline and subjected to rigorous examination.

3. RESULTS

Table 1 elaborates on the distribution of the terms Atmosphere/Ambiance/Aura in academic publications. The term "atmosphere" is the most frequently used term overall, with a total of 1,095 occurrences. This term shows a significant density, especially in journal articles (441) and book chapters (356). This demonstrates that the term "atmosphere" is widely accepted within the academic community and is employed in a variety of disciplines. A review of the co-use of the terms revealed that they were employed together on only two occasions. The data indicate that the terms are typically employed as synonyms of one another, rather than in conjunction with one another and that their joint usage is infrequent.

	All	Book / Edited Book	Book Section	Journal Article	Conference Proceedings	Thesis	Magazine Article	Others
Atmosphere OR Ambiance OR Aura	1260	155	379	515	129	39	11	32
Atmosphere	1095	145	356	441	84	37	9	23
Ambiance	173	14	25	56	59	3	2	14
Aura	48	4	7	33	1	3	0	0
Atmosphere AND Ambiance	7	0	0	2	2	1	0	2
Atmosphere AND Aura	4	1	0	1	0	2	0	0
Ambiance AND Aura	2	0	0	2	0	0	0	0

Table 1. The distribution of the use of atmosphere/ambiance/aura in various type of publication

In light of the considerable body of literature on this topic, the present study will focus on articles published in academic journals. In this regard, the distribution of the articles according to the number of citations they have received is initially examined. This is illustrated in Figure 1 below.
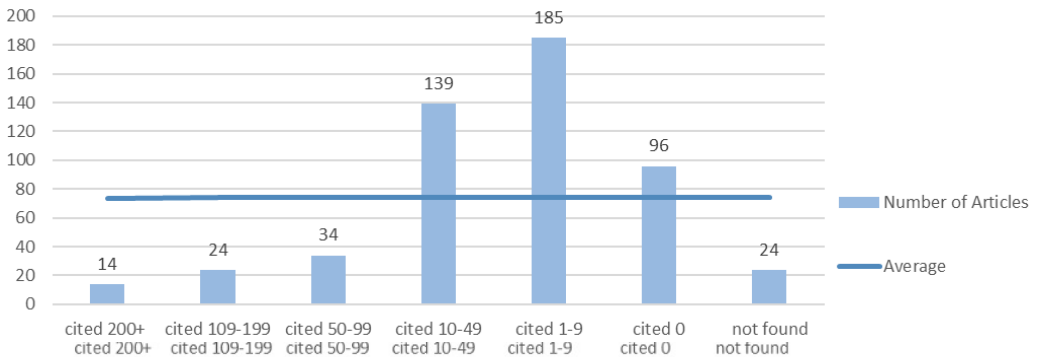
Figure 1. Distribution by citation.

A total of 14 studies have been cited over 200 times, while 24 studies have been cited between 109 and 199 times. There are 34 studies that have been cited between 50 and 99 times, 139 studies that have been cited between 10 and 49 times, and 185 studies that have been cited between 1 and 9 times. The number of studies with no citations is 96. Consequently, 386 studies were found to have received at least one citation, indicating that studies in general are subject to varying degrees of recognition and impact.
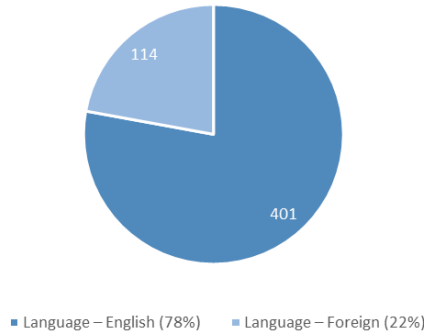
Figure 2. Distribution of articles in terms of language.

Furthermore, as illustrated in Figure 2, English is the dominant language employed in the majority of studies on this subject (78%). This preponderance of English-language articles indicates that the field is significantly shaped by English-speaking academic communities.
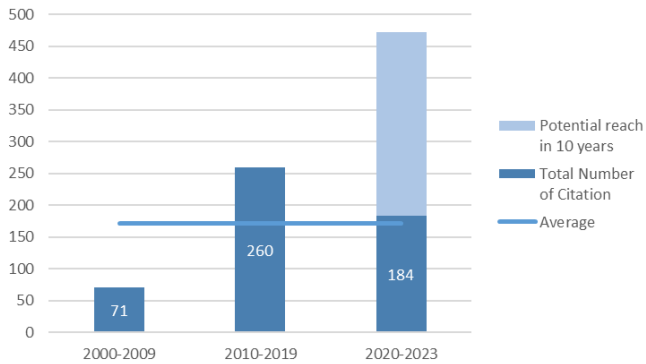
Figure 3. The total number of citations in each decade

Figure 3 illustrates the distribution of citations by year, demonstrating a notable surge in academic interest following 2020. The number of citations for the period between 2020 and 2023 (183) is notably high, indicating the potential for it to exceed 450 citations within a decade. The influence of the conference "Ambiances" may be a contributing factor to this observed increase.

As demonstrated in Table 2, the citation status of articles across various academic disciplines provides insight into the level of academic impact and interest within these fields. For instance, articles pertaining to the fields of economics-management-marketing are highly cited, with considerable influence within the academic community. Conversely, papers on art and art history are cited at a lower rate, and the impact of research in these domains appears to be more constrained. Areas such as cultural studies and sociology are referenced at a moderate level, which serves to indicate the and considerable impact of these disciplines in academic literature.

		Total Number of Articles	Min 1-cited Articles	Sum of Citation	Max. Citation	Average of Citation
Design-related	Arch – Int Arch	95	69	1137	250	16.5
Art and Media-related	Design	14	6	536	162	41.2
	Urban Design	24	22	993	173	45.1
Art and Mediarelated	Art – Art history	14	6	32	19	5.3
	Media studies	30	18	1021	419	56.7
	Music/ology	16	13	241	62	18.5
	Performance arts	14	6	74	44	12.3
Education and Language	Education - Pedagogy	6	6	109	57	18.2
	Language – Literary studies	14	7	161	73	23.0
Economy and Organization-related	Economy – Management - Marketing	27	26	5705	3318	219.4
	Tourism	2	2	36	23	18.0
Culture-related	Cultural studies	39	34	1666	736	49.0
	Geography	60	55	4753	1458	86.4
	Sociology	31	23	532	91	23.1
	Philosophy	93	64	1301	341	20.3
	Law	4	4	258	100	64.5
Health-related	Psychology	19	15	383	94	25.5
	Health studies	2	2	36	34	18.0
Others	Other disciplines	7	7	355	233	50.7
	Unable to define	4	1	8	8	8.0
Average		25.7	19	966.8	385	40.9
All		515	386	19337	7695	819.7

Table 2. Citation of journal articles by discipline-wise.

The detailed visualization in Figure 4 delineates the citation distribution across various disciplines. It demonstrates that seven distinct fields have a higher citation frequency than the average.
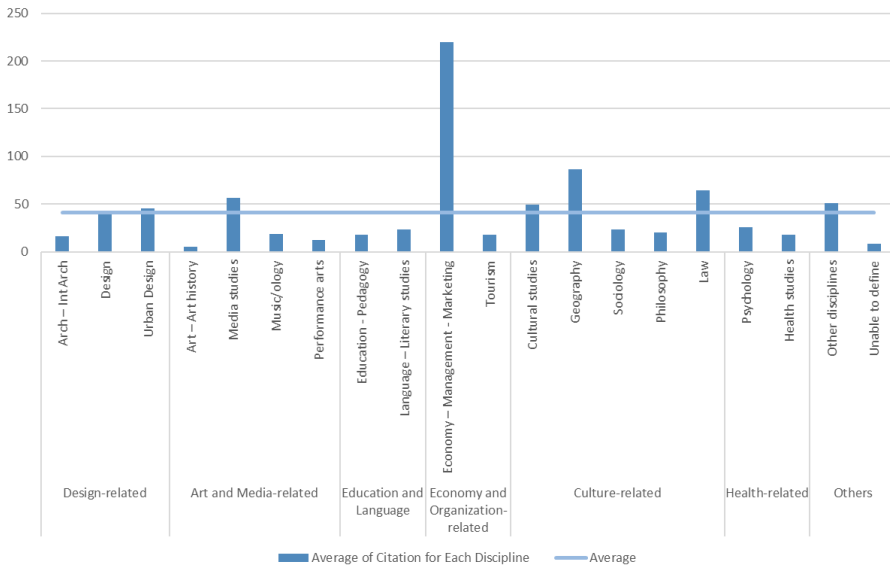
Figure 4. Average Citation for each discipline

Upon analysis of the disciplines as represented by the most-cited 100 articles, it becomes evident that the highest number of studies on this subject is within the field of geography (22%). This is due to the fact that the atmosphere holds significant theoretical and practical importance within the field of geography. Atmospheric studies encompass a range of disciplines, including urban design, philosophy and cultural studies, with each accounting for 10% of the field. The field of urban design is concerned with the impact of the urban environment on atmospheric dynamics, whereas the discipline of philosophy focuses on the development of theoretical frameworks. The study of cultural studies, on the other hand, examines the social and cultural influences on atmospheric perception. This interdisciplinary approach allows for the examination of atmospheric phenomena from a multitude of perspectives, thereby enhancing our comprehension of these phenomena and their broader implications.
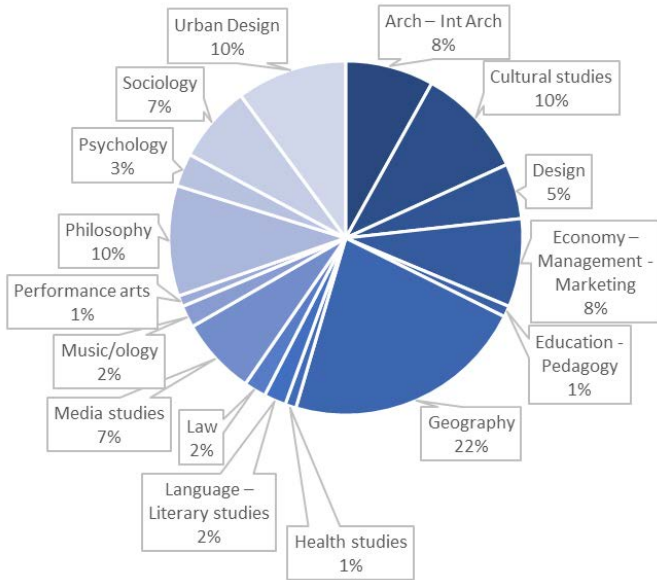
Figure 5. Distribution by disciplines in most-cited 100 articles

4. FINAL WORDS

Investigation of atmosphere/ambiance has become a complex area of research, attracting interest from several academic fields in recent decades. This research article has emphasized the notable contributions and growing interest in the issue across several disciplines, with a specific focus on the time frame from 2000 to 2023. The citation analysis highlights the different levels of acknowledgment and influence of research on the atmosphere. While disciplines such as economics and management demonstrate significant academic involvement and impact, topics like art and art history have lower citation rates. The discrepancy suggests that the influence of atmospheric studies is not evenly spread among different academic subjects, highlighting the various ways in which these disciplines approach the subject.

The interdisciplinary nature of atmospheric research is apparent from the wide array of fields that contribute to the literature. Geography, because to its substantial theoretical and practical involvement with the atmosphere, is at the forefront in terms of the quantity of studies conducted. Additional disciplines such as urban planning, philosophy, and cultural studies also have significant contributions, each offering distinct viewpoints that enhance the comprehensive comprehension of atmospheric phenomena.

Moreover, the multidisciplinary approach in atmospheric studies allows for the incorporation of novel concepts and methods from other fields into architectural literature, so enhancing and advancing the architectural understanding of the

atmosphere. The exchange of ideas from different sources not only enriches the theoretical foundations of architecture but also brings novel approaches that can be implemented in actual architecture and urban design.

The increasing number of publications, the advent of specialised journals and dedicated issues, and the rising citation rates all demonstrate that this is a vibrant and evolving field of research. It should be noted that this study represents a preliminary investigation of a comprehensive comparison, constrained by the limitations of the word and page limit. Further research* will expand upon the insights gained here.

* In future studies, it would be possible to scan abstracts of all publications for the specified keywords "atmosphere/ambiance/aura", rather than searching solely by titles of them. While this would undoubtedly expand the scope of the study, it would also make it more challenging to control and manage paradigms. However, considering the multi-disciplinary perspectives, it may also lead to the identification of studies that could otherwise be overlooked or underappreciated.

As a potential follow-up study, the arguments of each discipline's most influential studies can be subjected to content analysis, allowing for a comparison of their contributions. This approach enables the identification of which disciplines are pioneering in which subjects. Furthermore, it facilitates the integration of innovative approaches and methods from other disciplines into

architectural literature, thereby enriching and developing the architectural view of the atmosphere.

BIBLIOGRAPHY

Anderson, B. (2009). Affective atmospheres. Emotion, Space and Society, 2(2), 77-81. *https://doi.org/https://doi.org/10.1016/j.emospa.2009.08.005*

Bille, M., & Sorensen, T. F. (Eds.). (2016). *Elements of Architecture: Assembling archaeology, atmosphere and the performance of building spaces. Routledge.*

Böhme, G. (1993). Atmosphere as the Fundamental Concept of a New Aesthetics. *Thesis Eleven*, 36(1), 113-126. *https://doi.org/10.1177/072551369303600107*

Griffero, T. (2014). *Atmospheres: Aesthetics of emotional spaces*. Ashgate Publishing, Ltd.

Hatıpoğlu, S. C. (2023). The affective atmospheres of spatial organisms and smells: The God of Small Things. In N. Erdoğan & H. T. Akarsu (Eds.), *Architecture in Contemporary Literature* (pp. 71-77). Bentham Books. *https://doi.org/https://doi.org/10.2174/9789815165166123010010*

Hatıpoğlu, S. C., & Hacıömeroğlu, T. N. (2024). The Artificial Hypocrisy of the Fairytale Atmosphere: The Grand Budapest Hotel. In N. Erdoğan & H. T. Akarsu (Eds.), *Architecture in Cinema* (pp. 22-32). Bentham Books. *https://doi.org/https://doi.org/10.2174/9789815223316124010006*

Pfister, D. (2019). The Concept of Atmosphere from a Multidisciplinary Perspective. In M. Volgger & D. Pfister (Eds.), *Atmospheric Turn in Culture and Tourism: Place, Design and Process Impacts on Customer Behaviour, Marketing and Branding* (Vol. 16, pp. 31-43). Emerald Publishing Limited. *https://doi.org/10.1108/S1871-317320190000016007*

Schroer, S. A., & Schmitt, S. B. (Eds.). (2017). *Exploring Atmospheres Ethnographically*. Routledge.

Stewart, K. (2011). Atmospheric Attunements. *Environment and Planning D: Society and Space*, 29(3), 445-453. *https://doi.org/10.1068/d9109*

Sumartojo, S., & Pink, S. (2018). *Atmospheres and the experiential world: Theory and methods.* Routledge.

Thibaud, J.-P. (2011). The sensory fabric of urban ambiances [Article]. *The Senses and Society,* 6(2), 203-215. *https://doi.org/10.2752/174589311X12961584845846*

Zumthor, P. (2006). Atmospheres: *Architectural Environments. Surrounding Objects*. Birkhäuser.

MULTIMODAL AMBIANCES OF TOURISM IN LISBON: EXPLORING LOCALS' GAZES

Camilo Leon-Quijano
Postdoctoral Researcher
Ambiances Architecture Urbanités / CRESSON (France)

ABSTRACT
This presentation is based on the results of the Collaborative Engagement in Societal Issues (WP6/COESO) project and presents an experimental and multimodal ethnography that explores the relationship between citizens and mass tourism in the neighborhood of Sao José in Lisbon. Concretely, I will showcase the transmedia website that depicts the sensitive experiences of tourism in this neighborhood (*https://saojose.huma-num.fr/*).

The website features various experiences highlighting the relationship of locals to mass tourism in the neighborhood. Through this experimental website, visitors can explore different ambiances that reveal the complex and often hidden power dynamics associated with tourism. This anthropological study of ordinary experiences adopts a participatory and multimodal approach (i.e. Leon-Quijano 2024) by employing photographs, videos, texts, sounds, participatory mapping, and archives. This presentation aims to contribute to the discussion surrounding the use of images, sounds, and digital techniques in the development of theoretical reflections on atmospheres and multimodality.

RESUMO
Esta apresentação baseia-se nos resultados do projeto Collaborative Engagement in Societal Issues (WP6/COESO) e apresenta uma etnografia experimental e multimodal que explora a relação entre os cidadãos e o turismo de massa no bairro de São José, em Lisboa. Concretamente, irei apresentar o site transmédia que retrata as experiências sensíveis do turismo neste bairro (*https://saojose.huma-num.fr/*).

O site apresenta várias experiências que destacam a relação dos moradores com o turismo de massa no bairro. Através deste site experimental, os visitantes podem explorar diferentes ambiências que revelam as dinâmicas de poder complexas e muitas vezes ocultas associadas ao turismo. Este estudo antropológico das experiências quotidianas adota uma abordagem participativa e multimodal (i.e. Leon-Quijano 2024) utilizando fotografias, vídeos, textos, sons, mapeamento participativo e arquivos. Esta apresentação tem como objetivo contribuir para a discussão sobre a utilização de imagens, sons e técnicas digitais no desenvolvimento de reflexões teóricas sobre atmosferas e multimodalidade.

THE USE OF BIM METHODOLOGY TO OPTIMISE THE LICENSING PROCESS FOR ARCHITECTURAL PROJECTS

O USO DA METODOLOGIA BIM PARA A OTIMIZAÇÃO DO PROCESSO DE LICENCIAMENTO DE PROJETOS DE ARQUITETURA

Mayra de Souza Santos
Master Student in Architecture
and Urbanism / Mestranda em Arquitetura e Urbanismo
Federal University of Pernambuco
/ Universidade Federal de Pernambuco
mayra.souza@ufpe.br
mayraarquitetura@gmail.com

ABSTRACT

The aim of this article is to analyse how the use of the BIM (Building Information Modelling) methodology can optimise and improve the analysis of projects and urban licensing processes. The article initially addresses the contextualisation of the Architecture, Engineering and Construction industry and how BIM has developed based on the needs that have arisen over the years. It then looks at the state of the art in BIM methodology and presents an overview of the subject, based on relevant concepts and definitions. The following sections address the progressive adoption of BIM by the Brazilian Public Administration and how it can be exploited in urban licensing procedures. Finally, it presents the concept of Automated Code Checking and its application in the licensing processes for architecture projects, demonstrating how automation improves project analysis, guaranteeing accuracy and consistency, as well as speeding up the issuing of licences in accordance with legislation.

KEYWORDS: BIM. Project Licensing. Code Checking.

RESUMO

O presente artigo tem como objetivo analisar como o uso do BIM *(Building Information Modeling)* pode otimizar a análise de projetos e processos de licenciamento urbanístico. O artigo se inicia com a contextualização da indústria da Arquitetura, Engenharia e como o BIM se desenvolveu nesse cenário. Em seguida, procura abordar o estado da arte sobre a metodologia BIM e apresentar uma visão geral do tema, a partir de conceitos e definições. As seções seguintes abordam a progressiva adoção do BIM pela Administração Pública brasileira e como ele pode vir a ser explorado nos procedimentos de licenciamento urbano. Por fim, expõe o conceito de Verificação Automatizada de Regras (*Code Checking*) e a sua aplicação nos processos de licenciamento dos empreendimentos, demonstrando como a automação agiliza e aprimora a análise de projetos, garantindo precisão e consistência nas avaliações, bem como acelerando a emissão de licenças em conformidade com a legislação.

PALAVRAS-CHAVE: BIM. Licenciamento de Projetos. Validação Automatizada de Regras.

1. INTRODUCTION / INTRODUÇÃO

O setor da construção civil possui expressiva importância no desenvolvimento tecnológico e social ao longo da história. Um agente decisivo na economia de um país, é também norteador do desenvolvimento econômico e um dos primeiros indicativos de sinais de recessão. No Brasil, apenas no ano de 2021, a indústria da construção civil movimentou R$377,8 bilhões em incorporações, obras e serviços. Desta soma, a construção de edifícios representou a parcela de R$168,6 bilhões, conforme a Pesquisa Anual da Indústria da Construção (PAIC) realizada pelo IBGE. No ano de 2022, construção civil gerou 192.239 novos postos de trabalho com carteira assinada, segundo os dados do Cadastro Geral de Empregados e Desempregados (CAGED),

divulgados pelo Ministério do Trabalho. A busca por desenvolver novos métodos e práticas que otimizem as atividades desenvolvidas neste setor, são uma constante.

Ao longo dos anos, o surgimento de novas tecnologias revolucionaram a forma de projetar e executar edificações. O surgimento de ferramentas como o *Autocad*, lançado em 1982, e o *SketchUp*, dos anos 2000, transformaram o desenho técnico e a forma de representar as mais diversas disciplinas envolvidas no processo de projeto e construção. Como resultado desse avanço, o nível de exigência quanto ao desenho técnico aumentou. Uma gama muito maior de detalhamentos passou a ser exigida, ampliando de forma significativa a quantidade de informação disponibilizada para os executores e, por consequência,melhorando o produto final e possibilitando o desenvolvimento de novas soluções. Nesse contexto, surge o BIM, acrônimo para *Building Information Modeling* e suas ferramentas. Definido como: "Uma metodologia que integra informações geométricas, propriedades físicas e funcionais, além do ciclo de vida completo de um empreendimento, proporcionando uma melhor compreensão e tomada de decisões ao longo de seu ciclo de vida" (EASTMAN,2011), o BIM é um processo que envolve a utilização de modelos 3D, representando os objetos por meio de regras e parâmetros associados a sua geometria, que permitem a integração de informações de diferentes disciplinas envolvidas no projeto, como arquitetura, engenharia, elétrica e hidráulica, em um único ambiente de trabalho. O processo não só possibilita a interoperabilidade entre as disciplinas, mas também enseja agregar propriedades não geométricas e informações de naturezas diversas aos objetos. Isso permite a visualização de todo o projeto em tempo real, identificando possíveis conflitos e erros antes mesmos do início da construção, impactando profundamente as etapas que antecedem a execução. Ademais, permite a extração de relatórios e tabelas a partir do modelo, que são peças importantes para elaboração de processos de Estudos de Viabilidade e Licenciamento Urbanístico.

Para além disso, as ferramentas BIM permitem a verificação automatizada de parâmetros, normas e requisitos específicos que garantem o atendimento e a conformidade com as premissas do projeto e a legislação vigente. Desta forma, ao realizar a checagem do modelo, possíveis erros são identificados de maneira imediata, permitindo medidas corretivas ainda nas etapas iniciais.

Assim sendo, o interesse pela implementação e adoção das práticas que envolvem o BIM cresce exponencialmente na indústria de Arquitetura, Engenharia e Construção. A pesquisa realizada em setembro 2022 pela Agência Brasileira de Desenvolvimento Industrial (ABDI) em parceria com a Grant Thornton e o Sienge, intitulada "Mapeamento de Maturidade BIM Brasil" mostrou que 70% das organizações se veem adotando a metodologia nos próximos anos.

A perspectiva de automação proporcionada pelas ferramentas BIM pode produzir frutos em diversos contextos ainda pouco explorados. Um deles é a sua aptidão em otimizar de processos de licenciamento urbanístico. A possibilidade da verificação

automatizada de parâmetros normativos e legais tem-se mostrado eficiente, despertando o interesse de construtoras e escritórios de arquitetura que buscam aperfeiçoar o processo de projeto.

Este artigo propõe uma análise sobre o uso do BIM para a otimização do processo de licenciamento de projetos arquitetônicos. Serão apresentados os benefícios, desafios e impactos dessa abordagem, tanto do ponto de vista dos órgãos de licenciamento quanto dos profissionais envolvidos na elaboração dos projetos.

2. VISÃO GERAL DO BUILDING INFORMATION MODELING (BIM)

O conceito de modelagem com informação foi inicialmente apresentado pelo arquiteto e professor Chuck Eastman há mais de 30 anos. No entanto, foi apenas em dezembro de 1992, na publicação do artigo "*Modelling multiple views on buildings*" de G. A. Van Nedaveem e F. Tolman, que o termo BIM (*Building Information Modeling*) foi cunhado. *Softwares* capazes de produzir modelos com informação agregada já existem desde os anos 80, contudo, a popularização destes deu-se apenas no início do século XXI, a partir da difusão da tecnologia necessária para o processamento dos dados referentes aos modelos. Quanto ao BIM especificamente, contribuiu para a sua difusão a publicação de normativas, como por exemplo a ISO-PAS 16739 2007 – *Industry Foundation Classes, Release 2x, Platform Specification (IFC2x Platform)*, que pode ser considerada a base para prática atual.

Desde a sua criação, o conceito de BIM aborda as inter-relações entre os elementos componentes de uma edificação e suas representações, buscando elaborar uma construção em modelo virtual com todas as suas características construtivas. Todavia, o BIM engloba componentes que vão além representação em um objeto 3D. Trata-se de um modelo associado a um conjunto de informações, propriedades não geométricas, regras e atributos que buscam agregar o máximo de dados da edificação e seus componentes, desde a sua idealização até o seu descomissionamento, abarcando assim toda sua vida útil.

O processo de projeto que adota a metodologia BIM obedece a um fluxo básico que inverte a metodologia convencional. Tradicionalmente, toda análise é baseada nas representações bidimensionais, analisadas de forma manual, ajustadas e revisadas até atingir um nível de excelência que possibilite a execução, das disciplinas de forma individual. No processo em BIM, o aprimoramento do projeto é focado no modelo virtual da construção, onde cada disciplina elabora seu modelo e estes são compatibilizados e vinculados entre si, criando um modelo único, denominado "Modelo Federado", que passa por ciclos de otimização até a sua validação. Estes ciclos contam com a possibilidade da realização e verificação automatizada de regras *(Code Checking e Validation)*, fator de extrema importância para a eficiência do processo.

No processo de projeto tradicional, o pico de alterações relevantes acontece durante a etapa de Projeto Executivo, quando o projeto atinge um nível de maturidade que permite identificar inconsistências e interferências entre as disciplinas. Já com as ferramentas BIM, esse pico ocorre durante a fase de Anteprojeto, etapa em que o impacto das alterações possui uma menor relevância. A partir do Modelo Federado é possível identificar com clareza um aspecto importante sobre a ferramenta BIM: a interoperabilidade entres os modelos virtuais, que se caracteriza pela capacidade de duas ou mais plataformas se comunicarem por meio de um padrão, seja ele aberto ou interno. Normatizada pela ISO 29481 - *Building Information Models – Information Delivery Manual*, que apresenta um esquema geral da organização da informação dos modelos, vale destacar o *Model View Definition* (MVD), que define um subconjunto de informações necessárias para a interoperabilidade entre modelos. Somado a isso, são utilizados também os padrões BCF *(BIM Collaboration Format)*, focados em gestão e coordenação de projetos, visando garantir uma comunicação segura e acessível a todos os envolvidos no processo.

Uma vez validado o modelo virtual, é desenvolvida a documentação de onde serão extraídas as informações complementares ao modelo e que servirão de base para as demais atividades envolvidas na construção, licenciamento, orçamentação e execução.

Para a elaboração de um modelo virtual da construção em BIM é necessária a utilização de objetos virtuais, os quais recebem o nome de Objetos Paramétricos. Estes, são uma simulação de um objeto a construir ou construído, onde estão agregadas as informações sobre suas dimensões, materiais e demais características importantes ao projeto. Objetos Paramétricos possuem variados tipos de dados, tais como: desempenho térmico, lumínico ou acústico, manuais de uso e manutenção, especificações e outros. Eles podem ser considerados paramétrico quando podem ter suas características alteradas para atender as necessidades de um projeto sem a necessidade de redesenho deste elemento. Sendo assim, é possível alterar uma característica deste e suas representações bidimensionais, tridimensionais e textuais são automaticamente ajustadas. Por fim, esses objetos podem ser agrupados entre si e compõem mais informações importantes ao projeto e a execução.

O produto deste processo é um banco de dados composto pelo modelo paramétrico tridimensional, seus materiais, propriedades e características específicas. Compõem esse modelo os códigos de serviços associados às devidas execuções, análises acústicas, energéticas, luminotécnicas, estruturais e outras, que buscam simular virtualmente a existência da construção em toda a sua complexidade e dinâmica. Além disso, este produto gerado pode ser utilizado ao longo de toda a vida útil da edificação, uma vez que considera todas as atividades, elementos, processos e produtos inerentes a edificação.

O nível de desenvolvimento deste produto é definido a partir da necessidade da organização, podendo a quantidade de informação atrelada ao modelo ser modificada ao longo das entregas nas diferentes fases de projeto. Modelos Paramétricos

permitem o gerenciamento das alterações e coordenação interdisciplinar entre os elementos do projeto com eficiência, segurança e praticidade.

3. O BIM, A ADMINISTRAÇÃO PÚBLICA BRASILEIRA E O LICENCIAMENTO URBANÍSTICO

As vantagens da metodologia BIM não passaram despercebidos pela Administração Pública brasileira. Aliás, no mundo, o Estado tem sido fundamental na propagação do BIM, o que se constata pela experiência de países onde o uso se encontra mais difundido, como Cingapura, Reino Unido, Estados Unidos e países nórdicos (LEUSIN, 2021:6).

Pode-se dizer que há no Brasil uma política oficial para a disseminação e uso do processo, já que sucessivas normas foram editadas com esta finalidade. O primeiro texto normativo a abordar o BIM foi, em nível federal, o Decreto nº 9.377/2018, que instituiu a Estratégia Nacional do *Building Information Modelling*, depois revogado pelo Decreto nº 9.983/2019, ainda em vigor. Em ambos os decretos estão presentes como função estatal difundir o BIM e seus benefícios e coordenar a estruturação do setor público para a adoção do BIM.

Para implementar tais objetivos, a Administração Pública Federal editou o Decreto nº 10.306/2020, que determina a adoção gradual do BIM no desenvolvimento e execução de projetos de engenharia e arquitetura e nas gestões de obras ligadas ao Ministério da Defesa e ao Ministério da Infraestrutura. Para além disso, a nova Lei de Licitações e Contratos Administrativos (Lei nº 14.133/2021) traz, em seu art. 19, §3º, a utilização do BIM como preferencial nas licitações de obras e serviços de engenharia e arquitetura. Existe portanto uma tendência de universalização no uso das ferramentas BIM na Administração Pública brasileira. Sendo sua implementação realizada de forma gradual, já abrangendo de forma obrigatória o Ministério da Defesa e o da Infraestrutura e de forma preferencial os demais órgãos e entidades públicos.

A exigência de licença do Poder Público para certas atividades particulares insere-se no que em Direito Administrativo brasileiro chama-se de "poder de polícia". Na busca de realizar as suas finalidades constitucionais e legais, o Estado atua de forma positiva, prestando serviços públicos ou concedendo a sua execução à iniciativa privada, e de forma negativa, proibindo atividades de particulares lesivas ou potencialmente lesivas ao interesse público. Essa segunda hipótese, de limitação estatal à liberdade e à propriedade a fim de compatibilizá-las com os interesses coletivos, é o que vem a ser o poder de polícia (MELLO, 2017: 847). Chama-se de "polícia administrativa" ou "poder de polícia em sentido estrito" o controle das atividades privadas feito especificamente pelo Poder Executivo, quer de forma geral e abstrata, como nos regulamentos, quer de modo concreto e específico, como nas licenças (MELLO, 2017: 851).

Em regra, o direito de propriedade sobre o terreno compreende o direito de construir nele. É o que dispõe o art. 1.299 do Código Civil brasileiro. O exercício livre e irrestrito

do direito de construir, contudo, poderia trazer prejuízos à coletividade, de modo que pode estar sujeito a um exame estatal de conformidade legal e regulamentar. Assim, o próprio art. 1.299 põe como ressalva ao direito de construir a obediência ao direito de vizinhança e a sujeição aos regulamentos administrativos. Além dessas limitações, existem outras previstas na legislação dedicada e que fazem parte, em grande medida, do chamado Direito Urbanístico.

O Poder Público, portanto, no exercício do poder de polícia administrativa, exige, em regra, que interessado em edificar se submeta a procedimento administrativo, no qual será verificado se a futura construção está ou não em conformidade com os ditames legais e regulamentares aplicáveis ao caso. O BIM e o sistema de checagem automatizada que o integra podem ser de grande utilidade nesta análise de conformidade. Leis e regulamentos impõem uma série de dados e parâmetros mínimos, máximos ou obrigatórios aos quais devem estar sujeitos os projetos submetidos a licenciamento. A automatização desse processo somente geraria, mais uma vez, ganho de eficiência, com economia de tempo e recursos tanto para o particular, quanto para a Administração Pública.

4. A APLICAÇÃO DO BIM NO PROCESSO DE LICENCIAMENTO DE PROJETOS DE ARQUITETURA

Os processos de licenciamento, sejam urbanísticos ou ambientais, podem representar, uma parcela expressiva das atividades relacionadas a uma obra. A construção de edificação é um processo complexo, que envolve diversas atividades em diferentes tipos de disciplinas. Mapeando essas atividades desenvolvidas ao longo do processo da construção de edificações verticalizadas por uma construtora de médio porte, foi possível identificar um total de 192 macro atividades, das quais 56 estavam classificadas como licenciamento e suas derivações, isto representa cerca de 29% das atividades que abrangem o ciclo de vida de uma obra, desde o seu planejamento, passando pela execução e por fim sua habilitação para funcionamento. Assim sendo, é relevante ressaltar que os custos atrelados as burocracias do imóvel, chegam a representar 12% do valor final de um imóvel, sendo 80% dessa porcentagem, custo que se referem exclusivamente aos processo de Licenciamento (CBIC,2014).Os processos de licenciamento passam por diversas etapas, desde a elaboração do material para ser submetido à aprovação, de responsabilidade das organizações responsáveis pelo projeto, quanto as análises e exigências por parte dos órgãos responsáveis. Dessa forma, a otimização dos processos e suas etapas é de extrema importância para o cumprimento dos cronogramas estabelecidos, haja vista que os processos podem se estender por meses desde a submissão inicial para aprovação do projeto, devido as suas análises e exigências.

No mais, a crescente adoção da metodologia *Building Information Modelling* (BIM) despertou não somente o interesse daqueles que são parte interessada na habilitação do projeto, como também tem sido alvo de discussões e avanços por parte dos

órgãos licenciadores, que desenvolveram sistemas digitais de análise de projetos, por meio da tecnologia BIM, são exemplos:

Simplex Urbanístico – Portugal

Promulgado 8 em janeiro de 2024, o Decreto-Lei nº10/2024, visa uma revolução no papel da administração pública portuguesa quanto ao processo de obtenção de licenças par o setor da construção e engenharia. Visando modernizar, simplificar e otimizar os licenciamentos no âmbito urbanístico, o decreto estabelece a implementação do BIM em projetos de construções públicas. Por meio da criação da "Plataforma Eletrónica dos Procedimentos Urbanísticos" obter as licenças e autorizações necessárias, acompanhar processos on-line, uniformizar procedimentos, evitando práticas e procedimentos diferentes e a futura submissão de aprovações em formato BIM, com automatização de verificação de regras. A plataforma será de uso obrigatório aos municípios a partir de 5 de janeiro de 2026.

Singapura - Sistema CORENET e-Submission System

Desenvolvida pela Building and Construction Authority sob a liderança do Ministério do Desenvolvimento Nacional, e em colaboração com com organizações públicas e privadas, tem seu início em 1995. A plataforma tem como objetivo de facilitar o processo de submissão eletrônica de projetos de construção e licenciamento reformulando e otimizando os processos da indústria da construção civil para alcançar uma agilidade em tempo de resposta as solicitações, produtividade e qualidade. O sistema, permitia que engenheiros, arquitetos e demais profissionais da indústria da construção submetam digitalmente seus projetos de construção a análise, evitando a necessidade de submissões físicas em papel. O sistema hospedado de forma on-line, acessível e dispões de diversas publicações e manuais que orientam o processo de submissão dos projetos na plataforma e do acompanhamento desses via digital.

Brasil – Plataforma Tekto – Metropolis

A Plataforma Tekto, desenvolvida pela Tekto Solutions para integrar o sistema de Licenciamento Urbanístico da Cidade de Salvador na Bahia, tem como objetivo viabilizar a melhoria da gestão do licenciamento urbano, atuando com o objetivo de otimizar o processo de análise dos projetos submetidos a aprovação. Utilizando metodologias e ferramentas baseados na lógica BIM, busca explorar o conceito de Verificação Automatizada ou Code Checking nos modelos submetidos a análise, fazendo uso de um visualizador IFC 3D integrado aos Formulários de submissão, que realizam a checagem por meio de regras configuradas usando como base parâmetros construtivos e urbanísticos estabelecidos na LUOS – Lei 9.148/2016, PDDU 2016 - Lei Nº 9.069/2016 de 30/06/2016 e no Código de Obras - Lei Nº 9281/2017.

Dada alta quantidade de informações e peças técnicas produzidas em um projeto de arquitetura e suas disciplinas complementares, a conferência manual da adequabilidade do projeto as Leis, Decreto e Normas Técnicas aplicáveis acontece em um ritmo mais lento e de forma pouco padronizada, pois conta com a expertise do analista, além

de critérios subjetivos ao processo de análise individual. Desta forma, os resultados das análises realizadas de forma manual apresentam níveis diferentes de exigências e erros de análise. Um projeto realizado pela *Fiatech Regulatory Streamlinig Committee* (RSC) no ano de 2012, evidenciou a inconsistência dos resultados obtidos por análises manuais, quando submeteu a 14 órgãos distintos de diferentes estados e cidades, um projeto a análise e o resultado apresentou uma diversidade expressiva nas respostas a análise, variando no número de comentários realizados. A verificação automatizada é objetiva e padronizada, baseada nas regras estabelecidas para a checagem do modelo, não deixando espaço para interpretações e análises subjetivas.

No Brasil, o tempo médio para a emissão de um Alvará de Construção para grandes obras varia em média de 12 a 14 meses (SEDUR, 2021). Com a implantação do BIM e da verificação automatizada, a redução do prazo pode chegar a 90%, sendo um alvará emitido num prazo de 45 dias, a exemplo do primeiro Alvará de Construção emitido pela SEDUR, usando como base a metodologia BIM (SEDUR, 2022).Ademais, ainda é possível aplicar a verificação automatizada para a checar o atendimento do projeto a normas técnicas complementares. Assim como, sua aplicação pode ser utilizada para a checagem do atendimento aos itens do código de segurança contra incêndio e pânico. Outro aspecto importante a ressaltar é sua aplicação para a verificação de soluções sustentáveis.

Deste modo, no que diz respeito aos processos de licenciamento, a utilização de modelos BIM e a verificação destes modelos a partir de um conjunto de regras definidas, baseadas em leis e normas locais em vigor, contribuem para uma maior eficiência e celeridade do processo de análise, como também uma maior conformidade ao atendimento dos pré-requisitos legais, otimizando os processos urbanísticos, na busca por um processo mais rápido, claro e objetivo, mas sem perda de qualidade e integridade das construções (GUALBERTO at al.,2020)

4.1 Veríficação de Regras *(Code Checking)*

A Verificação de Regras Automatizadas ou *Code Checking and Validation* refere-se ao processo de aplicar regras predefinidas e automatizadas para verificar a conformidade do modelo de informações da construção com os padrões, normas e requisitos específicos do projeto. Pode ser definido como "um processo no qual um programa de validação de código é utilizado para verificar os parâmetros do modelo contra códigos específicos do projeto" (CIC apud SILVA JUNIOR, 2018). A verificação de regras é um dos usos do BIM, classificados por Succar (2019), que o define como "o processo de inspeção de um arquivo, documento ou modelo BIM para conformidade com especificações predefinidas ou códigos de design, desempenho ou segurança estabelecidos". É a partir desse uso em específico que os dados geralmente são obtidos do que foi reunido ou gerado, e colocados de forma que possam ser usados para a tomada de decisões (KREIDER; MESSNER, 2013). Para além disso a verificação de regras é uma ferramenta importante para a eficiência e qualidade dos produtos gerados pelo processo de projeto.

Estas regras de checagem, podem abranger diferentes aspectos presentes no modelo, como geometria, interferências, atributos e até mesmo a conformidade com regulamentos, e códigos de construção, facilitando o atendimento as leis e diretrizes urbanísticas no âmbito municipal, estadual e federal. Sua aplicação em modelos de projetos arquitetônico, representaria uma redução de tempo e retrabalho significativa ao processo, que poderá ser revertida em uma margem de retorno financeiro do investimento. O processo, exige a disponibilização de um pacote de documentos, planilhas de quantitativos e orçamentos, que podem facilmente ser validados a partir da checagem automatizada de regras, antes da submissão. A importância do Code Checking and Validation, pode ser observada em diversas esferas do processo de projeto, desde a sua concepção, passando pela habilitação do projeto e demais licenciamentos e finalmente a sua viabilidade.

O uso do BIM na verificação de regras inclui coordenação, previsão e validação (SILVA JUNIOR, 2015), e para tal existem sistemas de classificação regulamentados por normativas consolidadas em níveis nacionais e internacionais. Como exemplo, a Classificação Omniclass, que fundamenta a sua estrutura na ISO-12006 (2022) - *Building construction - Organization of information about construction works*, tendo duas de suas partes traduzidas para o português e que tem por objetivo classificar as informações relacionadas a uma construção ao longo de sua vida útil, as categorizando por meio de uma estrutura hierárquica, e visando promover a fácil interpretação das informações, facilitando seu entendimento por todos os envolvidos, desde o projeto até o seu descomissionamento. Uma vez que a informação é classificada, passa a ser reconhecida por um código de identificação composto por seis dígitos, sendo os dois primeiros dígitos a indicação da tabela de referência e os dígitos que se sucedem indicam a tipologia de cada nível de classificação. Desta forma, uma vez aplicado ao modelo o sistema de classificação é possível verificá-los e extrair informações a partir deles.

No Brasil, a publicação da NBR 15965 - "Sistema de Classificação da Informação da Construção" tem por objetivo orientar a classificação dos elementos e processo do modelo BIM. O sistema de classificação baseia-se nos conceitos definidos pela ISO 12006-2, uma estrutura que prevê diferentes níveis hierárquicos, de um conjunto completo até o nível do objeto (ABNT, 2011). Adequando as classificações às soluções construtivas e técnicas, comuns a realidade da indústria da Arquitetura, Engenharia e Construção no Brasil, esta NBR é composta por 7 partes e 13 tabelas de classificação. Essas são exemplos de regulamentações para a padronização das informações presentes no modelo, ponto de partida para a elaboração das regras de checagem automatizada.

É necessário que o modelo e a estruturação das classificações atribuídas aos componentes atendam as prerrogativas de qualidades necessárias para produzir um resultado fidedigno do que é verificado. Segundo Solihin e Eastman (2015), os principais desafios para uma implementação de verificação de regras bem-sucedida

são as complexidades inerentes às próprias regras e a amplitude das condições às quais elas precisam ser aplicadas. Considerando suas particularidades é possível categorizar as regras de verificação em quatro classes diferentes, são elas: regras baseadas em dados explícitos, regras baseadas em valores derivados, regras que necessitam de dados estruturados e por fim as regras que requerem a prova de uma solução específica. Por fim, a verificação de regras pode ser realizada a partir de três tipologias ferramentais: I) uma aplicação desenvolvida para funcionar em outra plataforma, como um plug-in, permitindo a verificação em qualquer momento que o projetista desejar, II) como um *software* de computador, paralelo ao *software* de projeto, III) como aplicativo baseado na web, que aceita o projeto derivado de diversas plataformas (SANTOS at al, 2022), a exemplo da Plataforma Tektos e CORENET já citados no item 5, como também *softwares* desenvolvidos com essa finalidade, como o Solibri Model Checker, *software* para gestão e compatibilização de projetos, que possibilita verificação da integridade do modelo, sua qualidade e atendimento as regras do projeto.

Uma vez estabelecida a estruturação do processo de checagem das regras, fundamentadas nos pré-requisitos legais e normativos no caso do licenciamento de projetos de arquitetura, é possível realizar a análise do modelo de forma a identificar, relacionar e, por fim, propor soluções a possíveis incompatibilidades e erros identificados ao longo do processo. A verificação de regras acrescenta ao processo de projeto de arquitetura uma nova dimensão, que remete à lógica da linguagem de programação, a partir da padronização formada por um conjunto de regras sintáticas: categorias de classificação dos componentes, e semânticas: base legal e normativa, a fim de gerar um script, que relacione os resultados obtidos a partir da aplicação delas ao modelo. Esse processo poderá ser repetido ad infintum, até que se obtenha um modelo final que atenda aos pré-requisitos de forma satisfatória.

4. CONCLUSÃO

A adoção de um processo automatizado e padronizado para a análise projetos de arquitetura, apresenta uma série de vantagens quando comparado com o modelo de análise manual, tanto para as organizações particulares como para o Poder Público. A redução dos prazos de análise, atendimento as exigências e concessão de alvarás e autorizações, representa a otimização de tempo das equipes envolvidas no processo, em ambos os lados. É importante reforçar que a integração de informações detalhadas em modelos BIM não apenas acelera a análise de projetos, mas também fortalece a conformidade regulatória.

Para além disso, é possível identificar ainda que, para as organizações do setor de Arquitetura, Engenharia e Construção, as vantagens representam redução dos prazos e custos totais dos projetos, redução dos riscos financeiros dos projetos, soluções inovadoras e melhor qualidade técnica do projeto arquitetônico. Para a Administração Pública, a otimização significa processos mais céleres, aumento da

receita fiscal com a melhoria do ambiente empresarial e imobiliário e consequente aumento da construção de novos empreendimentos, melhoria na percepção positiva da gestão municipal por parte do empresariado, além da possibilidade de redução de custos ao erário, uma vez que menos analistas serão necessários a realização das atividades. A colaboração facilitada entre arquitetos, engenheiros, reguladores e outros profissionais é um testemunho da transformação que a tecnologia pode trazer aos processos de licenciamento. Combinando inovação tecnológica com a experiência humana, podemos aspirar a projetos de arquitetura que não apenas impressionem visualmente, mas também atendam aos mais altos padrões de segurança, regulamentação e funcionalidade.

7. BIBLIOGRAPHY / BIBLIOGRAFIA

ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS (2011). NBR 15965-1:

Sistema de classificação da informação da construção - parte 1: terminologia e estrutura.

CORENET- Construction and Real Estate NETwork.(2013). Singapore BIM Guide Version 2. *https://www.corenet.gov.sg/media/586132/Singapore-BIM-Guide_V2.pdf. Acesso em: 01-07-2023*

EASTMAN, C. et al. (2011). BIM handbook: a guide to building information modeling for owners, managers, designers, engineers and contractors. Wiley

Fiatech Regulatory Streamlining Committee (2013). AutoCodes project: phase 1, proof-of- concept final report. Austin.

Câmara Brasileira da Indústria da Construção (2016).Fundamentos BIM - Parte 1: Implementação do BIM para Construtoras e Incorporadoras. CBIC.

LEUSIN, S (2021). Gerenciamento e coordenação de projetos BIM: um guia de ferramentas e boas práticas para o sucesso de empreendimentos. LTC.

MELLO, CA (2016) Curso de direito administrativo. Malheiros.

NEDERVEEN GA; TOLMAN, FP (1992). Modelling multiple views on buildings, Automation in Construction, Volume 1. Issue.

SILVA JUNIOR, M; MITIDIERI F.; VICENTE,C. (2018) Verificação de critérios de desempenho em projetos de arquitetura com a modelagem BIM. Pesquisa em Arquitetura e Construção, Campinas, SP, v. 9, n. 4, p. 334-343. *https://periodicos.sbu. unicamp.br/ojs/index.php/parc/article/view/8650453*.

SOLIHIN,W; EASTMAN, C (2015). Classification of rules for automated BIM rule checking development, Automation in Construction, Volume 53,2015,Pages 69-82. *https://www.sciencedirect.com/science/article/abs/pii/S0926580515000370*.

THE PORT AND THE CITY, INHERITANCE, PERMANENCE AND RUPTURES: A CASE STUDY OF RIO DE JANEIRO.

O PORTO E A CIDADE, HERANÇAS, PERMANÊNCIAS E RUPTURAS: UM ESTUDO DO CASO DO RIO DE JANEIRO.

Thereza Carvalho
Professora Doutora
Departamento de Urbanismo - Universidade Federal Fluminense - UFF/EAU/TUR
therezacarvalho@id.uff.br

Wandilson G. de Almeida Júnior
Doutorando
Universidade Federal do Rio de Janeiro – UFRJ/FAU/PROURB
wandilson.junior@fau.ufrj.br

Alex Lamounier
Professor Doutor
Departamento de Urbanismo - Universidade Federal Fluminense - UFF/EAU/TUR
alex.a.lamounier@gmail.com

ABSTRACT

This article deals with the cumulative temporal aggregation in the urban space of the port area and around it, in the city of Rio de Janeiro, when and where legacies were accepted or condemned, and the ruptures they caused. Discuss the relationships between pre-existences and expanded urban projects, at different times, which included multiple scales of intervention, in different dimensions. In this work, the city is seen as a place of intersection of distinct social, economic, cultural, historical and political processes, and reveals intertwinings with attributes embedded in its morphology and landscape. A case study carried out illustrates a proposed approach. The analysis exercise took into account the beginning of the implementation of a large urban project for the city's port region. The study developed included us reflecting on the transformation processes occurring in different public spaces, and in particular, on the relationships between impacts, attributes, singularities and identities.

KEYWORDS: appropriations. urban morphology. project. scales. pre-existences.

RESUMO

Este artigo trata da agregação temporal cumulativa no espaço urbano da área do porto e à volta, na cidade do Rio de Janeiro, quando e onde heranças foram acolhidas ou condenadas, e as rupturas que causaram. Discute as relações entre pré-existências e os projetos urbanos adicionados, em tempos distintos, que apresentaram múltiplas escalas de intervenção, em diferentes dimensões. Neste trabalho, a cidade é vista enquanto lugar de interseção de processos sociais, econômicos, culturais, históricos e políticos distintos, e revela entrelaçamentos com atributos impregnados na sua morfologia e na sua paisagem. Um estudo de caso realizado ilustra a abordagem proposta. O exercício de análise levou em consideração o início da implantação de um grande projeto urbano para a região portuária da cidade. O estudo desenvolvido nos permitiu refletir sobre os processos de transformação ocorridos em distintos espaços públicos, e de modo especial, sobre as relações entre impactos, atributos, singularidades e identidades.

PALAVRAS-CHAVE: apropriações. morfologia urbana. projeto. escalas. pré-existências.

1. INTRODUÇÃO

Reconhecer a ambiência que atravessamos com nossos múltiplos sentidos, ver, ouvir, sentir o calor e o cheiro, são etapas da apropriação, gozo e acolhimento das heranças urbanas que nos pertencem enquanto memória afetiva. Desperta vínculos acomodados em umas tantas camadas temporais que conosco se entrelaçam. A percepção desse conjunto paisagem-pessoas evoca o que Thibaud (2015) chama de senso "estético ambiental", que emerge tanto da paisagem quanto das narrativas àquele vinculado. A cidade, assim percebida, abriga passados e expectativas associados às projeções do imaginário de indivíduos e agrupamentos coletivos de uma dada sociedade de múltiplos futuros desejáveis por uns, não necessariamente por todos.

Este artigo trata da cidade enquanto lugar de interseção de múltiplos processos sociais que têm origem em diferentes temporalidades e distintas escalas espaciais. Emerge das pesquisas realizadas pelos dois autores, uma de pós-doutorado e outra de mestrado, a primeira consistiu no desenvolvimento metodológico do conceito de sedimentação dinâmica em morfologia urbana e a segunda na sua aplicação. Com base nessa percepção, as escalas de tempo que esta perspectiva contempla começam pelo cotidiano – dos acontecimentos imediatos que se materializam nas formas urbanas nas quais nós nos reconhecemos, cujas alterações nos impactam e são por nós facilmente percebidas.

O entendimento do seu significado exige, contudo, que aqueles fatos imediatos sejam vistos à luz de outras escalas de tempo, de mais longa duração, que sinalizam as conjunturas em que as decisões daquelas transformações vividas foram tomadas. Lynch (1975, pp. 01-02) trata "da evidência do tempo [...] no mundo físico, de como os sinais externos se ajustam (ou deixam de se ajustar) a nossa experiência interior e de como esta relação interior-exterior poderia converter-se numa relação positiva". Define, como "imagem desejável", aquela que "celebra e amplia o presente, ao mesmo tempo em que estabelece conexões com o passado e o futuro". Mas que futuro? Para quem? As leituras sobre o tecido da cidade consolidada e a sua suposta obsolescência, defendida por alguns autores, implicam geralmente em uma visão estática e uma leitura realizada/ idealizada a partir de um qualquer momento eleito. Todos os tecidos construídos sempre comportaram elementos morfológicos de períodos anteriores, inseridos em traçados, estruturas urbanas ou construções, e integrados na vivência diária dos seus habitantes.

Idealizações que excluem toda a cidade já construída como realidade física existente, opondo uma "cidade histórica" a uma cidade pós-industrial como duas realidades estanques e estáticas não servem, portanto, ao propósito do entendimento da cidade como ela é enquanto espaço vivido. O conjunto desses vestígios e signos que ora se justapõem, ora são sobrepostos e ocultos, ora são valorizados e mantidos, ora são abandonados, somados às forças de configuração que os geraram, integram o patrimônio da cidade a que podemos chamar de "capital genético da paisagem urbana". São apropriados diferentemente, ao longo dos vários tempos de sedimentação, por diferentes grupos sociais, adaptando-os a novas e velhas funcionalidades, de distintas maneiras. O processo de leitura desses vestígios e dessas forças de configuração aplicado em um bairro específico constitui objeto deste artigo.

2. O ESTUDO DE CASO

A Região Portuária da Cidade do Rio de Janeiro foi escolhida como uma área adequada ao desenvolvimento do estudo de caso. A região foi constituída urbanisticamente ao longo de quatro séculos de consolidação e, desde os preparativos da cidade justificados pela Olimpíada, passa pelo processo de reestruturação orientado por um projeto urbano contemporâneo. Por esta pesquisa tratar da interação entre novas intervenções e o tecido urbano consolidado, buscou-se, na caracterização da área

de estudo, através do entendimento evolutivo de constituição do tecido urbano, a identificação de ciclos de expansão e retração, bem como suas rupturas na formação desta malha urbana, entendidas como fatores com repercussão no tecido urbano, capazes de constituir significativas alterações em seus ritmos, processos e elementos constituintes, ou seja, em sua formação como um todo.

Rabha (1984) classifica a construção do Cais Porto, na primeira década do século XX, como um momento de ruptura do tecido urbano e social da Região Portuária da cidade, e ponto de partida do processo de degradação que a caracterizou, especialmente na segunda metade do século vinte. A construção do cais foi acompanhada pela construção do aterrado, pela inserção de novas tecnologias portuárias e pela monopolização da gestão do porto e dos novos terrenos. Estes acontecimentos definiram o afastamento do mar, alterando as relações urbanas com a configuração espacial existente, demarcando no passado o embate entre matrizes com distintos ritmos de consolidação e distinta produção de estruturas urbanas. Houve a introdução de um novo padrão de ocupação, imposto sobre o existente, sem preocupações significativas de integração. As novas ruas, terrenos e construções produzidas sobre o aterrado tinham poucas relações com as ruas, terrenos e construções que conformavam o tecido urbano anterior.

2.1 Aplicação do Método na Área do Porto

O estudo de caso compreendeu a aplicação de ferramentas metodológicas de análise urbana, pautada no escopo e nas etapas de análise em morfologia urbana definidas em Carvalho Santos e Dias Coelho (2009) apoiada em Jean-Paul Thibaud (2015), Neils Prak (1977) e Kevin Lynch (1975). Produziu uma leitura da formação e consolidação do tecido urbano, se interessou por seus elementos de composição, pelo constante processo de evolução e adaptação da cidade a novos usos e vivências expressas nas formas de apropriação, e buscou compreender a interação dos modelos espaciais existentes e as suas repercussões no espaço público. A elaboração do entendimento evolutivo do tecido urbano da Região Portuária, apoiada na referida escolha metodológica, apresenta a área de estudo, à luz dos ritmos de expansão e contração definidos pelas forças de atração, agregação, consolidação e valorização que marcaram a sua evolução urbana. Está inserida como parte do projeto de intervenção urbana denominado Porto Maravilha.

O presente tópico apresenta as reflexões construídas a partir da aplicação das citadas ferramentas metodológicas de análise urbana na Região Portuária da Cidade do Rio de Janeiro. Analisa a formação e consolidação do tecido urbano, interessada em seus elementos de composição, no seu constante processo de evolução e adaptação, que ajude a compreender as matrizes referenciais de determinados processos de urbanização, registrar as possíveis interações entre as matrizes identificadas e as prováveis repercussões destes processos no uso do espaço público. A aplicação e as análises ocorreram ao longo da pesquisa realizada por um dos autores entre os anos de 2015 e 2017, com acompanhamento e atualização até 2023.

A delimitação física do estudo de caso, emerge do método citado pela identificação das matrizes urbanas, pela definição das escalas de análise, pelo contato com os agentes de animação do espaço público. A produção de registros gráficos, fotográficos e descritivos, complementa a identificação formal do espaço urbano e a identificação dos padrões de uso e ocupação dos espaços públicos.

Carvalho Santos (2010) propõem a adoção de diferentes níveis de resolução no olhar, de aproximação ao espaço urbano, com o objetivo de identificar as redes de percursos de conexão entre diferentes núcleos de polarização já consolidados, produzidos em diferentes temporalidades, e, também, centralidades latentes ou emergentes, entendidas como singularidades atrativas potencialmente agregadoras.

Moudon e Oliveira (1997) apresenta quatro níveis de resolução que permitem a construção de uma análise morfológica, estes níveis são construídos a partir da interação entre o local com a região, o local com a cidade, um terceiro nível que considere a relação da rua com o quarteirão e, por fim, um olhar aproximado para a relação entre o edifício e a parcela urbana.

Neste trabalho optou-se por utilizar 3 níveis de resolução de análise, representados por três escalas de desenho, eleitas como referências gráficas para auxiliar a aplicação metodológica e a sistematização dos estudos. As relações da escala local com a cidade, foram representadas pela adoção da escala 1:10.000, que identificou interações com o entorno imediato, a acessibilidade, a estrutura viária, e a caracterização geomorfológica da região, a identificação geral dos grandes equipamentos e principais usos da região. No segundo nível de resolução, adotamos a escala referencial de desenho 1:5.000, com o intuito de abrigar um trecho específico para análise, permitindo a investigação da inter-relação dos espaços públicos e os seus percursos, considerando a formação de ruas e quarteirões. O terceiro nível é representado na escala 1:1.000. Segmenta a análise em pequenos trechos urbanos, aproximando a visão para a microescala, para a relação das parcelas urbanas e os edifícios, e também auxilia na identificação da possível complexidade e multiplicidade de usos existentes no espaço público. A escala aproximada possibilita o registro da vitalidade, abordada como interações humanas no espaço público.

A delimitação da área de estudo teve como premissa o espaço público, as suas margens, as ruas que se interligam a esses espaços, e os percursos de interligação aos espaços públicos complementares. As escolhas dos espaços públicos e suas redes de interligação, foram realizadas em uma série de visitas de reconhecimento, em concomitância com os primeiros estudos sobre a história urbana da Região. A Região Portuária do Rio de Janeiro possui aproximadamente 5.000.000 m^2, por tanto, ao delimitar uma área e concentrar as intenções de estudo sobre um trecho de menor extensão, viabilizou-se para a pesquisa o objetivo de construir uma análise aproximada da microescala urbana.

O primeiro procedimento analítico adotado foi o reconhecimento in loco, realizado em visitas técnicas direcionadas para a busca da delimitação física do estudo. Após a terceira visita, foi possível definir os espaços públicos e as redes de interligação que seriam incorporadas na delimitação do trecho de análise. Foram definidos dois eixos perpendiculares (Figura 1), o primeiro, denominado Eixo Sacadura Cabral, que tem como extremidades a praça Mauá e a praça da Harmonia. O segundo, é o Eixo Camerino, que interliga o Cais do Porto à atual Avenida Presidente Vargas. A praça do Jornal do Comércio, que tem suas origens no Cais do Valongo e posteriormente no Cais da Imperatriz, é o lugar onde os eixos definidos se encontram.
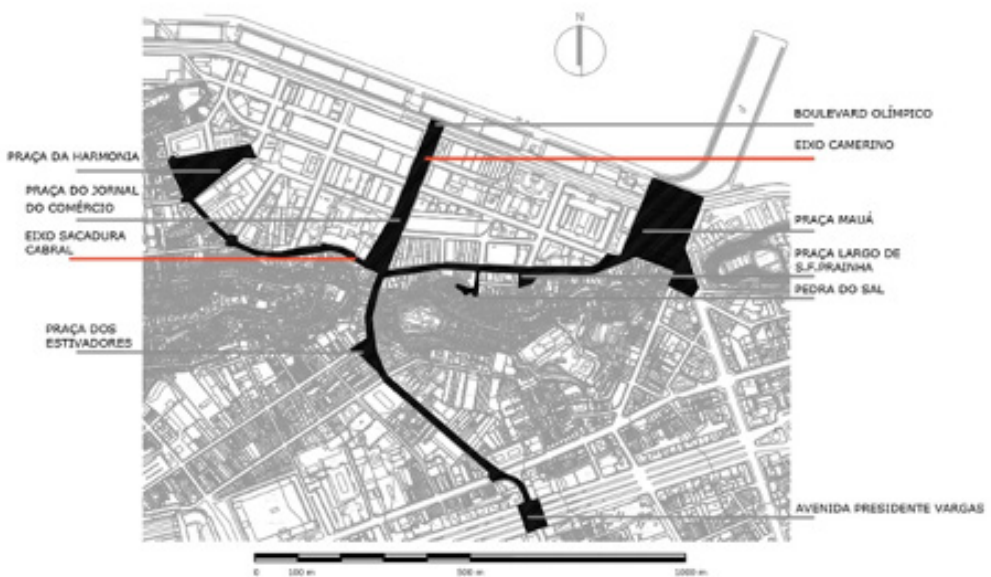
Figura 1. Mapa de identificação dos eixos de análise e dos espaços públicos.
Fonte: Elaborado pelos autores. (2017).

Em nosso estudo, os dois eixos foram entendidos como representativos deste local de transição entre matrizes de conformação espacial distintas, representados pela Rua Camerino e pela Rua Sacadura Cabral. A Rua Camerino é um eixo de transição vertical das matrizes, tem sua origem nos primeiros caminhos de acesso à região, desempenhou historicamente um papel estruturador em todas as fases da urbanização da região portuária. O seu trecho mais próximo ao mar, denominado como Avenida Barão de Tefé, passa a existir após o aterro construído para o Cais do Porto no início do século XX, e atualmente abriga os primeiros exemplares arquitetônicos representativos da tipologia das torres do projeto Porto Maravilha. A Rua Sacadura Cabral, por sua vez, pode ser associada a um eixo de transição horizontal, a sua formação remete ao limite costeiro da cidade nesta região até o século dezenove. Com o aterro para a construção do Cais do Porto, a outra margem da rua foi consolidada como uma nova área com possibilidade de ocupação. A Rua

Sacadura Cabral faz parte da delimitação do projeto SAGAS, tem a sua ambiência urbana legalmente protegida, é a fronteira dos setores com potencial adicional construtivo (CEPAC) delimitado no projeto do Porto Maravilha.

As ruas estudadas fizeram parte da primeira etapa de intervenção do projeto Porto Maravilha, caracterizado basicamente pela revisão da infraestrutura urbana, viária e reforma do calçamento. Além da delimitação, os dois eixos escolhidos possuem funções de interligação da malha urbana da região. A Sacadura Cabral, interliga o bairro da Saúde ao bairro da Gamboa. Conecta-se diretamente com importantes vias de ligação ao bairro do Centro, como a própria Rua Camerino, a Avenida Rio Branco e a Rua do Acre. Apresenta uma função binária entre os bairros da Saúde e Gamboa em conjunto com a Avenida Venezuela. O Eixo Camerino/Barão de Tefé, interliga o Cais do Porto à Avenida Presidente Vargas, na altura da Avenida Passos, que faz a conexão com a Avenida República do Paraguai, formando uma linha de interligação entre o Cais do Porto e a Lapa, com acesso ao Aterro do Flamengo pelo bairro da Glória. Este eixo produz uma ligação direta entre o porto e a Zona Sul da cidade. A malha urbana constituída ao longo destes dois eixos apresenta diversidade de espaços públicos, com características peculiares em suas formas, ambiências, funções e conteúdos, conformados por maneiras, motivações e histórias distintas. Neste conjunto de espaços públicos estão as praças Mauá, da Harmonia, do Jornal do Comércio/Barão de Tefé e dos Estivadores, o Jardim Suspenso do Valongo, o Adro de São Francisco, os Largos de São Francisco da Prainha, de São Domingos e o João da Baiana (Pedra do Sal), e o mais recente, a Orla Conde, também conhecida como Boulevard Olímpico.

2.2 Reflexões

A extensão temporal da pesquisa (2015-2017) propiciou o cadastro das rápidas transformações promovidas pelas alterações do Porto Maravilha, permitindo a caracterização da matriz de intervenção do projeto em sua capacidade acelerada de impor mudanças no tecido em estudo. Vivenciar o ritmo acelerado de transformações introduzidas pelo planejamento do projeto, permitiu a constatação e vivências de outros ritmos distintos do constante processo de transformação da cidade, com mudanças muito mais lentas e sutis.

Foram então identificados os atributos que, em diferentes camadas de tempo, atraíram usos e apropriações espaciais consolidadas em núcleos de agregação e redes de percurso, a partir das dimensões que os distinguiam - morfológica, institucional, econômica, ambiental, sociocultural e acessibilidade -, apontados como categorias analíticas no método de análise adotado. No caso específico da Região Portuária da Cidade do Rio de Janeiro a separação entre as matrizes continua visível, e mais precisamente no trecho investigado nesta pesquisa, que compreende os bairros da Saúde e parte da Gamboa, a antiga linha da costa, representada pela atual Rua Sacadura Cabral, conforma uma espécie de borda, uma fronteira marcante que não faz a transição de gênese, forma e vitalidade entre as duas áreas. A nossa "caixa de ferramentas" aplicada (Tabela 1).

Local	Dimensões		Forças			
			Atração	Agregação	Consolidação	Valorização
	Nomenclatura	Caracterização das Dimensões	Polarização / Singularidade atrativa (qualificar o que atrai)	(o que agrega)	(tempo e feição)	(indicadores)
Praça Mauá	Morfológica	Formas largos, praças e rótulas	Praça	Amplos espaços, convergência de vias.	Desenho urbano reestruturado recentemente.	Localização das âncoras culturais do Porto Maravilha.
		Margens edificadas e alinhamento	Margens edificadas em 3 faces da praça, e a Baía de Guanabara.	Atividades culturais e comerciais.	Abriga edificações de diversas épocas.	Museu do Amanhã/ Museu de Arte/ RB1/ Marinha e Touring Clube.
		Largura das ruas, vias e passeios	Convergência das principais vias da região.	Facilidade de acesso a Região Central da cidade.	Vias consolidadas em diferentes épocas.	Estrutura urbana.
		Topografia	Plana, em contato com a baía, grandes espaços livres, paisagem cênica.	Facilidade de deslocamento de pedestres, polo com a Praça da Harmonia.	Manutenção do contato com o mar e da topografia plana.	Comércio móvel, interligação entre museus e o Boulevart Olímpico
	Institucional	Dominialidade do território	Museus e Marinha.	Usos e atividades institucionais, culturais e lazer.	Uso continuo das atividades.	Localização das âncoras culturais do Porto Maravilha.
		Representações do poder público	Marinha, agentes da guarda municipal e Policia Militar.	Conservação e monitoramento.	Localização estratégica, terrenos de propriedade pública.	Localização estratégica.
		Regras de uso	Acesso público.	Interação e diversidade.	Uso público e investimentos de distintas épocas.	Atratividade de pessoas pelo uso público.
	Econômica	Comércio	Atividades comérciais, turisticas, culturais e lazer	Suporte complementar as atividades culturais e de lazer da praça, e as atividades de moradia e negócios do entorno.	Museu MAR e do Amanhã. Instalações efêmeras - Barracas e "foodtrucks".	Atração de usuário para as atividades de turismo, cultura e lazer.
		Agências financeiras	Existente no edifício RB1.	Existência indica agregação	Positivo para consolidação	Positivo para Valorização.
		caixa multibanco	Existente no edifício RB1.	Existência indica agregação	Positivo para consolidação	Positivo para Valorização.
	Social e Cultural	Feiras	Centralidade, transporte, infra e usuários.	Museus e galpões da Orla Conde.	Museus e galpões da Orla Conde.	Divulgação, espaços amplos, infraestrutura de acesso.
		Encontros e atividades	Amplos espaços, museus.	Vitalidade.	Acessibilidade, diversidade de espaços.	Divulgação, espaços amplos, infraestrutura de acesso.
		Estar e contemplar	Baía de Guanabara, amplos espaços gramados e mobiliários.	Diversidade de usuários.	Manutenção, diversidade de espaços e paisagem natural.	Paisagem natural.
		Imagem e identidade	Museus, Cais do Porto e Baía de Guanabara.	Turismo, lazer cultural.	Distintos investimentos ao longo do tempo.	Permanência, novos investimentos e divulgação.
	Natureza	Exposição solar	Amplos espaços, gramados e mobiliários.	Lazer ativo.	Praticas de atividades esportivas.	Atração de usuários.
		Ventos	Proximidade com a Baía.	Permanência.	Permanência e lazer contemplativo.	Atração de usuários.
		Arborização	Incipiente, em fase de crescimento.	Permanência e lazer contemplativo.	Permanência e lazer contemplativo.	Atração de usuários.
		Paisagem de contemplação	Baía de Guanabara.	Lazer contemplativo.	Manutenção da paisagem.	Atração de usuários.
	Acessibilidade	Transporte público	Ônibus e estação de VLT.	Facilidade de deslocamento de pedestres.	Intervenção recente, em estágio de avaliação.	Atração de atividades complementares.
		Parada de carros	Permitido em 1 margem (MAR)	Facilidade de deslocamento de pedestres.	Intervenção recente, em estágio de avaliação.	Reforço ao deslocamento peatonal ou transporte público.
		Estacionamentos	Existente no edifício RB1.	Existente e seletivo pelo preço	Intervenção recente, em estágio de avaliação.	Reforço ao deslocamento peatonal ou transporte público.

Tabela 1. Quadro de dimensões – aplicação das ferramentas de análise.
Fonte: Elaborado pelos autores. (2017).

Cabe ressaltar que o projeto do Porto Maravilha, de certa forma, incorpora a divisão existente ao concentrar as áreas destinadas à renovação do desenho urbano, à reformulação fundiária e a reformulação dos índices urbanísticos que orientam a ocupação construtiva, na área do aterrado, e ao manter a área de proteção do ambiente construído sem alterações propositivas. As matrizes identificadas no estudo interagem e repercutem na área delimitada com os eixos Sacadura Cabral e Camerino. Representativos da transição, a Rua Camerino/ Avenida Barão de Tefé, produz uma transição vertical por ser polarizada, em uma extremidade representa o novo modelo em desenvolvimento e na outra o tecido consolidado historicamente por distintos modelos e parâmetros de intervenção. A Rua Sacadura Cabral produz uma transição horizontal, a diferenciação de modelos ocorre entre as margens da rua, de um lado o modelo do Cais do Porto/ Porto Maravilha e do outro tecido urbano tradicional. A Rua Sacadura Cabral proporciona uma interligação viária interna da Região Portuária.

Ambos os eixos são significativos e estruturadores na composição da trama urbana da região, especialmente no que diz respeito à acessibilidade, interligação, interação e integração, alimentadas pela diversidade existente em trechos das duas áreas distintas identificadas. Nos eixos analisados, a área caracterizada pela conformação gradual do tecido urbano possui maior diversidade de usos e ocupações, representa a zona de uso residencial, a estrutura fundiária e as suas construções tendem ao pequeno e ao médio porte, facilitando a variedade de empreendimentos e ações individuais contribuindo para a diversidade local. Em geral as edificações são estruturadas para o desenvolvimento de atividades comerciais no térreo, o comércio existente é variado, atende e complementa expectativas e atividades diversas. Como consequência, a vitalidade dos espaços públicos é mais expressiva. A área atribuída ao padrão Aterrado/Porto Maravilha é caracterizada pelos usos institucionais e industriais, em transição para o uso comercial-turístico, com significativa estrutura consolidada de instituições públicas. As estruturas fundiárias, em geral, são de grande porte e restritas a poucos proprietários públicos e privados. Esta característica permite a destinação de grandes trechos a poucos usos, produzindo áreas monótonas com pouca vitalidade nos espaços públicos.

 O Porto Maravilha produz logo em suas primeiras fases de intervenção marcas urbanas na construção de novas edificações, na reestruturação do sistema viário, na construção dos museus e nas intervenções de reforma dos sistemas urbanos de infraestrutura. Os investimentos citados repercutem na vitalidade de alguns trechos da região. A vitalidade da praça da Mauá foi significativamente ampliada, porém as intervenções não foram capazes de produzir um efeito semelhante na área de análise de maneira homogênea, as repercussões são concentradas espacialmente. As novas edificações produzidas, segundo a legislação do Porto Maravilha, apresentam uma nova linguagem arquitetônica, caracterizada pela relação de afastamentos, taxa de ocupação, gabaritos, relação de vagas por área construída e pela linguagem estilística. Em determinados trechos da área de análise, por exemplo, os novos

gabaritos podem atingir até 90 metros em sua altura total, um grande contraste com as edificações ecléticas existentes nos eixos de estudo, com gabaritos variando entre 5 e 15 metros, ou até de alguns exemplares modernos que atingem 60 metros de altura.

A linguagem estilística nos exemplares arquitetônicos recém-construídos segue uma espécie de "international style" contemporâneo, não dialogam com a arquitetura do seu contexto de inserção, são basicamente compostas por torres revestidas com vidros espelhados e pequenas variações geométricas demarcando a distinção entre elas (Figura 4). Mesmo com o estabelecimento da ZUM (Zona de Uso Misto) na região portuária, que permite a convivência de usos comerciais, industriais e residenciais, inclusive na mesma edificação ou lote, outros parâmetros urbanísticos estabelecidos na legislação urbana de regulamentação do Porto Maravilha possuem potencial de geração de impactos negativos sobre a sociabilidade e a vitalidade nos espaços públicos. Entre os parâmetros morfológicos com impactos negativos sobre a sociabilidade dos espaços públicos estão o incentivo ao afastamento das edificações de suas divisas, bem como a produção de recuos em relação à testada do lote, e a proibição do desmembramento com a geração de lotes inferiores a 1000 m², bem como o incentivo ao remembramento que produza lotes superiores a 1500 m².

3. CONSIDERAÇÕES FINAIS

Resumidamente, a metodologia de análise urbana adotada proporcionou a leitura urbana de um trecho da cidade que abrangeu a convivência entre matrizes espaciais de temporalidades distintas, distintas, também, nas escalas espaciais e de usos que abriguem, que têm como fator de comparação seus respectivos ritmos evolutivos, investigadas a partir de espaços públicos singulares e sua rede urbana de conexão, e da busca pela identificação do reflexo das características constitutivas espaciais e suas peculiaridades sobre a vitalidade, os usos e as ocupações dos espaços públicos. As sucessivas transformações ocorridas nas ruas e praças eliminaram, em alguns casos, os referenciais da paisagem-contexto que as geraram e que lhes garantiam a singularidade e a identidade. Entende-se, aqui, por paisagem-contexto, a paisagem criada pela espacialização das relações entre pessoas, forças de ação, coisas e território, a qual, por sua vez, por força da relação de identidade assim construída, é também criadora. Para esta força da identidade Milton Santos (2004) definiu – "identidade é o sentimento de pertencer àquilo que nos pertence". Assim é o território onde usos e costumes são impressos como marcas das maneiras de ver e de viver de uma dada sociedade. As intervenções que pretendem modernizar esses espaços eliminando esses conteúdos, indiferentes aos contextos com os quais se relacionam, correm sérios riscos de provocar rejeição e abandono, consequente degradação do território, das redes de usos e trocas que nele se apoiam e daqueles que delas extraem seu sustento. Desprovidas destes atributos os espaços públicos, entre ruas, praças, passeios e bordas, parecem perder, nesses casos, boa parte dos propósitos originais que a engendraram, seja o ritualístico, seja o social-comercial, seja o cultural-identitário.

As intervenções do Poder Público, no caso estudado, pretendendo a modernização, independente do conteúdo do moderno aplicado, ora eliminou, por completo, todas as marcas de origem, ora recuperou as feições tradicionais do tecido urbano como potencial de atração para fins de 'consumo turístico'. Em ambos os casos produzindo impactos marcantes nem sempre positivos sobre as áreas onde estavam inseridos. Essas iniciativas parecem, frequentemente, desconsiderar e minar as relações simbólicas e funcionais que aqueles espaços contêm e estimulam com moradores, usuários e vizinhos e vizinhanças próximas e distantes.

4. BIBLIOGRAFIA

Abreu, M (1987). A evolução Urbana do Rio de Janeiro. IPLANRIO/ Zahar.

Aymonino, C (1984). El significado de las ciudades. Blume Ediciones.

Bacon, E (1967). Design of Cities - A superbly ilustrated account of the development of urban form, from ancient Athes to Modern Brasilia. Penguin Books.

Caniggia, G e Maffei, G (1995). Tipologia de la edificación – estructura del'espacio antrópico. Celeste Ediciones.

Conzen, M.R. (1960) Alnwick, Northumberland. A study in town-plan analysis. Institute of British Geographers Publication.

Carvalho Santos, TC e Dias Coelho, C (2009). O capital genético das redes de espaços públicos. Em L. Gazzaneo e A. Amora (Ed.), Ordem, Desordem, Ordenamento - Urbanismo e Paisagem (pp.284-303). Coleção PROARQ.

Carvalho Santos, TC (2010). Achados, perdidos e condenados: mutações e rupturas no DNA de Espaços-Públicos. Em C. Trigueiros (Ed.) Cadernos Seminário Internacional da Academia das Escolas de Arquitectura e Urbanismo de Língua Portuguesa (pp.692-709). FAUTL.

Kostof, S (2005). The city assembled – the elements of urban form through history. Thames and Hudson.

Kostof, S (2004). The city shaped. Urban Patterns and Meanings Through History. Bulfinch Press.

Lynch, K. (1975). De qué tempo es este lugar? Gustavo Gili.

Moudon, AV e Oliveira, V (1997). Morfologia Urbana como campo interdisciplinar emergente. Revista de Morfologia Urbana, 1, 41-49. https://doi.org/10.47235/rmu.v3i1.16

Rabha, N (1984). Cristalização e resistência no Centro do Rio de Janeiro (dissertação de Mestrado). Universidade Federal do Rio de Janeiro, Rio de Janeiro.

Santos, M (2004). Pensando o Espaço do Homem. EDUSP.

Prak, NL (1977). The Visual Perception of the Built Environment. Delft University Press.

Thibaud, JP (2015). En quête d'ambiances. Metis Presses.

EMPHASIZING DIVERSITY FOR ENHANCING URBAN WALKABILITY COMPREHENSION: INTEGRATING LAND USE DIVERSITY AND POI DIVERSITY

Qi Cao
yiqushaqi@gmail.com
Ecole of Architecture of Nantes, AAU CRENAU, FRANCE

ABSTRACT

The relationship between land use diversity and urban walkability has gained consensus in the industry. With the rise of location-based services, leveraging Point of Interest (POI) data for urban functional zoning has gained prominence in urban planning. Research in this field, However, which considering POI diversity as equally important as land use diversity, and exploring urban walkability through the integration of pedestrian-friendly streets and neighborhoods, remains relatively constrained. In response, taking the metropolitan area of Nantes, France, as an example. Our study aims to identify walkability zones focusing primarily on objectively measured environmental variables. The process involves initial screening of variables, followed by grouping, selection, prioritization, and statistical modeling. Through this approach, we will obtain a concise diversity assessment model closely related to walking, categorizing it into POI types and POI counts in land cell, as well as land use diversity in cell-level and in 3*3 cell neighborhood respectively. Through practical testing, we have concluded: Distance measures to routine daily destinations, assessed through Points of Interest (POIs), emerge as simple and effective alternatives to the intricate composite measures often employed to capture land use diversity and walkability. Land use diversity, characterized by physical and functional integration, fosters connections among pedestrians. The advantages of mixed-use development over single-use ones are multifaceted. They contribute to improved economic efficiency, enhanced neighborhood livability, reduced traffic congestion, expanded affordable housing options, and increased access to goods and services. Diversity serves as a practical target for policies and interventions aimed at fostering walkable communities. By integrating this crucial dimension, our study contributes to a more comprehensive understanding of urban walkability and underscores its multifaceted nature.

KEY WORDS: Urban Walkability, Land use diversity, POI diversity, Nantes

1. INTRODUCTION

Urban walking patterns, including urban walkability, are important indicators of modern urban planning and development (Jacobs, 1961). Urban walkability is influenced by various factors, including transportation networks, population density, environmental quality, social culture, and land use. Analyzing characteristics such as walkability, accessibility, connectivity, and safety, as well as people's walking habits and attitudes under different social walking culture backgrounds, is of great significance for studying urban walking patterns.

Research consensus on urban walking patterns and their influencing factors has been reached – areas with diverse urban land use types and landscape characteristics are more likely to be considered pedestrian-friendly (Cervero, 1988). This is because they scientifically and reasonably integrate residential, commercial, cultural, institutional, or industrial uses (McConville, 2009), promote connections between pedestrians (Pan, 2023), and the spatial pattern of land use also affects the frequency and continuity of walking behaviors (Alfonzo, 2005). This type of urban development characterized by physical and functional integration helps improve economic efficiency, enhance community livability, reduce traffic congestion, expand affordable housing options,

increase access to goods and services, and improve residents' quality of life and overall happiness (Galston, 2017). Urban land use spatial patterns are an important part of urban morphology and directly influence the formation of urban walking patterns (Alfonzo, 2005). In-depth analysis of the influence mechanisms of different urban land use spatial patterns on urban walking patterns can provide scientific basis and strategic guidance for urban planning (Ewing, 2009). By using artificial intelligence algorithms for multi-objective scenario simulations, we can predict the changes and development trends of urban walking patterns under different urban land use spatial patterns. This helps planners better understand the pedestrian-friendliness under different development scenarios and propose targeted planning recommendations.

However, the current research is not sufficient to deeply explore how urban land use spatial patterns interact with the population-environment-culture to affect urban walking patterns. That is, the influence mechanisms of different urban land use spatial patterns on urban walking patterns have not been thoroughly explored. Aims to explore the complex interactions and hidden patterns between urban land use spatial patterns and walking behavior, predict the challenges encountered in the future walking environment, and provide a longer-term perspective for pedestrian-related urban planning. We analyzed the characteristics of urban walking patterns and urban land use spatial patterns. Then we summarized the influence mechanisms of different urban land use spatial patterns on urban walking patterns. We adopts advanced methods in urban geography and transportation planning, innovatively attempts to study the relationship between urban land use spatial patterns and urban walking patterns.

2. RELATED WORK

A walkable neighborhood should be safe, well-serviced, and offer a positive walking experience, meaning streets, sidewalks, and paths are comfortable and interesting (Speck, 2012). Hansen (2014) identifies five factors affecting street walkability: spatial enclosure, transparency of buildings, human scale, environmental complexity, and overall imageability. Speck (2012) outlines four essential conditions for a walkable street: utility, safety, comfort, and interest. Alfonzo (2005) presents a hierarchy of five needs influencing walking decisions: feasibility, accessibility, safety, comfort, and pleasurability.

Yeang's Urban Design Compendium (2000) defines walkability as the practical ability to walk from home to minor services within two to three minutes (or 400 meters) and to major services like pharmacies or transit stations within 10 minutes (or 800 meters). Moudon et al. (2006) identified distance thresholds for food and drink establishments at 262 meters and for large grocery stores at 440 meters.

Walkability also depends on connections beyond the neighborhood, with accessible crossings over boundaries like rivers or railroads enhancing walkability. Evidence supports that walkable neighborhoods promote physical activity, improve health, benefit the economy, and foster social interactions.

Walkability is greatly influenced by the design of the built environment. To structure and select concerns and indicators for measurement, several frameworks categorize environmental factors. Cervero and Kockelman (1997) introduced the 3D's layout: Density, Diversity, and Design, later expanded to the 5D's by adding Destination accessibility and Distance to transit (Ewing et al., 2016). Gehrke reviewed similar structures, identifying key concerns such as accessibility, pleasantness, and safety from traffic and crime. The London Planning Advisory Committee developed the 5C's layout, which includes Connected, Convenient, Comfortable, Convivial, and Conspicuous dimensions. These dimensions address the built environment's impact on walkability (Saelens & Handy, 2008).

It is crucial to recognize that POI data provides a snapshot of a specific moment and may not fully capture the complex and dynamic nature of urban functions. Therefore, integrating other data sources such as urban transportation, land use, and population demographics is necessary for a more comprehensive understanding of sustainable urban functions. Using POI data alone has limitations in reflecting changes in the functional nature of urban blocks over time. Advanced technologies like machine learning algorithms, 3D modeling, and remote sensing can capture and analyze dynamic changes in urban block functionality. Additionally, involving public participation and community engagement in urban planning processes is crucial to ensuring that citizens' perspectives and needs are fully considered (Pan et al., 2023).

3. DATA PROCESSING
3.1 Empirical area
Nantes, located in western France, is a commune situated in the southern part of the Massif Armoricain. It serves as the capital of the Loire-Atlantique department and the prefecture of the Pays de la Loire region. As of 2021, Nantes is the sixth most populous municipality in France with 323,204 inhabitants, ranking first in population in the western part of the country. Geographically, Nantes lies near the Atlantic Ocean, at the beginning of the Loire estuary and the confluence of the Erdre and Loire rivers.

3.2 Data Sources and Data Preparation
The spatial database used in this study was created with using digital building files for the entire area sourced from geoservices platforms, namely, *https://geoservices.ign.fr* and *https://data.nantesmetropole.fr*. in July 2023. The database relies on high-precision, accurate, and comprehensive vectorial digital map data of Nantes, accessible and analyzable through ArcGIS.

Points of Interest (POI) information for Nantes at the end of 2022 was obtained, including 7 attributes: name, type, type code, location, administrative area of the province, longitude, and latitude. A total of 11,859 POIs were collected, classified into 105 subcategories and 9 major categories (Figure 1).
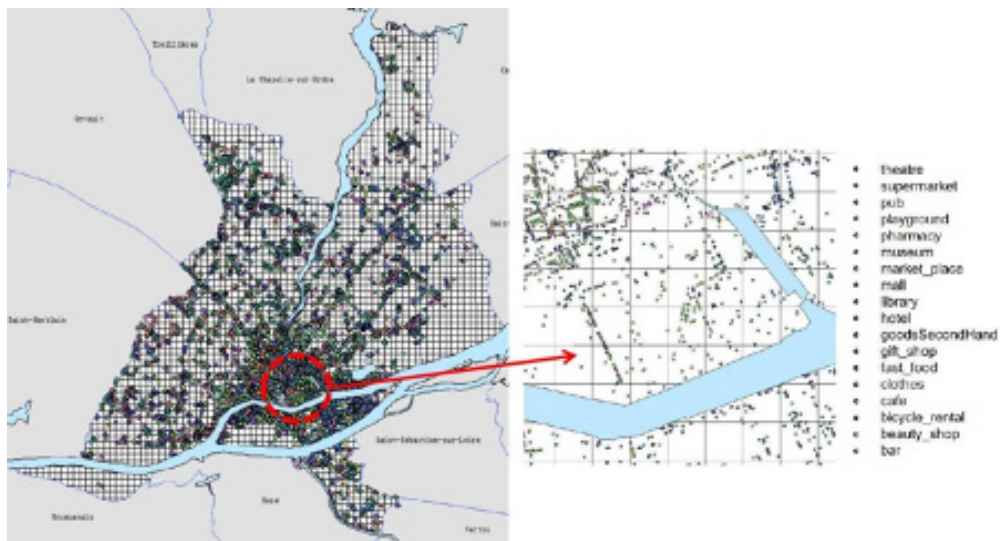
Figure 1. The classification of POI data

Road network data, classified into 14 types as shown in Figure 2, includes attributes such as FID, road name, and road length. Road data serves two evaluation parts: Firstly, all roads are involved in the computation, utilizing spatial syntax (Hillier, 1984) to calculate connection, which is one of the primary evaluation dimensions for pedestrian-friendliness (Yildirim, 2023). Secondly, major traffic lanes, including primary, secondary, and tertiary roads, are utilized in the evaluation of environmental comfort, with the calculation of the distance from parcels to the closest road. The closer the parcels are to these roads, the higher the probability of noise and environmental pollution, thus resulting in lower environmental suitability (Figure 2).
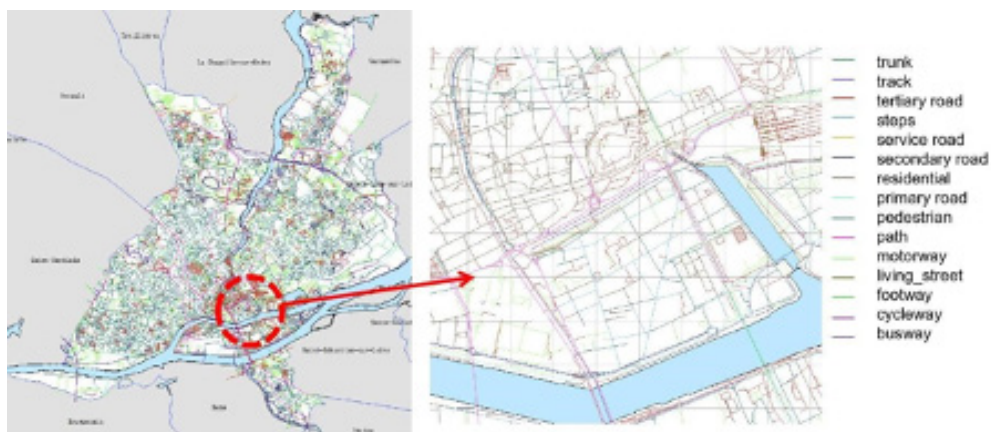
Figure 2. Illustration of roads involved in the study area

Land use data for the administrative boundary of Nantes were classified into 31 types (Figure 3). All of this data must be involved in the calculation of land use diversity.
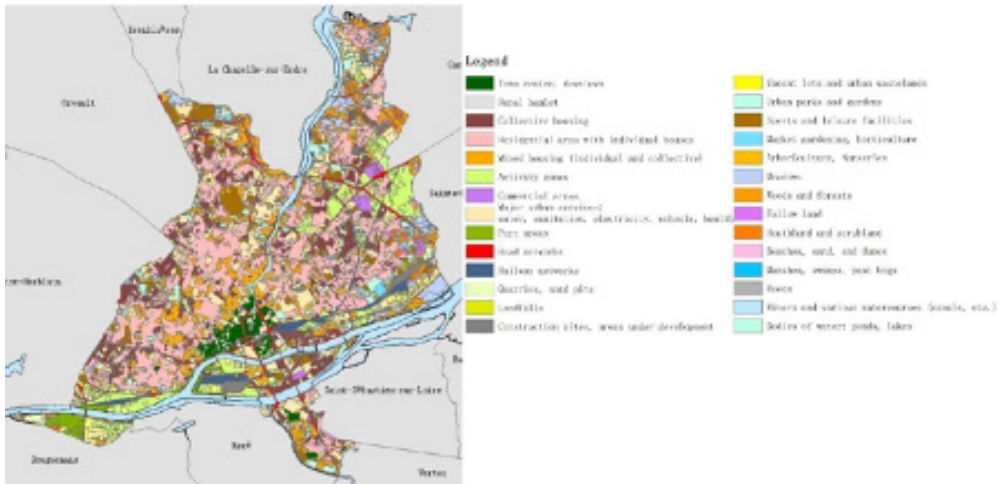
Figure 3. Land Use Type involved in this study in Nantes

With the research concepts and framework established, all computations were conducted using ArcGIS.

The downloaded data's Geographic Coordinate System is GCS_WGS_1984. We projected it to RGF_1993_Lambert_93 of Projected Coordinate System and GCS_RGF_1993 of Geographic Coordinate System

The entire area was partitioned into cells (150m*150m). The tool of Spatial Join allowed us to obtain the number of points of interest (POIs) within each fishnet. Each cell's values were influenced by numbers of POIs, distances to the nearest POIs, and diversity of POI and Land Use Type.

The calculation process involved using the center of each fishnet to search for the closest point, line, and polygon data, then assigning this value to the fishnet. (Refer to Figure 4). Metrics expressible as distances should preferably be represented using distance-related indicators, as indicators depicted by distance are better suited for characterizing walkability (Lee & Moudou, 2006).

We linked the fishnet with POIs using spatial join, where the attribute table's "join count" represented the number of POIs within each cell. Different types of POIs were categorized by class, and then each cell's count of distinct POI types was aggregated within a 3x3 neighborhood.

Positive and negative normalization are performed according to the indicators in Table 1 according to the actual meaning of each variable. Positive normalization was

performed on indicators where larger values indicate better suitability for walking, while negative normalization was applied to indicators where smaller values indicate better suitability for walking (see Equation 1 and 2).

$$P = \underline{\hspace{2cm}} M-$$ (1)

$$= \underline{\hspace{2cm}} M-$$ (2)

X_{PN} represents indicators requiring positive normalization; X_{NN} represents indicators requiring negative normalization; X_i represents the data value in each evaluation indicator, X_{Max} represents the maximum value in the dataset, and X_{Min} represents the minimum value in the dataset.

The Entropy Method is a multi-criteria decision-making (MCDM) technique employed to determine the weights of various criteria or factors in a decision-making process (Chen, 2021). By utilizing entropy values, the method calculates the entropy to quantify the uncertainty it adds to the decision. Ultimately, this process yields the weights for each criterion. Smaller entropy values correspond to higher weights, signifying that the criterion provides more valuable information for the decision-making process (see Equation 3 and 4).

$$=- \underline{\hspace{2cm}} 1() \quad =1 ()$$ (3)

$$= =1 (1-)$$ (4)

Where Ei is the entropy of criterion i, n is the number of alternative options or projects, and pij is the weight of the jth alternative option under criterion i. Where Wi is the weight of criterion i, m is the total number of criteria.

The use of the Entropy-based Weighting Method to assign weights to the indicators, and the use of the Natural Breakpoint Method in ArcGIS to combine these weighted indicators, resulted in a categorization of all indicator values into five levels.

4. RESEARCH PLAN AND METHODS
4.1 Analysis of Urban Land Use Spatial Pattern Characteristics

Firstly, use Geographic Information Systems (GIS) technology to analyze the characteristics of urban land use spatial patterns, including the distribution of land use types, spatial organization, diversity, and compactness. Land use type distribution characteristics are represented by the Simpson-Euler index (SE); spatial organization

characteristics include the degree of land use aggregation and distribution density, represented by the kernel density index; land use pattern diversity characteristics are represented by the Shannon index and Simpson-Wiener index; compactness characteristics of urban land use patterns are represented by the ratio of land use boundary length to spatial unit area; land use pattern complexity characteristics are represented by the Simpson index, Pielou evenness index, and Moran's I index.

(1) Distribution Characteristics of Land Use Types:

Describes the distribution of different land use types within the city, such as residential areas, commercial areas, industrial zones, green spaces, etc., in terms of their proportion and spatial layout. The Simpson-Euler index (SE) is used to evaluate the spatial structural characteristics of land use types   (see Equation 5 and 6).

$$SE = 1n \ n_{i=1} \ (1 – s_{j=1}\chi \ P2_{ij}) \qquad (5)$$

P_{ij} represents the proportion of the area of the jth land use type in region i. s is the number of different land use types. n is the study area, where this project adopts a 3*3 cell study area. Euler characteristic calculated by the formula:

$$\chi = V - E + F \qquad (6)$$

V is the number of vertices. E is the number of edges. F is the number of faces.

(2) Spatial Organization Characteristics:

Describes the spatial organization structure of various land use types within the city, including the degree of aggregation and distribution density of land use. Measures the spatial clustering and distribution density of different types of land use in the city. Identifies the spatial correlations and heterogeneity among different types of land use. Expressed using the kernel density index.

For each spatial location, the weights of each point within a certain range around it are calculated using a selected kernel function (such as Gaussian kernel) and bandwidth, and these weights are summed to obtain the kernel density estimate at that location. The entire study area is traversed to obtain the kernel density estimate for each location. The calculated kernel density estimate is plotted as a kernel density map (contour map or heat map) to intuitively show the spatial distribution of land use types. Analyzes the kernel density estimate map to interpret the spatial distribution of land use types. For example, high-density areas may indicate some association or interdependence between different types of land use. High-density areas may represent major commercial or residential areas in the city, while low-density areas may be industrial areas or nature reserves.

(3) Diversity Characteristics of Land Use Patterns:

Indicates the degree of diversity between different land use types within the city, including the number and types of different land use types, as well as their relative proportions. Reflects the richness of different types of land use in the city, used to evaluate the spatial complexity and diversity of the city. Expressed using the Shannon index and Simpson-Wiener index (see Equation 7 and 8).

Shannon Diversity Index:

$$H = - \sum_{i=1}^{n} P_i \times Ln(P_i) \qquad (7)$$

Where n is the number of different land use types, and Pi is the proportion of the area occupied by the ith land use type.

Simpson-Wiener Index (SW): Combines Simpson diversity index and Shannon diversity index. It considers the number of different land use types and their relative richness.

$$S = \frac{(1 - \sum_{i=1}^{n} P_i^2) + H}{2} \qquad (8)$$

(4) Compactness Characteristics of Urban Land Use Patterns:

Expressed as the ratio of the length of land boundaries to the area of spatial units. The study area is divided into uniform spatial units, and the length of land boundaries with other spatial units is calculated for each spatial unit. A higher compactness index indicates denser boundaries between land uses and a more compact distribution of land. A compactness index of 1 indicates maximum compactness, meaning all spatial units are fully connected, and the length of boundaries equals the total area.

(5) Mixing Characteristics of Urban Land Use Patterns:

Refers to the uniformity of the distribution of different types of land use in urban space, reflecting the degree of interpenetration between various land use types within the city. Expressed using Simpson's index, Pielou's evenness index, and Moran's I index (see Equation 9 and 10).

Simpson Index: Used to measure the degree of mixing between two types of land use. The calculation formula is as follows:

$$C = 1 - \frac{-\sum_{i=1}^{n} P_{i1} \cdot P_{i2}}{\sum_{i=1}^{n} P_{i1}^2 + \sum_{i=1}^{n} P_{i2}^2} \qquad (9)$$

Where C is the Simpson index, ranging from 0 to 1, with higher values indicating lower mixing of land use. n is the total number of land use types in the area. P_{i1} and P_{i2}

respectively represent the proportion of the i-th land use type (such as commercial land, residential land, etc.) in the entire area.

Pielou's Evenness Index (J): Also known as evenness index, used to measure the evenness of various types of land use in the city.

$$J = \frac{H}{Ln(n)} \qquad (10)$$

Moran's I Index: Used to measure the spatial autocorrelation of urban land use, indicating the degree of similarity between land use types in different areas. It indirectly reflects the spatial distribution relationship of land use and provides a measure of land use mixing in the city. A high Moran's I index indicates strong aggregation of land use types in space, while a low Moran's I index indicates relatively uniform distribution of land use types in space.

4.2 Analysis of Urban Walking-friendly

We analyzed urban pedestrian-friendliness Pedestrian-friendliness consists of walking environment, facilities, safety, accessibility, connectivity, and accessibility. It is obtained through urban traffic network analysis and suitability analysis based on Points of Interest (POI). The urban traffic network includes public transportation routes and stops, different grades of motor vehicle lanes, and different types of pedestrian roads (pedestrian streets and residential roads, etc.). Suitability analysis based on POI is conducted using the distance function of ArcGIS spatial analysis (Table 1).

Table 1 Summary of models

THERMAL COMFORT	PEDESTRIAN	SAFETY
Distance to:	Distance to (POI):	POI:
Primary (+)	Toilet (-)	Surveillance Camera Counts (+)
Secondary (+)	Bench	Drinking Counts (+)
Tertiary (+)	Bike Parking (+)	Safety Index (+)
Trees (-)	POI:	
Water (-) Garden (-)	Bike Parking Counts (+)	
DESTINATION	**CONNECTIVITY**	**ACCESSIBILITY**
Distance to (transport):	Space syntax:	POI diversity (+)
Bus Stops	Mean Depth (-)	POI counts (+)
Tram Stops	Mean Depth R3 (-) Integrate HH (+)	Land use diversity (+)

(Notes: (+) represents the larger the value, the more suitable for walking, while (-) represents the opposite meaning.)

The subsequent data calculations, also at the cell level, pertain to point-line-polygon data. The processing of point data mainly includes the following for each cell: the number of POI points, the distance to the nearest POI points of various types, and the calculation of POI category diversity. 1. Through spatial join, a new layer containing the fishnet and POI attributes was obtained. The Join count field in the attribute table of the new layer represents the number of POI points in each fishnet cell. 2. Using the NEAR tool, the distance from the center point of each fishnet cell to the nearest points of various types was calculated, such as the distance to the nearest supermarket or the nearest hospital. 3. By performing another Spatial Join, two layers (two types of POI points) were joined, resulting in the identification of POI_1 and POI_2 within the same cell (fclass_X, name_X), the number of each (Join_cou_X). 4. This process was repeated mamy times until all POIs were properly displayed. (105 times) 5. Then, using EXCEL, to count how many times non-zero elements appeared (using =COUNTIF(A1:A10, «<>0»)), resulting in the number of different types of POIs in each cell.

The diversity of POIs in each cell (D_{POI}) was determined by both the quantity (N_{POI}) and variety (C_{POI}) of POIs. Weighted POI diversity was derived from «Types_POI» within each cell and the average of «Types_POI» within the 3x3 neighborhood (see Equation 1). The weights (W_{NC} and W_{PC}) are determined using the entropy weighting method (see Equation 11).

$$D_{POI} = W_{PN}N_{POI} + W_{PC}C_{POI} \qquad (11)$$

The diversity of land use within each cell (D_{Land}) was determined by both the center cell ($Cell_{center}$) and its surrounding cells ($Cell_{neighhood}$). $Cell_{neighhood} \in [1,8]$. The fishnet intersects with the land use type layer to determine the number of land use types within each cell. It calculates the average number of land use types for each neighboring cell within a 3x3 radius. The land use diversity is then obtained by weighting «the number of land use types within each cell» and «the average number of land use types among the cells within the 3x3 neighborhood of the cell» (see Equation 12 and 13).

$$D_{Land} = WLCN_{Center} + W_{LN}N_{Neighber} \quad (12)$$

$$N_{Neighber} = \frac{N_{Center} + N_{i=1} N_{Neighbor}}{N} \qquad (13)$$

N_{Center} represents the number of different land use types in the central cell. $N_{Neighbor}$ represents the number of different land use types in the neighboring cells within the 3x3 neighborhood of each central cell. N represents the sum of the number of cells in the neighborhood. $N \in [2,9]$. The weights (W_{LC} and W_{LN}) are determined using the entropy weighting method.

The average value of land use types in the 3 by 3-neighbor field: First, perform an intersection of the land vector data with the fishnet. Then, count the occurrences

of NetID to determine the number of land use types in each cell. At this point, land use types may be duplicated, so use an Excel pivot table to remove the repeated occurrences of land use types in each cell. This will give you the final number of different land use types in each cell. Then, using MATLAB programming, iterate through each cell to calculate the average number of different land use types in a 3 by 3 cell neighborhood.

4.3 The connectivity of the entire city's transportation road network system.

It involves using spatial syntax to calculate the average depth and integration of the road network, serving as the evaluation indicators for «connectivity». The calculation formula is shown in the slide. Mean Depth measures the average depth from one node to all other nodes in the entire transportation network. Integration measures the accessibility and centrality of a node within the entire transportation network. It is a standardized form of Mean Depth, used to represent the importance and centrality of a node.

Using the tool of Near to the nearest motor vehicle road / to the nearest public transport stop. Then through Spatial syntax to calculate the average depth and integration of the road network, serving as the evaluation indicators for «connectivity». Mean Depth measures (Dj) the average depth from one node to all other nodes in the entire spatial network. Integration measures the accessibility and centrality of a node within the entire network. It is a normalized form of Mean Depth, representing the importance and centrality of the node (see Equation 14 and 16).

$$D_i = \frac{\sum_{j=1}^{n} d_{ij}}{n-1} \qquad (15)$$

$$RRAi = \frac{2(MDi - 1)}{Di - 2} \qquad (14)$$

$$Integration = \frac{1}{\quad} \qquad (16)$$

dij is the shortest path distance between node i and node j. n is the total number of nodes in the network.

RRAi is the Relative Asymmetry of node i. MDi is the mean depth of node i. Di is the maximum depth.
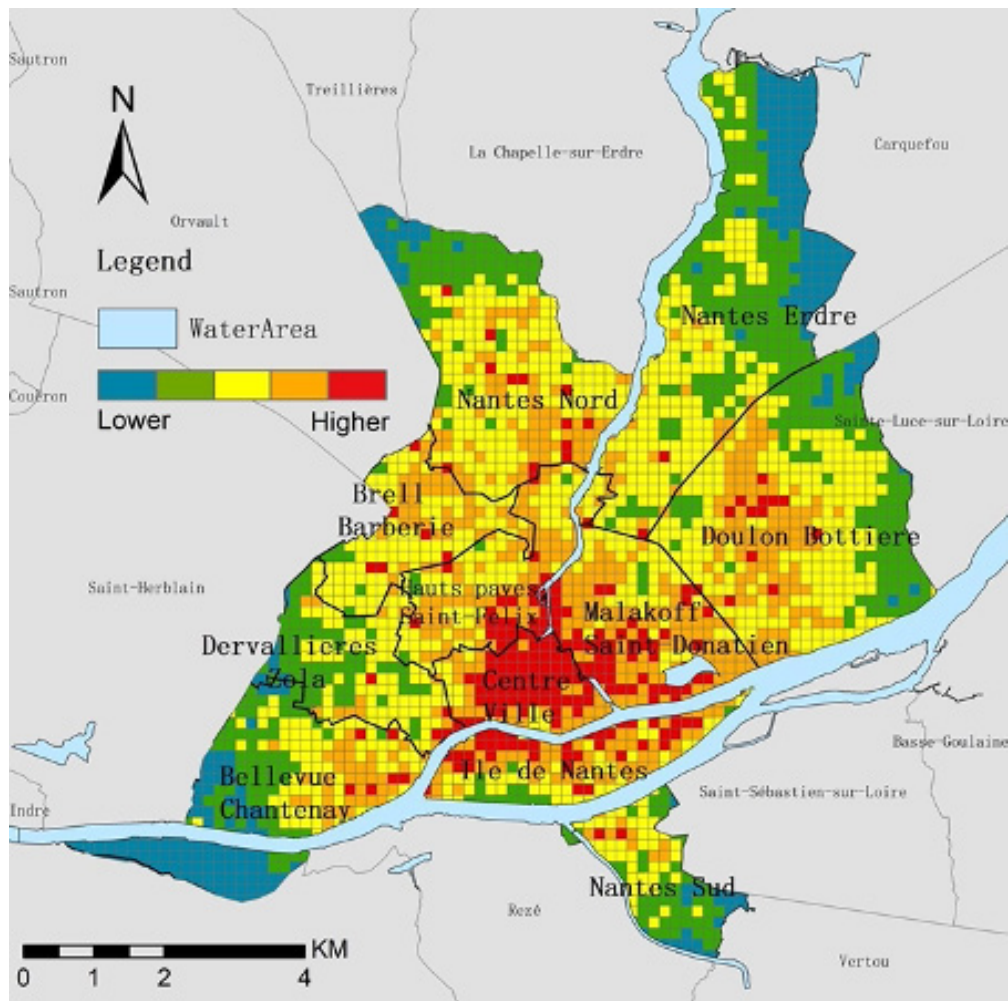
Figure 4. The map of evaluation for walkability related on urban pedestrian infrastructure, safety, destination, connectivity, accessibility, and environmental comfortable.

5. RESULTS AND DISCUSSION

Mixed-use development, also known as mixed-use zoning, is a form of urban development seamlessly blending residential, commercial, cultural, institutional, or industrial uses. This type of development, characterized by physical and functional integration, fosters pedestrian connections. The advantages of mixed-use developments over single-use ones are multifaceted. They contribute to improved economic efficiency, enhanced neighborhood livability, reduced traffic congestion, expanded affordable housing options, and increased access to goods and services. The integration of various amenities, including retail, restaurants, parks, and public transportation, within a single area elevates residents' quality of life and overall well-being.

The research findings consistently demonstrate that areas with high land-use diversity are generally more conducive to urban walkability. The association between mixed land use and increased walking is attributed to the closer proximity of destinations, aligning with the results obtained for accessibility . While urban design and planning literature often treat land use as an independent variable, space syntax theories propose that land uses dependent on movement tend to cluster in locations with high movement potentials determined by the inherent urban structure.

Land use patterns affect transportation behavior. Normative explanations of how built environments shape travel behavior, rooted in traditional utility-based travel demand theories, are well-documented in works. The role of density is particularly emphasized, with compact neighborhoods offering various mechanisms to deter vehicle trips and promote non-motorized travel. Compact neighborhoods boast reduced parking spaces, improved transit services, diverse land uses, and larger percentages of low-income households, collectively contributing to decreased car usage.

In the Macau Peninsula, mixed-use blocks are characterized by high transportation convenience, complete infrastructure, significant functional diversification, and a substantial proportion of mixed-use blocks within the urban area. These findings underscore the importance of comprehensive urban planning elements for fostering mixed-use development. Moreover, the impact of mixed-use development on pedestrian travel is substantial. Empirical research focused on urban form factors, including density, land use, and street network design, suggests that dense land-use patterns, especially with high levels of mixed-use and the presence of retail activities near residences, play a pivotal role in encouraging walking. Increased levels of land-use mix at trip origins and destinations contribute to a higher frequency of walking.

A notable gap in the current discourse is the development of objective methods for assessing the impact of the physical environment on walking. Existing models probing this relationship are deemed incompletely specified due to the challenge of balancing the reliance on subjective perceptions of the physical environment with a corresponding set of objective measures. This gap is, in part, attributed to the scale of models currently in use. Addressing this shortfall in objective assessment methods will be crucial for advancing our understanding of the intricate relationship between the built environment and walking behavior, providing valuable insights for future urban planning endeavors.

6.CONCLUSION AND FUTURE WORK

Research on urban walking patterns has attracted widespread attention, with urban land use spatial patterns playing a crucial role in influencing these patterns. Regions with high urban land use diversity are generally more conducive to enhancing urban walkability. This is because areas with high diversity/mixing of urban land use may provide a greater variety of transportation options, making it easier for pedestrians to access these modes of transport and increasing their accessibility. Urban land use

spatial patterns, particularly urban density, impact urban transportation behavior. Compact communities offer various mechanisms to reduce vehicle trips and promote non-motorized travel. Compact communities with reduced parking spaces, improved public transit services, diversified land use, and a higher proportion of low-income households collectively contribute to a decrease in car usage.

Connectivity between different land use types is an important factor influencing walking patterns. The connectivity and accessibility of walking paths affect the comfort and convenience of walking. The distance between walking destinations is a significant factor influencing people's walking behavior. Proximity to commercial and service facilities can encourage people to choose walking as a mode of transportation, and increasing the mixed land use between origins and destinations promotes higher walking frequencies. Mixed-use urban developments also have a significant impact on pedestrian travel. Intensive land use patterns, such as residential density and the concentration of commercial areas, directly influence the convenience of walking. Places with highly mixed uses and retail activities adjacent to residential areas play a critical role in encouraging walking.

Land use spatial patterns also influence the perception and experience of the walking environment. Areas with a diverse range of land use types and landscape features are more likely to be considered pedestrian-friendly. For example, areas with parks, green spaces, and landscape amenities can provide a more enjoyable walking experience, while wide streets and green belts can offer a more comfortable walking environment. Therefore, rational urban land use spatial planning contributes to planning urban walking systems, promoting the development and improvement of urban walking patterns.

However, the complexity of urban planning requires the comprehensive consideration of various influencing factors and their long-term development processes. Urban land use involves factors such as functional distribution and resident lifestyles, and the significant differences in land use structure in different areas necessitate tailored planning approaches. By integrating artificial intelligence technology and social participation mechanisms, establishing optimization models for urban land use patterns, and comprehensively simulating the impacts of different planning scenarios on walking patterns, scientific evidence can be provided to promote the improvement of urban walkability.

7. REFERENCES

Alfonzo, M.A., 2005. To walk or not to walk? The hierarchy of walking needs. *Environment and behavior,* 37(6), 808-836.

Cervero, R. (1988) Land-use Mixing and Suburban Mobility, *Transportation Quarterly*, (42), 429-446.

Cervero, R., and Kockelman, K.,1997. Travel demand and the 3Ds: Density, diversity, and design. *Transportation research part D*: Transport and environment, 2(3), 199-219.

Chen, P. 2021. Effects of the entropy weight on TOPSIS. *Expert Systems with Applications*, 168, 114186.

Ewing, R., and Handy, S., 2009. Measuring the unmeasurable: Urban design qualities related to walkability. *Journal of Urban design*, 14(1), 65-84.

Ewing, R., *et al.,* 2016. Streetscape features related to pedestrian activity. *Journal of Planning Education and Research*, 36(1), 5-15.

Galston, R., 2017. Places for People: *Designing Pedestrian-friendly Streets in Winnipeg*, Manitoba.

Hansen, G., 2014. Design for healthy communities: The potential of form-based codes to create walkable urban streets. *Journal of Urban Design*, 19(2), 151-170.

Hillier, B. and Hanson, J. (1984), The Social Logic of Space, Cambridge University Press: Cambridge.

Jacobs, J.,1961. Jane Jacobs. *The Death and Life of Great American Cities*, 21(1), 13-25.

Lee, C., and Moudon, A.V. (2006). The 3Ds+ R: Quantifying land use and urban form correlates of walking. *Transportation Research Part D: Transport and Environment*, 11(3), 204-215.

McConville, M., 2009. Defining Mixed-Use: *Which Land Uses Promote Walking?* Thesis (Master). University of North Carolina at Chapel Hill.

Moudon, A.V., *et al.*, 2006. Operational definitions of walkable neighborhood: theoretical and empirical insights. *Journal of physical activity and health,* 3(s1), S99-S117.

Pan, C., *et al.*, 2023. Identification of urban functional zones in Macau Peninsula based on POI data and remote information sensors technology for sustainable development. *Physics and Chemistry of the Earth, Parts A/B/C*, 131, 103447.

Saelens, B.E., and Handy, S.L., 2008. Built environment correlates of walking: a review. *Medicine and science in sports and exercise,* 40(7 Suppl), S550.

Speck, J., 2012. *Walkable City: How Downtown can Save America, One Step at a Time*. New York: Farrar, Strauss and Giroux.

Yeang, L.D., 2000. Urban design compendium. *English Partnerships/Housing Corporation, London.*

Yildirim, O.C., Sungur, A., and Ozer, D.G., 2023. Exploring multidimensional aspects of walkability: An innovative analysis approach in Besiktas, Istanbul. Frontiers of Architectural Research, 12(6), 1097-1126.

FOR A COLLABORATION OF INTERVALS

Paul Girard, Philippe Nys
Girard Paul
paulgirard.archi@gmail.com
Nys Philipe, AUSser (AHTTEP) (France)
Philipe.nys@gmail.com

ABSTRACT

The problem of ambiance --both as a device *(Ge-stell)* and a disposition *(Stimmung)*-- is its crystallisation of many fields of study, as it refers to all types of "spatial design" from the revolution of the printing press, to the usage of space, to "all that, between the project and the result, can happen without direct interference by an agent, yet combines with the agent's efforts to assure success or impede it", to the "collaboration of intervals" (Dupréel, 1948). The blooming fields of ambiance are an epiphenomenon in a general explosion « design » *(dessein/dessin)* fields, which can be dated to the appearance of SMLXL (1996). The conjunction (more than disjunction) between an architect and an agency (Rem Koolhass/OMA), a graphic designer (Bruce Mau) and an editor (Monicelli) has multiplied the power of each field to the extent that their spatial design has created a collective « paper openfield ». This conjunction shakes the foundation of the parricide at the heart of western culture (Chronos, Plato), as it had been interpreted by Victor Hugo: this (book) will kill that (architecture, specifically gothic architecture, the repository and embodiment of the art of memory). This formula is more or less emblematic of a number of cultural debates in our period of ongoing globalisation: this (the internet) -with all the devices that are developed by the instrument of instruments-- will kill that (book culture). Countering the obvious trend towards the digital, the explosion of design books shows that these fields (mutually) augment their performance when they focus on an "object" such as spatial design. Why is this? Because they conjugate the modes of presentation and representation of the world *in visu, in situ* and *in actu*. The question then becomes that of decrypting the mechanisms at work in the eternal rotation of presentation and representation for its own sake.

EMBODIED VIBRATIONS: EXPLORING INTERACTIVE AUDIO SYSTEMS IN THE ALIENATING REALM

VIBRAÇÕES INCORPORADAS: EXPLORANDO SISTEMAS DE ÁUDIO INTERATIVOS NO REINO ALIENANTE

Dimitris Batsis
Postdoctoral Researcher
Department of Fine Arts and Art Sciences, University of Ioannina
dbatsis@uoi.gr

Magdalini Grigoriadou
Postdoctoral Researcher
Laboratory of Environmental Communication
and Audiovisual Documentation (LECAD),
Department of Architecture, University of Thessaly
mgrigoriadou@uth.gr

ABSTRACT

Digital integration deeply influences our consciousness and alters human experience, transforming needs into commodities within digital data flux, akin to Umberto Eco's hyperreality exemplified by Disney World. Hyperreality merges virtual and actual realities with human and artificial intelligence, becoming central to modern life. McLuhan's "electronic man" navigates a fragmented visual environment, where auditory information regains its primordial essence, enabling comprehensive knowledge. Sound, creatively employed, communicates complex conditions and disrupts political uniformity, addressing themes like cyberspace's sensory oversaturation. Sound also triggers memory and introspection, fostering imagination through DIY assistive technology. Embodiment as a creative tool allows reclaiming agency in a fragmented world, bridging divides, amplifying marginalised voices, and provoking a reflective stance. Our study focuses on sound in customised interactive systems while we explore socio-political issues, cultural heritage, and inclusivity. We analyse three works, "The Zone," "Vavo," and "Insight," highlighting their socio-political and cultural implications.

KEYWORDS: interactive audio systems. sound installation. inclusivity. embodiment. sound art.

RESUMO

A integração digital influencia profundamente nossa consciência e altera a experiência humana, transformando necessidades em mercadorias dentro do fluxo de dados digitais, semelhante à hiper-realidade de Umberto Eco exemplificada pela Disney World. A hiper-realidade funde realidades virtuais e reais com inteligência humana e artificial, tornando-se central para a vida moderna. O "homem eletrônico" de McLuhan navega em um ambiente visual fragmentado, onde a informação auditiva recupera sua essência primordial, permitindo um conhecimento abrangente. O som, empregado criativamente, comunica condições complexas e perturba a uniformidade política, abordando temas como a super-saturação sensorial do ciberespaço. O som também desencadeia memória e introspecção, fomentando a imaginação através da tecnologia assistiva DIY. A incorporação como uma ferramenta criativa permite recuperar a agência em um mundo fragmentado, unindo divisões, amplificando vozes marginalizadas e provocando uma postura reflexiva. Nosso estudo se concentra no som em sistemas interativos personalizados enquanto exploramos questões sociopolíticas, patrimônio cultural e inclusão. Analisamos três obras, "The Zone", "Vavo" e "Insight", destacando suas implicações sociopolíticas e culturais.

PALAVRAS-CHAVE: sistemas de áudio interativos. instalação sonora. inclusão. incorporação. arte sonora.

1. SURROUNDED

Admittedly, our sense of time and space has been obliterated within the simulacra (Baudrillard, 1981). The rapid pace of events in the hyperreal world overwhelms our ability to perceive and analyse them. We are inundated with streams of vectorized information from all directions and locations. The participatory, real-time awareness fostered by cyberspace alienates our experience of time, creating a puzzling and disorienting sense of self. In contrast, the map transcends physical space; cyberspace diminishes elements of globalisation, locality, and territories, turning space into a fragmented and relentless environmental complexity. Distances are crossed in microseconds. As a result, time and space become indistinguishable aspects of our existence, compressed and replaced by multiple layers of "alternative temporal topographies," as Barbara Adam observes (Blesser & Salter, 2007).

The existential crises we experience, particularly those intensified by the lockdown measures which were taken during the pandemic, become visceral. We are on the brink of encountering a new factor that drastically influences humanity's evolution. Inevitably, we exist within the network, an extension of what we call reality. We no longer connect and disconnect from this reality; it has transformed into a hyperreality, an ongoing cyber activity that permeates our consciousness as an irrational singularity. This singularity creates an illusion of unity, reassuring us that it seemingly holds the world together. In essence, it perpetuates a recurring, alienating landscape, where the needs created by Western civilization are turned into products in the constant flow of digital information, similar to the idea of hyperreality described by Umberto Eco, as seen in places like Disney World (Eco, 1990). According to McLuhan (1988), the world is ruled by mediated information, where the ''electronic man'' lives surrounded by concurrent information as he is increasingly removed from his traditional (visual) environment, where space and purpose tend to be uniform, linked, and stable. Sound information becomes knowledge, returning to its native existence in a 360-degree manner. Therefore, in our times, sound is more than ever creatively employed to communicate the alienating landscape to the public, with its invisible, penetrating, and ever-flowing quality.

2. ALIENATING LANDSCAPE

It could be argued that sound urges us to abandon the language of representation, which has been the subject of theoretical discussions in literature and the visual arts for the last half of the century (Ouzounian, 2006). Sound is characterised by instantaneity (it can be sensed directly in normal conditions), and has the ability of becoming space. It possesses this abstract characteristic that attributes movement in space (any space that contains air). It does not need the figurative element forasmuch as it is unseen energy that is unleashed into the cosmos and ultimately, reality.

Besides, vibrations along with their properties and spatial effects, occur within a region of subjective and behavioural presences (Pettman, 2017; Virilio, 1997). We experience reality through sound. Auditory hallucinations are as important as the visual ones, if we think that a digitised world is a low fidelity representation of reality. Sound and hearing (along with the other senses) however are actual elements of our digital-dependent reality, ambiances of alienation, by which we are moulded and shaped by. The constant flow of information manifests in both audio and visual forms, dominating our merkwelt through handheld virtual devices. Consequently, sound is researched as the interpreter of alienating landscapes, a medium that is communicated through interaction and as an agent of human embodiment.

3. ALIENATING EMBODIMENT AND INTERACTIVE AUDIO

Sound shapes every moment of our lives, moulding our intangible memories, emotions, and perceptions. While hearing is passive, listening to sound is an active process managed by the brain. The auditory system continuously receives sound information, and the brain filters, categorises, and connects this data with memories and personal experiences before reacting. Our two ears enable us to perceive stereo sound, which helps us gauge distance, spatial relationships, and our location in the world. Our ability to hear is multilayered, allowing us to gather information from various mental and perceptual perspectives (Floyd, 2016). In our effort to reveal the connections between interactive sound and alienating landscapes, we adopt a speculative approach by placing the works within the context of embodiment and sound art. Sound, integral to the three examined artworks, encapsulates post-biological existence and facilitates the creative redefinition of embodiment (Batsis & Grigoriadou, 2021). Although invisible, sound is a powerful medium that is deeply felt. These artworks communicate and redefine disrupted embodiments through sound art, demonstrating how sound diffusion conveys the ever-changing state of embodiment in the context of interactive sound installations.

In certain artworks, the process itself is the primary focus, whereas in others, the outcome holds more significance than the process. Sometimes, the interaction process constitutes the art, while in other instances, an actual product, such as a performance or an image, is the result. For us, the ambiguity of where the art lies, is a key attraction of this approach (Dannenberg & Bates, 1995). When creating a sound installation using software, we consider the nature of auto-generative processes, including the algorithms and sounds we will employ, as well as the level of audience interaction. These processes range from auto-generative processes utilising evolutionary algorithms (such as cellular automata and neural networks) to chaotic systems and other processes that can be influenced by an external agent, with the program's response subsequently affecting the agent's transformation (Row, 1992).

4. SOCIOLAND - ALIENSCAPE

With the advent of inexpensive and readily accessible delivery mechanisms, the scope of public interactive art has significantly expanded, encompassing a diverse array of methodologies and outcomes within new and interdisciplinary arts. In the subsequent chapter, we discuss the implications of three specific works in shaping socio-political and cultural concepts. We analyse the challenges involved in realising these works, which vary in their accessibility—from being directly accessible and freely available to public audiences (Vavo) to those presented in scheduled exhibition contexts (The Zone and Insight).

The Zone, an interactive sound installation designed for a 4.0 surround system, was developed by Volumetric Units—a team consisting of the author and sixteen students from the School of Fine Arts - University of Ioannina. This installation was built and exhibited at the AV-Lab, part of the School of Fine Arts, on the University of Ioannina campus. The exhibition was open to the public for two days, on February 19 and 20, 2020. The Zone is an allegory for contemporary human interaction with the technological constructs of hyperreality, representing the establishment of cyberspace as the current ontology. It is an exploration of the sociopolitical implications of concealed online processes aiming to evoke a sensation of concentrated confusion, mirroring the hyperreality experienced in online environments, where the dissolution of information is accompanied by a subsequent dissolution of meaning (Batsis & Bitsikas, 2022). The sound acquires the intrinsic capacity to manifest as space, given that sound comprises material vibrations within a spatial context. Each sound transition represents a departure from the concrete and known, moving towards the abstract and uncertain.

Ranciere discusses four distinct contemporary art themes that lead the argumentative challenges of the past, to new and different compositional figures: the play, the inventory, the encounter / invitation and the mystery (Ranciere, 2004). These elements (to a greater or a lesser extent) are indeed recognizable in The Zone. Ranciere's approach on mystery is especially a compositional theme that the zone is characterised by. The steps into the unknown bleak and limitless environment –the space that was never used before for installations or art related work- that the visitor is urged to take as he follows the guide, without knowing where he is heading to and when he will stop is a strange situation. The Zone instantly becomes veiled in mystery.

The work Vavo was created by Alexandros Psychoulis, professor at the School of Architecture and Engineering of the University of Thessaly, for the Palimpsest Art Museum (co-funded by the Interreg V-A Greece-Italy 2014-2020 Programme). This project was carried out in cooperation with RC University of Ioannina, University of Bari, Region of Epirus, Province of Lecce, and the Municipality of Ioannina. The work was commissioned by THE PALIMPSEST Project which addresses the challenge of revitalising cultural heritage assets as a means to rejuvenate the urban environment.

It views cultural heritage as a collective, grassroots resource and introduces innovative approaches by utilising digital tools to repurpose this recovered material. This approach not only applies to the digital realm but also reintegrates the material into the physical urban space. Through artistic installations, a hybrid space emerges, where the past is brought to life in the present.

Vavo was inspired by the following oral story about strange echoes on Ioannina island: Just past the church of St. John, near the chapel of St. Panteleimon, there was a place called Vavo where no one dared to go. The steep hills that overlooked that place had a hollowed-out space, where, according to the locals, there was an old woman who shouted back at people. Panayis, when he lost the love of his life, sat there for hours, asking: "Do you love me?". In essence, Vavo is an invisible installation for the viewer. Hidden inside the walls of the Ioannina Castle, in the narrow alley where the Jewish Synagogue is located, the equipment captures conversations of unsuspecting passers-by and repeats them with a delay of ten seconds further down the path. As a result, passers-by encounter their own words moments after they have spoken them, hearing themselves again. The intention is to create an unfamiliar experience. With no indication of its presence, the experience feels irrational and conflicts with the logical flow of events. Words spoken on the street, which would normally be lost forever, are given a second chance and repeated outside the mouth that uttered them. This is not a natural phenomenon like an echo; the time delay removes any sense of naturalness, making the landscape feel alien. Artificially, my words wait for me at the end of the road.

Certain new media public artworks that incorporate speech sounds utilise language to heighten the dramatic tension within the piece. The function of these speech sounds is to create a psychological interplay with the senses, either contrasting with or complementing them. Characters in these artworks frequently engage in repetitive movements, which can enhance the viewer's sense of immersion. These movements are often synchronised and occur simultaneously, further intensifying the immersive experience. For Vavo, the element of repetition is essential, as the captured words re-emerge at a different geographical point from where they were initially created. Played through a speaker, the captured conversations, words, and sounds made by passers-by form a sense of presence—an alienating landscape where urban myths and oral stories trigger memory or a sense of being, becoming reinterpreted and echoing through the passage of time.

Insight is a project set to materialise in 2024, involving sound artist and academic researcher Dimitris Batsis, artist and researcher Athanasios Kokkinos, and Christos Stavrou, Associate Lecturer at the School of Fine Arts, University of Ioannina, and Associate Researcher at the Centre Interlangues Texte Image Langage, Université de Bourgogne. The project is supported by the Department of Fine Arts and Art Sciences, School of Fine Arts, University of Ioannina, and the University of Ioannina Student Social Support and Disability Services. Rafaella Athanasiadi, from the

Department of English Studies at the University of Cyprus, an academic researcher in media accessibility, is the invited researcher. Visnja Stankovic provided the audio description and recitation.

As an artwork, it falls into the category of multimedia and multisensory installation art, featuring a set of daffodils, a stereo system, and a table displaying an artist's book featuring a set of daffodils, a stereo system, and a table displaying an artist's book. This participatory and inclusive experience combines tactile and auditory stimuli, aiming to connect with human existence both literally and figuratively. Through creative audio description, we invite all participants, whether visually impaired or not, to engage with a touch-sensitive artist's book. The project comprises three parts: the introductory audio description played on repeat outside the main area; the main installation in the central area, which includes daffodils, a stereo system, and a table with the artist's book; and the interactive pages of the book, featuring verses from William Wordsworth's poem "I Wandered Lonely as a Cloud" in braille and embossed illustrations. Touching these pages activates audio descriptions and recitations of Wordsworth's verses, accompanied by relevant soundscapes.

The goal is for participants to realise the multifaceted nature of human existence through exploring creative audio descriptions and discovering new artistic expressions. Ultimately, our goal is to parallel this process with introspection, hence the title Insight, where knowledge transcends the senses or logic, leading to spiritual enlightenment and the realization of truth for both the sighted and the non-seeing. We emphasise the triad of "observation, imagination, introspection," believing that integrating the romantic poem within the interactive installation will materialise our endeavour.

5. THE SYSTEMS – THE PROCESS

The audio systems for all three interactive sound works, are created through three basic elements: programming languages of Max/MSP and SuperCollider, which are used to develop the core algorithms and sound processing functions; Arduino that provide the hardware platform; and various sensors, which facilitate user interaction by capturing real-time data.

The design of The Zone comprised three distinct areas: the entrance pathway, the main room, and the "office" (a contiguous space not accessible to visitors but capable of emitting sounds). Various methods of sound diffusion were employed: a quadraphonic system in the main room, two small speakers in the office, and two prominent speakers situated behind a curtain in the entrance pathway. All areas were completely darkened to ensure that sound dominated the space in the total absence of light. Interactive sounding particle board walls were installed in the main room to demarcate spatial boundaries for those inside. These were the only physical elements with which visitors could engage. The main room thus transformed into

an immersive environment, an exploratory chamber that prompted engagement with and reflection on the sound objects that were "appearing and disappearing" in the darkness: symbols of allegorical permutations reflective of the concealed and chaotic data flux inherent to cyberspace.

To augment interactivity and immersion within the main room, we strategically positioned two motion sensors on the unfelted side of two distinct particle boards at ankle height. Additionally, we integrated three piezoelectric sensors, affixing them with tape, thereby incorporating them as supplementary interactive components of the installation. Each piezoelectric sensor was directly connected to the sound card and through an individual input channel in Ableton Live (Max for Live). A particular chain of audio effects amplified the diverse live sonic inputs. Every touch, scrub, or knock on the particle-board surfaces within the main room produced a distinct and immediate acoustic stimulus. The signals from the motion sensors were processed through an Arduino and Max configuration.

Regarding the setup and overall technical implementation for Vavo, the audio latency system is designed to capture live audio input, apply a delay effect, and output the processed audio through a stereo setup. The implementation involves configuring the SuperCollider server, setting up input and output devices, and utilising specific SuperCollider functions to manage the audio signal processing. The core functionality revolves around capturing audio from an input device and applying a delay effect. The process begins with defining a node proxy (Ndef) that handles the audio input from channel 0. This is achieved using the DelayL function, which implements a linear interpolating delay line. The function parameters are set to capture the audio signal (SoundIn.ar(0)), with a maximum and actual delay time of ten seconds, and a feedback control of 1. This setup allows the delayed audio input to be played back through the system. Additionally, the delay effect can be applied directly without using a node proxy, and it can also be combined with a panning effect using the Pan2.ar function. This function takes the delayed audio signal and places it within the stereo field, enhancing the spatial audio experience. To handle the audio processing, the SuperCollider server is initialised and configured with specific settings. The code functions like a continuously operating device that delays the captured audio by ten seconds.

Regarding the setup and overall technical implementation of the artist's book for Insight: each page contains two copper plates and two wires. When a page is touched, the copper plates press together, creating a circuit. All wires extend from the back cover page and connect directly to the digital inputs of an Arduino Nano CH340 via a wire switch. The Arduino Nano is connected to a NANO IO Shield Expansion Board for better and tidier wiring. When the user closes the open electrical circuit by touching a page, electrical voltage passes through the Arduino Nano CH340. The project supports up to eight touch-sensitive areas, with each area corresponding to a page of the artist's book, which contains conductive tape strips. Given that the book has four pages, each page has two sensor areas created using conductive tape strips.

Touching or feeling each page generates electrical signals that are converted into logical trigger signals within the Arduino Nano CH340. These signals are then sent through a serial port (from the Arduino Nano CH340 to the laptop), ultimately reaching SuperCollider. The code developed in SuperCollider receives and decodes the binary messages generated by the Arduino Nano CH340, translating these triggers into digital audio. The audio instrument implemented in the code functions like a sampler. Each touch field is attached to an audio buffer, and each time the user closes the circuit by touching or sensing the page, an audio sample with the poem's verses and the corresponding audio description is played through the stereo speaker setup. The role of creative audio description (Walczak & Fryer, 2017) is central to the work, aiming to explore the flow and translation of information and knowledge. By incorporating embossed design and words in the artist's book, the installation invites interaction from both visually impaired and sighted individuals, highlighting the intersection between touch and sound propagation. praticidade.

6. CONCLUSIONS

The exploration of interactive sound installations such as The Zone, Vavo, and Insight reveals the profound impact of digital integration on human consciousness and perception. These works utilise sound as a medium to communicate the complexities of hyperreality, where virtual and actual realities merge, creating an immersive and alienating landscape. The installations highlight the importance of embodiment and interaction, using tactile and auditory stimuli to foster introspection and a deeper connection with one's environment. The Zone, with its intricate soundscapes and use of motion and piezoelectric sensors, exemplifies how sound can manipulate space and consciousness, reflecting the chaotic flux of cyberspace. Vavo, inspired by local oral stories, employs a delayed audio feedback system to create an uncanny and disorienting experience, challenging the linear flow of time and memory. Insight, set to materialise at some point during 2024, emphasises inclusivity and accessibility through a touch-sensitive artist's book, encouraging engagement from both visually impaired and sighted participants. The technical implementation of these projects, involving advanced audio processing and interactive technologies, underscores the potential of sound to bridge sensory divides and foster critical reflection on contemporary socio-political issues. By examining the interplay between sound, embodiment, and digital hyperreality, this study underscores the transformative potential of interactive sound installations, inviting us to reconsider our relationship with technology and its role in shaping human experience. The continued exploration of sound as an immersive and interactive medium promises to enrich our understanding of art and its impact on society, offering new avenues for artistic expression and socio-political discourse.

7. BIBLIOGRAPHY

Baudrillard, J. (1981). Simulacra and simulation. (trans: Sheila Faria Glaser). Ann Arbor, MI: University of Michigan Press.

Batsis, D., & Bitsikas, X. (2022). The Zone: A study of sound art as hyperreality. Leonardo, MIT Press, 55 (5), pp. 508-511.

Batsis, D., & Grigoriadou, M. (2021). Disrupted embodiments: Bio-manifestations in sound art. Proceedings from the 3rd International Conference Digital Culture and Audiovisual Challenges: Interdisciplinary Creativity in Arts and Technology DCAC 2021.

Blesser, B., & Salter, R. (2007). Spaces speak, are you listening? Experiencing aural architecture. Cambridge, MA: MIT Press.

Dannenberg, R. B., & Bates, J. (1995). A model for interactive art. In Proceedings of the Fifth Biennial Symposium for Arts and Technology, Connecticut College, CT, pp. 103-111.

Eco, U. (1990). Travels in hyperreality. (trans: William Weaver). San Diego, CA: Harvest Book.

Floyd, E. T. (2016). The reproduction of sound - a guide to the construction of an ideal listening environment [U.S.] Beijing: People's Posts and Telecommunications Publishing House.

McLuhan, M., & Laws, E. (1988). Laws of media: The new science. University of Toronto Press, Toronto, Buffalo, London, p. 102.

Ouzounian, G. (2006). Embodied sound: Aural architectures and the body. Contemporary Music Review, 25(1-2), 69-79.

Pettman, D. (2017). Sonic intimacy: Voice, species, technics. Stanford, CA: Stanford University Press.

Ranciere, J. (2004). The politics of aesthetics. London: Continuum p. 53.

Row, R. (1992). Interactive music systems. Cambridge, Mass. MIT Press.

Virilio, P. (1997). Open sky. (trans: Julie Rose). London: Verso.

Walczak, A., & Fryer, L. (2017). Creative description: The impact of audio description style on presence in visually impaired audiences. British Journal of Visual Impairment, 35(1), 6-17.

https://palimpsest.gvthemes.com/

http://palimpsest.eu/

"DISNEYLANDISATION" AS A TECHNIQUE OF ALTERING THE STATE OF CONSCIENCE THROUGH SENSORIAL INFLUX

"DISNEYLANDIZAÇÃO" COMO UMA TÉCNICA DE ALTERAÇÃO DO ESTADO DE CONSCIÊNCIA ATRAVÉS DO INFLUXO SENSORIAL

ABSTRACT

This study examines the phenomenon of "Disneylandisation", which involves the creation of an alienating environment characterized by a ludic and juvenile ambiance, accompanied by overwhelming sensory stimuli. Roger Caillois posits that society is grounded in primordial games that precede cultural formations. Our contemporary "society of spectacle", a concept introduced by Guy Debord, represents the apex of this tendency, heightened for commercial purposes. Through a focused analysis of Japanese endemic *pachinko* parlors, this study investigates the techniques of Disneylandisation, particularly emphasizing the promotion of infantilization through a simulated experience of "pure play", and the pervasive exposure to sensationalistic auditory and visual stimuli. The primary aim is to elucidate the potential risk associated with this phenomenon, which may lead individuals into a state akin to a "social trance".

KEYWORDS: Disneylandisation. Social trance. Society of spectacle. Simulacrum of Pure Play. Sensorial oversaturation. *Pachinko*

RESUMO

Este estudo examina o fenômeno da "Disneylandização", que envolve a criação de um ambiente alienante caracterizado por uma atmosfera lúdica e juvenil, acompanhada de estímulos sensoriais avassaladores. Roger Caillois postula que a sociedade está enraizada em jogos primordiais que precedem as formações culturais. A nossa "sociedade do espetáculo" contemporânea, um conceito introduzido por Guy Debord, representa o ápice dessa tendência, intensificada para fins comerciais. Através de uma análise focada nos salões de pachinko endêmicos do Japão, este estudo investiga as técnicas de Disneylandização, enfatizando especialmente a promoção da infantilização através de uma experiência simulada de "jogo puro" e a exposição difundida a estímulos auditivos e visuais sensacionalistas. O objetivo principal é elucidar os potenciais riscos associados a esse fenômeno, que podem levar os indivíduos a um estado semelhante a um "transe social".

PALAVRAS CHAVE: Disneylandização. Transe social. Sociedade do espetáculo. Simulacro de Jogo Puro. Sobressaturação sensorial. *Pachinko.*

1. INTRODUCTION
1.1 Disneylandisation

The term "Disneylandisation" is often used to describe the transformation of contemporary society into a simulacrum of entertainment, evoking scenes akin to mirages in the desert, where topological and temporal incongruities abound in an unreal disposition. Through an abundance of visual and auditory stimuli, this infantilizing facade uniquely aims to captivate the masses.

This phenomenon manifests in various forms, with one of the most prominent examples found in tourism attractions. With the explosion of global travel, the marketing of national "images" has become a fiercely competitive endeavor, often perpetuating clichés. While proponents argue that such tourism marketing safeguards invaluable world heritage sites, the extent to which it alters or distorts their original essence remains debatable, accompanied by substantial material consumption surrounding these sites. This inclination towards commodification extends to commercial and political spheres, employing curated "images" for self-promotion irrespective of underlying realities. In contemporary society, Disneylandisation operates ubiquitously, exerting influence on both macro and micro levels of daily life.

This paper aims to offer fresh insights into this "Disneylandisation", elucidating its specific techniques that potentially induce a "social trance", thereby altering states of consciousness. This phenomenon poses a dual threat: not only to our economic autonomy, but also to our capacity for nuanced, abstract and multifaceted thinking, integral to the ethics encapsulated in the maxim "cogito ergo sum".

1.2 Social trance

The concept of "social trance" is grounded in the idea that our languages and cultures play a pivotal role in shaping our consciousness, influenced significantly by our environment. For example, André-Leroi Gourhan (1975) underscores this concept through affordance theory, illustrating how human cognitive processes evolve in tandem with environmental dynamics, highlighting a co-evolution between gesture and speech influenced by tool use.

Similarly, Tetsuro Watsuji (1979) categorizes global regions into monsoon, desert, and prairie types based on climatologic particularities, asserting their profound impact on both external and internal human conditions. These environmental characteristics instinctively mold our cultural norms and behaviors, influencing our relationship with nature and extending to agriculture as our first notion of labor.

Watsuji further delineates how monsoon areas, characterized by humid conditions where nature embodies both a nurturing and authoritative presence, tend to elicit a passive human response. In contrast, desert regions, defined by hostile climates where natural threats symbolize danger, foster a resilient survivalist attitude. Prairie

environments, with their regular and predictable nature, promote a sense of control
over the environment. While avoiding determinism, these environmental influences
on human consciousness are undeniable.

In addition to these factors, the concept of "memes", originally conceptualized by
Richard Dawkins, provides crucial insights into the dynamics of social trance. Memes
are a unit of imitation distinguishing between "replicators" and their "vehicles".
According to Susan Blackmore (2000), a replicator is "anything of which copies are
made, including "active replicators" whose nature affects the chances of their being
copied again. A vehicle is the entity that interacts with the environment" and "carry
the replicators around inside them and protect them". In more radical way, Daniel
Dennett (1991) argues that "our minds and selves are created by the interplay of
memes. Not only are memes replicators like genes but human consciousness itself is
a product of memes".

To define social trance, it is essential to differentiate it from ecstasy, as posited by
Gilbert Rouget (1990), emphasizing its emergence in social contexts through sensory
stimulation involving movement (Table 1). Trance entails an amnesic experience,
implicating a temporary abandonment of individual subjectivity, fostering a collective
sense of unity and conformity.

From this perspective, social trance can be understood as a complex state of
consciousness, altered within artificially created environments, tacitly seeking self-
loss – a form of profound manipulation. In this regard, Dennett's theory that "the
haven all memes depend on reaching is the human mind, but a human mind is itself
an artifact created when memes restructure a human brain in order to make it a
better habitat for memes" becomes pertinent. This theory underscores how social
trance operates as a vehicle for memes to propagate widely within society, serving
as a method to embed memes in the masses. Disneylandisation, with its distortion of
spatial and temporal realities, emerges as a potent catalyst for inducing this social
trance. Let us analyze its concrete techniques to support this argument: simulacrum
of "pure play" and sensorial saturation.

Ecstasy	Trance
Immobility	Movement
Silence	Noise
Solitude	In company
Sensory deprivation	Sensory over-stimulation
Recollection	Amnesia
Hallucination	No hallucination

Table 1. Differentiation of ecstasy and trance
Source: Adapted from Rouget, G. (1990).

2. TECHNIQUES OF DISNEYLANDISATION
2.1 Simulacrum of Pure Play

The concept of the simulacrum of "pure play" introduces a ludic and juvenile ambiance that promotes infantilization. This notion resonates with Roger Caillois's (1958) observation that our society is based on primordial games, describing the conditions of pure play as follows:

> 1. Free: the player should not be obliged to participate, as such obligation would immediately strip the game of its attractive and joyful nature;
>
> 2. Separate: circumscribed within precise and predetermined spatial and temporal limits;
>
> 3. Uncertain: the course of the game should not be determined beforehand, nor should the result be assured, with some latitude necessarily left to the player's initiative;
>
> 4. Unproductive: creating neither goods, wealth, nor any new element, and, except for the transfer of property within the circle of players, leading to a situation identical to that at the beginning of the game;
>
> 5. Regulated: subject to conventions that suspend ordinary laws and establish a new, temporary legislation that alone counts;
>
> 6. Fictive: accompanied by a specific consciousness of a second reality or a clear unreality compared to everyday life.

Disneylandisation employs the simulacrum of pure play to establish virtual realities that appear as realistic as possible. Despite the appearance of freedom, participants often find themselves hypnotically drawn into experiences that strip away their subjectivity. The ostensibly non-unproductive nature of these experiences is particularly evident in capitalist societies where economic motives, manifested through relentless advertising, overshadow the pure ludic intent.

To further illustrate this phenomenon on a macro level, consider the case of *pachinko* in Japan. *Pachinko* is a gaming "machine" where chance and money are pivotal, extending by synecdoche to the "place" housing these machines. This place exists nowhere else but in Japan, and there, it is ubiquitous. The game itself is very simple, akin to a pinball machine. By inserting 100-yen coins or 1000-yen bills into a machine, the player receives a few hundred grams of metallic balls, which are flipped into the circuit one after another, taking a complex track and hoping to fall into a winning hole to gain more balls. Within these gaming rules, a form of hypocrisy is discernible. Seemingly, *pachinko* presents as a "purely entertaining game", but in reality, it is a gambling game that alienates its users. It operates within the simulated conditions of pure play while selectively emphasizing its fictive aspects, masking its inherent ties to real-world monetary transactions.

2.2 Sensorial saturation

Sensorial saturation constitutes another prominent technique of Disneylandisation, exemplified vividly in *Pachinko* parlors. These spaces overwhelm the senses with garish architectural designs that disrupt the natural landscape with images resembling terrestrial paradises or iconic tourist attractions (Figure 1-4). As soon as the door opens and a customer enters, the deafening noise briefly escapes and abruptly disappears as the door closes. This aesthetic packaging exemplifies a hallmark of Disneylandisation.

Moreover, upon entry, the player's auditory senses confront the risk of sonic saturation across all frequency levels, characterized by a cacophony of upbeat background music, the intermittent noise of propelled metal balls, and accompanying childlike sound effects. Once engaged in gameplay, players are enveloped in a sensory bombardment: dazzling visual displays of rotating machine reels and flashing neon lights, tactile sensations of manipulating the game interface amidst constant movement, as well as olfactory and gustatory stimuli like cigarette smoke. This immersive sensory environment facilitates a nihilistic engagement where players, tacitly accepting these stakes, willingly pursue self-loss. The manipulation of these senses contributes to addictive behaviors and gambling pathologies, reflecting the insidious impact of Disneylandisation's sensorial strategies.
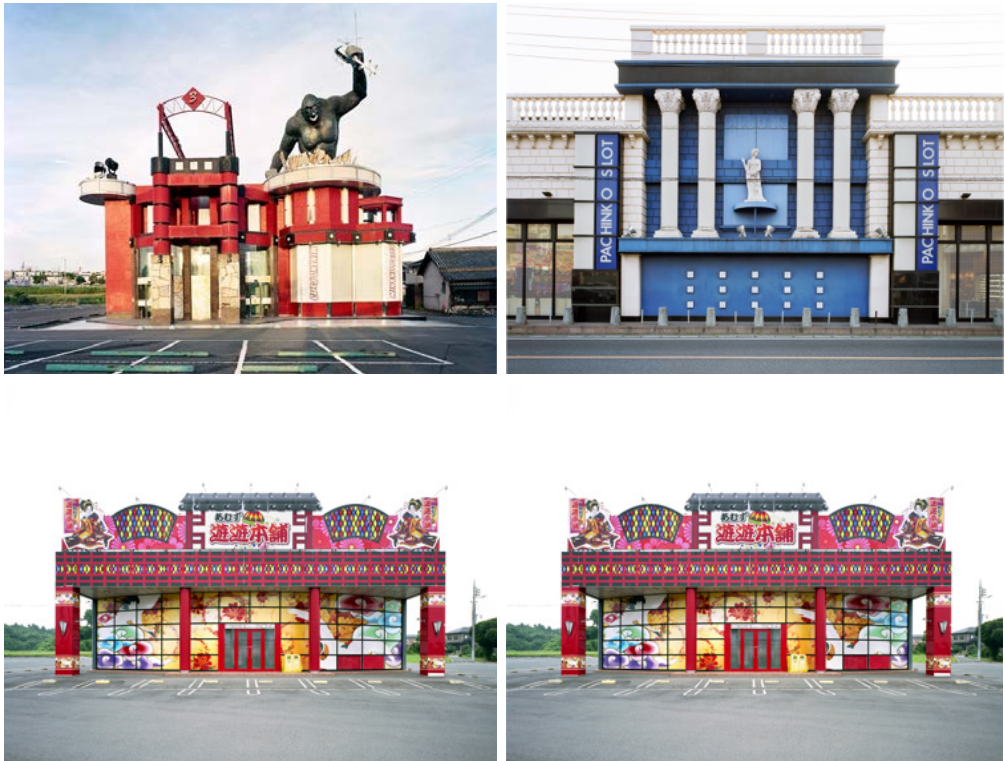
Figure 1-4. Pachinko parlors appearing amidst Japanese landscapes
Source: Adapted from Stoker, V. J. (2013)

2.3 Categorization of pure play

In exploring the technique of sensorial saturation, it is pertinent to consider, Caillois's (1958) categorization of play into four primary groups: competition, chance, mimicry, and vertigo, with an emphasis on its social dimensions. In the context of *pachinko*, chance assumes a significant role as players engage in a game of luck against ostensibly ludic machines. However, *pachinko* exerts a more pronounced influence within the realm of vertigo.

According to Caillois (1958), this type of game seeks to momentarily disrupt the stability of perception, inducing a kind of pleasurable panic that overrides lucid consciousness. These games aim to provoke a spasm or dizziness that abruptly suspends reality. *Pachinko* epitomized this category by overwhelming the senses through sensory saturation, creating a sensation akin to vertigo. This process potentially induces a trance-like state in players.

Another dimension of the play experienced in *pachinko* is mimicry. Caillois (1958) elucidates that games of mimicry compel players to adopt illusory personas and behave accordingly, temporarily shedding their own identity to assume another's role, in which the pleasure of this play constitutes. Roland Barthes (1970) portrays the *pachinko* hall as a hive or a workshop where players seem akin to assembly line workers. This portrayal highlights how the game, while ostensibly a form of pure entertainment, paradoxically transforms players into mere cogs in the machine they manipulate. Players, in their quest for self-loss, voluntarily submit to this consensual alienation, underscoring pachinko's nature as a form of toxic commodification that unfolds under the guise of a pure play. They become addicted and invest themselves to the maximum extent in this practice of self-disappearance.

3. SOCIETY OF SPECTACLE
3.1 Alienation

Having examined the pathological nature of this seemingly ludic game like *pachinko*, it becomes evident that such phenomena pervade not only specific environments like *pachinko* parlors but extend throughout our broader society. As Guy Debord (1967) posits, in our "society of spectacle", spectacle operates as a social relationship where images as representations reign by the domination of the economy's control over social life. This transformation sees a shift from "being" to "having", where all human achievements are defined by their material possessions, and subsequently from "having" to "appearing", where the immediacy of prestige derives solely from appearances.

This transformation is observable in the virtual realms we increasingly inhabit. Whether through mass media broadcasts on platforms like YouTube and television, video games, or Social Networking Services (SNS), these virtual spaces epitomize Debord's concept of the spectacle. Engagement with SNS and the virtual world

under overexposure to sound and images trigger the release of dopamine, relying on various "reward" factors. This spectacle numbs us with vertigo through sensory saturation, alienating us and encompassing cognitive and emotional traits, akin to the effects of psychoactive substances.

Infantilization, a technique of Disneylandisation, aims at distorting interpretations to favor commercial interests where capturing attention becomes a competitive game. The strategy prioritizes triggering synchronous rather than diachronic perceptions. This leads to more and more sensationalist images jostled by "punch lines" with exaggeratedly expressive close-ups, accompanied by an excess of combined sound effects, explosive jingles, and shapeless background music.

3.2 Musical influx

Furthermore, within this spectacle, sonic materials, particularly in the form of music, play a crucial role in capturing and maintaining our attention. Unlike visual information, which can be avoided by closing one's eyes, sound information demands passive reception due to our inability to close our ears. Moreover, musical rhythms possess potent capabilities to influence our physiological behavior.

Neuroscientific research demonstrates that humans exhibit neural responses to periodic stimuli, known as steady-state responses (SSR), a form of neural synchronization with external rhythm (Novembre & Iannetti, 2018). The amplitude of such neural activity is particularly significant corresponding to the beat frequency and the duple-meter-related frequencies, triggering oscillatory activity. Some neuroscientists interpret this finding as inherent cognitive processes involved in attention and anticipation related to rhythm and beats.

Another research suggests a neurobiological explanation of humans' pleasure deriving from music as dopaminergic activity triggered by fulfilled predictions (Zatorre & Salimpoor, 2013). Humans perceive regularities through patterns of sounds and develop tonal and temporal expectancies based on individual's exposure to music, thereby creating the brain's reward system. This delineates not only the resemblance among sonic materials for commercial gains, but also the mechanism by which musical images are trapped into memory regardless of our intention.

These findings on sonic materials support our hypothesis of social trance. To elaborate, psychological research suggests the notion of "interbrain synchrony", a "reinforcement of cooperation model" through "the perception of rhythmic behavior matching among individuals" (Reddish, Fischer & Bulbulia, 2013). Synchrony occurs by sharing goals and joint attention, particularly with music, dance and collective rituals. In this context, a discernable hypothesis is that collective music and dance served as biocultural adaptations for cooperation in early societies. In this view, social trance can be interpreted as distorted biocultural product, representing a regression through cognitive overload and a diminished capacity for reflective thought.

CONCLUSION

Disneylandisation fabricates artificially constructed environments that distort our perception of space and time. Within these fabricated cocoons, one may find themselves amidst tropical heat, swaying to Caribbean salsa music in vibrant summer attire during a freezing winter, or dining in a French-style restaurant served by a garçon playing the accordion, all set in the heart of slum town in Mumbai. This phenomenon persistently encroaches upon our habitus, exerting profound influences on our cultures, languages, and ultimately, both our collective and individual consciousness. By deftly triggering dopamine release, Disneylandisation captivates us, inducing a pervasive social trance. In this state, we relinquish our intellectual faculties, tacitly aligning ourselves with the collective "others".

In conclusion, the ethical implications of being ensnared in this social trance necessitate thoughtful reflection. It is evident that a singular perspective cannot be imposed upon this complex phenomenon. Drawing on Nietzsche's metaphor (1883), one might contend that individuals immersed in Disneylandisation embody the burden-bearing camel, passively participating in societal norms and cultural trends without critical examination. Conversely, others may perceive themselves as the rebellious lion, challenging these constructs in search of autonomy. Simultaneously, some may embrace a more optimistic view akin to the playful child, eagerly anticipating the potentialities of "hyperhumanism" or "transhumanism". Nevertheless, given the escalating pervasiveness of Disneylandisation across all societal strata, addressing its profound impact emerges as an urgent imperative.

BIBLIOGRAPHY

Blackmore, S. (2000). The meme machine, Oxford University Press.

Barthes, R. (1970) Empire of signs. Points.

Caillois, R. (1958). Les jeux et les hommes. Gallimard.

Debord, G. (1967). La société du spectacle. Buchet-Chastel.

Dennett, D. (1991). Consciousness explained. Little, Brown and Company.

Leroi-Gourhan A. (1975). Le geste et la parole - Technique et langage, Editions Albin Michel.

Nietzsche, F. (1883). Thus Spoke Zarathustra. Penguin Classics.

Novembre, G. & Iannetti, G. D. (2018). Tagging the musical beat: Neural entrainment or event-related potentials?. National Academy of Sciences, 115 (47) E11002-E11003. https://www.pnas.org/doi/full/10.1073/pnas.1815311115

Reddish, P., Fischer, R. & Bulbulia, J. (2013). Let's Dance Together: Synchrony, Shared Intentionality and Cooperation. PLOS ONE, 8(8):e71182. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0071182

Rouget, G. (1990). La Musique et la transe: esquisse d'une théorie générale des relations de la musique et de la possession.

Watsuji, T. (1979). Fudo (Climate and Culture: A Philosophical Study). Iwanami Shoten.

Zatorre, R. & Salimpoor, V. N. (2013). From perception to pleasure: Music and its neural substrates. National Academy of Sciences, 0027-8424, 10430-10437. https://www.pnas.org/doi/epdf/10.1073/pnas.1301228110

THE NEURODIVERGENT BODY IN MOTION: MAPPING THE AUTISTIC SENSORY EXPERIENCE OF THE WALKABLE URBAN SPACE

O CORPO NEURODIVERGENTE EM MOVIMENTO: MAPEANDO A EXPERIÊNCIA SENSORIAL AUTÍSTICA DO ESPAÇO URBANO CAMINHÁVEL

DR CAROLINA VASILIKOU
Senior Lecturer and EDI Lead Manchester School of Architecture,
c.vasilikou@mmu.ac.uk

JANE ELIZABETH BENNETT
PhD Candidate University of Reading,
j.e.bennett@pgr.reading.ac.uk

ABSTRACT

The act of walking and locomoting is a daily rhythm, undertaken by necessity to engage with work, education, and social activities. This paper presents a scoping review with a focus on the neurodivergent experiences of urban space whilst walking. Our review aims to explore how current research may be failing to explore the human elements of neurodiversity and how urban spaces are perceived through alternative rhythms. The lens used pertains to ways of sensing the urban space whilst moving through it and explore the gaps that are left through the lack of engagement with neurodivergent people. We propose that a neurodivergent corpography provides an opportunity to explore walkable urban spaces through an alternative sensory lens. We investigate how the heightened sensory perception of neurodivergent experiences might be used as a source of expert knowledge informing the development of alternative methods for pluralistic inclusive urban space.

KEYWORDS: neurodivergent body. walking. urban space. corpo-sensorial perception. inclusive design. built environment.

RESUMO

O ato de caminhar e se locomover é um ritmo diário, realizado por necessidade para o envolvimento com o trabalho, a educação e as atividades sociais. Este artigo apresenta uma revisão de escopo com foco nas experiências neurodivergentes do espaço urbano durante a caminhada. A nossa revisão pretende explorar como a investigação atual pode estar a falhar na exploração dos elementos humanos da neurodiversidade e como os espaços urbanos são percebidos através de ritmos alternativos. A lente utilizada diz respeito às formas de sentir o espaço urbano enquanto se move através dele e explorar as lacunas que são deixadas pela falta de envolvimento com pessoas neurodivergentes. Propomos que uma corpografia neurodivergente oferece uma oportunidade para explorar espaços urbanos caminháveis através de lentes sensoriais alternativas. Investigamos como a percepção sensorial intensificada de experiências neurodivergentes pode ser usada como fonte de conhecimento especializado informando o desenvolvimento de métodos alternativos para um espaço urbano pluralista e inclusivo.

PALAVRAS-CHAVE: corpo neurodivergente. caminhada. espaço urbano. modelo de percepção corpo-sensorial. design inclusivo. arquitetura

WALKING AND EXPERIENCING THE OTHER: CASE OF SEVERAL CHOREOGRAPHIC PROJECTS

CAMINHAR E RESSENTIR O OUTRO: O CASO DE ALGUNS PROJETOS COREOGRÁFICOS

EKATERINA SHAMOVA
PhD in Architecture, researcher , LACTH laboratory, ENSAPL School of Architecture and Landscape Architecture, Lille (France), *katyashamova123@gmail.com*

ABSTRACT

This article focuses on several choreographic projects of collective walk to approach the manner in which ambiances form and transform in this particular context. By choosing to concentrate specifically on the relations between the participants of these projects and the on-lookers, a hypothesis is put forward that ambiances that thus arise will both be dependent on the very nature of the lived experience as sensible subjects, and reflect the manners of co-presence as users of the public space.

KEYWORDS: walking. choreography. experience. relation.

RESUMO

Este artigo interessa-se a alguns projetos coreográficos de caminhada coletiva para questionar a forma cujo as atmosferas se formão e se transformão neste contexto particular. A ênfase é colocada especificamente nas relações entre os participantes do projeto e os transeuntes. Isto permite-nos propor uma hipótese segundo a qual as atmosferas que emergem tanto se relacionam com a própria natureza da experiência vivida de sujeitos sensíveis como reflectem as formas de estar co-presente como utilizadores do espaço público.

PALAVRAS-CHAVE: andar. coreografia. experiência. relação.

THE CITY AND MOBILITY UNDER THE LIGHT OF SYSTEMIC THINKING.

A CIDADE E A MOBILIDADE SOB A LUZ DO PENSAMENTO SISTÊMICO

Silva / Renan Durval Aparecido
Doutor em Arquitetura e urbanismo
Universidade Federal de Alagoas – AL/Brasil
renansilva.urb@gmail.com

ABSTRACT

This article explores sustainable urban mobility through the lens of systemic thinking. Movement is fundamental to urban life, but unplanned city development has promoted the automobility paradigm, resulting in various negative externalities. This descriptive and exploratory study analyzes urban mobility as a complex and interdependent system. Based on the analysis of theoretical and technical references, it proposes a new paradigm focused on accessibility and sustainability, emphasizing the importance of integrated urban planning. The aim is to contribute to a holistic interpretation of urban phenomena, promoting fairer and more sustainable cities.

KEYWORDS: Urban mobility. Systemic thinking. Sustainability. Accessibility. Urban planning.

RESUMO

Este artigo explora a mobilidade urbana sustentável sob o prisma do pensamento sistêmico. O movimento é fundamental para a vida urbana, mas o desenvolvimento desordenado das cidades promoveu o paradigma da automobilidade, gerando diversas externalidades negativas. Este estudo, de natureza descritiva e exploratória, analisa a mobilidade urbana como um sistema complexo e interdependente. Com base na análise de referenciais teóricos e técnicos, propõe-se um novo paradigma focado na acessibilidade e sustentabilidade, destacando a importância de um planejamento urbano integrado. O objetivo é contribuir para uma interpretação holística dos fenômenos urbanos, promovendo cidades mais justas e sustentáveis.

PALAVRAS CHAVE: Mobilidade urbana. Pensamento sistêmico. Sustentabilidade. Acessibilidade. Planejamento urbano.

1. INTRODUÇÃO

O movimento é central na natureza, em seu modo de operar e de se manifestar. É ele quem possibilita a combinatividade de elementos que gerou a vida e a imensa heterogeneidade que integra o universo nas suas mais diversas escalas. Como parte da natureza, o Homo sapiens é também parte deste contexto. O movimento é um ímpeto humano que levou a espécie aos quatro cantos do planeta, e para além dele.

Das mais antigas às mais recentes, das menores às grandes metrópoles, alguns fundamentos são comuns a todas as cidades. Um deles é que não há cidade sem movimento. As pessoas precisam se mover para exercerem suas funções sociais. Fluxos de pessoas, recursos e ideias são a expressão da vida nas cidades. Porém, mobilidade não é só movimento. É também pausa e permanência. É essencialmente conexão e acesso.

O desenvolvimento das cidades de grande parte do mundo, sem o adequado planejamento e gestão, com espraiamento urbano e rodoviarismo, apoiados em

interesses econômicos e fomentados pela política habitacional, potencializou o paradigma da automobilidade[1], com externalidades negativas severas para as pessoas e para o ambiente urbano e natural: alto consumo de espaço, energia e dinheiro; pobre relação das pessoas com o ambiente e com as outras pessoas; medo e insegurança; iniquidade; agravamento das mudanças climáticas e comprometimento da saúde, o que se choca com a premissa fundamental que deveria orientar todos os esforços humanos: a preservação e potencialização da vida.

Neste contexto tem emergido novos paradigmas, como o da acessibilidade e da mobilidade sustentável, com o potencial de promover transformações na forma das pessoas se organizarem em sociedade e de viabilizarem o seu funcionamento. Ferramentas de transformações urbanas tem ganhado cada vez mais relevância no sentido de mudar as cidades e melhorar a qualidade de vida de seus habitantes, tais como os Objetivos para o Desenvolvimento Sustentável, a promoção da caminhabilidade, a Visão zero para a segurança viária, o urbanismo tático e o Desenvolvimento Orientado pelo Transporte Sustentável.

Tais questões possuem grande relevância diante dos desafios que a humanidade tem a enfrentar no século XXI e é por isso que o estudo da mobilidade sustentável, sob o prisma do pensamento sistêmico, configura-se como o eixo central deste trabalho, de natureza descritiva e exploratória, com base na análise e interpretação de referenciais teóricos e técnicos. O objetivo é contribuir para o desenvolvimento da interpretação do fenômeno urbano, e mais especificamente da mobilidade urbana sustentável.

2. PENSAMENTO SISTÊMICO E AS CIDADES

O conceito de sistemas pode ser compreendido como um "conjunto de unidades em interações mútuas" (Bertalanffy, 2020, p. 63). Morin (2005, p.19) argumenta que tudo aquilo que conhecemos pode ser concebido como sistema: dos átomos às galáxias, da célula ao organismo e à sociedade, entendendo a ideia de sistema como uma "associação combinatória de elementos diferentes".

A perspectiva do pensamento sistêmico surge em várias disciplinas na primeira metade do século XX, sendo os pioneiros os biólogos, enfatizando os organismos como totalidades integradas. Foi enriquecida então pelos psicólogos, com a Gestalt e pela nova ciência da ecologia e exerceu os efeitos mais dramáticos na física quântica (Capra, 1996).

Nos anos de 1960 é publicada a obra seminal sobre o conceito de sistemas, a Teoria Geral dos Sistemas. A TGS, dadas as suas postulações aplicáveis a qualquer sistema, independentemente de suas propriedades particulares, revelou um importante e útil

---

1 Conceito que se refere a "todas as instituições e práticas que determinam o papel social do automóvel. (...) discursos que fazem do automóvel o motor social de nosso tempo e o associam a liberdade, progresso, movimento, individualidade e independência. O automóvel é a pedra fundamental sociotecnológica da modernidade" (Planka.Nu, 2020, p.17).

princípio de transversalidade, sendo aplicável a vários campos do saber, inclusive aos estudos urbanos.

> O espaço urbano permite várias aplicações da ideia de sistema. Da malha viária aos serviços públicos, passando pela própria ideia de projeto urbano, o aspecto sistêmico dessas realidades evidencia-se na interdependência que guardam entre si, gerando sempre efeitos mais complexos do que quando tomados isoladamente (Araújo, 2007, p.110).

Neste contexto, pode-se conceber a cidade, segundo Terán (2013), como um metassistema composto de vários subsistemas, dentre os quais estão o sistema de transportes, o educacional, o de saúde e o da segurança pública. Quanto mais integrados, dinâmicos, resilientes e autocomplementares tais subsistemas, mais harmônico é o conjunto e melhores os resultados para o seu funcionamento e para a qualidade de vida daqueles que o habitam.

Cidades e seus habitantes apresentam e necessitam de sistemas para o movimento (transportes), respiração (processo de obtenção de energia), sensibilidade para responder ao seu ambiente, crescimento (evolução e mudanças ao longo do tempo), reprodução (incluindo educação, construção, planejamento e desenvolvimento), excreção (produtos e resíduos) e nutrição (necessidade de ar, água, solo, alimentos etc.) (Ecocity, 2021, tradução nossa).

A interpretação da cidade como sistema e a necessidade de entender seus problemas como sendo de uma complexidade organizada não são ideias novas. Jacobs (2011) já abordava essas relações na década de 1960. Ela ilustra essa perspectiva de "complexidade organizada", utilizando como exemplo um parque urbano, argumentando que não se pode compreendê-lo analisando quaisquer elementos isoladamente. O uso do parque, por exemplo, depende de seu desenho, mas também da presença de pessoas o utilizando, de maneiras diferentes e em momentos diversos. E isto, por sua vez, é influenciado pelo contexto em que o parque se insere, como a idade dos edifícios e o tamanho das quadras no entorno.

Apesar de não ser uma ideia nova, ainda há lacunas a serem preenchidas no debate sobre o tema da cidade como sistema e a necessidade de desenvolvimento de uma visão holística no seu planejamento e construção. Não se tem a pretensão aqui de preenchê-las, mas todo trabalho científico busca contribuir de alguma maneira, diante de suas limitações e particularidades, para que seu universo de estudo evolua, ainda que em pequena escala.

Como argumenta OPAS (2021), há um novo paradigma[2] em ascensão, que considera que a mobilidade sustentável engloba questões ambientais, econômicas, sociais

---

2 Paradigma científico é definido por Kuhn (1962, apud Capra & Luisi, 2014, p.25) como "uma constelação de realizações - conceitos, valores, técnicas etc. - compartilhadas por uma comunidade científica e usadas por essa comunidade para definir os problemas e soluções legítimos".

e comportamentais, dentre outras. Apesar disso, ainda há uma concentração significativa em torno dos aspectos relacionados ao meio ambiente natural, notadamente no contexto brasileiro, quando se trata do tema da sustentabilidade urbana. A urbanista Marcela Costa, nesse sentido, discorre da seguinte forma sobre o assunto:

> (...) observa-se o desconhecimento dos eixos que estruturam o conceito no nível dos municípios brasileiros, bem como ferramentas adequadas para monitoração dos aspectos relacionados à mobilidade urbana (Costa, 2008, p.2).

No Brasil, as contribuições da ciência ecológica e do pensamento sistêmico transdisciplinar ainda possuem pouca inserção nos estudos urbanos no âmbito acadêmico, havendo, portanto, um distanciamento dos estudos das ciências sociais e das ciências ecológicas, assim como ocorre distanciamento entre o Planejamento urbano, Desenho urbano e Ecologia (Andrade e Blumenschein, 2014).

3. A CIDADE COMO UM ECOSSISTEMA

Tendo em vista que um ecossistema é um ambiente biológico formado pelos organismos que vivem em uma área em particular, interagindo com os elementos não vivos do ambiente, como o ar, o solo, a água e a energia solar, a cidade, neste sentido, é também um ecossistema, na medida em que é parte de sistemas maiores que propiciam serviços essenciais desde a regulação (clima, drenagem, equilíbrio nutricional, filtragem de águas), provisão (alimentos, remédios), até a cultura (ciência, espiritualidade, recreação etc.) entre outros (ECOCITY, 2021).

Herzog (2013) argumenta que a ecologia é fundamental para desenvolver a compreensão da cidade, já que é a ciência que estuda as relações entre os seres vivos e o seu habitat. O urbanismo ecológico, neste sentido, tem como objetivo contribuir com estudos para o ser humano adaptar-se ao seu ambiente, por meio de projetos de lugares mais sustentáveis, reconhecendo a cidade como habitat e suas ligações com os elementos da natureza. No entanto, dependendo da abordagem, o urbanismo ecológico é interpretado, muitas vezes, como "metáfora" ou um encontro interdisciplinar, favorecendo os aspectos ambientais em detrimento dos aspectos socioeconômicos e culturais. É preciso pensar o desenvolvimento de forma sistêmica, com o objetivo de reduzir os impactos da relação predatória entre humanos e natureza, buscando um direcionamento simbiótico. Para isso, é imprescindível que o ambiente urbano seja dotado de flexibilidade e agilidade na resposta aos problemas que enfrenta, ou seja: resiliente.

É preciso que as cidades estejam alinhadas com os princípios básicos que organizam e constroem a essência de todos os seres vivos, de interconexão e co-desenvolvimento. Talvez seja o caminho mais rápido para integrar de maneira harmônica a produção de espaços construídos ao meio ambiente natural e às necessidades fundamentais das pessoas.

A ideia de urbanismo sustentável no Brasil ainda é muito concentrada nas referências do início do século XX e tem sido focada no tema da infraestrutura verde, estruturada sobre o modelo da cidade com baixas densidades ou com concentração de edifícios altos, isolados no lote e fragmentados em relação ao espaço público, o que prejudica a sua vitalidade e aumenta a vulnerabilidade das pessoas ao utilizá-lo. A perspectiva a ser buscada é a de concentração e diversidade de pessoas, interagindo em espaços multifuncionais, maximizando as trocas de matéria, energia e informação e reduzindo a sobrecarga sobre os ecossistemas (Andrade & Blumenschein, 2014).

A ONU-HABITAT (2012), no relatório sobre o "Estado das cidades no mundo", destaca a importância de se pensar em cidades com foco nas pessoas e que possam integrar todos os aspectos relacionados à prosperidade, dos mais tangíveis aos menos tangíveis, excluindo as ineficiências e práticas insustentáveis das cidades que se desenvolveram até então.

4. MOBILIDADE URBANA COMO SISTEMA

O conceito de mobilidade é relativamente novo, integrando os antes utilizados transporte e trânsito, que eram vistos pelas variáveis meramente técnicas, de ordem unidimensional, e diante disso foram historicamente limitados em si mesmos. Sendo um atributo das cidades, que agrega vários elementos que interagem de forma interdependente, circular e recursiva, a mobilidade caracteriza-se como um fenômeno complexo. Desta forma, é inadequado tratá-la de maneira unidimensional, reducionista ou meramente analítica.

O geógrafo brasileiro Milton Santos (2004) apresenta a ideia da cidade como um sistema composto de elementos fixos (tais como edifícios e vias) e fluxos (materiais ou imateriais), que estabelecem a conexão entre os primeiros, em uma relação dialética. A cidade seria, então, um sistema socioespacial. Espacial, por ser constituída de fluxos e fixos, objetos e ações, e social, por ser construída e habitada pelas pessoas. A ação de se mover é a gênese do fluxo que configura aquilo que se entende como trânsito: um sistema aninhado no sistema mobilidade. Nas relações causais recursivas da mobilidade, três sistemas principais interagem: transporte, trânsito e uso do solo.

Como argumenta Gorz (2015 In: LUDD (org.), 2015, p.82), o problema da mobilidade não pode em hipótese alguma ser visto de maneira isolada. Ele é um problema da cidade. Neste sentido, a compartimentalização da cidade, com "um lugar para trabalhar, outro para "habitar", um terceiro para se abastecer, um quarto para aprender, um quinto para se divertir", gerou incongruências na maneira do espaço ser organizado.

A mobilidade não é só, e nem principalmente, infraestrutura. É preciso visualizá-la dentro da perspectiva de cidades melhores para se viver, mais adaptada às necessidades humanas em toda a sua diversidade, tendo como instrumentos a promoção do modelo

de cidade compacta, com uso misto do solo e fachadas ativas, mas sobretudo que seja mais inclusiva e democrática, com o objetivo de propiciar aos seus cidadãos a oportunidade de desfrutarem de uma vida de proximidade onde suas funções sociais podem ser desempenhadas sem a necessidade de grandes deslocamentos.

A associação entre suburbanização, zoneamento e desenvolvimento de transportes urbanos de largo alcance, como o metrô e o automóvel, potencializaram a dispersão e a fragmentação urbana, gerando um distanciamento entre as áreas residenciais e os locais de concentração de emprego e serviços. O fenômeno do espraiamento antecedeu o automóvel, mas a sua massificação favoreceu o processo, possibilitando que as pessoas chegassem aonde o transporte de massa não tinha capilaridade.

O alargamento de ruas passa a ser uma constante e analistas de trânsito passam a ganhar cada vez mais relevância no planejamento urbano, juntamente com uma prática de planejamento "de cima para baixo" (Hall, 2011), resultando em uma série de externalidades negativas. Não se trata de um sistema que funciona bem e passa por um momento de perturbação, mas de um sistema que é essencialmente problemático. A perturbação é a normalidade do sistema. A "(...) automobilidade como sistema é uma impossibilidade" (Planka.Nu, 2020, p.19).

Os automóveis, que surgiram com uma imagem associada à promessa de liberdade e desenvolvimento humano, acabaram escravizando as pessoas, tornando-as reféns de sua utilização (Speck, 2016). E é esse justamente o seu grande problema: não o veículo em si, mas a dependência que se desenvolveu, sendo, individualmente, a opção mais viável/convidativa de mobilidade em muitos contextos urbanos.

Jacobs (2011, p. 378) argumenta que o maior problema das ruas, como espaço público, não é essencialmente a presença massiva de automóveis, mas o fato delas serem "destruídas e transformadas em espaços imprecisos, sem sentido e vazios para qualquer pessoa a pé". O uso massivo de carros é um elemento central na construção desse cenário, mas o mesmo resultado seria alcançado de outras maneiras que não tenham como princípio fundamental a concepção da rua como espaço de encontro e de construção social.

> Ruas impessoais geram pessoas anônimas, e não se trata da qualidade estética nem de um efeito emocional místico no campo da arquitetura. Trata-se do tipo de empreendimento palpável que as calçadas possuem e, portanto, de como as pessoas utilizam as caçadas na vida diária, cotidiana. (...) As associações públicas formais em cidades requerem uma vida pública informal subjacente. (Jacobs, 2011, pág. 61)

Ruas lotadas de carros, estacionados e em circulação, vêm reduzindo a importância da rua como espaço de interação humana e de formação de capital social, justamente os elementos essenciais para a principal razão das cidades existirem: conectar pessoas

e promover desenvolvimento. Certamente reconsiderar o papel que desempenham os automóveis nas cidades é uma das mudanças mais importantes na forma de pensar a mobilidade.

4.1 Paradigma da acessibilidade

Todos os indicadores produzidos no conhecimento científico e empírico apontam para a necessidade de superação do paradigma da automobilidade. Para tanto, como argumenta Gorz (2005 In: LUDD (org.), 2005, p.75), "será preciso uma revolução ideológica ("cultural")", minimamente independente de espectros políticos, que faça ascender o paradigma da mobilidade sustentável e o da acessibilidade. O primeiro englobando de forma interdependente as esferas social, econômica e ambiental (OPAS, 2021), e o segundo estruturado sobre a ideia de acesso lato sensu.

Para a promoção da acessibilidade é fundamental a articulação entre transportes (o meio) e o uso do solo (as atividades nas origens, destinos e caminhos). Para Levinson (2012 apud Kneib & Portugal, 2017, p.65), a acessibilidade "combina a qualidade do serviço, a capacidade e a configuração da rede de transportes com as atividades existentes e sua distribuição espacial" envolvendo trocas entre estes dois componentes. Nesta interação há ciclos de feedback com o sistema trânsito, o terceiro componente da mobilidade urbana. Neste sentido, pode-se entender a acessibilidade como um instrumento de promoção da mobilidade sustentável.

Planka.Nu (2020, p.23) argumenta que o paradigma da acessibilidade tem como premissa que "todas as pessoas deveriam ter acesso, nos lugares em que vivem, aos serviços sociais que desejam e necessitam", configura uma abordagem "que subverte a ideia de mobilidade como um valor em si" (ibid), entendendo a mobilidade como uma espécie de recurso[3] para acessar algo, seja um lugar ou um serviço, em uma perspectiva mais objetiva, ou uma oportunidade ou uma percepção, em uma linha mais subjetiva. Assim, em tal perspectiva a mobilidade seria um instrumento de promoção da acessibilidade.

4.2 Arquétipos sistêmicos

No processo de interpretar a mobilidade sob a luz do pensamento sistêmico mostrou-se útil a construção de mapas mentais, para a identificação de arquétipos sistêmicos[4], na medida em que, como argumentam Capra & Luisi (2014, p.114), "relações não podem ser medidas e pesadas; relações precisam ser mapeadas". Ao mapear relações, é possível identificar padrões e comportamentos do sistema, assim como pontos de bifurcação ou pontos de alavancagem[5] no sistema, que geram novas ramificações e oportunidades de mudança.

---

3 Meio; o que serve para alcançar um fim. **"recurso",** in Dicionário Priberam da Língua Portuguesa [em linha], 2008-2021, <*https://dicionario.priberam.org/recurso*>. Acesso em 10 de junho de 2022.

4 Modelos que buscam classificar a estrutura de um sistema e seu comportamento, favorecendo a interpretação de cenários e o surgimento de *insights* acerca do tema trabalhado (Sordi et al., 2014)]

5 Pontos do sistema em que pequenas modificações podem gerar grandes mudanças (Meadows, 2022).

Na Figura 1 é possível, por exemplo, identificar a recursividade da precária infraestrutura cicloviária no ambiente urbano. Partindo do centro da figura e seguindo o caminho da caixa na cor azul, pode-se refletir que essa problemática gera vulnerabilidade do ciclista e, como consequência, o medo de usar a bicicleta como modo de transporte. Isso gera uma menor quantidade de crianças e jovens com permissão dos responsáveis para usar a bicicleta como modo de transporte, resultando em empobrecimento da relação com a cidade. Isso, por sua vez, vai gerar uma intensificação da rua como mero espaço de passagem (caixa na cor laranja) o que cria o cenário propício para que a gestão pública não se sinta pressionada a mudar a realidade e promover a infraestrutura cicloviária.

Figura 1. Mapa mental das consequências da precariedade da infraestrutura cicloviária
Fonte: Elaborado pelo autor

Na mesma linha de análise, a partir da Figura 2 pode-se refletir sobre como os espaços destinados à circulação exclusiva, ou preferencial, para ônibus dialoga com a natureza sistêmica e socioespacial da mobilidade. Partindo da caixa na cor preta e indo à de cor azul, observa-se que uma das suas externalidades positivas mapeadas é que ele aumenta a velocidade operacional dos ônibus e reduz o tempo dos trajetos. Isso aumenta a atratividade do sistema de transporte por ônibus e reduz engarrafamentos, na medida em que o ônibus otimiza o uso do espaço. Também reduz o volume de sinistros de trânsito e de emissão de poluentes, o que, conjuntamente, contribui para a redução de vulnerabilidades relacionadas ao comprometimento da saúde. Por outro lado, há também uma redução do comprometimento de tempo do cidadão com o deslocamento por ônibus, o que aumenta o seu tempo de vida disponível para a família e cuidado com os filhos e, por fim, reduz em outro aspecto a situação de vulnerabilidade a qual muitas crianças estão sujeitas pela ausência de pais e mães no acompanhamento de seus desenvolvimentos.
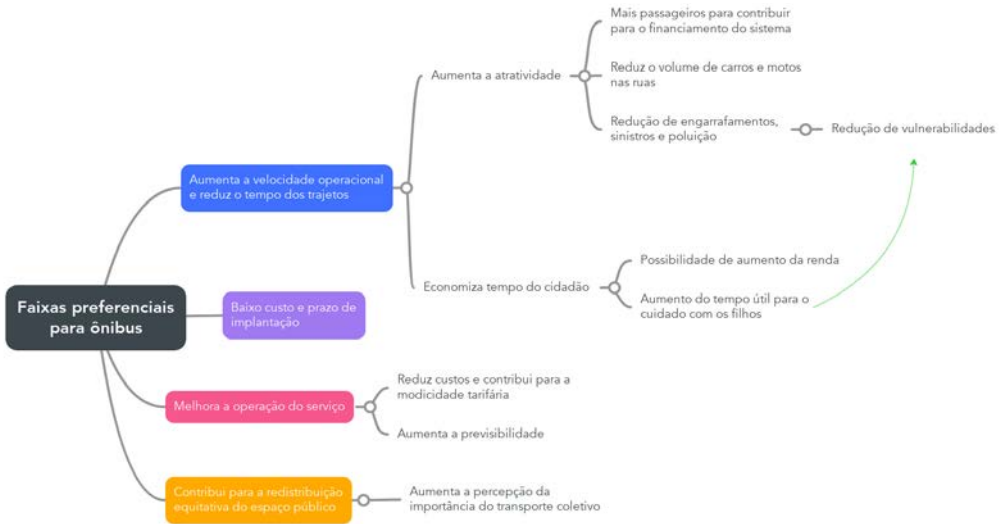
Figura 2. Mapa mental dos efeitos da dedicação de espaço exclusivo/preferencial ao transporte coletivo por ônibus
Fonte: Elaborado pelo autor

Considera-se que as lentes do pensamento sistêmico contribuem para o aprimoramento da capacidade de entender as interconexões entre as partes de um sistema e que a construção de mapas mentais e arquétipos sistêmicos apresentam o potencial de contribuir para isso, bem como para identificar possibilidades de atuação para melhorar o comportamento do todo, desenhando possíveis caminhos para a reestruturação do sistema.

A compreensão do caráter sistêmico das cidades e da mobilidade é um passo importante para se mudar paradigmas, mas é certo que, ainda assim, há uma distância entre compreender e implementar. Reconhece-se as dificuldades de transportar o arcabouço teórico do pensamento sistêmico para a realidade concreta da elaboração e execução de políticas públicas, que efetivamente mudem a realidade percebida pelas pessoas no seu dia a dia.

Boa liderança política certamente é um ponto de alavancagem importante, assim como o chamado alfabetismo urbanístico, como fundamentação de uma base social de pressão por mudanças. Para o planejamento/gestão da cidade, cada um de seus habitantes é importante no processo de conhecê-la e de idealizá-la. Todos os segmentos da estrutura administrativa cumprem funções no processo cognitivo e de posicionamento diante da realidade. Porém, é necessária uma liderança que oriente a tomada de decisões, considerando a interação entre a parte e o todo: um cérebro da cidade. Uma estrutura centralizadora no organismo, não dentro de uma perspectiva piramidal, ou de total independência, mas num sentido de buscar conectar os diversos inputs do sistema para criar uma lógica coesa, uma estrutura coerente e resiliente

Além disso, são importantes implantes subversivos no sistema, que podem ser protagonizados pela sociedade civil, como com intervenções de urbanismo tático, ou pelo próprio Poder público, através do desenvolvimento de políticas públicas que desafiem o paradigma da automobilidade e enderece, a promoção da acessibilidade. O que seria algo no sentido que Souza (2006, p.82) se refere como "conquistas táticas e conjunturais em meio a uma navegação de longo curso".

5. CONCLUSÕES

Os problemas de mobilidade urbana são atualmente reconhecidos como de natureza eminentemente sistêmica, cujas partes são constituídas de elementos que estão encadeados e são interdependentes. É necessário, portanto, reconhecer a natureza sistêmica dos deslocamentos urbanos e identificar e compreender quais adequações serão necessárias para também dar tratamento sistêmico aos arranjos institucionais, aos processos de planejamento e de gestão, como também de políticas, projetos e ações no campo dos transportes e da mobilidade urbana, no sentido de promover cidades mais justas, sustentáveis, inteligentes e potencializadoras da vida em todas as suas formas de se manifestar.

Como sistema, a cidade é formada pelas interconexões entre as pessoas. Potencializar tais relações favorece o desenvolvimento do capital social e amplia as oportunidades de as pessoas exercerem todo o potencial humano. Neste sentido, se requer o fomento à interação humana e à vida em comunidade, entendendo que cada elo do sistema cidade e do sistema mobilidade tem a sua importância e função, com suas respectivas características, escalas e efeitos.

O grande desafio das cidades é oferecer a seus cidadãos um leque de opções com atratividade equilibrada entre elas, de forma multiconectada. Quando isso ocorre, naturalmente as pessoas tendem a escolher aquela que for mais condizente com sua realidade, percepção, identidade, capacidade de custeio etc. Por outro lado, quando as opções são limitadas, devido às discrepâncias significativas entre elas, a tendência é as pessoas se concentrarem naquelas que ofereçam condições menos restritivas.

Ao longo da história, muitos modelos de cidades foram criados para tentar responder aos desafios de organizá-las, mas não se chegou ao que parece ser um "modelo" universal para que as cidades possam cumprir suas funções, enquanto comunidade humana, de maneira equilibrada e sustentável. A busca, portanto, mais do que por um modelo físico, seria por um modelo mental, conceitual, filosófico e até espiritual: o da sustentação e potencialização da vida, um modelo que respeite a teia da vida: a teia da vida urbana.

6. BIBLIOGRAFIA

Andrade, L. & Blumenschein, R. (2014). A nova ecologia da cidade: uma conexão importante para a ciência do desenho urbano. Belém/PA.

Araújo, R. (2007) A cidade sou eu? O Urbanismo do Século XXI. Tese de Doutorado apresentada ao Programa de Pós-Graduação em Urbanismo – PROURB – da Faculdade de Arquitetura e Urbanismo da Universidade Federal do Rio de Janeiro / UFRJ. Rio de Janeiro.

Bertalanffy, L. (2020). Teoria Geral dos Sistemas: fundamentos, desenvolvimento e aplicações. 5. ed. - Petrópolis, RJ: Vozes.

Capra, F. (1996). A teia da vida: uma nova compreensão científica dos sistemas vivos. São Paulo: Editora Cultrix, 1996.

Capra, F. Luisi, P. (2014). A Visão Sistêmica da Vida. São Paulo: Cultrix.

Costa, M. (2008). Um Índice de Mobilidade Urbana Sustentável. Tese (Doutorado) - Escola de Engenharia de São Carlos, Universidade de São Paulo, São Carlos.

Ecocity (2021). What is an ecocity?. https://ecocitybuilders.org/what-is-an-ecocity/

HALL, P. (2011). Cidades do amanhã. 2. Ed. São Paulo: Perspectiva.

Herzog, C. Cidades para todos. 1 Ed. Rio de Janeiro: Mauad X: Inverde.

Jacobs, J. (2011). Morte e vida de grandes cidades. 3ª ed. São Paulo: Editora WMF Martins Fontes.

Kneib, E. Portugal, L. (2017). Caracterização da acessibilidade e suas relações com a mobilidade e o desenvolvimento. Rede Iberoamericana de estudo em polos geradores de viagens.

Ludd, Ned. (org.). (2005). Apocalipse motorizado: a tirania do automóvel em um planeta poluído. 2. ed. rev. -- São Paulo: Conrad Editora do Brasil.

Meadows, D. (2022). Pensando em sistemas: como o pensamento sistêmico pode ajudar a resolver os grandes problemas globais. Tradução de Paulo Afonso. 1. ed. Rio de Janeiro: Sextante.

Morin, E. (2005). Introdução ao pensamento complexo. Porto Alegre: Sulina.

ONU-HABITAT (2012). Estado das cidades no mundo. https://unhabitat.org/downloads/docs/State_of_the_World_Cities_Report2012.pdf

OPAS. (2021). Agenda Convergente Mobilidade Sustentável e Saúde. Documento de Referência. Paho.org, [s.l.]. DOI: https://doi.org/OPAS/BRA/NMH/20-171.

Planka.Nu. (2020). A estrutura de poder do trânsito. 1. ed. São Paulo: Fundação Rosa Luxemburgo.

Santos, M. (2004). Por uma Geografia Nova: Da Crítica da Geografia a uma Geografia Crítica. São Paulo: Editora da Universidade de São Paulo, 2004. (Coleção Milton Santos; 2)

Sordi, J.. Nelson, R.; Bianchi, E. (2014). Mapa causal e o ensino de arquétipos sistêmicos. Organizações em contexto, São Bernardo do Campo, ISSNe 1982-8756 • Vol. 10, n. 19, jan.-jun. 2014 DOI: http://dx.doi.org/10.15603/1982-8756/roc.v10n19p331-356

Souza, M. (2006). A prisão e a ágora: reflexões em torno da democratização do planejamento e da gestão das cidades. Rio de Janeiro: Bertrand Brasil.

Speck, J. (2016). Cidade caminhável. 1. Ed. São Paulo: Perspectiva.

Terán, J. (2013). Mobilidade urbana sustentável. São Paulo: Scortecci.

ANALYSIS OF ROAD SAFETY IN THE METROPOLITAN REGION OF MACEIÓ: APPLICATION OF SAFE SYSTEMS AND VISION ZERO PRINCIPLES

ANÁLISE DA SEGURANÇA VIÁRIA NA REGIÃO METROPOLITANA DE MACEIÓ: APLICAÇÃO DOS PRINCÍPIOS DE SISTEMAS SEGUROS E VISÃO ZERO

Antônio Alberto Monteiro de Souza
Especialista em Mobilidade Urbana Sustentável
Departamento Estadual de Trânsito
aamonteirodesouza@gmail.com

Emanuel Davi Medeiros
Graduando em Arquitetura e Urbanismo
Departamento Estadual de Trânsito de Alagoas
emanueldavim@gmail.com

Laryssa Karen da Silva Souza
Graduanda em Arquitetura e Urbanismo
Departamento Estadual de Trânsito de Alagoas
laryssa.souza@fau.ufal.br

Taís Emanuelle da Silva Araújo
Graduanda em Administração
Departamento Estadual de Trânsito de Alagoas
tais.detran.al@gmail.com

ABSTRACT

From a systemic perspective of the Vision Zero and Safe Systems principles, this article aims to analyze the road safety challenges faced in the Metropolitan Region of Maceió (RMM). With data provided by the National Traffic Accident Registry (RENAEST), the State Traffic Department of Alagoas (DETRAN/AL), and media sources, 17 focus points were mapped and identified, with a total of 142 accidents, of which 72.5% are collisions, with an average of 2.2 victims per occurrence. The causes of the accidents indicated a recurrence of human factors; however, the analysis allowed us to understand that the lack of planning and supervision, along with engineering failures, directly influence the circumstances of the occurrences, and it is not the individual responsibility of road users. Finally, this study fosters reflections on road safety in the RMM and can contribute to planners in building safe systems for the region.

KEYWORDS: Vision Zero. Metropolitan Region of Maceió. Safe Systems. Systemic Perspective. Traffic Incidents. Road System.

RESUMO

A partir de uma perspectiva sistêmica dos princípios do Visão Zero e Sistemas Seguros, este artigo propõe analisar os desafios da segurança viária enfrentados na Região Metropolitana de Maceió (RMM). Com o fornecimento de subsídios pelo Registro Nacional de Acidentes de Trânsito (RENAEST), Departamento Estadual de Trânsito de Alagoas (DETRAN/AL) e veículos midiáticos, foram mapeados e identificados 17 pontos de enfoque com 142 sinistros ao total, dos quais 72,5% são colisões, com uma média de 2,2 vítimas por ocorrência. As causas dos sinistros indicaram recorrência do fator humano, no entanto a análise permitiu entender que a falta de planejamento e fiscalização, e falhas de engenharia influenciam de forma direta as circunstâncias das ocorrências, não sendo responsabilidade individual dos usuários da via. Por fim, este estudo fomenta reflexões acerca da segurança viária na RMM e pode contribuir para agentes planejadores na construção de sistemas seguros para a região.

PALAVRAS-CHAVE: Visão Zero. Região Metropolitana de Maceió. Sistemas Seguros. Perspectiva Sistêmica. Sinistros de Trânsito. Sistema Viário.

1. INTRODUÇÃO

A segurança no trânsito é um problema global que afeta a todos os países, entretanto se atenua nos países em desenvolvimento. Segundo dados da Organização Mundial da Saúde (OMS, 2018), aproximadamente 1,35 milhões de pessoas morrem em sinistros de trânsito a cada ano, com 90% dessas mortes ocorrendo em países de baixa e média renda. Crianças e jovens são particularmente vulneráveis, representando 22% das mortes no trânsito. Estas estatísticas são alarmantes, porque os sinistros de trânsito resultam em perdas econômicas, incluindo custos de saúde, perda de produtividade e impacto nas famílias e demonstram a necessidade de ações urgentes para efetivar a segurança no trânsito em todo o mundo. É importante destacar que a maioria das mortes e ferimentos no trânsito são evitáveis.

No cenário brasileiro, o Registro Nacional de Acidentes de Trânsito (RENAEST) é ferramenta indispensável para a análise da segurança viária no Brasil e seus dados possibilitam identificar os principais fatores de risco para sinistros de trânsito no território brasileiro, o que fornece subsídios para o desenvolvimento de ações e medidas preventivas direcionadas, alinhadas com as metas do Plano Nacional de Redução de Mortes e Lesões no Trânsito (PNATRANS).

O PNATRANS surge como um marco na luta por um trânsito mais seguro. Este plano estabeleceu metas para reduzir o número de óbitos e lesões graves no trânsito até 2028 (Lei nº 13.614, 2018). Posteriormente, a meta foi prorrogada no Código de Trânsito Brasileiro para o final de 2030, relativamente ao índice apurado em 2020 (Lei nº 14.599, 2023).

Este estudo tem como objetivo traçar e analisar o panorama da segurança viária na Região Metropolitana de Maceió (RMM), com foco em identificar os principais problemas e propor diretrizes para a redução das externalidades negativas dos sinistros de trânsito. A partir de uma perspectiva sistêmica, o estudo adota os princípios do Visão Zero.

A RMM é a unidade organizacional, geoeconômica, social e cultural, no Estado de Alagoas que abrange uma área de 3.250 km^2 e uma população de 1.194.596 habitantes (IBGE, 2022), formada municípios de: Atalaia (1), Barra de Santo Antônio (2), Barra de São Miguel (3), Coqueiro Seco (4), Maceió (5), Marechal Deodoro (6), Messias (7), Murici (8), Paripueira (9), Pilar (10), Rio Largo (11), Santa Luzia do Norte (12) e Satuba (13) (Figura 1). A região enfrenta desafios significativos na área de segurança viária, apresentando índices preocupantes de sinistros , com elevado número de vítimas fatais e feridos graves.

Figura 01: Localização dos municípios da RMM (III) em relação a Alagoas (II) e ao Brasil (I).
Fonte: Elaborado pelos autores.

2. REVISÃO BIBLIOGRÁFICA

Numa sociedade existem inúmeras complexidades que abrangem o meio urbano e social. Uma destas complexidades é o tráfego, que nele abriga diversas relações que, se mal interligadas, podem ocasionar conflitos problemáticos para o ser urbano. Com isso, a segurança viária torna-se importante componente para permear no tráfego a ideia de que são necessárias ações que minorem a existência de sinistros de trânsito e que favoreçam a proteção de todos os usuários da via, principalmente dos mais vulneráveis - motociclistas, pedestres e ciclistas -, diante de lesões ou fatalidades.

Nessa perspectiva, surgem os Princípios de Sistemas Seguros: 1. Nenhuma morte no trânsito é aceitável; 2. Os seres humanos cometem erros; 3. Os seres humanos são vulneráveis a lesões no trânsito; 4. A responsabilidade é compartilhada por quem projeta, constrói, gerencia, fiscaliza e usa as vias e os veículos e pelos agentes responsáveis pelo atendimento às vítimas; 5. A gestão da segurança no trânsito é integrada e proativa (Fórum Internacional de Transportes da OCDE/ITF, 2015). Esses princípios são reforçados pelo Visão Zero (Vision Zero Network, 2024), metodologia sueca que visa um sistema viário sem mortes em que os usuários da via têm o direito ao erro, mas que essa falha não deve implicar na morte desses.

Com a notável importância da mobilidade para a formação de um indivíduo e para o reconhecimento deste como cidadão – ao vivenciar o espaço público de forma intrínseca –, diversos conflitos passam a fazer parte desta experiência. Os sinistros não são exceções não englobadas ao sistema viário e que o invadem por questões externas, mas sim parte pertencente a esse complexo de conflitos, haja vista que o ser humano, essencialmente, está suscetível aos erros e isso não seria diferente no trânsito. Essas complexidades são atenuadas por uma visão "carrocêntrica" que idealiza o homem como parte componente de uma carcaça metálica automobilística e que o distancia hierarquicamente dos outros usuários da via, propiciando o surgimento de externalidades como desenvolvimento de velocidades excessivas e comportamentos agressivos e autoritários no trânsito (DAMATTA, 2010).

Esses efeitos comportamentais atuam como contribuintes para o acontecimento de sinistros e atenuantes da gravidade desses, entretanto faz-se necessário entender que a responsabilidade não deve ser individualizada ao usuário da via, mas sim compartilhada com todos, assim como abordam os princípios já citados. O Visão Zero enfatiza essa distribuição de atuações e a necessidade de uma equidade no trânsito, que entenda os ônus que a ele pertencem e que encontre formas de torná-los inofensivos aos que usufruem desse. Dessa forma, esses conceitos foram utilizados para nortear o desenvolvimento desse estudo, o que permitiu compreender de forma abrangente a dinâmica dos sinistros.

3. METODOLOGIA

Este estudo utilizou dados do Anuário RENAEST 2023 disponíveis no portal de Indicadores do Departamento Estadual de Trânsito de Alagoas (DETRAN/AL) que apresenta uma análise detalhada dos sinistros de trânsito em Alagoas no ano de 2023. Com base nisso, foram mapeados os sinistros de trânsito e identificados os pontos de enfoque da RMM para este estudo.

Foram identificados 17 pontos principais que tiveram suas dinâmicas aprofundadas em um estudo baseado na análise de cada um dos Boletins de Ocorrência de Acidente de Trânsito (BOATs) registrados pelas instituições que alimentam o RENAEST em Alagoas. Para corroborar com a análise, também foram consultadas publicações em jornais online que registraram sinistros de trânsito próximos aos pontos identificados.

A análise se deu a partir da investigação dos pontos de enfoque para entender as diferentes dinâmicas dos sinistros selecionados. A categorização das informações por tipo de sinistro, impacto e causas principais permitiu uma caracterização do cenário regional e a leitura analítica dos BOATs detalhou os sentidos das vias, a quantidade de vítimas, o número de óbitos e os principais elementos recorrentes nesses registros. Para a discussão, participaram arquitetos(as), urbanistas e engenheiros(as) civis especialistas em segurança viária. Esses profissionais utilizaram os elementos recorrentes nos sinistros, as características das vias e seu conhecimento técnico e empírico para corroborar na discussão da importância da redução dos impactos negativos dos sinistros de trânsito alinhado aos conceitos de princípios de sistemas seguros.

4. ANÁLISE DOS DADOS

Foram identificados na RMM 17 pontos com mais números de ocorrências neste ano. No total, esses pontos somam 142 registros de sinistros, localizados em 3 municípios da Região e em 3 rodovias estaduais (AL 101 Sul, AL 101 Norte e AL 105) e 4 vias municipais (as Avenidas Durval de Góes Monteiro, Fernandes Lima, Governador Afrânio Lages e Menino Marcelo) (Figura 2).
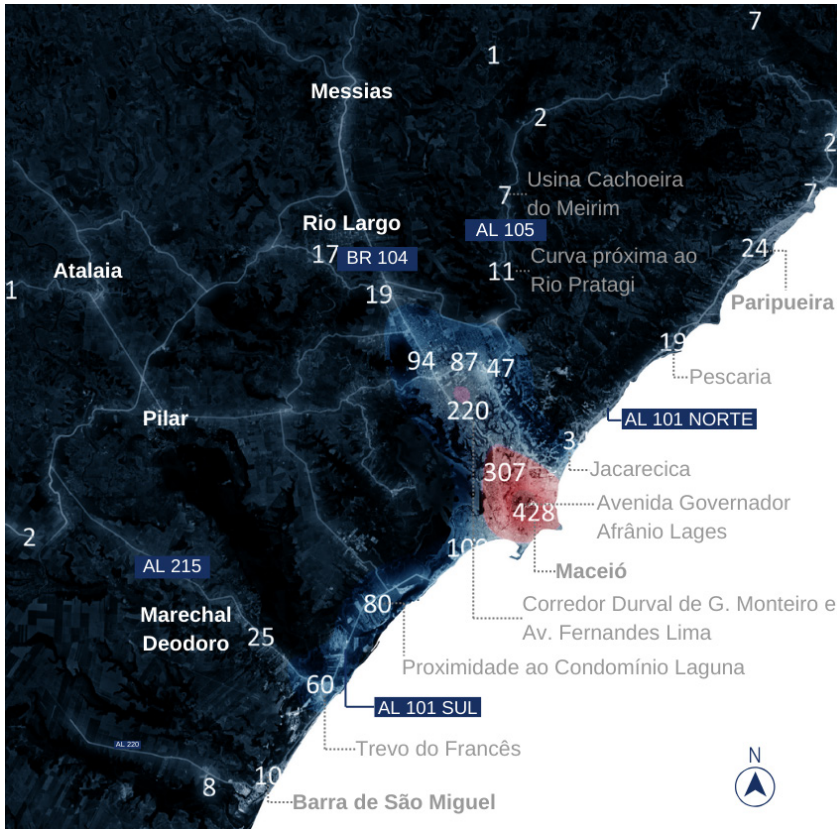
Figura 2: Mapa de calor das ocorrências na RMM com indicação de pontos.
Fonte: Elaborado pelos autores.

As colisões traseira, lateral, transversal e frontal são, nessa ordem, os principais tipos de sinistros analisados, concentrando 72,5% do total. Há também a ocorrência de choque envolvendo objeto estático, e outros como atropelamento de animais e de pedestres e tombamento – sendo esses em menor número.

A análise da distribuição temporal dos sinistros por dia da semana mostra uma tendência no aumento ordenado de ocorrências durante o final de semana (sexta-feira, sábado e domingo). O aumento precede a segunda-feira que representa o dia com mais número de registros do recorte estudado, o qual concentra 22,5% do total.

Foram registradas 321 pessoas envolvidas nos sinistros analisados, mostrando uma média de 2,2 vítimas por ocorrência. A análise do perfil dos envolvidos evidencia que os homens representam a maior parte dessas vítimas (68,2%), enquanto as mulheres representam apenas 17,4%, e 14,3% pessoas não tiverem o sexo identificado. Condutores de veículos representam cerca de 77% das vítimas (sendo 60% condutores de automóveis e 25% motociclistas), somado a 1,5% de pedestres e ciclistas.

Em relação à vulnerabilidade das vítimas, percebe-se que pedestres, ciclistas e motociclistas representam, nessa ordem, os grupos mais vulneráveis dos sinistros. Enquanto 3,9% das vítimas condutores de automóveis sofreram lesões graves ou vieram a óbito, essa proporção aumenta para 40% para pedestres e ciclistas e 16,1% para motociclistas, sendo necessárias ações com enfoque para esses grupos.

Os registros de sinistros apontam como principais causas a desobediência às normas de trânsito, falta de atenção do condutor, não manutenção da distância de segurança e velocidade incompatível – todos resultados da ação humana de forma imprudente. Esse resultado, no entanto, é influenciado por elementos intrínsecos à segurança viária. Além das ações imprudentes dos usuários das vias, foram identificados problemas de infraestrutura viária, como insuficiência de sinalização, baixa visibilidade, e carência de fiscalização de trânsito, principalmente no controle da velocidade de circulação. A Figura 3, como exemplo, mostra trecho da rodovia estadual AL 101 Norte, no município de Paripueira, com conflitos na circulação dos diferentes tipos de usuários da via devido a falta de infraestrutura e ocupação irregular da calçada.

Figura 3: Trecho da rodovia estadual AL 101 Norte, no município de Paripueira.
Fonte: ASCOM - DETRAN-AL, 2023.

4. DISCUSSÃO

De acordo com a Politec-MT, o "fator humano", referente ao comportamento das pessoas no tráfego, é considerado o elemento que mais contribui para a ocorrência de sinistros (CARVALHO, 2019). Neste estudo, 92,2% das ocorrências se agrupam em causas que responsabilizam as próprias vítimas – como desobediência às normas de trânsito, falta de atenção e velocidade incompatível. No entanto, é necessário, com base nos princípios dos sistemas seguros e do Visão Zero, enfatizar a abordagem da responsabilidade coletiva e da construção de um ambiente que favoreça comportamentos seguros e que absorvam os erros humanos.

O sistema de mobilidade urbana é constituído por um conjunto organizado e coordenado de fatores sociais, econômicos e ambientais – para além dos modos de transporte, os serviços e a infraestrutura viária são elementos que devem garantir os deslocamentos de pessoas e cargas no território do município de forma acessível e sustentável (Lei nº 12.587/2012). Nesse sentido, a segurança viária é elemento fundamental para mitigar os danos de sinistros de trânsito e deve englobar ações integradas de setores da saúde, educação, fiscalização e engenharia. Ligado a isso, a metodologia dos Sistemas Seguros defende que os órgãos de trânsito e infraestrutura, sejam eles de qualquer esfera, devem criar sistemas viários que ajudem a perdoar erros dos diferentes usuários, reduzindo o número de falhas que podem resultar em morte ou lesões graves. Dessa forma, observando os casos estudados a partir de uma perspectiva sistêmica da segurança viária, entende-se que os sinistros podem ter ocorrido por diversas razões que vão além da responsabilidade da vítima.

Nos últimos anos, a RMM vem sofrendo uma crise na mobilidade urbana causada principalmente pela subsidência do solo de 5 bairros de Maceió decorrentes da exploração de salgema pela mineradora BRASKEM. Esse acontecimento teve consequência no adensamento populacional de bairros e cidades da RMM, além de perdas de eixos viários importantes para a capital (DOS SANTOS; LIMA; BULHÕES, 2022). Esse contexto é, ainda, agravado pela falta de instrumentos oficiais de planejamento na região, uma vez que Maceió conta com seu Plano Diretor defasado e o Plano de Mobilidade inexistente.

Ao refletir sobre um contexto cultural difundido na região, assim como na maioria das cidades litorâneas da região Nordeste do Brasil também, observa-se no litoral do estado de Alagoas o hábito do consumo de bebidas alcoólicas nas praias como elemento integrante dos momentos de lazer. Constata-se nesse contexto, condutores assumindo o risco de dirigir após o consumo de bebida alcoólica nos retornos das praias nos finais de semana. Neste estudo, fica mais evidente essa perspectiva na rodovia AL 101, seja na região Norte ou Sul, principal via de ligação dos balneários de praia mais procurados nesta região. Esse contexto, associado aos registros encontrados em matérias sobre sinistros e nos boletins de ocorrência, enfatiza a importância de uma ampliação das ações de conscientização e principalmente das ações de fiscalização aos finais de semana.

O crescimento expressivo do número de motocicletas nas vias é outro aspecto socioeconômico que tem consequências diretas nos desafios da segurança viária, seja de modo independente ou alinhado ao consumo de bebidas alcoólicas. Esse aumento é consequência de um processo da introdução da motocicleta no Brasil como um entendimento de melhoria de vida e ascensão financeira (VASCONCELLOS, 2013). Na RMM, de acordo com dados do DETRAN/AL, a frota de motocicletas aumentou em 2.299,8% nos últimos 24 anos, indo de 6.288 para 150.901 veículos desse tipo. Isso representa um considerável aumento das pessoas vulneráveis no trânsito que veem nas motocicletas uma possibilidade de emprego e deslocamento mais veloz.

Além dos motociclistas, os grupos de pedestres e ciclistas – mais vulneráveis no contexto da mobilidade urbana – requerem maior atenção. O cenário das vias públicas que foi identificado neste estudo, com insuficiência de infraestrutura e uso irregular da calçada, por exemplo, é reflexo de um panorama geral que revela a negligência à segurança na circulação desses grupos. De acordo com o pesquisador OLIVEIRA JÚNIOR (2019), as calçadas da cidade de Maceió são carentes de sinalização vertical, faixas de pedestres bem posicionadas, rampas de acessibilidade e apresentam problemas de tipo de pavimento impróprio, buracos e obstruções. Além disso, FACCHINETTI (2023), presidente da Associação Alagoana de Ciclismo, afirmou que, apesar do recente avanço de ciclovias na capital, a atual estrutura cicloviária não é suficiente para garantir a plena circulação de ciclistas no sistema viário da região.

Esses fatores são somados ainda à falta de controle de velocidade regulamentada nas rodovias estaduais e vias municipais da RMM. De acordo com dados do INMETRO (2024), Maceió conta com 2,2 radares de velocidade válidos para cada 100.000 veículos (todos localizados em rodovias federais), sendo a 4ª capital brasileira com o menor número. Em comparação, Brasília, capital federal do Brasil, é a cidade com maior número nessa proporção, totalizando 46,2 radares/100 mil veículos. É importante ressaltar que a velocidade contribui de forma determinante para as ocorrências, e a falta de controle sobre ela pode agravar significativamente as consequências dos sinistros.

Os impactos socioemocionais dos sinistros de trânsito são difíceis de serem mensurados. Lesões oriundas dessas ocorrências podem prejudicar de forma permanente a vida de cidadãos que dependem da sua mobilidade para o trabalho e geração de renda, afetando fortemente a sua qualidade de vida, além do prejuízo psíquico que o luto pela morte no trânsito pode causar em familiares e dependentes. Além disso, há a produção de custos econômicos que impactam a sociedade em geral. Despesas hospitalares, perda de produção, remoção de corpo e veículos e danos patrimoniais são alguns dos componentes que constituem os custos de sinistros de trânsito no Brasil em rodovias e aglomerados urbanos (DE CARVALHO, 2020). A nível de assimilação do cenário geral, o Hospital Geral do Estado – principal hospital de emergência da Região Metropolitana de Maceió – chegou ao número de

5.435 atendimentos de sinistros de trânsito no ano de 2023 –, o que representam de forma sutil os impactos socioeconômicos e psíquicos que os sinistros na RMM podem representar para o Estado.

Este panorama levanta a necessidade de interação em rede entre as diversas instâncias da mobilidade urbana, começando pela não individualização da responsabilidade aos usuários da via, mas ao compartilhamento desta com quem as projeta, regulamenta, fiscaliza e idealiza, também. Especialmente para Maceió e sua região metropolitana, essa reflexão se faz extremamente necessária, dado o atual contexto social, econômico e ambiental da capital.

Dessa forma, as políticas públicas alinhadas aos princípios de Sistemas Seguros, Visão Zero, Plano Global pela Segurança no Trânsito e do próprio PNATRANS devem reger o processo de estruturação de um sistema viário seguro. O planejamento e implantação de calçadas reguladas, faixas de pedestres, iluminação, ciclovias e/ ou ciclofaixas deve ser prioritária nesse processo – estimulando cada vez mais o transporte ativo das pessoas nos municípios da RMM. Também são fundamentais ações de incentivos ao uso de transportes coletivos, como investimentos em transporte público intermunicipal.

É necessário a implantação de métodos de controle e redução de velocidade, principalmente nas áreas onde as cidades cresceram às margens de rodovias, passando a possuir características de vias urbanas com a presença constante de pedestres e acessos a comércios locais e escolas. A OMS indica nestes trechos, por exemplo, que a velocidade seja regulamentada em no máximo 40 km/h, reduzindo em 90% a possibilidade de mortes por atropelamento.

Por fim, é importante ressaltar que o número de sinistros de trânsito é superior ao coletado nos dados analisados, o que é decorrente da inexistência de órgão de trânsito em algumas das cidades da RMM e da limitação do número de equipes capacitadas na coleta dos sinistros na própria capital Maceió, resultando que sinistros ocorridos nas áreas mais afastadas dos centros urbanos não sejam registrados. Assim, é fundamental também avançar no processo de municipalização do trânsito, conforme estabelecido no Código de Trânsito Brasileiro (Lei nº 9.503, 1997) que trata do processo legal, administrativo e técnico, por meio do qual o município assume integralmente a responsabilidade pelo seu trânsito.

4. CONCLUSÃO

O sinistro no trânsito é resultado de diversos fatores que fazem parte do sistema de mobilidade nas cidades. Este estudo teve como objetivo traçar e analisar o panorama da segurança viária na Região Metropolitana de Maceió, e a partir da perspectiva sistêmica dessas ocorrências, propor diretrizes que envolvem os contextos sociais, econômicos e ambientais do recorte.

Fatores humanos contribuem de forma significativa para a ocorrência do sinistro, pois os usuários das vias são e estarão suscetíveis ao erro. No entanto, a responsabilidade pelos sinistros nem sempre deve ser individualizada para o condutor. Este estudo indica que a falta de planejamento e fiscalização, e falhas de engenharia são causas graves e contribuem de forma direta, seja para a ocorrência ou para o agravamento das consequências.

Na perspectiva da RMM, políticas como a municipalização de rodovias com características urbanas, gestão de velocidade e o correto tratamento da infraestrutura da via para o desenvolvimento dessa, promoção de um plano de mobilidade, planejamento de vias inclusivas – não só as formas de se transportar de um lugar ao outro, mas as diversas formas de ser, socialmente, politicamente e economicamente de um ser humano –, fomento à caminhabilidade, dentre outras, são essenciais para a redução da morbimortalidade no trânsito.

Os princípios da Visão Zero devem guiar as políticas e ações do poder público, promovendo uma cultura de segurança viária onde cada vida é valorizada e protegida. Implementar essa metodologia implica em um esforço contínuo de engenharia, educação, fiscalização e políticas públicas integradas para criar um sistema de trânsito mais seguro e sustentável para todos. Ainda, estudos como este podem servir de base para que agentes planejadores do trânsito possam aplicar metodologias para amenizar suas realidades.

4. BIBLIOGRAFIA

ALAGOAS. **Lei complementar nº 50, de 15 de outubro de 2019**. Dispõe sobre o sistema gestor metropolitano da Região Metropolitana de Maceió - RMM e dá outras providências. Maceió, AL. 2019.

BRASIL. **Lei nº 13.614, de 11 de janeiro de 2018.** Cria o Plano Nacional de Redução de Mortes e Lesões no Trânsito (Pnatrans) e acrescenta dispositivo à Lei nº 9.503, de 23 de setembro de 1997 (Código de Trânsito Brasileiro), para dispor sobre regime de metas de redução de índice de mortos no trânsito por grupos de habitantes e de índice de mortos no trânsito por grupos de veículos. Brasília, DF. 2018.

BRASIL. **Lei nº 14.599, de junho de 2023.** Posterga a exigência do exame toxicológico periódico para obtenção e renovação da Carteira Nacional de Habilitação; e altera a Lei nº 9.503, de 23 de setembro de 1997 (Código de Trânsito Brasileiro), a Lei nº 11.442, de 5 de janeiro de 2007, para dispor sobre seguro de cargas, e a Lei nº 11.539, de 8 de novembro de 2007, para dispor sobre a carreira de Analista de Infraestrutura e o cargo isolado de Especialista em Infraestrutura Sênior. Brasília, DF. 2023.

BRASIL. **Lei nº 12.587, de 3 de janeiro de 2012.** Institui as diretrizes da Política Nacional de Mobilidade Urbana. Brasília, DF. 2012.

BRASIL. **Lei nº 9.503, de 23 de setembro de 1997.** Institui o Código de Trânsito Brasileiro. Brasília, DF. 1997.

CARVALHO, Henrique Praeiro. **Fator humano é o que mais contribui para os acidentes de trânsito, alerta Politec.** [Entrevista concedida a] SESP. Mato Grosso. 2019. Disponível em *https://www.sesp.mt.gov.br/-/fator-humano-e-o-que-mais-contribui-para-os-acidentes-de-transito-alerta-politec#:~:text=Nesse%20cen%C3%A1rio%2C%20o%20fator%20humano,Crimes%20de%20Tr%C3%A2nsito%20da%20Politec.* Acesso em 02 de jul. de 2024.

DAMATTA, Roberto. **Fé em Deus e pé na tábua:** ou como e por que o trânsito enlouquece no Brasil. Rio de Janeiro: Rocco. 2010.

DE CARVALHO, Carlos Henrique Ribeiro. **Custos dos acidentes de trânsito no Brasil: estimativa simplificada com base na atualização das pesquisas do IPEA sobre custos de acidentes nos aglomerados urbanos e rodovias.** Texto para Discussão. Instituto de Pesquisa Econômica Aplicada (IPEA). Brasília. 2020.

DETRAN/AL. Anuário Renaest 2023. **Indicadores Detran/AL.** 2024. Disponível em: *http://indicadores.detran.al.gov.br/2024/05/02/renaest-2023/*. Acesso em 05 de junho de 2024.

DOS SANTOS, C. G.; LIMA, G. F.; BULHÕES, J. A. Subsidência do solo e remoções forçadas em Maceió-AL: as disputas pela cidade: Land subsidence and forced removals in Maceió-AL: the disputes over the city. **Brazilian Journal of Development,** [S. l.], v. 8, n. 10, p. 65711–65734, 2022. DOI: 10.34117/bjdv8n10-054. Disponível em: *https://ojs.brazilianjournals.com.br/ojs/index.php/BRJD/article/view/52783*. Acesso em: 25 jun. 2024.

FACCHINETTI, Antônio. Presidente da associação de ciclismo comemora aumento de ciclovias em Maceió, mas avisa: "Não é suficiente". [Entrevista concedida a] **TV Gazeta.** 2023. Disponível em *https://ge.globo.com/al/noticia/2023/04/19/presidente-da-associacao-de-ciclismo-comemora-aumento-de-ciclovias-em-maceio-mas-avisa-nao-e-suficiente.ghtml*. Acesso em 02 de jul. de 2024.

GOVERNO FEDERAL. **Segurança Viária.** Gov.br, 2020. Disponível em: *https://www.gov.br/transportes/pt-br/assuntos/transporte-terrestre/rodovias-federais/seguranca-viaria*. Acesso em: 12 jun. 2024.

INMETRO – **Instituto Nacional de Metrologia, Qualidade e Tecnologia**. Consulta de Instrumentos. Portal de Serviços do INMETRO nos Estados. 2024. Disponível em <*https://servicos.rbmlq.gov.br/Instrumento*. Acesso em 04 de mar. de 2024.

International Transport Forum. **ITF Transport Outlook 2015.** Paris: OECD. 2015. Disponível em: *https://doi.org/10.1787/9789282107782-en*. Acesso em: 12 jun. 2024.

IBGE (INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA). **Censo Brasileiro de 2022.** Rio de Janeiro: IBGE, 2023. Disponível em: *https://www.ibge.gov.br/estatisticas/sociais/trabalho/22827-censo-demografico-2022.html*. Acesso em 28 jun. 2024.

MENDONÇA, M. F. S. DE .; SILVA, A. P. DE S. C.; CASTRO, C. C. L. DE .. **Análise espacial dos acidentes de trânsito urbano atendidos pelo Serviço de Atendimento Móvel de Urgência: um recorte no espaço e no tempo.** Revista Brasileira de Epidemiologia, v. 20, n. 4, p. 727–741, out. 2017. Disponível em: *https://doi.org/10.1590/1980-5497201700040014*. Acesso em: 4 jun. 2024.

OLIVEIRA JÚNIOR, Willian Félix de. Em Maceió (AL), calçadas são caminhos hostis ao pedestre. [Entrevista concedida a] Regina Rocha. **Mobilize Brasil.** 2019. Disponível em *https://www.mobilize.org.br/noticias/11738/em-maceio-al-calcadas-sao-caminhos-hostis-ao-pedestre.html*. Acesso em 02 de jul. de 2024.

OMS (ORGANIZAÇÃO MUNDIAL DA SAÚDE). **Global status report on road safety 2018.** Genebra, Suíça. 2018. Disponível em: *https://www.who.int/publications/i/item/9789241565684*. Acesso em: 6 jun. 2024.

PEREIRA, Mauricio Gomes. A seção de discussão de um artigo científico. **Epidemiol. Serv. Saúde**, Brasília , v. 22, n. 3, p. 537-538, set. 2013 . Disponível em <*http://scielo.iec.gov.br/scielo.php?script=sci_arttext&pid=S1679-49742013000300020&lng=pt&nrm=iso*>. acessos em 13 jun. 2024. *http://dx.doi.org/10.5123/S1679-49742013000300020*.

PINSKY, Ilana; FILHO, Roberto Victor Pavarino. **A apologia do consumo de bebidas alcoólicas e da velocidade no trânsito no Brasil:** considerações sobre a propaganda de dois problemas de saúde pública. Revista de Psiquiatria do Rio Grande do Sul, v. 29, n. 1, p. 110-118, jan. 2007. Disponível em: *https://doi.org/10.1590/S0101-81082007000100019*. Acesso em: 4 abr. 2024.

VASCONCELOS, Eduardo Alcântara de. **Risco no trânsito, omissão e calamidade: impactos do incentivo à motocicleta no Brasil.** São Paulo: Editora do Autor, 2013.

VISION ZERO NETWORK. **What is Vision Zero?.** Estados Unidos: Vision Zero Network, 2024. Disponível em: *https://visionzeronetwork.org/about/what-is-vision-zero/*. Acesso em: 9 jul. 2024.

WORLD HEALTH ORGANIZATION. **Managing Speed.** 2017, Geneva: World Health Organization. Disponível em: *https://www.who.int/publications/i/item/managing-speed*. Acesso em: 13 jul. 2024.

LO3

ARCHITECTURE AND HEALTH

CHAIR Catherine Schneider

The preamble to WHO's constitution provides a definition of health: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

To meet this objective, we need an architecture that takes into account the physical, mental and social needs of human beings.

What might these varied, complementary and compatible criteria be? What transdisciplinary collaborations would be relevant? Which disciplines should be involved? What forms of action?

How can we foster harmonious social ties? Within families, between families?

How can the senses be taken into account to promote physical well-being?

- Sound and auditory well-being: quantitative and qualitative, inside the home and outside, with windows open and closed.
- Olfactory well-being inside and outside homes, without chemical or synthetic fragrances
- Tactile, haptic and ergonomic well-being: materials, shapes, layouts
- Visual well-being: light, lighting, proportions, volumes, colors

What criteria are needed to promote mental well-being? What are the needs and the means to meet them: places to rest, isolate, recharge, share, communicate...

This "health" home project is aimed at students and professionals from a wide range of disciplines: perfume schools, dancers, physiotherapists, psychologists, composers, acousticians, designers, visual artists, decorators, landscapers, gardeners, nurserymen, veterinarians, engineers, project managers...

For testimonials of actions completed or in progress, upcoming projects, studies, surveys, etc.

LO3

REFLECTION OF MENTAL HEALTH ON THE DIFFERENT AMBIANCES OF LIVING SPACES

REFLEXÃO DA SAÚDE MENTAL NOS DIFERENTES AMBIENTES DOS ESPAÇOS DE VIDA

Emna Ghanouchi
PhD student
University of Catrthage, ENAU, LaRPA, ERA, Tunis
Egm.architecte@gmail.com

Hind Karoui
Architect, Lecturer in Architecture
University of Catrthage, ENAU, LaRPA, ERA, Tunis
Hind.karoui@enau.ucar.tn

ABSTRACT

Atmospheres are increasingly evoked by various fields of research related to mental health. In a constantly changing world, even if the correlation between environmental psychology and social psychology is now well established, the mechanisms that link them are still the subject of numerous empirical and academic research. This contribution proposes to study daily practices and habits in the living spaces of ten Tunisian interiors and to highlight their importance in strengthening the interconnection that exists between home and its inhabitant. From this relationship, emerge a unique and particular atmosphere, resulting from the assembly of sensory criteria and other human needs among them. During visits of investigation, there was observation and oral testimonies of individuals in action in their homes. The analysis of this relationship by interpreting the perceived and felt impact of one on the other concludes with the behavioral and psychological translation of the living space on mental health.

KEYWORDS: atmosphere. living spaces. Habitus. senses. perception. mental health.

RESUMO

As atmosferas são cada vez mais evocadas por diversos campos de pesquisa relacionados à saúde mental. Num mundo em constante mudança, mesmo que a correlação entre a psicologia ambiental e a psicologia social esteja agora bem estabelecida, os mecanismos que as ligam ainda são objecto de numerosas investigações empíricas e académicas. Esta contribuição propõe estudar práticas e hábitos diários nos espaços de convivência de dez interiores tunisinos e destacar a sua importância no fortalecimento da interligação que existe entre a casa e o seu habitante. Desta relação emerge uma atmosfera única e particular, resultante do conjunto de critérios sensoriais e de outras necessidades humanas entre eles. Durante as visitas de investigação, houve observação e depoimentos orais de indivíduos em ação em suas residências. A análise desta relação através da interpretação do impacto percebido e sentido de um sobre o outro conclui com a tradução comportamental e psicológica do espaço habitacional na saúde mental.

PALAVRAS-CHAVE: atmosfera. espaços de vida. Hábito. sentidos. percepção. saúde mental.

1. INTRODUCTION

Recent years have raised several questions about the relationship between the inhabitant and their habitat. These questions reflect a growing awareness of the importance of the built environment in quality of life and overall well-being. Note that social, technological, environmental and economic developments have been the main catalysts for the transformations and changes undergone by homes over time in response to the changing needs of individuals and communities. Far from the modern architectural concept of the house as a "[...] machine of living" (Le Corbusier, 1923) where, during architectural design, functionality and aesthetics took precedence

over the cognitive and emotional needs of individuals, mental health is today brought to the top of the criteria of residential design. This interest has been accentuated by significant events whose impact directly affects the well-being and mental health of individuals. The COVID-19 pandemic is one of the recent and recurring examples which has undeniably had a considerable impact on living spaces and inhabited interiors. Indeed, "[...] the mandatory stay of COVID-19 is a powerful reminder to change the way people live, work, and interact. It also revealed the impact of housing conditions on their physical and mental health" (D'Alessandro et al, 2020). The impact of the 2020 and 2021 confinement on living spaces and mental health has effectively called into question the entire relationship between housing and its inhabitant as well as the needs now taken into consideration in the design of housing. Indeed, Millán-Jiménez et al. (2021) assert that in addition to the harmful effects on physical and mental health, periods of confinement have changed the paradigm of people's relationship with their home by becoming aware of its limits. This important and traumatic period marked a turning point in the relationship between housing and residents, once again redefining the notion of "home". In order to offer the best in quality housing and with the aim of reconciling individuals with their living spaces, it is inevitable to better understand this complex relationship in order to make it as optimal as possible.

1.1 Birth of an interdependent relationship between habitat – inhabitant

It is essential to note that the need to protect oneself from natural elements and animal attacks gave rise to the birth of "primitive habitat" as a refuge by prehistoric man. Although "spontaneously designed" for an innate need for security and protection, Shepard (1978) provides an enriching perspective on how prehistoric habitats were more than just shelter. It also highlights their role in creating a spiritual and symbolic connection with nature, while meeting the practical needs of early humans. Although existing, the perception of the influence of personal or emotional feelings on space was at that time still elusive and imperceptible by Man. Shepard (1978) states that human habitat is more than just shelter. It is "[...] a space where body and mind meet, where physical refuge mixes with the symbolic and spiritual dimensions of existence" (Shepard, 1978). Indeed, the emotional dimension between space and humans has been an integral part of the human experience since Antiquity. However, the importance given to this dimension has varied throughout history and across cultures. It was the rapid urbanization and industrialization of the 20th century that brought about the most significant changes in people's living environments. These transformations have raised questions about the impacts of the built environment on human behavior, well-being and mental health. Following the commitment of pioneering researchers taken aback by growing social concerns regarding the impact of the environment on human well-being and the development of interdisciplinary research aimed at understanding these interactions, environmental psychology has gradually established itself as a distinct and influential field, contributing to our understanding of the complex relationships between individuals and their physical environments, whether natural, built or social. Lewin (1936) was one of the first to emphasize the importance of the

contextual environment in understanding human behavior. An individual's life space at a given moment includes not only what is present in the environment and what he sees and hears, but also his internal state. "[...] A person's needs, interests, and goals create a field of forces that determine the direction and intensity of behavior" (Lewin, 1936).

1.2 The habitus: a creator of atmosphere

The emergence of the concept of ambiance in the context of built spaces and their impact on individuals has emanated from several research studies on architecture, urban planning, environmental psychology as well as other social sciences. The convergence of these diverse disciplines, each bringing unique perspectives on how spaces can influence human experiences, has led over time to the identification of this concept considered the genesis of primitive habitat as a stranger thing. The study of spatial ambiance has then evolved throughout history, constantly reflecting the concerns, knowledge and technologies of each era.

Ambiance as an emerging concept was first explored in depth for the first time in a phenomenological and poetic framework by, among others, Bachelard (1958). He was also one of the first to invite individuals to see the spaces they inhabit, carrying emotions and memories, not only as functional environments, but as places deeply connected to our psyche and our imagination. As a result, he exposed how "[...] interior spaces influence human psychology and introduced ideas about how places and ambiances affect feelings and thoughts" (Bachelard, 1958). The way in which individuals interact with their habitat generates unconsciously repetitive behaviors and a set of lasting and transferable dispositions, incorporated into individuals through their life experiences, particularly during their socialization. These dispositions influence the way individuals perceive the world, think, feel and act in lasting, transportable and unconscious ways on their environment. Bourdieu (1980) studied at length the formation and reproduction of this type of social and individual behavior to which he associated the term habitus. He introduces this concept by qualifying it as "[...] an immanent law, deposited in each of the members of a group by the analogous experiences they have undergone and which guides the practices of all the members of this group in the same way, without this regulation is in no way the product of obedience to consciously established rules" (Bourdieu, 1980). In addition to reflecting social conditions and norms, this concept automatically inserts into each individual a set of thoughts and behaviors that directly and indirectly impact individual practices and habits. This highlights the way in which the environment and individual characteristics influence each other, going so far as to transform the perception of the place of life as well as the way of living within this space. Lefebvre (1974) for his part, analyzed how living spaces are socially constructed and influence our daily experiences and interactions. His work has made a profound contribution to understanding the importance of designing urban spaces that meet not only the functional needs, but also the sensory and social needs of residents. According to him, spaces are created, used, and lived, and can be transformed to improve the quality of life of individuals and communities. Lefebvre (1974) states that the perception of

space is determined by sensory criteria, which influence not only the way in which space is experienced but also the way in which it is produced and used, emphasizing the importance of sensory criteria in the creation of atmospheres.

After this immersion in the subject, hypotheses posed by this study are to see how the atmosphere influences mental health and how habits can play an important role in this inter-influence, while seeking to know if the residential area plays a role in this relationship or not

2. METHODS AND MATERIAL
2.1 Participants and their living spaces

The selection of participants in the in-situ survey was made in a controlled manner with volunteers who met the study selection criteria. Participation was voluntary with agreement to keep identities anonymous after publication of results. It was carried out with ordinary people living in two different areas of the community of La Marsa, in the northern suburbs of Tunis, in Tunisia. In total, 10 people participated in the survey whose personal data are grouped in table 1 below:

1 (owner -5 years)	Sex: F & Age : 45	Villa floor (2L + 3) Located in 1,5km from city center (1st area)
2 (tenant -5 years)	Sex: F & Age : 47	G+1 Duplex (L + 3) Located in 700m from city center (1st area)
3 (owner -5 years)	Sex: F & Age : 34	Ground Apartment (L +3) Located in 6,5km from city center (2nd area)
4 (owner -5 years)	Sex: F & Age : 33	Villa Floor (L +3) Located in 700m from city center (1st area)
5 (owner +5 years)	Sex: F & Age : 55	Ground House (2L +3) Located in 8,5km from city center (2nd area)
6 (owner +5 years)	Sex: M & Age : 67	Villa floor (L + 3) Located in 4,1km from city center (2nd area)
7 (owner +5 years)	Sex: M & Age : 65	G+1 Duplex (L+4) Located in 5Km from city center (2nd area)
8 (owner +5 years)	Sex: F & Age : 66	G+1 Independent house (2L+5) Located in 8,5Km from city center (2nd area)
9 (owner -5 years)	Sex: F & Age : 56	G+1 Independent house (2L+ 3) Located in 850m from city center (1st area)
10 (owner +5years)	Sex : F & Age : 38	First-floor Apartment (L+2) Located in 2 Km from city center (2nd area)

Table 1. Participants data table.
Source : Author (2024)

40% of participants are between 33 and 49 years old and 60% between 49 and 66 years old. 80% of respondents are female and only 20% are male. According to the neighborhood of occupation, 40% of the people questioned live within a radius of 1.5km from the city center of Marsa, refers to the municipality of Marsa (1st area) while 60% live in neighborhoods with radii ranging from 1.5km km 8.5 km from La Marsa city center (2nd area). We consider the 1st area to be the most affluent neighborhood in La Marsa. The 2nd one consists of a group of more popular and disadvantaged neighborhoods (See Figure 1):

Legend:

The location of the municipality of La Marsa

1st area (most affluent neighborhood in La Marsa)

2nd area (popular and disadvantaged neighborhoods)

Figure 1. situation of the two survey areas of the commune of la marsa.
Source : view from google earth, modified by the author (2024)

Among those surveyed, only 10% live in an apartment, 20% live in two-levels duplexes, 40% occupy villa floors, 20% live in two-levels houses and only 10% live in a ground-floor house. 50% of participants have lived in their current homes for 5 years or more while the remaining 50% have occupied their homes for less than 5 years (See figure 2).
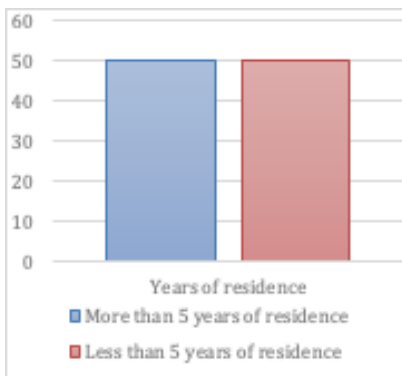
Figure 2. Number of years of life in the habitat.
Source : Author (2024)
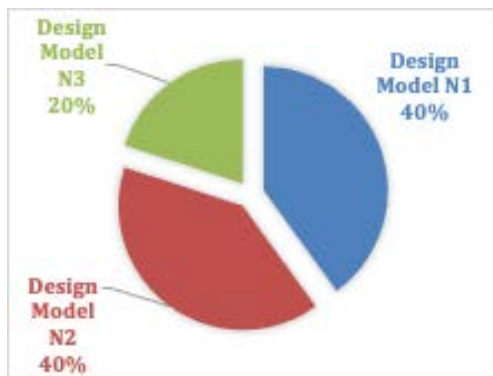
Figure 3. percentage of housing models studied.
Source: Author (2024)

Nearly a quarter (40%) live in a house with two common living spaces (living room + lounge) according to architectural model 1 (see figure 3) while the remaining three quarters (60%) correspond to architectural model 2 (40%) and 3 (20%) of Figure 3 (See Figure 4). Half of the 10 houses benefit from a direct connection with exploited outdoor or green spaces while the other half is without gardens or with unused gardens (See figure 4). All these details therefore indicate that all respondents answered the survey based on their personal experience.

Figure 4. The three housing design models (Model 1 + Model 2 + Model 3).
Source: Author (2024)

2.2 Survey methods

The surveys were all carried out in situ, in the living spaces (indoor and outdoor) of the participants, following a rhythm of several visits made between 7 a.m. and 9 p.m. The survey methods followed are inspired by those of Audas (2010), although consistent with the usual research methods carried out by predecessors and investigators of environmental psychology (Moles & Rohmer, 1972), were adapted to the needs of the article and had the aim of objective of guiding the in-situ investigation which took place in the living spaces of the interviewees. There was a random (no precise order) observation of places and individuals in their usual living environment and taking note of their habits as well as their interactions with all the details that make up their places of residence. life, the survey of living spaces and the taking of photos, the monitoring of the individual in action in his habitat during a commented tour and taking notes on the drawn map of the important points where the most important actions take place (in addition to the remarks, the specificities of the spaces, etc.), the semi-structured interview and the reactivated interview where the interviewee has free rein to speak, and finally the drawing up of the different mental maps. A questionnaire was also sent to participants via the internet and responses were received in the form of voice or written messages.

2.3 Materials

In the field, only a notebook, a pencil, a pen, a camera and a voice recorder were needed. The notebook was used to make a quick manual survey of the locations, to make a few quick diagrams, to note the various remarks referenced as well as to note the most important points during the testimonies. The voice recorder was useful for

memorizing the semi-structured interviews while the camera made it possible to take pictures of all the rooms and all the interesting details mentioned several times by the participants in their living spaces.

3. RESULTS
3.1 A positive response to sensory criteria

Contacting the premises automatically made it possible to assess the degree of presence or absence of sensory factors in each room before anything else. Subsequently, thanks to the commented journey during which there was monitoring of the individual in action in his own space, we notice a strong interaction on the part of the inhabitant with the spaces according to these factors. Later, after one or more interviews, the individuals confirmed to me that indeed their presence in certain rooms compared to others is instinctively guided by the different sensory stimuli which animate the spaces (see table 2 below):

Favourite space / Sensory factors	1	2	3	4	5	6	7	8	9	10
	The big Living room	None	Garden	Living-dining room	The big Living room	None	Living room	The big living room	The patio	The living room
GOOD LIGHT	+	-	+	+	+	-	-	+	+	+
GOOD SMELL	+	-	+	+	-	-	+	+	+	+
NO STREET NOISES	+	-	+	+	+	-	+	+	+	+
GOOD TEMPERATURE	+	-	+	+	+	-	+	+	+	-
GOOD VENTILATION	+	+	+	+	+	+	+	+	+	+

Table 2. Appreciation of sensory factors in residents' favorite spaces.
Souce: Author (2024)

A real desire is noted on the part of the participants to want to make the most of sensory factors wherever they move in their homes and tend to stay in spaces that respond as positively as possible to sensory factors. These spaces are generally their favorite of all living spaces precisely for these reasons. On a slightly larger scale, this appreciation of the rooms influences their appreciation in relation to the entire home. The more sensory factors are present in a positive way in the house, the more positive the inhabitant-habitat relationship is.

3.2 Establishing a routine within a home, a sign of appreciation

Through hours of observation and commentary, it is remarkable to see that certain actions are repeated several times during the day. These actions repeated from day to day are ultimately considered habits. What is also notable is that these habits occur every day, almost at the same time and in the same living spaces. During the

semi-structured interviews, I noted that the establishment of these "routines" took place in parallel with the progressive familiarization of the individuals concerned with their living spaces since they began living there. Monitoring these routines according to the degree of exploitation of living spaces compared to others leads us to say that there are spaces more visited and used than others, which we will call "routine spaces". We also note that the duration of their use depends on the degree of appreciation of these spaces by the inhabitants.

The best example, almost common to all those interviewed, remains the kitchen where breakfast is taken every morning. This habit common to several Tunisian families is so widespread and even sacred among some, that it constitutes a fine example of habitus. Moreover, this habit, which appears simple on the surface, is deeply charged with symbolic connotations, many of which are common among almost all participants. Thus, the kitchen, whose function is, basically, to be the place where we cook and eat, acquires a more sensitive and more emotional dimensional value. It becomes a place of emotion, tenderness and nostalgia which acts positively on the minds and psychology of the inhabitants (see figure 5).

Figure 5. Mental map of one of the residents enjoying being in the kitchen.
Source: Author (2024)

On the other hand, we have 20% of individuals who have not managed to develop any affection with their living spaces, at least no or almost no particular appreciation. After observation, it was found that their routines were very unstructured and disorganized or even absent. These people spend their days "running away" from the spaces that they are just "forced" to use, even to the point of very often fleeing the home altogether and preferring to spend the day outside rather than inside their homes. During the semi-structured interview, these same people admitted "not feeling good and comfortable in their homes". They are unable to stabilize there and establish a certain routine because they have almost no attachment to it. These same people also said they considered their current homes as temporarily utilitarian, the time to go and

live in another house that resembles them and brings them comfort and well-being.

3.3 Atmosphere and mental health: a simultaneous reflection

The questionnaire as well as the various interviews and semi-structured speeches carried out offered participants the freedom to speak about their personal experiences and to provide detailed accounts of their relationships with the homes they have occupied since their childhood. The narratives were naturally very emotional and affective and associated the different spaces approached with a set of feelings, memories and events experienced. What has been detected is that each individual moves from one home to another taking with them an acquired baggage of personal preferences, tastes, precious memories but also new expectations, since the very first house of childhood. This whole, once installed and assembled, added to the sensory criteria already present as well as the spatial design of the place, will automatically return the image and the sensation of a unique and singular atmosphere, charged with particular emotions and feelings. The photographs taken during the surveys were used to capture the "image" of the different atmospheres. At the same time, the various testimonies made it possible to identify the emotional states of the inhabitants which corresponded with the feelings which emanated from the atmospheres of their living spaces. After studying and analyzing the 10 research cases, it was found that 80% of the cases continually interact and make constant efforts to improve their living spaces. These same people say they basically like the houses they occupy (see figures 6 and 8). The living spaces of these people are alive, dynamic and animated and more or less organized too. The relationship between these inhabitants and their habitats constantly evolves and develops with the aim of optimization and improvement (Figure 8).

Figure 6. photo of the living room of a well-used habitat. Source: Author (2024)
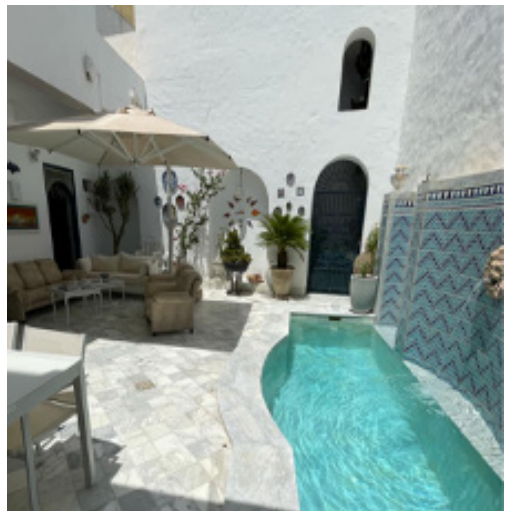
Figure 7. Photo of the patio of the same habitation. Source : Author (2024)

Figure 8. word cloud of terms used by 80% of residents for their home.
Source: Author (2024)

Figure 9. word cloud of terms used by 20% of residents for their home.
Source: Author (2024)

Figure 10. interior of a person who don't like her house
Source: Author (2024)
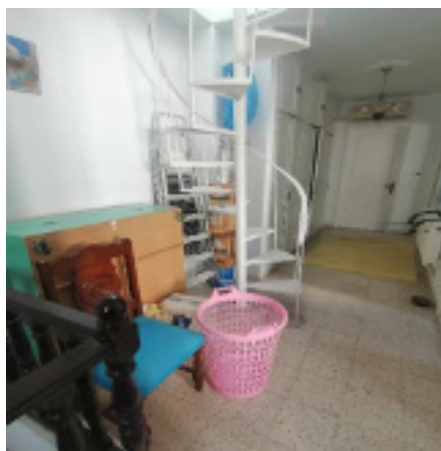
Figure 10. interior of a person who don't like her house
Source: Author (2024)

The remaining 20% say they have a conflicting relationship with their inhabited interiors. The terms they used to describe their homes were negative and sometimes even emotionally violent (see figure 9). These same individuals said they felt no sense of attachment and belonging to their homes and therefore did not want to make any effort to rectify or improve their living spaces). Their two interiors (see figures 10 and 11) are as if frozen, cold, lifeless and disorganized (their belongings are scattered or even remained in boxes or bags since their moves). We deduce their feelings of rejection and dissatisfaction with their current housing considered "temporary", in the hope of moving to better housing.

3.4 The exterior ambiance does not necessarily define the quality of the interior one

While, despite its good location, one case out of the four (25%) interviewed said having a bad relationship with home in the 1st area, only one case out of the 6 residents (16,67%) of the 2nd area, more popular zone, said not liking his living space.

4. DISCUSSION ET CONCLUSION
4.1 Atmosphere and mental health: a simultaneously evolving interdependence

Spatial assessment is for the majority of cases guided by a satisfactory presence of sensory criteria as well as other essential components of the inhabited space such as functional needs (ergonomics and optimal functionality for better use of space which avoids the individual to feel frustrated and upset) and psychological needs (A habitat designed in response to the personal requests of its inhabitant (decorative style, architectural style, etc.) but also in accordance with spatial and proportional requirements is more likely to be appreciated and well exploited). The ambiance of a space refers to the general atmosphere created by the combination of all the sensory criteria present but also all the functional and psychological elements which characterize the living space. It therefore influences the emotions and behaviors of individuals to the point of conditioning their appreciation of their living spaces. This double influence then results in the following deduction: The more positive the response to these criteria and these needs, the more positive the impact of the general atmosphere on psychological well-being. At the same time, the more satisfied and fulfilled the individual is in their living space, the more pleasant, warm and friendly the general atmosphere of the home is.

It should also be noted that the appreciation of the interior atmosphere does not necessarily depend on the quality of the exterior urban atmosphere.

4.2 An established routine is a sign of a good relationship with the living space

When the individual is fulfilled and satisfied by their living space, a life routine is spontaneously established through the repetition of several daily, monthly or annual behaviors and habits. Routine and repeated habits in the home are thus signs of stability, fulfillment and satisfaction of the individual with their living space which in turn encourages and pushes them to be more productive, active and enthusiastic. In the case where, on the contrary, no routine is followed and behaviors are unstable, individuals confirm that they feel no affection and no connection with their spaces. This in no way gives them the desire to improve or develop the environment around them, which in turn plunges them into a vicious circle of sedentary lifestyle and inactivity leading to depression. We deduce that when we feel affection and appreciation for our living space, despite all its shortcomings, we seek to create connections and positive links (relationship) with it in the form of actions and repetitive habits (routine).

To conclude, well-being in a home is the result of a combination of physical, psychological and social factors which interact to create a harmonious environment favorable to the daily life of the occupants. The design and management of these factors play a crucial role in ensuring a healthy and pleasant environment.

5. BIBLIOGRAPHY

Le Corbusier (1923). Towards a New Architecture. John Rodker.

Lewin, K (1936). Principles of Topological Psychology. McGraw-Hill.

Bachelard, G (1958). Poetics of Space. University Press of France.

Bourdieu, P (1980). The Logic of Practice. Stanford University Press.

Lefebvre, H (1981). The Production of Space. Blackwell.

Moles, A & Rohmer, E (1972). Psychosociology of space. Casterman.

Shepard, P (1978). The Subtle Body: An Essay on the Relationship between Nature and the Human Body. Washington DC: Island Press, 219. *https://www.researchgate.net/publication/323067111_Encounters_with_Nature_Essays_by_Paul_Shepard_edited_by_Florence_R_Shepard_with_an_Introduction_by_David_Petersen_Washington_DC_Island_Press_1999_Reviewed_by_Eric_Katz*

Audas, N (2010). The Affective Dimension of Individuals: Relationship to Place: Comparative Survey Techniques. Natures Sciences Sociétés, 195-201. *https://cressound.grenoble.archi.fr/fichier_pdf/librairie_ambiance/Audas_2010_dimension_affective*

D'alessandro D & Gola M & Appolloni L & Dettori M & Fara G. M & Rebecchi A & Settimo G & Capolongo S. COVID-19 and living space challenge. Well-being and public health recommendations for a healthy, safe, and sustainable housing. Acta Biomed. *https:// https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8023091/#*

Millán-Jiménez, A & Herrera-Limones, R & López-Escamilla, Á.& Torres-García (2021). Lockdown, Comfort, and Health: An Analysis of the Real Impact of Lockdown on University Students During the COVID-19 Pandemic, MDPI. *https://www.mdpi.com/1660-4601/18/11/5572*

L03

VIRTUAL ENVIRONMENTS AND MENTAL HEALTH: DATA-BASED DECISIONS FOR BETTER COMFORT AND WELL-BEING

AMBIENTES VIRTUAIS E SAÚDE MENTAL: DECISÕES BASEADAS EM DADOS PARA MELHOR CONFORTO E BEM-ESTAR

Sana Layeb
Architect, Ph.D. in architecture, Assistant Professor
ISTEUB, ENAU, LR21ES20, LaRPAA, Tunis, Tunisia
sana.layeb@isteub.ucar.tn

Safa Elkefi
PhD, Engineering/Industrial Management
School of Nursing Columbia University, New York USA
se2649@cumc.columbia.edu

ABSTRACT

Our study integrates medical informatics with the architecture field. It results in the development of a virtual reality-based solution that aims to support autistic children. Our multidisciplinary team, comprising architects, engineers, and healthcare professionals, is developing an AI-based IT solution tailored to the local context. The project involves identifying real needs and designing and evaluating a virtual reality (VR) tool to help autistic children recognize and manage their emotions in various spatial situations. VR offers interactive, immersive environments that can be customized to each child's sensory needs, providing a safe space to practice social and emotional skills. This "health virtual environment" also serves as a training and support tool for professionals and parents, enhancing intervention practices and fostering better understanding and inclusion of autism. Our research aims to create more inclusive spaces and advance technological solutions, promoting neurological diversity and improving mental healthcare.

KEYWORDS: mental health. well-being. Informatic solutions. virtual environments. daily-life situations

RESUMO

Este trabalho explora a integração da arquitetura e da ciência de dados para criar ambientes de apoio para crianças autistas. Nossa equipe multidisciplinar, composta por arquitetos, engenheiros e profissionais de saúde, está desenvolvendo uma solução de TI baseada em IA adaptada ao contexto local. O projeto envolve a identificação de necessidades reais, o design e a avaliação de uma ferramenta de realidade virtual (RV) para ajudar crianças autistas a reconhecer e gerenciar suas emoções em diversas situações espaciais. A RV oferece ambientes interativos e imersivos que podem ser personalizados de acordo com as necessidades sensoriais de cada criança, proporcionando um espaço seguro para praticar habilidades sociais e emocionais. Este "ambiente virtual de saúde" também serve como ferramenta de treinamento e apoio para profissionais e pais, aprimorando práticas de intervenção e promovendo uma melhor compreensão e inclusão do autismo. Nossa pesquisa visa criar espaços mais inclusivos e avançar soluções tecnológicas, promovendo a diversidade neurológica e melhorando o cuidado da saúde mental.

PALAVRAS-CHAVE: saúde mental. bem-estar. tecnologias informáticas. ambientes virtuais situações do dia a dia

1. INTRODUCTION

Interacting with the environment contributes to the development of our emotions and behaviors. The new nature of hybrid process designs has changed the way we create ambiance.

It's worth noting that when architects, healthcare professionals and experts in informatics join forces they have the opportunity to transform how spaces are designed to meet the needs of vulnerable populations (Layeb & El Kefi, 2023). In the field of architecture, it is essential to take into account the mental and social needs of all individuals, including their varying sensory needs. Autism, being a condition, results in significant differences in how people perceive and engage with their environment, posing notable challenges in daily life (Layeb, 2022). Despite advancements in understanding autism, there is still a lot of work needed to enhance the well-being and social inclusion of those affected.

To tackle this issue researchers in architecture and healthcare professionals are investigating how information and communication technologies can enhance care for individuals with autism (Ghosh et al., 2021; Sabzevari et al., 2023 ; Jaliaawala et al., 2020). These technologies show the potential to offer assistance customized to each individual's specific needs and sensory requirements (Asan et al., 2022).

2. CONTEXT
In this work, our multidisciplinary team of architects, engineers and health providers is focusing on developing a virtual-reality-based application adapted to the local context to help autistic children recognize and manage their emotions in different spatial situations. It helps them interact safely with their external environments.

We started with a user-needs study involving different stakeholders. Based on the results of this step, we then designed an application that uses virtual reality to help the autist child identify risks of safety in the environment where they are.

We hope, by this, to offer autistic people a safe and controlled space in which they can practice and improve their social, communicative and emotional skills.

3. METHODOLOGY
As we explain in Figure 1, the methodology adopted for this project includes several stages.

3.1 Questionnaire design and needs analysis
In this first step, we begin by understanding the specific needs of children with ASD and their families. To do this, our team has prepared a questionnaire adapted to the specificities of our society, taking into account linguistic particularities.

We collected responses from various stakeholders, including healthcare professionals, specialist educators and parents of autistic children.

3.2 Data analysis

The responses are then analyzed and correlated in the second step.
The aim of this step is to draw up a comprehensive inventory of the needs of children with autism, focusing on areas where technological intervention could have the greatest impact.

3.3 Designing and developing a virtual environment

In this section, our team of engineers, developers and AI specialists will work on the design and development of an IT solution (Hadhri et al., 2024). The main objective is to create a user-friendly interface that can be used by and for autistic children, their families and healthcare staff. It will be designed to recognize children's emotional states and provide personalized interventions based on their sensory and emotional needs (Layeb & ElKefi, 2024).

3.4 Feasibility study

In the final phase, we will evaluate the efficiency and acceptability of our IT solution. This evaluation will enable us to make any necessary adjustments and improvements.
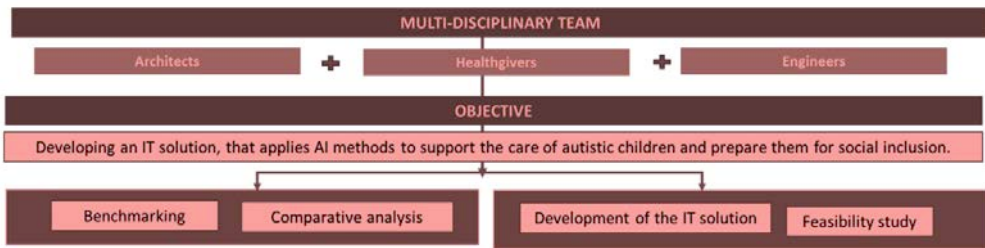
Figure1. Methodology construction.
Source : Authors

4. RESULTS

Capturing sensory experience in its multiple dimensions allows us to create new virtual experiences integrating various sensory modalities, thanks to the integration of innovative approaches. Virtual reality applications in the field of autism offer multiple advantages, including the possibility of creating interactive and immersive environments that can be tailored to the specific needs of each child. Virtual reality makes it possible to create a flexible, incremental and scalable environment with several sensory experiences by controlling lighting, proportions, materials, volumes, colors, and sound, ... as in real-life situations and more.

This "health virtual environment" provides a training and support tool for healthcare professionals and parents. These technologies can help to improve intervention practices and foster a better understanding and inclusion of autism within society.

Our informatics solution can take several forms. We propose developing an application based on advanced artificial intelligence (AI) techniques coupled with virtual reality abilities to help autistic children identify and manage potential dangers in their environment. This solution uses AI and machine learning (ML) algorithms, as well as object detection in real- time or through augmented reality (AR). This application is designed to be adapted to every learning experience, providing a personalized and interactive experience that adjusts to the rhythm and learning behavior of each child.

The main concept involves detecting potentially unsafe objects in the child's immediate environment. These detected objects generate AR alerts, which can be simulated in a variety of formats: suitable icons or messages, attractive cartoon characters or even safety instructions, as illustrated in Figure 2.
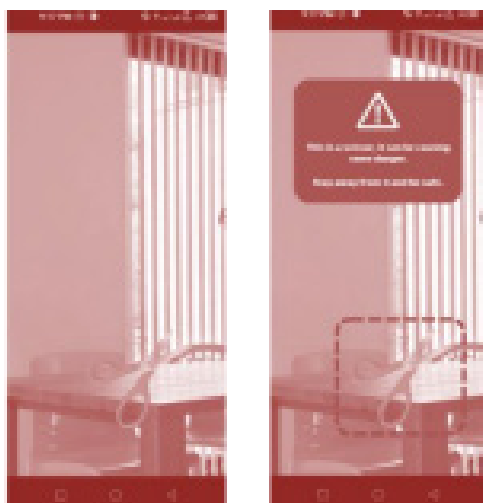
Figure2. Sscreenshot of the IT Solution.
Source: Ben Slimen (2023)

We also aim to offer solutions based on virtual reality (VR). We aim to create virtual environments based on digital modeling to simulate real-life scenarios, such as crossing a street or taking an urban or architectural walk. These virtual environments can also be populated with virtual characters who react in predictable ways (chatting, speaking, ...). Our simulation will also include the introduction of physical signals (sounds, light, colors, volumes, proportions, shapes, ...), enabling children to learn and manage their reactions and interactions at their right rhythm (Bellani et al., 2011). It can, therefore, help us to deal with this population's challenges in terms of spatial, social and communication interactions.

Virtual reality also enables to creation a controlled and flexible environment (Layeb, 2020; Ben Amar & Layeb, 2024; Boussif & Layeb, 2024), which is crucial for autistic children who may be confronted with sensory and emotional overload in real-life

situations. VR enables therapists to create flexible, incremental and controlled situations to be exposed to stimuli that can trigger anxiety and social difficulties.

This process can stimulate their social interactions and eventually facilitate their inclusion. The adaptability of the solutions can help parents and therapists provide an individualized approach tailored to each child's sensory profile (Dunn, 2007).

5. DISCUSSION

Our project is part of the evolution of designing processes towards hybrid and digital worlds. This evolution is redefining our way of creating ambiences and revolutionizing the way we design, build and use our architectural and urban spaces.

Innovative technology integrated into spatial and atmospheric design processes has the potential to influence the comfort, well-being and behavior of users of both urban and architectural space. Combined with data science, it opens up new ways of designing more inclusive spaces. The virtual environment we propose facilitates the active participation of people whose perception is qualified as impaired. We aim to improve the quality of life of our users (autistic children, parents, educators, etc.) as well as their mental health, thanks to sensory-friendly environments.

By integrating the sensory experience in its multidimensional aspects, it is possible to project new virtual experiences integrating various sensory modalities. The use of sensors and data allows the creation of immersive environments that can respond dynamically to the user's needs. Indeed, AI and IoT devices can capture and analyze data in real-time, influencing the perception, reactions and behavior of autistic children in these virtual worlds (Ahmad et al., 2018; Papoutsi et al., 2018 ; Torrado et al., 2017 ; Penev et al., 2021 ; Hoeberichts et al., 2023).

Autism, as a developmental disorder, leads to a specific model of perception characterized by impaired communication (verbal and non-verbal), impaired social interactions, and a lack of interest and imagination (Wing & Gould, 1979). To occupy, to live and to ambulate in space, either architectural or urban, presents significant challenges for these children. This is because they often have difficulty communicating and expressing their feelings and emotions appropriately. Exploring virtual environments enables us, as space designers, to anticipate situations of stress and anxiety and correct them.

This supports their well-being and helps them experience space comfortably. Based on our initial results, we expect that these digital health solutions will significantly impact the lives of autistic children, their families and their therapists.

6. CONCLUSION

This proposal underscores the increasing significance of integrating architecture and data science to enhance living spaces and advocates for the development of cutting-edge technological solutions to support individuals with autism. This area represents a promising field for research and action, with the potential to positively impact the daily lives of affected individuals and promote their full integration into society.

By investing in ongoing research and creating such technologies, we can contribute to the development of a more inclusive world that embraces neurological diversity and enhances mental health care. Despite the challenges, we are confident that our efforts can significantly improve the lives of children with autism. Through the provision of specialized interventions and innovative technological tools, we can assist these children in developing their social and emotional skills, thereby fostering their social inclusion and active participation in society.

In summary, our project seeks to harness the synergy between architecture, data, and artificial intelligence to establish inclusive and innovative environments for children with autism. By infusing advanced technologies into spatial design, we aim to equip autistic children with the resources they need to navigate their surroundings confidently and securely (Zaniboni et al., 2021). Through collaboration with families, therapists, and healthcare providers, we strive to create a more inclusive future for all.

7. BIBLIOGRAPHY

Ahmad, A., Li, K., Feng, C., Asim, S. M., Yousif, A., & Ge, S. (2018). An empirical study of investigating mobile applications development challenges. IEEE Access, 6, 17711-17728.

Amar, K. B. & S. Layeb. (2024). Transformative Architecture: Fostering Inclusive Spaces for Neurodivergent Well-being in Tunisia. Healthcare Systems Day 2024, supported par African Working Group in Healthcare Systems, ENIT, Tunis, Tunisia.

Asan, O., Elkefi, S, Clouser, K. N. & Percy, S. (2022). Using health information technology to support the needs of Children with Medical Complexity: Mapping review of consumer informatics applications," Frontiers in Digital Health, vol. 4.

Bellani, M., Fornasari, L., Chittaro, L. & Brambilla, P. (2011). Virtual reality in autism: state of the art, Epidemiology and psychiatric sciences, vol. 20, no. 3, pp. 235-238

Boussif, Y. & Layeb S. (2024). L'Architecture pour le bien-être mental : Recommandations spatiales pour l'inclusion sociale des personnes atteintes de TSA en Tunisie. Healthcare Systems Day 2024, supported par African Working Group in Healthcare Systems, ENIT, Tunis, Tunisia.

Dunn, W. (2007). Sensory processing in children with and without autism: A comparative study using the Short SensoryProfile. American Journal of Occupational Therapy, 61, 2007, 190–200

Ghosh, T., Al Banna, M. H., Rahman, M. S., Kaiser, M. S., Mahmud, M., Hosen, A. S. M. S., & Cho, G. H. (2021). Artificial intelligence and internet of things in screening and management of autism spectrum disorder.Sustainable Cities and Society, 74 (2021), Article 103189. *https://doi.org/10.1016/j.scs.2021.103189*

Hadhri, A., Layeb, S., Elkefi, S. & Bhar, S. (2024). Designing IT Solutions for Addressing the Unique Support Requirements of Autistic Children, Healthcare Systems Day 2024, supported par African Working Group in Healthcare Systems, ENIT, Tunis, Tunisia, 2024

Hoeberichts, K., Roke, Y., Niks, I., & van Harten, P. N. (2023). Use of a mHealth mobile application to reduce stress in adults with autism: a pre-post pilot study of the Stress autism Mate (SAM). Advances in Neurodevelopmental Disorders, 7(2), 268-276.

Jaliaawala, M.S., Khan, R.A. (2020). Can autism be catered with artificial intelligence-assisted intervention technology? A comprehensive survey. Artif Intell Rev 53, 1039–1069 (2020). *https://doi.org/10.1007/s10462- 019-09686-8*.

Layeb, S. & Elkefi S. (2024). Redéfinir la prestation des systèmes de santé : Exploiter les solutions informatiques pour améliorer la performance de la prise en charge des enfants TSA", Healthcare Systems Day 2024, supported par African Working Group in Healthcare Systems, ENIT, Tunis, Tunisia.

Layeb, S. & Elkefi, S. (2023). Cognition and social sciences in the service of urban planning. 2nd International Conference IEEE on Cognitive Mobility, 19-20 October, Budapest, Hongrie.

Layeb, S. (2022). La perception de la transition architecturale chez l'enfant avec autisme. Revue française de pédagogie, 214, 2022, 53-69. *https://doi.org/10.4000/rfp.11302*

Papoutsi, C., Drigas, A., & Skianis, C. (2018). Mobile Applications to Improve Emotional Intelligence in Autism A Review. International Journal of Interactive Mobile Technologies, 12(6).

Penev, Y., Dunlap, K., Husic, A., Hou, C., Washington, P., Leblanc, E., & Wall, D. P. (2021). A mobile game platform for improving social communication in children with autism: a feasibility study. Applied clinical informatics, 12(05), 1030-1040.

Sabzevari, F., Amelirad, O., Moradi, Z., & Habibi, M. (2023). Artificial intelligence evaluation of COVID-19 restrictions and speech therapy effects on the autistic children's behavior. Scientific Reports, 13(1), Article Number. doi: 10.1038/s41598-022-25902-y

Torrado, J. C., Gomez, J., & Montoro, G. (2017). Emotional self-regulation of individuals with autism spectrum disorders: smartwatches for monitoring and interaction. Sensors, 17(6), 1359.

Wing, L., & Gould, J. (1979). Severe impairments of social interaction and associated abnormalities in children: Epidemiology and classification. Journal of Autism and Developmental Disorders, 9(1), 11–29. *https://doi.org/10.1007/BF01531288*

Zaniboni, L., Marzi, A., Caniato, M., & Gasparella, A. (2021). Comfortable and safe environments for people with autism: Preliminary analysis of risks and definition of priorities in the design phase. In Journal of Physics: Conference Series (Vol. 2069, No. 1, p. 012177). IOP Publishing

ACKNOWLEDGEMENTS

AMBULANCE AMBIENCES AND SIREN HARMONISATIONS: APPLIED ACOUSTICS RESEARCH AND SOUND/MUSIC DESIGN IN EMERGENCY AMBULANCE VEHICLES

AMBIENTES DE AMBULÂNCIA E HARMONIZAÇÕES DE SIRENES: PESQUISA DE ACÚSTICA APLICADA E PROJETO DE SOM/MÚSICA EM VEÍCULOS DE AMBULÂNCIA DE EMERGÊNCIA

Robin McGinley
Chair of Programme and Course Leader, International MA in Curating Art
Stockholm University, Sweden
robin.mcginley@arthistory.su.se

Ricardo Atienza
Associate Professor in Sound in Art and Media
Aalto University School of Arts, Design and Architecture. Helsinki, Finland
richardatienzab@gmail.com

ABSTRACT

This paper offers an overview of the process and preliminary results of a collaborative research project, commissioned by Stockholm Regional Council Culture Department and AISAB, the largest provider of ambulance care services in Stockholm, Sweden. The project aimed to explore, in practical terms, how artistic and design methods could transform and improve the experience of ambulance interiors. To this aim, different artistic and design disciplines were convoked, notably sound art and symphonic orchestral music, material artistic practice and architectural lighting design. Focusing here on the music and sound design aspects, the resultant installation hardware and sound materials were subsequently deployed and tested within an operational ambulance space, with initial feedback from paramedics and patients utilised to begin to ascertain the effectiveness of the project's contribution to creating a more pleasant and engaging soundscape and acoustic experience within this singular, fast-paced and dynamic healthcare environment.

KEYWORDS: Sound art & design. Healthcare environments. Interior experience of ambulances. Sound attention masking. Co-design workshops.

RESUMO

Este artigo oferece uma visão geral do processo e dos resultados preliminares de um projeto de pesquisa colaborativa, encomendado pelo Departamento de Cultura do Conselho Regional de Estocolmo e pela AISAB, o maior fornecedor de serviços de ambulância em Estocolmo, Suécia. O projeto teve como objetivo explorar, em termos práticos, como os métodos artísticos e de design poderiam transformar e melhorar a experiência dos interiores de ambulâncias. Para tal, foram convocadas diferentes disciplinas artísticas e de design, nomeadamente a arte sonora e a música orquestral sinfónica, a prática artística material e o desenho de iluminação arquitetónica. Focando aqui nos aspectos de música e design de som, o hardware de instalação e os materiais sonoros resultantes foram posteriormente implantados e testados dentro de um espaço operacional de ambulância, com feedback inicial de paramédicos e pacientes utilizados para começar a verificar a eficácia da contribuição do projeto para a criação de um ambiente mais uma paisagem sonora e uma experiência acústica agradáveis e envolventes neste ambiente de saúde singular, acelerado e dinâmico.

PALAVRAS-CHAVE: Arte sonora e design. Ambientes de saúde. Experiência interior de ambulâncias. Mascaramento de atenção sonora. Workshops de co-design.

1. INTRODUCTION AND OVERVIEW OF THE RESEARCH FIELD

The pilot project 'Art in Ambulance Healthcare' (konst i ambulanssjukvården) was initiated in 2022, as a collaboration between the Cultural Department at Stockholm Regional Council (Region Stockholms kulturförvaltning) and AISAB

(Ambulanssjukvården i Storstockholm AB), a subsidiary company of the regional council, which provides ambulance care services throughout the Greater Stockholm area. Amongst its many remits and assignments, the council's cultural department, through its section for public art, and its affiliated competence development centre for art and health, is responsible for contemporary art within health care environments, including hospitals

and other health care locations throughout the region (which the council itself directly manages). This includes the administration and deployment of a large public art collection throughout its various healthcare facilities, together with the commissioning of new artworks and project initiatives designed to be presented and implemented across a range of healthcare contexts.

The current project developed within this institutional framework, and led to the commissioning of a process of experimentation, participatory workshops and activities to investigate the possibilities of installing applied ideas from sound design and music, as a means towards conceiving the ambulance interior as a space proper to the presentation of contemporary art, but also how such an initiative might contribute to the experiential improvement of these challenging environments for paramedic crews and patients. The wider project also included objects and visual elements created by artist Pia Sandström, together with a new and enhanced interior lighting design by Rodrigo Muro and Foteini Kyriakidou, from the Architectural Lighting Design Division of the School of Architecture and the Built Environment at The Royal Institute of Technology (Kungliga Tekniska Högskolan – KTH) (Pilotprojekt *i ambulans*, 2024). However, the current paper will focus exclusively on the process and preliminary outcomes of the sonic dimensions of the project.

1.1 Overview of the Research Field

The attendant research field relating to creative and artistic interventions within ambulance environments is sporadic and intermittent. Therefore, this paper will contextualise the current project by offering an outline highlighting interventionist strategies within ambulance environments and clinical practices, originating from a range of governmental, municipal and academic research contexts, as well as initiatives developed by ambulance crews themselves. One of the first examples that caught the attention of the project team early on, was a news item from India, which was syndicated internationally, and involved a suggestion from Nitin Gadkari, Minister of Transport and Roadways, that the customary sound of the ambulance siren should be replaced, throughout the country, by the more pleasant and amiable sounds of instruments from traditional Indian classical music, specifically playing a piece of music that is well-known to the general populace, and associated with the state public radio broadcaster All India Radio (AIR), also known as Akashwani (Pentreath, 2021; Pti, 2021). Despite extensive coverage, it is unclear whether the proposed change was ever implemented within live ambulances. Nonetheless, such a proposal underlines the potential for questioning the widespread public use of ambulance siren

sounds, and that such creative changes and interventions are at least conceivable, even at municipal and national levels. Innovation within ambulance vehicle interior design can also derive from academic research contexts, such as The Royal College of Art's collaborative project with the NHS and others from 2011, to improve the layout, ergonomics and clinical efficiency of the space in terms of the treatment area, crew working conditions and patient experience (Hamlyn et al., 2011). A further example, from the Swedish context, involved Jonas Ahnmé and students from the department of industrial design at Konstfack University of Arts, Crafts and Design in Stockholm who, in 2015, completed a project in collaboration with the National Association of Ambulance Personnel (Riksföreningen för Ambulanssjuksöterskor) to develop alternative prototypes and design proposals for the functioning and work environment of future ambulances (Forslind, 2014). As we also found out from the current research process, through engagement with the Swedish company Eurolans, who are the main supplier of modification and emergency vehicles in the Nordic region, the design specifications for ambulances are generally developed in consultation with ambulance healthcare providers, with a high level of differentiation regionally, also according to prevailing statutory requirements and regulations. The above examples thus demonstrating the potential for creative and design-led engagement within such processes.

Regarding the deployment of visual arts within ambulances, such initiatives can also come from ambulance crews themselves, as evidenced by an example reported in mainstream media by the Canadian Broadcasting Corporation, of an ambulance crew in Quebec who piloted a project of installing reproduction artworks or photographs onto the ceilings of ambulance interiors, as a means towards stress relief and visual diversion for patients during transit ("Quebec Paramedics Want to Install Art to Ease Ambulance Stress," 2022). Although slightly ad-hoc in arrangement, and anecdotal as a news item, there is nonetheless a useful suggestion here, as well as a highlighting of the need for enhancement of the visual sphere for patients and crews alike. Similarly, in terms of the auditory dimension, Jānis Indulis Dundurs and Inka Janna Janssen (2020) have investigated the potential adverse health effects for paramedics of constant exposure to high sound pressure levels throughout their shifts, due to siren usage and differing vehicle speeds, whereas Katie L. Myers (2013) demonstrates that one approach, deriving from applied music therapy, for improvement of the ambulance interior soundscape, especially from the patient perspective, is through the application of patient-selected genres and pieces of music, thereby enhancing patient well-being and overall experience of ambulance transport.

2. PRELIMINARY WORKSHOPS

The project's first workshop took place in September 2022, with the participation of representatives of paramedics and ambulance crews from AISAB. The aim of the workshop was essentially twofold, and entailed not only introducing the idea and potentials of artistic intervention into the interior ambulance environment, but also

opening up an initial space for discussion, encouraging participants to speculate on where within the ambulance interior it might be possible to intervene creatively and artistically, whilst also taking into consideration how such interventions might function as improvements, regarding environmental and experiential conditions, for patients, as well as for ambulance crews themselves.

This was achieved by initially sharing with workshop participants a number of examples of creative/artistic and design projects and initiatives, together with recent examples drawn from the attendant research literature (some of which are outlined in section 1.1). These discussion examples assisted with situating the possibility of artistic/creative intervention, whilst also emphasising that such ideas and initiatives have already been subjected to quite a high level of discussion, critique and activity internationally. The fact that the examples were all derived from the immediate ambulance context provided a 'something to hold on to' factor, also grounding the discussion in concrete cases, and encouraging further elaboration and consultation, geared towards and assimilated to the local context in Stockholm.

Following this segment, the workshop continued with a discursive presentation slide, which brought together a number of factors and parameters for consideration in terms of interventional possibility:
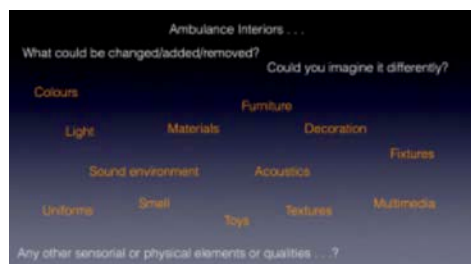
Figure 1a. Excerpt from the workshop presentation, detailing the discursive slide on environmental and sensorial factors and parameters.

Figure 1b. External view of the ambulance in which the prototypes were installed and tested.

This was followed up with a workshop component involving visiting a couple of ambulance vehicles in the garage with participants and, in an informal and freeform way, transferring and rapidly applying discursive ideas to the ambulance interior itself, in situ. This was followed by a summative plenary discussion.

3. DESIGN AND DEVELOPMENT OF THE ADDED SOUND ENVIRONMENT

3.1 Recordings and analysis

In order to experience first-hand the ambiences surrounding paramedic staff and transferred patients, we were invited to join the team for a full shift. During this journey we made a number of ambisonic (3-dimensional) recordings of the ambulance sonic environments in motion, at different speeds, corresponding to different types of roads and levels of urgency involved.
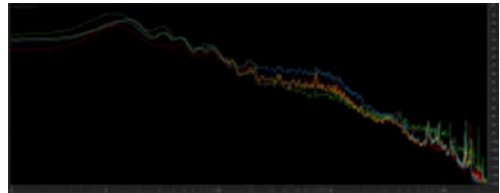
Figure 2a. Average frequency distribution of the sonic environment inside the ambulance for four different speeds. In horizontal frequency range in Hertz (logarithmic scale), in vertical relative decibels.

Figure 2b. Interior view of the ambulance cabin.

This was followed by an acoustic analysis of the resulting sequences focused on spectral distribution, rhythmical patterns, etc. The results show a heavy saturation of the low frequency spectrum, in agreement with the noticeable vibration experienced inside the cabin, and a pronounced progressive decay as we ascend in the frequency domain to finally reach a rather silent medium-high and high frequency band (see figure 2). We can see in this analysis the result of the acoustic treatment applied around the cabin of the ambulance, an unbalanced insulation highly efficient in the upper frequency range while mostly unable to absorb the vibration of the vehicle in motion, potentially even amplifying it. As a result of irregularities of the road surfaces, vibration emerges discontinuously along the timeline of a journey, and constitutes a distinct and characteristic layer of the ambulance sonic environment that we will treat specifically.

3.2 First Prototype

Based on the previous acoustic results and workshops, we designed a first prototype of an added sonic environment to be experienced, altered and evaluated by crew members *in situ*. In material terms, it consisted of a basic setup easy to install and remove from the ambulance afterwards: a tablet with a graphical user interface, connected via Bluetooth to two portable speakers attached to the ceiling of the cabin. This first version of the GUI allowed testers to mix three different sounds including independent gain controls for each, and to modify through a bidimensional pad two parameters in the resulting mix: the dominant frequency range (through a bandpass filter, X-axis of the pad) and the level of grain of the resulting texture (through a reverberation effect, Y-axis).

Crew members were invited to test this sonic environment and graphical user interface during a trip in the ambulance, and to provide feedback on it. Six people took part in this first evaluation and their comments and suggestions were integrated into the second prototype. We will not focus in this paper on the specific results and sound materials of this first phase but, as a summary, we could observe a positive reception of the general concept and environment, including a number of suggestions for improvement of the GUI (added functions and flexibility) and of sound control (advocating for a more flexible sound design of each independent sound material in the mix, for example).

3.3 Second Prototype. Physical Setup and GUI

Based on the feedback and observations collected with the first prototype, a number of significant modifications were brought into prototype 2.

First, concerning the physical setup, a specific line-array speaker was designed and built that could be integrated seamlessly in the limited volume of the cabin, while responding efficiently to the sonic spatial requirements of the added soundscape (figure 3).

Figure 4. Graphical User Interface.

Regarding the graphical user interface (GUI, figure 4), it incorporated a number of new features and further flexibility in terms of sound design control. Users are invited to create a background added sonic environment (Layer A) by choosing among four different sonic textures, mixing them freely (independent gain control) and fine-tuning each one of them independently in terms of frequency range and grain (as described for prototype 1). Once the mix is ready, a button (in red "My mix") allows them to store their preferred sound blend, data that is collected and will be later analysed. The system can be operated manually or in automatic mode, to free ambulance crew when needed.

This GUI also offered a gain control on two extra sound layers that will be described below, Layer B, ("Bump"), a reactive layer to the vibration impacts caused by road irregularities, and Layer C, orchestral textures responding to the different siren modes of the ambulance (see section 4).

This interface was created with the graphic programming environment *PureData* (Pd) and the native Pd GUI rendering *MobMuPlat*.

3.4 Second Prototype. Description of the added sound environment.

The added sonic environment is composed of three distinct sound layers, responding to three different sonic issues and materials:

Layer A: a discontinuous layer automatically reacting to vibration, to the low frequency transients due to bumps and discontinuities in road surfaces. A motion detection sensor (embedded in the tablet) randomly triggers over a certain threshold one of the recorded bells of a wind chime displaying a modal scale. The attacks of the bells have been removed in order to blend perceptually the low frequency transient with the bell sound, operating here as a lasting resonance of the main impacts, colouring and rebalancing it in spectral terms. This added resonance intends to produce an occasional and low-density layer, and its gain can be controlled by the ambulance staff or even totally silenced.

Layer B: Based on information or attention masking theories (Nilsson et al., 2010; Atienza & Billström, 2012; Eriksson, 2017), its aim is to divert the attention from the background noise and general acoustic environment of the ambulance dominated by motor sounds, vibration, sound signals from medical equipment and characterised by a dry and inert acoustic response (plastic interior surfaces for hygienic reasons). *Attention masking*, as opposed to traditional *energy masking*, intends not to hide but to divert the attention from a disturbing sound source through minimal added sound interventions at low gain.

Four sonic textures are proposed for the users to choose among, blend and transform. They are each of a different sonic nature and present as well different textural characteristics. This broad selection of materials aims at providing a wide palette of possibilities for the users to explore, and for the design process itself to understand which textures might be most appreciated and operational in collaboration with users:

- A: *Material* sound produced by sleigh bells in a continuous gentle movement, plus an electroacoustic treatment for obtaining a dense texture formed by parallel ascending and descending *slow glissandi* (see figure 5a).

- B: *Natural* soundscapes from water (river, sea), wind, fire, etc., blend together to create a complex and unstable texture which, in perceptual terms, continuously shifts and changes identity.
- C: *Instrumental* texture (cello) composed of several waves of a similar continuous bow action, playing a single -different- tone each, and at slightly different tempi. It results in a continuous texture, whose properties display a constant but very gradual mutation, almost imperceptible when not paying attention to it.

• D, *Synthetic* sound based on a Karplus-Strong algorithm providing a point-based, transient texture that follows a harmonic series scale and a variable rhythmical pattern (see figure 5b).

As mentioned previously, these textures described here are the raw materials that will be later moulded by ambulance crew members through the provided GUI (Sound tuning pad, see figure 4, GUI). Consequently, their frequency ranges will be limited through a band-pass filter, and an impulse-response reverberation effect will allow the manipulation of their grain depth and resulting spatial experience.

Layer C: Orchestral layer reacting to the three different siren modes (see section 4).
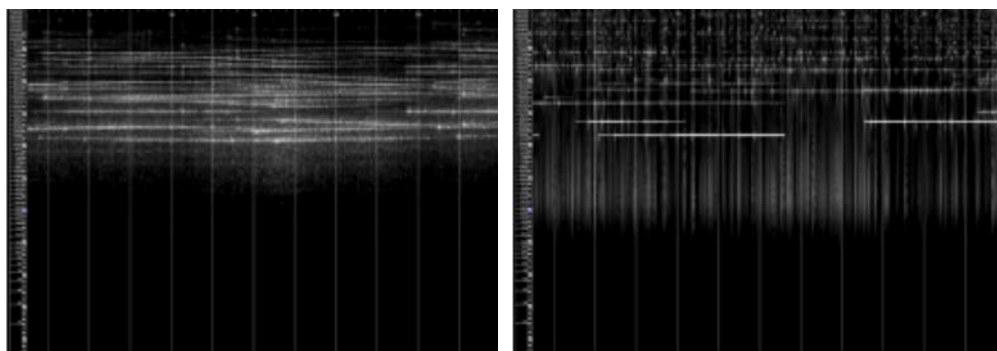
Figure 5. Spectrogram of sonic textures A (material sound, left image) & D (synthetic sounds, right image). 30 seconds sequences. Note the dominant high frequency range in both cases, benefiting from almost no competition from the background sound of the ambulance in motion, as shown in figure 2.

4. SIREN HARMONISATIONS: COMPOSITIONAL APPROACHES AND RECORDING THE ORCHESTRA

As indicated above in section 1.1, the abrasive sound of the ambulance siren is apt to generate debate and consternation within urban experience. Therefore, in developing a project generating auditory experiences within ambulance interiors it was felt, by extension, to also address the interior experience of the ambulance siren, when sounding. To this end, a series of orchestral harmonisations of the siren were created, based around the pitched and harmonic relationships inherent to the siren sound, with the aim to place this within a musical context and foundation – softening and smoothing out its impact, when heard within the vehicle. Similar to the other sonic and acoustic environmental elements described above, these harmonisations form a selectable mode within the interactive sound installation system.

Three distinct sounding modes are currently utilised by the sirens mounted on AISAB's ambulance vehicles. Driver activated and controlled, a main siren sound which alternates between a fairly familiar two-tone electronic oscillation, which is intercut at intervals with a contrasting signal involving a frequency sweep in upward motion. To attract further attention in specific instances and situations, the driver can also choose to trigger discreet klaxon blasts, which interpose and override the other sounding modalities.

Four different harmonisations were composed and orchestrated for full symphony orchestra, each one manifesting as a short orchestral fragment, deriving from the sounding states outlined. As the commissioner for the project, Stockholm Regional Council, is also the principal funding partner of The Royal Stockholm Philharmonic Orchestra, it was arranged for the orchestra to record this material at Stockholm Concert Hall (Konserthuset) in October 2023. The symbolic value of having one of the most prominent orchestras in the country record these vignettes, which were then installed into a working ambulance, certainly adding a further dimension to the process.

The four orchestral harmonisations included 17 *Klaxon Harmonies*, a series of harmonic combinations, which correspond to the sound of the driver-operated klaxon sound. Performed and recorded successively, as a series of orchestral hits, when inside the ambulance, these chords mask the blast of the sounding klaxon, with each chord triggered, in a non-linear fashion, by the manual use of the horn. Another harmonisation, entitled *Polyrhythmia* is a piece based on a natural harmonic series, embedding the two tones of the main siren sound. A series of rhythmical cells have also been derived from the 120 BPM of the siren pulse. Each instrument plays a number of passages, composed of a repeated cell and a different rhythmical pattern, which both emerge and fade out smoothly, in an undulating motion.

Figure 5: The Royal Stockholm Philharmonic Orchestra, recording the Ambulance Siren Orchestral Harmonisations, Stockholm Concert Hall (Konserthuset), October 2023.

A further treatment of the main siren sound was Main Siren – Slow (4x5), a series of diatonic chords suggested by the harmonic orientation of the signal. These chord sequences are deployed through a series of intersecting loops, of uneven lengths, and scored for five semi-independent instrumental groups, intersecting instrumental families. The piece is characterised by long, held notes and foregrounds a kind of harmonic stasis throughout. This obscures the incessant oscillation of the siren sound, whilst offering it a slow-moving harmonic grounding. A final example, Infinite Canon,

is based upon, and utilises, the eight-bar fragment which comprises J.S. Bach's Canon 5 a 2 per Tonos from *Das Musikalische Opfer, BWV 1079 (1747)*. Bach inscribes this fragment, "Ascendenteque Modulatione ascendat Gloria Regis". Thus accordingly, the piece embodies a musical process whereby the canonic material is successively heard throughout the full range of the orchestra, from lowest to highest instruments, with each successive repetition modulating upwards. Bach's instruction gives rise to a psychoacoustic sensation of the canon infinitely rising in pitch, akin to such contemporary electroacoustic phenomena as Shepherd tones, or the infinite loops of M.C. Escher lithographs. Synchronised with the frequency sweep siren sound, and thereby providing a spectral accompaniment in perpetual motion.

5. CONCLUSION

The setup described above (prototype 2) has been permanently installed in one of AISAB's vehicles since December 2023 and is being tested in real situations. Information on preferences and usage is being collected and will be the object of future analysis and further improvements. However, the feedback collected during this prototyping process already provides us with a number of relevant elements in terms of design of the GUI and sound preferences.

As a general reflection, we commenced this collaboration with relatively sceptical expectations from crew members regarding a potential positive impact of added sound within their daily working environment. Being confronted by a saturated and stressful environment, the perspective of new added elements was a reasonable cause for concern. This perspective evolved throughout the co design process in which they could provide feedback on sound materials, and gained control of sound parameters, and the use of the entire added sound system: paramedics are free to decide if and how to use these added sound layers, which is an essential component within such environments, for their potential acceptance.

Regarding the GUI, crew requests point in two apparently contradictory directions: on one hand an intuitive and simple interface in terms of use, not requiring any specific knowledge or focus as they are already confronted by a highly technical and complex environment, whilst on the other a flexibility and a high level of control of sound parameters to accurately adjust sound components to their taste. As a result, in addition to the improvements introduced in prototype 2, a discussion has also been engaged on automatic modes, for quick and simple use, as well as co-designed presets prepared in advance for a number of specific situations and to be later triggered when required.

Useful feedback has also been collected during the process regarding the characteristics of the sound materials themselves: a preference for continuous sound textures that could more easily blend within the background environment of the ambulance, with limited transients or marked rhythmical patterns (pulse), operating at low gain and avoiding extreme frequency ranges that could be excessively present in perceptual

terms. Gain has proved to be a relevant parameter on which almost all users agree, placing it within a narrow range, just above perceptual presence, but not any further.

These observations and the feedback collected from prototype 2 will be evaluated and implemented in a final permanent installation to be implemented during 2024-2025.

7. BIBLIOGRAPHY

Atienza, R., & Billström, N. (2012). Fighting "noise"= adding "noise"? Active improvement of high-speed train sonic ambiances. Ambiances in action. International Congress on Ambiances, Montreal 2012

Quebec paramedics want to install art to ease ambulance stress. (2022, January 16). CBC News. *https://www.cbc.ca/news/canada/montreal/artbulance-pilot-project-1.6315254*

Dundurs, Janis Indulis and Janssen, Inka Janna. (2020). Influence of Noise in Ambulance Vehicles on Emergency Personnel. Noise and Environment, IntechOpen. *https://doi.org/10.5772/intechopen.87872*

Eriksson, M., Atienza, R., & Pareto, L. (2017). The Sound Bubble: A context-sensitive space in the space. Organised Sound, 22 (1), 130-139. *https://doi.org/10.1017/S1355771816000418*

Forslind, E. (2020, November 24). Hur ska en ambulans se ut – om elever från Konstfack får bestämma? *Vårdfokus*. *https://www.vardfokus.se/arbetsmiljo/hur-ska-en-ambulans-se-ut-om-elever-fran konstfack-far-bestamma/*

Hamlyn, H., Fusari, G., Matthews, E., Harrow, D., Stevens, P., Winsor, R., Benger, J., Dean, D., Darzi, A., King, D., Helen Hamlyn Centre for Design, Royal College of Art, Vehicle Design Department, Royal College of Art, University of the West of England, Bristol, London Ambulance Service, Imperial College Healthcare NHS Trust, & Redlin Printing Ltd. (2011). Redesigning the emergency ambulance (By British Library). *https://rca media2.rca.ac.uk/documents/122.Redesigning_theEmergency_Ambulance.pdf*

Myers, Katie L. (2018). The Use of Patient-Preferred Music to Improve Patient Experience during Interfacility Ambulance Transport (MMus dissertation) Florida State University

Nilsson, M. E. et al. (2010). Auditory masking of wanted and unwanted sounds in a city park. Noise Control Engineering Journal, 58(5), 524-531.

Pentreath, R. (2021, September 20). India to replace ambulance sirens with traditional flute and tabla music. Classic FM. *https://www.classicfm.com/music-news/india-ambulance-sirens-replaced-flute-tabla instruments/*

Pti. (2021, October 5). Indian musical instrument sounds for vehicle horns soon: Nitin Gadkari. The Times of India. *https://timesofindia.indiatimes.com/auto/news/indian-musical-instrument-sounds-for-vehicle-horns soon-nitin-gadkari/articleshow/86773005.cms*

Pilotprojekt i ambulans. (2024). Region Stockholm. *https://www.regionstockholm.se/halsa sjukvard/halsa/kulturochhalsa/kompetenscentrum-for-kultur-och-halsa/innovation-och forskningsprojekt/pilotprojekt-i-ambulans/*

LIGHT, COLOUR AND HUMAN BEINGS: FUTURE CHALLENGES FOR A BETTER DESIGN

LUZ, COR E SERES HUMANOS: DESAFIOS FUTUROS PARA UM MELHOR DESIGN

Andrea Siniscalco
Assistant professor - researcher
Department of Design, Politecnico di Milano, Italy
andrea.siniscalco@polimi.it

ABSTRACT

Lighting design involves product selection, arrangement, and system control. Despite its significant impact on human experiences, it is often reduced to aesthetic choices. Scientific literature highlights the influence of light on humans, frequently overlooked in favour of energy efficiency and visual performance. While efficiency and lighting practice remain essential, focusing solely on these aspects neglects broader well-being implications.

Professionals now recognise that photometry and calculations are insufficient; the perception of spaces, influenced by lighting distribution, is crucial. Lighting has evolved to support psychophysical well-being, incorporating technological advances and scientific research over the past twenty years.

The Human-Centric Lighting (HCL) approach enhances performance, attention, and sleep-wake cycles, particularly for night shift workers. However, the psychological response to light and colour remains underexplored. Understanding the emotional impact of light, influenced by various factors, is challenging but essential. Future research should document how light affects perception, cognition, and emotion to improve lighting design for individual well-being.

KEYWORDS: Light. Colour. Design. Psychology. Physiology.

RESUMO

O design de iluminação envolve a seleção de produtos, distribuição e controle dos sistemas. Apesar da importância do impacto da luz nos humanos, frequentemente esse aspecto é minimizado em relação à eficiência energética e resultados visuais. Focar apenas nesses aspectos negligencia uma abordagem mais ampla quanto ao bem-estar humano.

Profissionais da área reconhecem que só a parte técnica é insuficiente; a percepção dos espaços, influenciada pela distribuição da luz, é essencial, assim como incorporar avanços tecnológicos e pesquisas dos últimos vinte anos.

A iluminação centrada no ser humano melhora a performance, atenção e ciclos do sono, principalmente para quem trabalha em turnos noturnos. No entanto, a resposta psicológica à luz e à cor é pouco explorada. Entender o impacto emocional da luz, influenciado por diversos fatores, é desafiador, mas essencial. Pesquisas futuras devem documentar como a luz afeta percepção, cognição e emoção, com foco no bem-estar do indivíduo..

PALAVRAS CHAVE: Luz. Cor. Design. Psicologia. Fisiologia.

1. INTRODUCTION

The continuous succession of day and night is a simple phenomenon known by everyone, and it has been repeated every day since the dawn of time. In the millions of years that have seen human beings appear, survive and evolve into what we are today, the "simple" phenomenon of the succession of day and night has accompanied us. An event so common that no one questions it. Most people don't even consider it, but this phenomenon has left indelible traces on our biology. The human being is made to "operate" during the day and "recharge" at night. Yet, since the discovery of fire, perhaps as many as 1.4 million years ago (Clark & Harris, 1985), our ancestors have used the flame to peer into the darkness, first to defend themselves and then, thanks to torches and all subsequent technologies, to lengthen the day, invading the hours of the night with "artificial" light (Schivelbusch, 1995).

The history of lighting design has gone back and forth, mainly remaining relegated to spaces occupied by nobles and wealthy merchants until the Industrial Revolution, when illuminating the spaces became necessary for productivity, and thanks to the improvement of gas lighting, light entered the homes of ordinary people in a widespread way (Chandler & Lacey, 1949). From here on, the race to improve technology and illuminating engineering seemed to be the only thing counted to give the population the best possible light.

But what is the "best possible light"? In the period of electrification of industries and domestic environments, the most desirable parameters were undoubtedly those relating to the lifespan of the lamps or their price, the luminous flux emitted and energy consumption. The main focus was to optimise the products by increasing their efficiency and directing the light onto functional areas, preventing energy waste where possible and containing glare for individuals. Lighting the spaces was the answer to the need to see clearly, uniformly, and without discomfort, maximising safety and, if possible, containing expenses. The approach to design was mainly engineering-like in the professional field and limited to the use of aesthetic lighting fixtures for the residential sector. The aspects related to the psychology of lighting, the human dimension, emotions and atmosphere were not part of the typical project of lighting systems. That light provokes emotions, however, is a common fact. Since the days of classical theatre (Marotti, 1974), it was common to use luminous deceptions to surprise the audience; in the first half of '900, cinema was marked by iconic masterpieces that had the construction of light on stage as the critical element of success. In these films, environments were recreated where light and shadow created tension and disquiet, as in Friedrich Wilhelm Murnau's Nosferatu (1922) or left the viewer speechless, as in Fritz Lang's Metropolis (1927). In Nuremberg in 1937, Albert Speer, architect of the Third Reich, designed the "Cathedral of Light", a display of power for heads of state from all over the world, who commented admiringly on the incredible spectacle (Speer et al., 1969), unaware of the horrors that would soon be unleashed. Why was aesthetics not considered an essential parameter in architectural lighting design? Perhaps the limitations of the technology of the time,

or the fact that the world was recovering from the dramas of the Second World War, meant that lighting design did not consider people's mental and physical well-being until the fifties.

2. FROM OPTIMISED TO WHOLESOME

There are many important figures in the history of lighting design, but some are universally recognised as the true precursors of the modern way of illuminating spaces.

Probably the most known is the architect *Richard Kelly,* who, in 1950, highlighted the difficulty of selling lighting ideas, as at the time, the only things that were paid were the luminaires and not the lighting projects. Kelly then became the first "architectural lighting consultant" and postulated the three famous qualities of light in spaces, namely *"focal glow"* (light to highlight a detail), *"ambient luminescence"* (filling light to make a space brighter) and *"play of brilliance"* (bright sparks to create a glimpse of visual interest) (Kelly et al., 2010). The incredible prolificacy of his work and the numerous collaborations with the greatest architects of the time (IESNA, 2024) meant that people began to think about light in spaces not only quantitatively but also (and above all) qualitatively.

Architect *William Lam* is another figure we can point to as responsible for changing the direction of architectural lighting design. In 1959, Lam coined the saying *"Lighting by Design, not Engineering"*. His innovative approach to design involved collaboration between working groups from the very first steps of the project, integrating architecture, natural and artificial lighting and the building's systems. Lighting design intended not as a technical necessity at the end of the built space but as an element that contributed to shaping the environment from the very beginning of the design process. Its buildings were comfortable, functional and sustainable. In describing how a place should be illuminated, Lam identifies two groups of criteria, *"activity needs"* and *"biological needs"* (Lam, 1992). The activity needs can be summarised in good lighting engineering. Biological needs, on the other hand, represent the sum of all the psychological needs that proper lighting should solve in a place, regardless of its type. These multiple needs are divided into three large groups: *orientation, discernability* and *communication*. Orientation can be read in spatial terms as the ability to interpret *paths, entrances, exits* and *services,* also as a function of time, daylight conditions and what enters the space; a space without a clear orientation can be perceived as unnatural and oppressive. Discernability is the ability to read architecture clearly. The safety given by not having insufficiently lit areas, the structure of the surfaces and volumes highlighted by light and shadows, and the ease of identifying points of interest are all factors that allow you to experience the space in a safe and consequently relaxed way. Finally, communication is the ability to foster *social interaction,* where its extremes are seen as equally harmful (overcrowding and isolation); To encourage communication at the level of public life (multiple persons) or intimate (close and personal), and finally, the contemplation of elements (alone or in group).

3. SCIENTIFICALLY VALIDATED QUALITY OF LIGHT

As a result of Kelly and Lam's innovative approaches, many professionals paid renewed attention to lighting design. The driving force was undoubtedly the perception of space and the psychological sensations it conveyed. It was not until 1984 (Zehring et al., 1984) that researchers could demonstrate the functioning of the circadian cycle. This twenty-four-hour rhythm regulates the activity of our body through the production and inhibition of specific hormones. That light influenced mood, and the sleep-wake cycle had already been hypothesised for a long time; the concept of *"biorhythm"*, now considered pseudoscience (Holley et al., 1981), had been used to try to predict the course of biology. Hall, Robash and Young's studies on the circadian cycle, which earned them the Nobel Prize in Physiology or Medicine in 2017 (Nobel Prize Press, 2017), laid the foundations of what is now called *Human-Centric Lighting (HCL)*.

This particular type of design approach takes into account factors related to the influence of light on the physiology of individuals. It can have numerous advantages if used correctly and in places where it makes sense. Light can affect our body in many ways: it can raise body temperature (Badia et al., 1991), increase heart rate (Cajochen et al., 2005), influence the activity of the cerebral cortex (Noguchi & Sakaguchi, 1999), improve the attention and performance of workers (Boyce et al., 1997; Monk et al., 1997), be used in the treatment of Seasonal Affective Disorder (SAD) (Lewy et al., 1982), helps in the regulation of sleep-wake cycles (Lack & Wright, 1993) also in the case of patients with Alzheimer's disease (Van Someren et al., 1997), and numerous other aspects.

In extreme summary, the principles of the HCL describe that inside the eye, in the retina, in addition to the most common photoreceptors (cones and rods), a type of photopigment has been identified that can translate light into electrical impulses and send them through a different path from that used for vision. This opsin (photosensitive protein) is called melanopsin and is primarily the first element that sets the light to influence the circadian cycle (Provencio et al., 1998). Light enters the eye and impacts the retina. Here, through a phenomenon called phototransduction, operated by melanopsin, light is converted into an electrical impulse and sent to the suprachiasmatic nucleus (SCN) located in the hypothalamus. The SCN is commonly known as the "biological clock" because it regulates circadian rhythms and, through the superior cervical ganglion, is connected to the pineal gland, which regulates melatonin in the blood. Melatonin is the hormone responsible for the propensity to fall asleep. It has also been discovered that the physiological response of the human being to light is not linear but is decidedly shifted towards shorter wavelengths, with a peak located at 480 nm, which corresponds to blue light (Brainard et al., 2001; Thapan et al., 2001). Interestingly, the channels influencing melatonin regulation are mostly Non-Image Forming (NIF) (McIntyre et al., 1989).
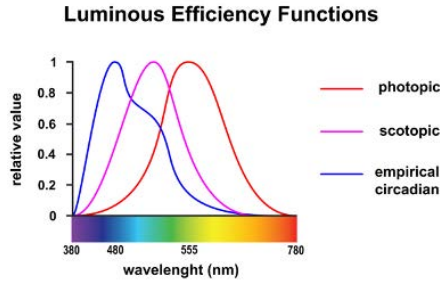
Figure 1: The three curves represent the efficiency of light in different aspects. The photopic curve is the human sensibility to colour in normal lighting conditions. The scotopic curve is the sensibility to colour in very dim light conditions. The empiric circadian curve (derived from the studies of Brainard and Thapan) shows the sensibility to the spectrum of our organism in relation to the physiological reaction to light. The last curve is unrelated to vision and starts with the phototransduction carried by the melanopsin (and not cones and rods like in the other two curves).

Over the last twenty years, these principles have led to the development of numerous lighting products based on the principles of HCL. Starting from the first approaches, which still used fluorescent light sources, such as the Sivra system by iGuzzini, Dynamic Lighting by Philips, and My White Light by Artemide, to name a few, we have arrived at the present day, after the revolution of LEDs and the so-called "digital light" which is connected, dynamic, controllable and highly flexible. The market today is teeming with lighting products designed for the well-being of individuals, to the point that sometimes these technologies are used in contexts where they are not needed. Nevertheless, a fundamental aspect of the interaction between light and human beings remains investigated in a less organic way than those commonly considered in the context of HCL.

4. PHYSIOLOGY VS PSYCHOLOGY

The premise of a research that is beginning at the *Laboratorio Luce* of the Department of Design of Politecnico di Milano (Italy), is that by questioning a large number of people during seminars, lectures and conferences, a discrepancy emerges relating to the perception of visual stimuli which, according to the principles of HCL, should be considered as "activators". By asking subjects -who do not have expertise in the influence of light on the organism- which colour (when faced with a selection) they would define as *"activating"*, almost no one chooses blue; a clear majority of people are oriented towards yellow and orange. If you are asked to couple keywords with a stimulus, terms such as "cheerful", "energising", "love", "anger", and "energy" are always associated with colours such as yellow, orange and red. On the other side, blue is often associated with "sadness", "serenity", "cold", "calm", and "peace", quite the opposite of what happens in the mechanism of interaction between light and physiology.

The first apparent thought is that the questions asked require a visual evaluation, while, as already mentioned, the mechanism that influences physiology is not related to vision but follows a different path. However, some studies (Hubbard et al., 2013;

Lockley et al., 2003) seem to confirm that cones (responsible for the perception of colour) also contribute to the mechanism of melatonin regulation. It isn't easy to think that a complex but balanced system, like our organism, possesses two mechanisms (one physiological and one psychological) that act so antagonistically. However, the emotional choice to associate a colour with an emotion does not seem to depend on physiological mechanisms.

Numerous studies in the field of psychology have dealt with colour preferences and the associations they arouse in individuals. The mechanism that leads subjects to prefer specific colours over others is not yet fully understood; however, one hypothesis (Humphrey, 1976) predicts that some colours are rooted in the biology of living beings and that they suggest atavistic reactions (the colour of flowers for pollinators, the vivid colours of certain poisonous amphibians for predators, etc.). Another study (Hurlbert & Ling, 2007) seems to experimentally validate the atavistic hypothesis, arguing that the evolution of the human visual system has favoured traits related to colours that are more advantageous to us in nature. The *Ecological Valence Theory (EVT)* (Palmer & Schloss, 2010) starts from the assumptions already described (which express results on an evolutionary-genetic scale) but also takes into account the experiences of individuals concerning certain visual stimuli. It, therefore, seems clear that there are associations between "pleasant" colours, such as blue/light blue (clear sky, clean water) and "unpleasant" colours, such as brown (associated with faeces and decomposition). Still, it is also true that the experience of individuals can have a profound impact on their personal preferences. The theory of *Color in Context* (Elliot & Maier, 2012) emphasises that the response to colour is involuntary; colour is not the stimulus itself but rather the basis of the percept that is created, triggering an appetitive or adverse response without the subject's awareness. However, the meaning attributed to colour can also be profoundly influenced by experience (social context, knowledge, folklore, rituals, art, fashion, etc.). Colour in context also highlights that not only does colour influence the three brain systems of affection, cognition and behaviour, but these systems are responsible for how we perceive colour. It would, therefore, appear that the observer's psychological state influences the perception of colour.

Over the years, numerous tests have been conducted to assess the extent to which colour could have a psychological influence on individuals; however, all these tests, conducted in the field of psychology, have always suffered from fundamental problems such as the lack of metrological rigour in the administration of the visual stimulus, the lack of consideration of environmental factors (like distance, or interference with background, etc.) and the reduced number of samples analysed. The practical applications of the results of these tests have not always produced the desired results; one example among many was the attempt to reduce prison violence by colouring cell walls pink (Schauss, 1979), which has proven over time to be not universally reproducible (Genschow et al., 2015).

5. COLOUR, EMOTION AND THE FUTURE OF LIGHTING DESIGN

Predicting the psychological effects of colour in lighting design is not as quantifiable as good lighting practice or HCL principles. However, this does not mean that coloured light is avoided or excluded. The massive presence of products on the market is an absolute indication of users' desire to use colours beyond the opinions, often excessively rigid, of the purists of the lighting project. In concerts, musicals, theatrical performances, fashion shows, installations, and clubs, coloured light is almost always present, and its purpose is always to leverage the observer's emotions. Anyone can buy, even on common e-commerce platforms at relatively low prices, lighting fixtures or "smart bulbs" that, when applied to standard luminaires, allow them to be transformed into systems capable of emitting dynamic coloured light by controlling them via smartphone or electronic personal assistant.

These products certainly do not have the primary purpose of effectively illuminating the space; instead, they use colour to provoke an emotional response. For this purpose, there are usually preset scenarios, which are based not on a quantitative, temporal or directional application of light (as in the case of HCL) but rather on the mimesis of idealised natural scenarios (tropical breeze, arctic sunrise, sunset in the savannah, northern lights, etc.). The idea is to recreate a natural percept, leveraging memories and emotions; however, this goal is pursued utterly empirically and without a scientific basis.

The challenge of this particular field would, therefore, be to understand whether designed lighting, based on the principles of HCL, can also perform the function of an *"emotional regulator"*, trying to understand whether there is any form of proportionality between the two mechanisms (physiological and psychological) (Siniscalco et al., 2022). The modification of intensity, directionality, and correlated colour temperature (warm-white / cool-white) has proven effects on physiology but has results – even adverse ones – that affect the psychology of individuals. Increasing the intensity and temperature of the colour (cold light) can improve a worker's level of attention and performance. Still, the perceived space may be less pleasant and, in the long term, affect mood, especially if the normal sleep-wake cycle is altered, as in the case of night shift workers (Bedrosian & Nelson, 2013). The presence of colour (and its change as a function of time) in the visual field of individuals has not been exhaustively investigated in the field of studies related to HCL, except to underline (Figueiro et al., 2004) that the principle of the chromatic opponent can also be applied in physiological mechanisms (Hering, 1964).

Does provoking a psychological response through colour in an individual's field of view affect the circadian cycle regulatory effect? Does emotionally mitigating (through colour) the stress induced by a visual stimulus that aims to inhibit melatonin production, preventing falling asleep, affect the physiological process? Given that light can provoke emotions, can it be used to induce controlled emotional states?

Being able to shed light on these questions could lead to a new way of approaching the lighting design of spaces, both professional ones with much more stringent performance requirements and residential ones, where it could simply improve the mood of the occupants. Current technologies allow great flexibility: in the production of dynamic lighting fixtures, where it is possible to control the intensity and chromaticity of the individual LED modules, where optics can be installed that allow accurate control of the luminous flux and in the presence of electronics allows IoT programming (in the future also prediction, thanks to generative AI (Kasanagottu et al., 2024)).

6. CONCLUSIONS

Extensive research in the scientific literature suggests that light and colour influence humans through two mechanisms, one psychological and one physiological, that seem to act separately, sometimes agonistically. This paper briefly presents the difference between these two mechanisms and asks questions about their possible interaction.

These questions are the starting point of research (in the initial phase) based on exposure to dynamic lighting systems (HCLs) and luminaires capable of producing coloured light, with subsequent psychological tests such as Self-Assessment Manikin (Bradley & Lang, 1994) and Panas scale (Watson et al., 1988).

Following these tests, the analysis of the results will aim to find relationships between the physiological response, well known and documented in the literature, and the psychological one, which, in many respects, is still to be investigated. If a relationship exists, it will be possible to draw up a series of guidelines to obtain lighting projects and lighting products that could perceptibly benefit individuals' well-being and mood, improving their performance when confronting activities commonly perceived as stressful.

7. BIBLIOGRAPHY

Badia, P., Myers, B., Boecker, M., Culpepper, J., & Harsh, J. R. (1991). Bright light effects on body temperature, alertness, EEG and behavior. *Physiology & Behavior, 50*(3), 583–588. *https://doi.org/10.1016/0031-9384(91)90549-4*

Bedrosian, T. A., & Nelson, R. J. (2013). Influence of the modern light environment on mood. *Molecular Psychiatry, 18*(7), 751–757. *https://doi.org/10.1038/mp.2013.70*

Boyce, P. R., Beckstead, J. W., Eklund, N. H., Strobel, R. W., & Rea, M. S. (1997). Lighting the graveyard shift: The influence of a daylight-simulating skylight on the task performance and mood of night-shift workers. *International Journal of Lighting Research and Technology, 29*(3), 105–134. *https://doi.org/10.1177/14771535970290030501*

Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: The self-assessment manikin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry, 25*(1), 49–59. *https://doi.org/10.1016/0005-7916(94)90063-9*

Brainard, G. C., Hanifin, J. P., Greeson, J. M., Byrne, B., Glickman, G., Gerner, E., & Rollag, M. D. (2001). Action Spectrum for Melatonin Regulation in Humans: Evidence for a Novel Circadian Photoreceptor. *Journal of Neuroscience, 21*(16), 6405–6412. *https://doi.org/10.1523/JNEUROSCI.21-16-06405.2001*

Cajochen, C., Münch, M., Kobialka, S., Kräuchi, K., Steiner, R., Oelhafen, P., Orgül, S., & Wirz-Justice, A. (2005). High Sensitivity of Human Melatonin, Alertness, Thermoregulation, and Heart Rate to Short Wavelength Light. *The Journal of Clinical Endocrinology & Metabolism, 90*(3), 1311–1316. *https://doi.org/10.1210/jc.2004-0957*

Chandler, D., & Lacey, D. (1949). *The Rise of the Gas Industry in Britain*. British Gas Council.

Clark, J. D., & Harris, J. W. K. (1985). Fire and its roles in early hominid lifeways. *African Archaeological Review, 3*(1), 3–27. *https://doi.org/10.1007/BF01117453*

Elliot, A. J., & Maier, M. A. (2012). Color-in-Context Theory. In *Advances in Experimental Social Psychology* (Vol. 45, pp. 61–125). Elsevier. *https://doi.org/10.1016/B978-0-12-394286-9.00002-0*

Figueiro, M. G., Bullough, J. D., Parsons, R. H., & Rea, M. S. (2004). Preliminary evidence for spectral opponency in the suppression of melatonin by light in humans. *NeuroReport, 15*(2), 313.

Genschow, O., Noll, T., Wänke, M., & Gersbach, R. (2015). Does Baker-Miller pink reduce aggression in prison detention cells? A critical empirical examination. *Psychology, Crime & Law, 21*(5), 482–489. *https://doi.org/10.1080/1068316X.2014.989172*

Hering, E. (1964). *Outlines of a Theory of the Light Sense*. Harvard University Press.

Holley, D. C., Winger, C. M., Deroshia, C. W., Heinold, M. P., Edgar, D. M., Kinney, N. E., Langston, S. E., Markley, C. L., & Anthony, J. A. (1981). *Effects of circadian rhythm phase alteration on physiological and psychological variables: Implications to pilot performance (including a partially annotated bibliography)* (NASA-TM-81277). *https://ntrs.nasa.gov/citations/19810016185*

Hubbard, J., Ruppert, E., Gropp, C.-M., & Bourgin, P. (2013). Non-circadian direct effects of light on sleep and alertness: Lessons from transgenic mouse models. *Sleep Medicine Reviews, 17*(6), 445–452. *https://doi.org/10.1016/j.smrv.2012.12.004*

Humphrey, N. (1976). The Colour Currency of Nature. In *Colour for Architecture Today* (p. 192). Taylor & Francis. *https://www.taylorfrancis.com/chapters/edit/10.4324/9781315881379-3/colour-currency-nature-nicholas-humphrey?context=ubx&refId=ae239579-0f3a-4943-b462-94eee261002a*

Hurlbert, A. C., & Ling, Y. (2007). Biological components of sex differences in color preference. *Current Biology, 17*(16), R623–R625. *https://doi.org/10.1016/j.cub.2007.06.022*

IESNA. (2024). *IESNYC—About Richard Kelly* [Association]. Illuminating Engineering Society - New York City Section. *https://iesnyc.org/content.php?page=About_Richard_Kelly*

Kasanagottu, S., Karre, R., & Kumaraswamy, E. (2024). *Application of machine learning algorithms in a smart home design. 2971*(1). *https://doi.org/10.1063/5.0195981*

Kelly, R., Neumann, D., & Addington, D. M. (A c. Di). (2010). *The structure of light: Richard Kelly and the illumination of modern architecture*. Yale University Press in association with the Yale School of Architecture.

Lack, L., & Wright, H. (1993). The effect of evening bright light in delaying the circadian rhythms and lengthening the sleep of early morning awakening insomniacs. *Sleep, 16*(5), 436–443. *https://doi.org/10.1093/sleep/16.5.436*

Lam, W. M. C. (1992). *Perception and lighting as formgivers for architecture* (1. [print.]). Van Nostrand Reinhold.

Lewy, A. J., Kern, H. A., Rosenthal, N. E., & Wehr, T. A. (1982). Bright artificial light treatment of a manic-depressive patient with a seasonal mood cycle. *The American Journal of Psychiatry, 139*(11), 1496–1498. *https://doi.org/10.1176/ajp.139.11.1496*

Lockley, S. W., Brainard, G. C., & Czeisler, C. A. (2003). High Sensitivity of the Human Circadian Melatonin Rhythm to Resetting by Short Wavelength Light. *The Journal of Clinical Endocrinology & Metabolism, 88*(9), 4502–4505. *https://doi.org/10.1210/jc.2003-030570*

Marotti, F. (1974). *Lo spettacolo dall'Umanesimo al manierismo: Teoria e tecnica ; storia documentaria del teatro italiano.* Feltrinelli. *https://books.google.it/books?id=l7IjMwEACAAJ*

McIntyre, I. M., Norman, T. R., Burrows, G. D., & Armstrong, S. M. (1989). Human melatonin suppression by light is intensity dependent. *Journal of Pineal Research, 6*(2), 149–156. *https://doi.org/10.1111/j.1600-079x.1989.tb00412.x*

Monk, T., Buysse, D., Reynolds Iii, C., Berga, S., Jarrett, D., Begley, A., & Kupfer, D. (1997). Circadian rhythms in human performance and mood under constant conditions. *Journal of Sleep Research, 6*(1), 9–18. *https://doi.org/10.1046/j.1365-2869.1997.00023.x*

Nobel Prize Press. (2017, ottobre 2). *The Nobel Prize in Physiology or Medicine 2017.* NobelPrize.Org. *https://www.nobelprize.org/prizes/medicine/2017/press-release/*

Noguchi, H., & Sakaguchi, T. (1999). Effect of Illuminance and Color Temperature on Lowering of Physiological Activity. *Applied Human Science, 18*(4), 117–123. *https://doi.org/10.2114/jpa.18.117*

Palmer, S. E., & Schloss, K. B. (2010). An ecological valence theory of human color preference. *Proceedings of the National Academy of Sciences, 107*(19), 8877–8882. *https://doi.org/10.1073/pnas.0906172107*

Provencio, I., Jiang, G., De Grip, W. J., Hayes, W. P., & Rollag, M. D. (1998). Melanopsin: An opsin in melanophores, brain, and eye. *Proceedings of the National Academy of Sciences, 95*(1), 340–345. *https://doi.org/10.1073/pnas.95.1.340*

Schauss, A. G. (1979). Tranquilising effect of color reduces aggressive behavior and potential violence. *Journal of Orthomolecular Psychiatry, 8*(4), 218–221.

Schivelbusch, W. (1995). *Disenchanted night: The industrialisation of light in the nineteenth century* (A. Davies, Trad.). Univ. of California Pr.

Siniscalco, A., Bortolotti, A., & Rossi, M. (2022). Do color and light affect physiology and psychology in proportional ways? *Colour and Colorimetry. Multidisciplinary Contributions. Vol. XVII A*, 246. *https://doi.org/10.23738/RCASB.006*

Speer, A., Winston, R., & Winston, Clara. (1969). *Inside the Third Reich: Memoirs*. Touchstone.

Thapan, K., Arendt, J., & Skene, D. J. (2001). An action spectrum for melatonin suppression: Evidence for a novel non-rod, non-cone photoreceptor system in humans. *The Journal of Physiology, 535*(1), 261–267. *https://doi.org/10.1111/j.1469-7793.2001.t01-1-00261.x*

Van Someren, E. J., Kessler, A., Mirmiran, M., & Swaab, D. F. (1997). Indirect bright light improves circadian rest-activity rhythm disturbances in demented patients. *Biological Psychiatry, 41*(9), 955–963. *https://doi.org/10.1016/S0006-3223(97)89928-3*

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063–1070. *https://doi.org/10.1037/0022-3514.54.6.1063*

Zehring, W. A., Wheeler, D. A., Reddy, P., Konopka, R. J., Kyriacou, C. P., Rosbash, M., & Hall, J. C. (1984). P-element transformation with period locus DNA restores rhythmicity to mutant, arrhythmic Drosophila melanogaster. *Cell, 39*(2 Pt 1), 369–376. *https://doi.org/10.1016/0092-8674(84)90015-1*

L03

HEALTHY AND ATHIS: PARAMETERS AND TOOLS

SALUBRIDADE E ATHIS: PARÂMETROS E FERRAMENTAS

Karine da Silva Ferro
Professora1 e Doutoranda2
1 Centro Universitário FMABC - CUFMABC /
2 Programa de Pós-Graduação em Arquitetura e Urbanismo -
Universidade Presbiteriana Mackenzie - PPGAU-FAU / UPM
karine.ferro@gmail.com

Maria Augusta Justi Pisani
Professora Doutora
Universidade Presbiteriana Mackenzie - PPGAU-FAU / UPM
augusta@mackenzie.br

Ciça Kaline Cruz Rosa
Mestre em Urbanismo
Programa de Pós-Graduação em Urbanismo -
Universidade Federal do Rio de Janeiro – PROURB-FAU / UFRJ
cica.rosa@fau.ufrj.br

ABSTRACT

This article discusses the relationship between health and housing, considering the premises of the WHO and NBR 15.575, which are related to environmental psychology, using the Technical Advisory on Housing of Social Interest – ATHIS as a tool, to combat housing inadequacy, based on the concepts of healthy housing, health promotion and habitability, aligned with the definition of health, set out in the preamble of the constitution of the World Health Organization - WHO. The method used was documentary and bibliographic review of primary and secondary sources, in VHL, CAPES, Google Scholar databases; in addition to qualitative analysis through documents, redesign and visits of an ATHIS case in an occupation in the central region of the city of Rio de Janeiro, according to the premises exposed in the theoretical framework analyzed. The results of this research may assist new investigations and ATHIS projects in Brazil.

KEYWORDS: healthy housing. healthy architecture. ATHIS. environmental psychology. habitability.

RESUMO

Este artigo debate a relação de saúde e moradia, considerando premissas da OMS e da NBR 15.575, que se relacionam com psicologia ambiental, tendo como ferramenta a Assessoria Técnica em Habitação de Interesse Social – ATHIS, para enfrentamento da inadequação habitacional, fundamentada nos conceitos de habitação saudável, promoção de saúde e habitabilidade, alinhados com a definição de saúde, exposta no preâmbulo da constituição da Organização Mundial de Saúde - OMS. O método utilizado foi a revisão documental e bibliográfica em fontes primárias e secundárias, em bases de dados BVS, CAPES, Google Acadêmico; além de análise qualitativa de um caso de ATHIS em uma ocupação da região central da cidade do Rio de Janeiro por meio documental, redesenho e visitas, conforme as premissas expostas no referencial teórico analisado. Os resultados desta pesquisa poderão auxiliar novas investigações e projetos de ATHIS no Brasil.

PALAVRAS-CHAVE: habitação saudável. arquitetura saudável. ATHIS. psicologia ambiental. habitabilidade.

1. INTRODUÇÃO

Para este artigo, a saúde é entendida conforme o preâmbulo da constituição da Organização Mundial de Saúde - OMS (2024), o qual observa que não basta a falta de doença para considerar saudável o indivíduo, mas sim, assegurar seu bem-estar de maneira integral. Esta definição, quando complementada pelos conceitos de determinantes sociais e da promoção de saúde, demanda a interdisciplinaridade do debate de ações efetivas deste campo. Neste contexto a habitação exerce papel importante, relacionando salubridade com premissas de habitabilidade determinadas pela Organização das Nações Unidas - ONU (1991) e pela NBR 15.575 (ABNT, 2021).

Além disso o conceito de habitação saudável considera o bem-estar, a segurança, a privacidade, o sentimento de pertencimento e interação social, para uma ambiência propícia à saúde mental do seu ocupante (Bonnefoy, et al., 2004; OMS, 2018). Questões estas tratadas pelos temas que englobam a Psicologia Ambiental - PA, dialogando entre si na determinação tanto da influência do espaço no comportamento, quanto vice-versa (Cavalcante & Elali, 2017, 2018). Desta forma, interagindo com as premissas de habitação saudável e habitabilidade, e com as formas de atuação em ATHIS, como será demonstrado ao longo do artigo.

1.1 Justificativa

O direito à moradia é um direito fundamental, assegurado pela Constituição Federal brasileira e pelo direito à moradia adequada (Brasil, 2013). E, segundo a Organização das Nações Unidas - ONU (1991), existem requisitos que devem ser seguidos para que a moradia seja considerada adequada, como: segurança da posse; disponibilidade de serviços, materiais, instalações e infraestrutura na região; economicidade; habitabilidade; acessibilidade; localização e adequação cultural. Ou seja, considera questões físicas, técnicas, culturais e sociais, em consonância com a visão integral de saúde, citada acima.

As premissas citadas acima, relevantes para a formação de uma moradia digna e salubre, se relacionam diretamente com a PA e seus temas, uma vez que buscam a redução dos riscos sociais, físicos e psicológicos com impacto na redução do estresse do ocupante; ambientes que promovam bem-estar; ambiências que valorizem a identidade e sentimento de pertencimentoa ao lugar; garantia de acesso à cidade, promovendo a mobilidade, não só territorial, como também econômica e social (Cavalcante & Elali, 2017, 2018).

Dados de 2022 da Fundação João Pinheiro (2024), demonstram que, no Brasil, o déficit habitacional qualitativo é em torno de 26 milhões de habitações inadequadas, sendo que aproximadamente 7 milhões apresentam duas ou mais inadequações das levantadas. Este número cresce em valores absolutos no período de 2016 a 2022, mas se mantém em proporção ao total de domicílios urbanos duráveis no período de 2016 a 2022.

As questões consideradas como inadequações habitacionais (Fundação João Pinheiro, 2024) tem relação direta com os pontos de intersecção entre a saúde e o ambiente construído considerados por Shaw (2004), identificando como impacto direto na saúde física a presença de desequilíbrio térmico, umidade e mofo; e os efeitos da insegurança e deficiência física e existencial, a precariedade habitacional, falta de pertencimento e o status social, na saúde mental. Já o impacto indireto à saúde física e mental fica a cargo dos aspectos apontados pelos indicadores socioeconômicos e de qualidade de vida; da proximidade e disponibilidade de serviços de abastecimento e equipamentos na região de implantação da moradia; comportamentos culturais regionais e familiares; senso de comunidade e capital social.

1.2 Objetivos

O presente artigo busca:

- Identificar os parâmetros e ferramentas que promovam a salubridade na Habitação de Interesse Social - HIS no Brasil, por meio de premissas da habitação saudável e habitabilidade elencadas pela OMS e NBR 15.575, as quais se relacionam com os temas que compõem o campo de investigação da PA, para o enfrentamento da inadequação habitacional, tendo como ferramenta a Assessoria Técnica para Habitação de Interesse Social - ATHIS.

- Verificar o atendimento ao direito à moradia adequada e à habitação saudável para enfrentamento da inadequação habitacional, por meio de análise qualitativa de caso de ATHIS na cidade do Rio de Janeiro.

2. MÉTODO

O método utilizado é a revisão documental e bibliográfica, em fontes primárias e secundárias, em bases de dados BVS, CAPES e Google Acadêmico, pela seleção das palavras-chave: habitação saudável, arquitetura saudável, ATHIS, psicologia ambiental e habitabilidade.

Assim como, análise qualitativa de caso de ATHIS em uma ocupação da região central da cidade do Rio de Janeiro por meio documental, de visitas e redesenho, conforme as seguintes a premissas, analisadas no referencial teórico, a seguir: Acessibilidade; Mobilidade; Identidade Social Urbana, Identidade do Lugar e Pertencimento; Percepção de Risco e Estresse Ambiental; Habitabilidade e Conforto Higrotérmico.

3. REFERENCIAL TEÓRICO
3.1 Promoção de Saúde e Habitação Saudável

A proposta da Promoção de Saúde - PS é o direcionamento de ações com base no conceito ampliado de saúde, relacionadas às condições objetivas de vida como: paz; habitação; educação; alimentação; renda; ecossistema estável; recursos sustentáveis; justiça social e equidade. Identificando, assim, o papel importante do meio ambiente na saúde, desde os ecossistemas, áreas urbanas e rurais; até a unidade habitacional (Brasil, 2021; Cohen, 2004; OMS, 1986).

As inequidades em saúde, ou seja, diferenças injustas e evitáveis, são enfrentadas por meio do foco da PS nas Determinantes Sociais de Saúde, definidas por fatores que extrapolam questões biomédicas e impactam na qualidade de vida da população, como: habitação; acesso à saneamento e redes de abastecimento e acesso a áreas arborizadas. Entendendo que o estabelecimento de ambientes salubres faz parte

de estratégias de prevenção em saúde, demonstrando a importância da visão transdisciplinar, porém de difícil efetivação em políticas públicas no cenário brasileiro (Brasil, 2021; Buss & Filho, 2007; Cohen, 2004).

Como importante norteador para avaliação e definição de parâmetros para a produção de moradias adequadas e favoráveis à saúde, tem-se a definição de habitabilidade, com duas visões complementares, uma pela ONU (1991) e outra pela NBR 15.575 (ABNT, 2021), a primeira a considera como moradia adequada a que protege seu ocupante de riscos físicos do meio; e a segunda determina fatores de habitabilidade, relativos ao conforto higrotérmico, segurança e desempenho da edificação, a saúde, higiene, funcionalidade e acessibilidade.

Os benefícios da consideração das inter-relações saúde – ambiente se alinham ao estudo da PA, a qual define a ambiência como a vivência ativa do conjunto de experiências e situações propostas pelo espaço por parte do usuário, assim como elenca temas de formação deste campo, tais quais: interdisciplinaridade; identidade de lugar; identidade social urbana; comportamentos socioespacial humano; estresse ambiental; percepção de risco; mobilidade e privacidade (Cavalcante & Elali, 2017, 2018; Thibaud, 2018).

Entendendo que a habitação saudável é inerente do bem-estar e desenvolvimento humano, a OMS elabora uma série de diretrizes e fornece recomendações fundamentadas em pesquisas e evidências sobre as condições e possíveis interferências para a melhoria deste espaço basilar para o desenvolvimento físico, mental e social de seus habitantes.

Inicialmente a OMS (2018) elenca os principais riscos associados à saúde, no espaço habitacional, e seus possíveis impactos. Como a população passa mais da metade do tempo dentro da habitação, as exposições e riscos à saúde no ambiente doméstico são mais expressivos que os demais. A habitação precária, devido a fragilidade ambiental, social e construtiva, expõe os usuários a maiores riscos, inclusive àqueles relacionados também com a acessibilidade. O conforto ambiental (higrotérmico, acústico, lumínico) e a qualidade do ar interno podem aumentar a mortalidade cardiovascular; prejudicar a saúde respiratória; desencadear reações alérgicas. A superlotação aumenta os riscos sociais; doenças infecciosas e o estresse. As instalações de água e esgoto afetam a segurança alimentar e a higiene pessoal. Os materiais e sistema construtivos inadequadas expõe aos moradores perigos de desabamentos, infiltrações e o contato com materiais não saudáveis. A falta de espaços públicos inibe a prática de convívio social e atividade física.

Em complemento a isto a NBR 15.575 avança ainda mais ao definir parâmetros relacionados à proliferação de micro-organismos e à presença de poluentes na atmosfera interna à habitação e no ambiente de garagem, além das condições de habitabilidade definidas pela norma (ABNT, 2021).

Outro agravante muito constatado há décadas é que as habitações precárias são mais suscetíveis às mudanças climáticas, justamente por apresentarem fragilidades em suas estruturas, espaços internos e externos, levando à população residente maior vulnerabilidade a escorregamentos, inundações, incêndio e outros acidentes que desencadeiam mais problemas de saúde (Bruna & Pisani, 2010).

As recomendações da OMS (2018) são muito claras e possuem exemplos e detalhes, fundamentados por pesquisas mundiais. Fica explicito que cada quesito apontado é totalmente vinculado às características intrínsecas de cada região ou localidade e que nunca estas recomendações são estagnadas. As pesquisas, novas tecnologias e mudanças climáticas e sociais devem fazer parte de constantes atualizações.

3.2 ATHIS

Os problemas com a falta de qualidade e infraestrutura urbana da habitação social no Brasil deflagrou, principalmente a partir da década de 1960, a luta pela reforma urbana e pelo direito coletivo à cidade. A partir da redemocratização ocorrida na década de 1980, arquitetos e urbanistas, sociólogos, engenheiros e outros profissionais iniciam as Assessorias Técnicas para dar suporte aos projetos de habitação social (ATHIS, 2024). Ressalta-se que em vários municípios brasileiros há atendimentos que antecedem a lei Nacional da Assistência Técnica, algumas experiências, como o caso de Porto Alegre (RS) e São Paulo, que desde a década de 1970 já contava com programas específicos de assistência técnica à habitação social totalmente gratuito.

A Lei nº 11.888, de 24 de dezembro de 2008 é promulgada com o objetivo de assegurar às famílias de baixa renda assistência técnica pública e gratuita para o projeto e a construção de HIS. Esta Lei atende as famílias com renda mensal de até 3 (três) salários-mínimos, em áreas urbanas ou rurais, para que tenham o direito à assistência técnica pública e gratuita para o projeto e a construção de HIS para sua própria moradia. Abrange todos os trabalhos de projeto, acompanhamento e execução da obra a cargo dos profissionais das áreas de arquitetura, urbanismo e engenharia necessários para a edificação, reforma, ampliação ou regularização fundiária da habitação, tornando-se viável com o apoio financeiro da União aos Estados, ao Distrito Federal e aos Municípios para a execução de serviços permanentes e gratuitos de assistência técnica (Brasil, 2008).

O CAU/BR (2024) luta pela implantação do ATHIS, provendo e incentivando a participação de gestores públicos e arquitetos. Indica que a prefeitura deve ter um programa habitacional para selecionar as famílias a serem atendidas, bem como uma previsão orçamentária para a remuneração dos profissionais envolvidos e para a execução das obras. Fazem parte das atividades previstas durante o atendimento: projeto de unidades habitacionais novas; melhoria da habitação (impermeabilizações, telhados, aberturas, conforto e equipamentos); ampliação e obras internas; regularização fundiária (quando se trata de ocupação) e formalização das obras nas edificações regulares.

A melhoria da qualidade nas habitações em favelas não é um projeto simples, pois estas são implantadas de forma muito densa, incrustradas umas às outras, com múltiplos andares e sem espaços suficientes para iluminação e ventilação em todos os ambientes. Portanto, a criatividade e inovação, a custos baixos, devem ser explorados para que se minimize a falta de qualidade destes espaços. Outra questão recorrente é a infiltração nessas edificações, sejam elas pelo solo, pela cobertura e pelas paredes envoltórias.

A umidade desencadeia fungos e mofo, e estes são riscos à saúde, que afetam principalmente crianças, idosos e pessoas mais vulneráveis às doenças respiratórias. Segundo o relatório OMS (2021), a presença de umidade e mofo é uma interação complexa entre o desempenho térmico e a ventilação de um edifício, a geração interna de umidade e as infiltrações. As obras de ATHIS precisam empregar medidas que reduzam ou eliminem a umidade e o mofo em habitações, considerando inclusive os parâmetro elencados por normas, como a NBR 15.575.

Várias Universidades, Institutos Federais e Faculdades de arquitetura e urbanismo abriram cursos de extensão em ATHIS neste século, tendo especializado milhares de arquitetos. Mais recentemente a residência em ATHIS, envolvendo universidade e prefeituras tem sido realizado com sucesso. A quantidade de profissionais formados ainda não garante a ocupação nesta área, pois as limitações das prefeituras de fazer parcerias e conseguir verbas para a atuação são esparsas. Mas a ATHIS é um avanço considerável que tem disseminado os saberes e as competências entre os profissionais da construção civil, principalmente os arquitetos e urbanistas.

Segundo levantamento do CAU/SP realizado em 2023, dentre os 54 projetos de ATHIS fomentados pela entidade no período de 2021 a 2023, nenhum profissional da área da saúde participou dos projetos fomentados, embora existam projetos de intervenção voltados para segurança, salubridade e regularização edilícia e fundiária, temas relacionados com premissas de habitação saudável (Sanches & Coradin, 2023). A maioria dos profissionais são da área de arquitetura e urbanismo, o que indica uma baixa interdisciplinaridade na amostra analisada, quesito importante para a abordagem da aproximação entre habitação e Promoção de Saúde.

Conforme os dados publicados referentes ao tipo e o segmento da ação dos projetos fomentados no período no estado de São Paulo, os que apresentam maior impacto na saúde dos moradores, foram os relacionados à prestação de serviço às das ocupações no centro da capital, por meio de parceria dos movimentos de luta por moradia com profissionais de assistência técnica com experiência, até anterior à legislação nacional de ATHIS, uma vez que o estado possui histórico de políticas públicas voltadas à autoconstrução (Sanches & Coradin, 2023).

4. ANÁLISE DE APLICAÇÃO DA ATHIS E PREMISSAS DE SALUBRIDADE

Para análise do caso com a aplicação de processo de ATHIS em uma ocupação de edifício na área central do Rio de Janeiro, detalhado a seguir, foram elencados os seguintes temas, identificados no referencial teórico do artigo: Acessibilidade; Mobilidade; Identidade Social Urbana, Identidade do Lugar e Pertencimento; Percepção de Risco e Estresse Ambiental; Habitabilidade e Conforto Higrotérmico, verificados de forma documental, redesenho da planta do pavimento tipo e por experiência de residência artística no local por uma das autoras do artigo.

Com relação à atuação da ATHIS no Rio de Janeiro, esta é realizada por meio de iniciativas e programas de parecerias entre os movimentos de moradia e Organizações da Sociedade Civil com fomentos nacionais, estaduais e municipais, públicos e de entidades como o CAU. A região está em processo de desenvolvimento técnico de profissionais que atuem na área da assessoria técnica para atenderem a demanda crescente, uma vez que, para a captação de verbas para programas como o Programa Minha Casa Minha Vida / PMCMV - Entidades é obrigatória a contratação deste serviço para as reformas e adequações necessárias nos edifícios ocupados, tendo como exemplo a Ocupação Manoel Congo (Figura 1), como uma das duas únicas realizadas por meio de fomento do PMCPV – Entidades, no estado do Rio de Janeiro (Gonzalez, 2023; Nepomuceno, 2022).
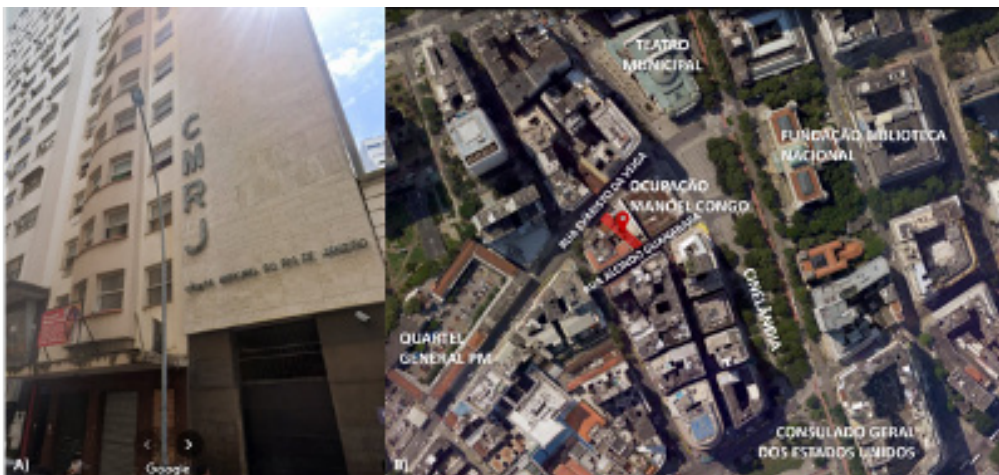
Figura 1/Figure 1. Ocupação Manoel Congo
A) Fachada da Rua Alcindo Guanabara, vizinha à Câmara Municipal do Rio de Janeiro; B) Mapa de Localização.
Fonte: adaptado de Google (2023). / Source: Adapted from Google (2023).

Como resultado do processo de urbanização verificado nas metrópoles brasileiras, a cidade do Rio de Janeiro tem edifícios ociosos na Zona Central e que são alvo de interesse para transformação em HIS, uma vez que a região detém 55% da oferta de empregos da cidade, contra 2% a 11% nas regiões periféricas, que demandam

deslocamentos de uma média de 2 a 3 horas em cada viagem. Em busca deste direito à cidade e à **mobilidade urbana e social**, para acesso à infraestrutura urbana e trabalho, o Movimento Nacional de Luta pela Moradia-RJ realiza a ocupação Manoel Congo (Consórcio Quanta | Lerner, 2018; Gonzalez, 2023; Nepomuceno, 2022).

A ocupação Manoel Congo teve início em outubro de 2007, abriga 42 famílias e 120 moradores, encontra-se em um antigo prédio do INSS localizado no centro da cidade do Rio de Janeiro, que em 2010 foi comprado pelo Estado do Rio de Janeiro e iniciou os projetos de reforma por meio de recursos do Fundo Nacional de Habitação de Interesse Social – FNHIS, com o compromisso de Concessão do Direito Real de Uso formalizado após as reformas e adequações do edifício, que se encontram em fase final, com previsão de regularização fundiária, pela obtenção de documentos legais, como o Habite-se, ainda em 2024 (Cardoso & Ximenes, 2018; Cardoso R. , 2024; Gonzalez, 2023). O processo de ATHIS nesta ocupação foi importante na garantia do direito de permanência das famílias ocupantes no edifício e para a viabilização da regularização edilícia e fundiária.

As famílias que participaram da ocupação, vieram em sua maioria de regiões de favelas da periferia da cidade como o Cantagalo, em busca de maior segurança e menor contato com a criminalidade, presente nestas regiões, além de maior facilidade de acesso à infraestrutura urbana, o que tem relação direta com as **premissas de percepção de risco e estresse ambiental** discutidos na PA. Os moradores também são provenientes, em boa parte, segundo Gonzalez (2023), de coabitações, buscando uma redução na aglomeração habitacional, que é uma diretriz de saúde determinada pela OMS (2018)

É possível identificar na planta do pavimento tipo (Figura 2), que questões relacionadas ao **conforto higrotérmico** das unidades habitacionais foram consideradas, parcialmente, buscando o melhor posicionamento das mesmas junto às janelas existentes, reduzindo o número de divisórias dos ambientes, beneficiado pela orientação solar do edifício. Porém, apesar das unidades habitacionais localizadas nas extremidades possuírem iluminação e ventilação natural mais satisfatórias do que as centrais, essas últimas estão com as aberturas principais voltadas para um fosso central que contêm a previsão de escada e possui o bloqueio de um prédio vizinho geminado ao edifício da ocupação, prejudicando o atendimento aos parâmetros definidos pela NBR 15.575.

Figura 2/Figure 2. Croqui Esquemático – Planta Pavimento Tipo Ocupação Manoel Congo.
Fonte: Autoras, adaptado de Gonzalez (2023, p. 125). / Source: Authors, adapted from Gonzalez (2023, p. 125).

Uma facilidade relatada na conversão do edifício comercial em habitação, foi a presença das lajes livres, que demandaram pouca intervenção nas divisórias existentes, viabilizando parte do custo da obra, porém o desafio de adequação se deu com relação às instalações de água, esgoto e eletricidade necessárias às unidades habitacionais, o que diverge das necessidades de pavimentos comerciais. Ainda sobre a **habitabilidade**, houve preocupação sobre os tipos de materiais a serem instalados nos apartamentos, privilegiando a higiene dos espaços (Gonzalez, 2023).

Além da questão das instalações, existem desafios quanto à **acessibilidade** nos apartamentos menores; com relação aos acessos que têm dimensão menor que 90 centímetros em alguns casos e os banheiros com dimensões abaixo das mínimas indicadas, dificultando a movimentação de pessoas com redução de mobilidade, porém, segundo identificado por Gonzalez (2023) nas entrevistas com os responsáveis pelo acompanhamento das obras de adequação, foi montado escritório interno na ocupação para ajuste de projetos e tomadas de decisões para cada demanda específica dos moradores, havendo personalização de soluções.

Conforme demonstrado no corte esquemático abaixo (Figura 3), a ocupação Manoel Congo, além de contar com as unidades habitacionais, também tem na base do edifício usos relacionados a lazer, cultura e geração de renda, como um café, cujo lucro auxilia nos gastos comuns e na manutenção do edifício, além de espaço de cultura, auditório e cooperativas. Desde o princípio o objetivo foi criar atividades que apoiassem financeiramente as necessidades da ocupação, gerando trabalho e renda com base em uma estratégia coletiva para enfrentamento do aumento do custo de vida com a moradia no centro. Porém estas atividades excedem este papel ao servirem como mediadores da **identificação com o lugar** de maneira endógena promovendo o sentimento de **pertencimento,** por intermédio dos programas dos espaços comuns. Além disso, ao promover atividades que se abrem para a relação com os habitantes do entorno do edifício é facilitada a formação da **identidade social urbana**, ao permitir trocas culturais e de vivências para a criação de laços com o território.
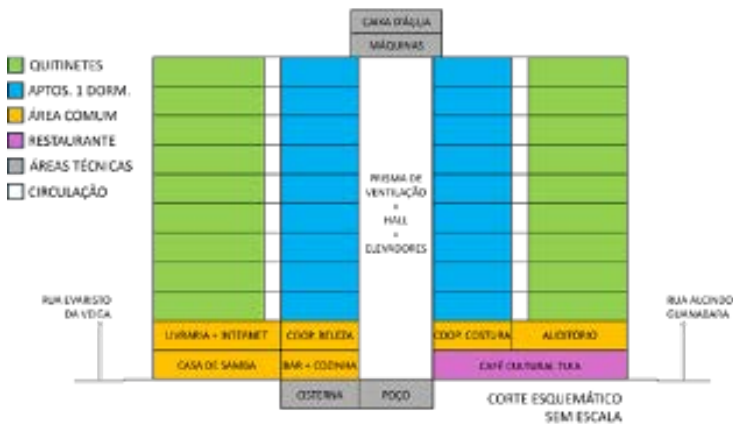
Figura 3/Figure 3. Corte esquemático edifício Ocupação Manoel Congo.
Fonte: Autoras, adaptado de Gonzalez (2023, p. 125). / Source: Authors, adapted from Gonzalez (2023, p. 125).

5. CONSIDERAÇÕES FINAIS

É possível identificar pelas bases teóricas, dados e pelo caso apresentado a relevância do processo de ATHIS na garantia da segurança física, social e psicológica, da salubridade e da habitabilidade, na formação de uma ambiência promotora de qualidade de vida e bem-estar do cidadão, garantindo seu direito à moradia saudável e digna, em especial no caso das ocupações de edifícios para conversão em HIS; apresentando desafios nestas adaptações para atendimento aos parâmetros de salubridade, determinados pelas normas, os quais devem ser enfrentados.

Ainda, a falta de articulação entre as diversas áreas, em especial as secretarias e ministérios de Habitação e Saúde, nas diversas instâncias nacionais, dificulta o ganho de volume de produção que gerem impactos significativos e em escala para o enfrentamento do déficit habitacional qualitativo, o qual supera em pelo menos três vezes o déficit quantitativo.

Além disso, essa integração viabilizaria o aumento de verbas destinadas a esta finalidade, uma vez que a escassez de investimentos leva à morosidade dos processos de regularização, principalmente os similares ao caso apresentado, produzindo efeitos psicológicos negativos pela insegurança na falta de garantia de permanência no local de moradia.

Assim como, resultaria diretamente em estratégias de Promoção de Saúde, que demandam ações coordenadas para regularização edilícia e fundiária dos domicílios brasileiros voltados a uma ambiência habitacional salubre, as quais devem seguir premissas validadas e baseadas nas normas, estudos científicos e orientações da OMS, a fim de produzir impacto positivo na prevenção em saúde.

6. REFERÊNCIAS

ABNT. (2021). Edificações habitacionais – desempenho – parte 1: Requisitos gerais (NBR 15575-1).

ATHIS. (2024). Sobre ATHIS. ATHIS - Fórum Regional de Assessoria Técnica em Habitação de Interesse Social e Extensão Universitária. *https://www.athis.org.br/sobre/*

Bonnefoy, X. R., Annesi-Maesano, I., Aznar, L. M., Braubach, M., Croxford, B., Davidson, M., Ezratty, V., Fredouille, J., Gonzalez-Gross, M., van Kamp, I., Maschke, C., Mesbah, M., Moissonnier, B., Monolbaev, K., Moore, R., Nicol, S., Niemann, H., Nygren, C., Ormandy, D., ... Rudnai, P. (2004). Review of evidence on housing and health [Background document]. In Fourth Ministerial Conference on Environment and Health. WHO Europe. *https://www.wascorporation.it/docs/4_conferenza_europea_salute_2004.pdf*

Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Análise em Saúde e Doenças não Transmissíveis. (2021). Promoção da Saúde: Aproximações ao tema: Caderno 1. Ministério da Saúde, Secretaria de Vigilância em Saúde, Departamento de Análise em Saúde e Doenças Não Transmissíveis. *http://bvsms.saude.gov.br/bvs/publicacoes/promocao_saude_aproximacoes_tema.pdf*

Brasil. Presidência da República. Casa Civil. (2008). Lei nº 11.888, de 24 de dezembro de 2008. Assegura às famílias de baixa renda assistência técnica pública e gratuita para o projeto e a construção de habitação de interesse social e altera a Lei no 11.124, de 16 de junho de 2005. Casa Civil. *https://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2008/Lei/L11888.htm*

Brasil. Secretaria de Direitos Humanos da Presidência da República – SDH/PR. (2013). Direito à moradia adequada. Coordenação Geral de Educação em SDH/PR, Direitos Humanos, Secretaria Nacional de Promoção e Defesa dos Direitos Humanos. *https://unesdoc.unesco.org/ark:/48223/pf0000225430?posInSet=7&queryId=N-EXPLORE-f0e891c6-38b7-4000-894c-539c3af62bc3*

Bruna, G. C., & Pisani, M. A. J. (2010). Mudanças climáticas e pobreza: Reflexões. Revista Brasileira De Ciências Ambientais (RBCIAMB), (18), 49–57. *https://www.rbciamb.com.br/Publicacoes_RBCIAMB/article/view/370*

Buss, P. M., & Pellegrini Filho, A. (2007). A saúde e seus determinantes sociais. Physis: Revista de Saúde Coletiva, 17(1), 77–93. *https://doi.org/10.1590/s0103-73312007000100006*

Cardoso, A., & Ximenes, L. (2018). Manuel Congo, movimentos sociais e a luta pelo direito à moradia no Rio de Janeiro. Observatório das Metrópoles. *https://www.observatoriodasmetropoles.net.br/manuel-congo-movimentos-sociais-e-luta-pelo-direito-moradia-no-rio-de-janeiro/*

Cardoso, R. (2024). Ocupação Manoel Congo, no Rio, deve ser regularizada ainda em 2024. Agência Brasil. *https://agenciabrasil.ebc.com.br/geral/noticia/2024-03/ocupacao-manoel-congo-no-rio-deve-ser-regularizada-ainda-em-2024#:~:text=A%20Ocupação%20Manoel%20Congo%20fica,128%20pessoas,%20vivem%20no%20prédio*

CAU/BR. (2024). O que é ATHIS. Mais Arquitetos - Uma cruzada em defesa da moradia digna para todos. *https://caubr.gov.br/maisarquitetos2021/?page_id=166*

Cavalcante, S., & Elali, G. A. (Orgs.). (2017). Temas Básicos em psicologia ambiental. Vozes.

Cavalcante, S., & Elali, G. A. (Orgs.). (2018). Psicologia Ambiental: Conceitos para a leitura da relação pessoa-ambiente. Vozes.

Cohen, S. C. (2004). Habitação saudável como caminho para a promoção da saúde (tese de doutorado). Fundação Oswaldo Cruz, Rio de Janeiro.

Consórcio Quanta | Lerner. (2018). Plano estratégico de desenvolvimento urbano integrado da região metropolitana do rio de janeiro - PEDUI RMRJ. Governo do Rio de Janeiro, Câmara Metropolitana do Rio de Janeiro, Grupo Banco Mundial. *https://www.modelarametropole.com.br/wp-content/uploads/2018/08/ResumoPT..compressed-1.pdf*

Fundação João Pinheiro. Diretoria de Estatística e Informações. (2024). Inadequação de domicílios no Brasil 2022. Fundação João Pinheiro, Diretoria de Estatística e Informações. *https://fjp.mg.gov.br/deficit-habitacional-no-brasil/*

Gonzalez, L. L. (2023). Assessoria e assistência técnica no Rio de Janeiro: Reflexão crítica sobre a práxis (dissertação de mestrado). Pontifícia Universidade Católica, Rio de Janeiro.

Google. (2023). Google Maps. *https://www.google.com.br/maps/*

Nepomuceno, M. D. (2022). O movimento nacional de luta pela moradia: Uma leitura freireana do mutirão na Ocupação Manoel Congo (tese de doutorado). Universidade Federal Fluminense, Niterói.

OMS. (1986). Carta de Ottawa. Em Primeira conferência internacional sobre promoção da saúde. WHO. *https://bvsms.saude.gov.br/bvs/publicacoes/carta_ottawa.pdf*

OMS. (2018). WHO housing and health guidelines. WHO. *https://iris.who.int/bitstream/handle/10665/276001/9789241550376-eng.pdf?sequence=1*

OMS. (2021). Policies, regulations and legislation promoting healthy housing: A review. WHO. *https://apps.who.int/iris/bitstream/handle/10665/338940/9789240011298-eng.pdf*

OMS. (2024). Constitution. World Health Organization. *https://www.who.int/about/governance/constitution*

ONU. (1991). General comment nº 04: The right to adequate housing (art. 11, §. 1). Em Committe on economic, social and cultural rights. UN CESCR.

Sanches, D., & Coradin, R. F. (Orgs.). (2023). Vivenciando ATHIS: CAU/SP 2021/2023. Conselho de Arquitetura e Urbanismo de São Paulo. *https://issuu.com/causp_oficial/docs/vivenciandoathis*

Shaw, M. (2004). Housing and public health. Annual Review of Public Health, 25, 397–418. https://doi.org/10.1146/annurev.publhealth.25.101802.123036

Thibaud, J. P. (2018). Ambiência. Em S. Cavalcante & G. A. Elali (Orgs.), Psicologia Ambiental: Conceitos para a leitura da relação pessoa-ambiente (pp. 15–25). Vozes.

L03

SENSITIVE ARCHITECTURE: PROMOTING HEALTH AND SOCIAL HARMONY WITH NEUROARCHITECTURE

ARQUITETURA SENSÍVEL: PROMOVENDO SAÚDE E HARMONIA SOCIAL COM A NEUROARQUITETURA

Patrícia Cristina Cunha Nunes de Oliveira Fontoura
Researcher and Post-Doctorate in Architecture CEAU FAUP / Investigadora
e Pós Doutoranda em Arquitetura. CEAU FAUP
University of Porto / Universidade do Porto
pfontoura@arq.up.pt
patriciacunha.arquitetura@gmail.com

ABSTRACT

Neuroscience applied to Architecture contributes to creating spaces that promote physical health and mental and social well-being. According to the WHO, health includes a complete state of well-being beyond the absence of disease. In Architecture, elements such as air quality, lighting, acoustics, ergonomics, and visuals are essential for occupants' physical well-being. The careful selection of colors, materials, textures, shapes, and layouts impacts the health, behavior, and mood of users. This study investigated the colors red, green, and blue in Architecture, demonstrating significant changes in the mood of individuals exposed to these environments for four hours daily over a month during study activities

KEYWORDS: Sensitive Architecture. Neuroarchitecture. Health. Color. Humor.

RESUMO

A Neurociência aplicada à Arquitetura contribui para a criação de espaços que promovem saúde física e bem-estar mental e social. Segundo a OMS, a saúde inclui um estado completo de bem-estar, além da ausência de doença. Em Arquitetura, elementos como qualidade do ar, iluminação, acústica, ergonomia e visuais são essenciais para o bem-estar físico dos ocupantes. A cuidadosa escolha de cores, materiais, texturas, formas e layouts impacta a saúde, comportamento e humor dos usuários. Este estudo investigou as cores vermelho, verde e azul na Arquitetura, demonstrando mudanças significativas no humor de indivíduos expostos a esses ambientes por quatro horas diárias durante um mês em atividades de estudo

PALAVRAS-CHAVE: Arquitetura Sensível. Neuroarquitetura. Saúde. Cor. Humor.

1. INTRODUÇÃO

A Neuroarquitetura é um campo interdisciplinar emergente e integra os princípios da Neurociência com a prática arquitetónica, buscando compreender como o ambiente construído influencia o cérebro humano e, consequentemente, o comportamento, as emoções e o bem-estar dos indivíduos. Este campo de conhecimento é essencial para a arquitetura contemporânea, pois oferece insights valiosos para a criação de espaços que não apenas atendem às necessidades funcionais, mas também promovem saúde física e mental, conforto e bem-estar (Sternberg, 2010). O interesse pela Neuroarquitetura cresce à medida que evidências científicas demonstram que elementos do ambiente construído, como a luz, a cor, a forma e a acústica, têm impactos significativos sobre o sistema nervoso. Espaços projetados com base nesses princípios podem melhorar a qualidade de vida, aumentar a produtividade, reduzir o estresse e até mesmo acelerar processos de recuperação em contextos de saúde (Eberhard, 2009).

A importância de projetar ambientes saudáveis está alinhada com a definição de saúde da Organização Mundial da Saúde (OMS), que a descreve como "um estado

de completo bem-estar físico, mental e social, e não apenas a ausência de doença ou enfermidade" (World Health Organization, 2024). Além disso, a criação de espaços que promovem saúde e bem-estar está em consonância com vários dos 17 Objetivos de Desenvolvimento Sustentável (ODS) da ONU, particularmente aqueles relacionados à saúde e bem-estar (ODS 3), cidades e comunidades sustentáveis (ODS 11), e educação de qualidade (ODS 4) (Nations, 2023).

O objetivo deste artigo é compartilhar uma experiência acadêmica que investigou o impacto de três cores específicas sobre o humor dos indivíduos, analisando como estímulos neurais gerados pela cor podem influenciar a perceção e o comportamento em contextos arquitetónicos. Este estudo busca contribuir para a ciência da Arquitetura e do Urbanismo, utilizando o conhecimento da Neurociência para aprimorar a criação de espaços que promovam o bem-estar e a saúde dos usuários (Küller, Ballal, Laike, Mikellides, & Tonello, 2009).

2. REVISAO DA LITERATURA

Nesta seção, serão abordados diversos temas que permeiam os campos do conhecimento relacionados à Arquitetura e ao Urbanismo. Esses tópicos são fundamentais para o desenvolvimento de projetos que visam alcançar uma condição ideal e positivamente estimulante. Sob essa ótica, são considerados princípios essenciais os estímulos neurais, que desempenham um papel crucial na conceção e materialização de ambientes projetados para maximizar a qualidade de vida e a experiência espacial dos usuários.

2.1 Qualidade do Ar, Iluminação, Acústica e Ergonomia

A qualidade do ar, a iluminação, a acústica e a ergonomia são aspetos cruciais na arquitetura que influenciam diretamente o bem-estar físico dos ocupantes. Estudos mostram que uma boa ventilação e a filtragem adequada do ar reduzem a incidência de doenças respiratórias e alergias, promovendo uma sensação de frescor e conforto, sem falar na produtividade que chega a montantes como quatorze bilhões de dólares à época e que não fica tão distante da atual realidade (Fisk, 2000). A iluminação, tanto natural quanto artificial, desempenha um papel fundamental na regulação dos ritmos circadianos, influenciando o humor e a produtividade (Boyce, Hunter, & Howlett, 2003). Além disso, há de se comentar do ciclo claro e escuro da luz do dia e esse entendimento incorporado à Arquitetura pode tanto fomentar quanto manter o estado de saúde do indivíduo (Aries, Aarts, & Hoof, 2013). Já a acústica adequada minimiza o ruído indesejado, melhorando a concentração e reduz o estresse, o que por si só já se torna um grande ganho salutar (Jahncke, Hygge, Halin, & Dimberg, 2011). Um design ergonômico, que leva em conta as posturas e movimentos naturais do corpo humano, é essencial para prevenir problemas musculoesqueléticos e aumentar o conforto físico e estado de saúde a longo prazo (IEA, 2010).

2.2 Bem-estar Tátil

A escolha de materiais e texturas no design de interiores não é apenas uma questão estética, mas também de saúde. Materiais naturais e texturas agradáveis ao toque podem proporcionar uma sensação de conforto e segurança (Pallasmaa, 2012), afinal é no corpo que se percebe o mundo e a Arquitetura tem grande responsabilidade diante deste fato sendo o invólucro dessas perceções. Layouts ergonômicos, que se adaptam às necessidades físicas dos usuários, são essenciais para criar ambientes que promovem a saúde e o bem-estar (Vischer, 2007), ou seja, transcende a questão da produtividade convergindo para a satisfação pessoal frente à atividade executada no ambiente projetado/construído. Por exemplo, a inclusão de superfícies táteis variadas pode estimular os sentidos de forma positiva, enquanto o mobiliário ergonomicamente projetado pode prevenir lesões e desconforto (Zhang, Helander, & Drury, 1996). Ampliando o olhar, o ser humano vem afetando significativamente o ambiente que vive, pensa-se, portanto, no sentido contrário onde, enquanto arquitetos, existe a expertise comprovada na alteração do comportamento por meio do ambiente projetado. Em termos de conforto ou desconforto diante deste espaço há de se fazer certa distinção. Conforto em termos de perceção ambiental e da Neuroarquitetura pode ser definido como a sensação subjetiva de bem-estar e satisfação que um indivíduo experimenta em um ambiente construído, resultante de uma interação harmoniosa entre fatores físicos, sensoriais e psicológicos. Essas dimensões serão assim definidas, para o entendimento da abordagem desse artigo:

2.2.1 Dimensão física do conforto

Refere-se a fatores tangíveis e mensuráveis do ambiente, como temperatura, umidade, iluminação, ventilação e ergonomia. Um ambiente fisicamente confortável minimiza o estresse térmico, visual e acústico, lumínico, proporcionando condições ideais para a realização de atividades diárias (Leaman & Bordass, 1999).

2.2.2 Dimensão sensorial

Abrange a estimulação dos sentidos humanos, incluindo visão, audição, olfato, tato e paladar. Ambientes que equilibram essas experiências sensoriais podem criar uma sensação de harmonia e prazer, evitando sobrecarga ou privação sensorial (Kaplan & Kaplan, 1989).

2.2.3 Dimensão psicológica

Envolve a perceção e interpretação subjetiva do ambiente pelo indivíduo. Isso inclui fatores como privacidade, segurança, controle sobre o ambiente, estética e ligação emocional com o espaço. Um ambiente psicologicamente confortável promove sentimentos de segurança, familiaridade e satisfação emocional (Vischer, 2008).

2.3 Aspetos Visuais e Olfatórios

A interação de luz natural e artificial, as proporções e volumes dos espaços, bem como a escolha de cores, têm um impacto significativo no estímulo neural e na

promoção da saúde através do design arquitetónico e que possuem efeitos já comprovados cientificamente da restauração cognitiva, afetiva, fisiológica e clínica (Madan, Kynthia, Duijnhoven, Aarts, & Kort, 2024). No caso desse artigo em específico, as cores especificadas podem influenciar o humor e a perceção dos espaços além do fato de carregar um significado associado e ter um impacto significativo nas relações de afeto, cognição e comportamento das pessoas como, por exemplo, cores quentes que podem criar uma sensação de acolhimento, enquanto cores frias podem ter um efeito calmante (Elliot & Maier, 2014). Estímulos olfativos desempenha um papel crucial na criação de ambientes saudáveis, contribuindo para a experiência sensorial completa e, em algumas pesquisas estão consolidam que trata-se de um sentido muito mais emocional do a sugestão visual e auditiva, havendo inclusive a correlação direta entre a emoção de uma memória simbólica e significativa com o cheiro associado a ela – é o que se encontra, inclusive, na pesquisa de (Herz, 2004).

2.4 Elementos Naturais e Layouts Intuitivos

O design biofílico, que integra elementos naturais nos ambientes construídos, é essencial para a reconexão dos indivíduos com a natureza, promovendo o equilíbrio e o bem-estar emocional (Kellert, Heerwagen, & Mador, 2013). Vistas agradáveis, espaços verdes e materiais táteis naturais são componentes importantes que contribuem para a sensação de bem-estar e redução do estresse, para tanto são levados em consideração aspectos emocionais, atencionais e fisiológicos das influências redutoras do estresse (Ulrich, et al., 1991). Isso dá ao arquiteto e ao urbanista ferramentas de grande alcance no intuito da elaboração de espaços tanto que provém a saúde quanto a mantém. Em seu estudo, Jahncke et al (2011) experimentou atividade regenerativa em ambiente laboral a partir de sons da natureza e imagens associadas a esses. O resultado fora mapeado com os relatos de níveis de fadiga e humor como a melhora significativa do estado final ao longo do dia de trabalho. Imaginar integrar diretamente elementos naturais tem ganhos maiores ainda. Além disso, layouts intuitivos, que facilitam a navegação e a compreensão dos espaços, também são fundamentais para criar ambientes que suportam o bem-estar emocional (Ekstrom & Isham, 2017).

3. METODOLOGIA

Será descrita a metodologia utilizada no Projeto de Pesquisa realizado no ano de 2019 e 2020 com o uso das cores e o acompanhamento das alterações de comportamento e humor observados em indivíduos.

3.1 Projeto de Pesquisa

Em 2019, foi proposto um projeto de pesquisa numa faculdade de arquitetura no Brasil, com o objetivo de demonstrar a influência das cores no comportamento humano. Outra meta era sensibilizar estudantes de arquitetura e urbanismo de início de curso para o impacto das decisões arquitetónicas na saúde, no comportamento e no estado de humor dos indivíduos a partir da escolha na paleta de cores do

ambiente. Fora, então, realizado um experimento na própria sala de aula que era utilizada cotidianamente durante a semana com o mesmo grupo de estudantes – com isso, os alunos atuaram tanto como pesquisadores quanto como amostra da pesquisa. Esta abordagem proporcionou uma experiência prática e imersiva em Projeto de Arquitetura, destacando a relevância dos estimulos neurais e sua consequente mudança no comportamento e humor do indivíduo – campo da Neurociência aplicada à Arquitetura no processo projetual.

3.2 Uso das cores no experimento do Projeto de Pesquisa

O estudo teve como foco três cores específicas: vermelho (RGB 255, 0, 0), verde (RGB 98, 196, 55) e azul (RGB 66, 133, 244), como mostrada na Figura 1. Estas cores foram selecionadas com base na literatura existente sobre o efeito psicológico das cores, que sugere que o vermelho pode aumentar a excitação e a energia, o verde pode promover a calma e a recuperação, e o azul pode induzir sentimentos de tranquilidade e serenidade (Elliot & Maier, 2014).
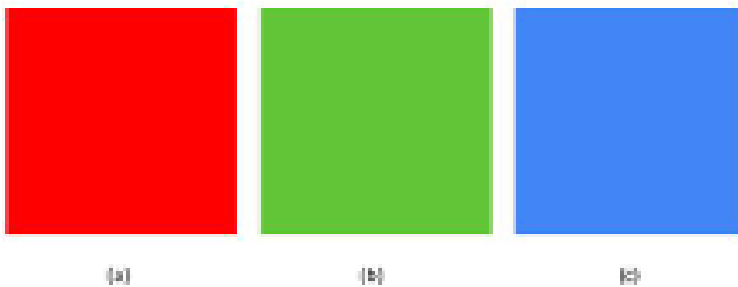
Figura 1. Cores utilizadas na sala de aula: a) Vermelho: RGB (255,0,0); b) Verde: RGB (98,196,55); c) Azul: RGB (66,133,244). Fonte: Acervo Pessoal (2019)

O mecanismo cerebral que identifica as cores e controla os sentimentos associados a elas envolve diversas áreas do cérebro. A perceção das cores ocorre no córtex visual, enquanto as respostas emocionais são mediadas pelo sistema límbico, particularmente a amígdala e o hipocampo. Estudos de neuroimagem mostraram que cores vivas e saturadas podem ativar áreas cerebrais associadas à excitação e à atenção, enquanto cores mais suaves tendem a ativar áreas relacionadas ao relaxamento e à calma (Conway, 2009). Portanto, o experimento proposto pressupôs desse conhecimento para evidenciar as discrepâncias dos sentimentos extremos – da excitação metabólica e emocional à calma, ou seja, iniciando os estudos com o vermelho e finalizando com o azul. A escolha do verde aconteceu numa intenção consciente de gradação mediana entre os extremos dos sentimentos causados.

3.3 Procedimentos do Projeto de Pesquisa

A aplicação das cores na sala de aula foi realizada com a participação voluntária dos alunos, que ajudaram na pintura e na preparação do ambiente, Figura 2. Este

envolvimento não só fomentou um senso de propriedade e engajamento, mas também proporcionou uma oportunidade educacional para a aplicação de princípios de Neurociência à Arquitetura: a intenção era o engajamento da pesquisa aos alunos e à própria Faculdade fomentando o sentimento do pertencimento. Surtiu excelente efeito e a pesquisa foi muito assertiva e alcançou todos os seus objetivos.

Para mensurar os efeitos das cores no comportamento e no estado de humor dos alunos, foram utilizados questionários elaborados conjuntamente com um psicólogo. Os questionários foram aplicados em dois momentos: imediatamente após a aplicação de cada cor e novamente após um mês de convivência dos alunos no ambiente modificado. Os questionários avaliaram aspectos como níveis de estresse, concentração, motivação e bem-estar geral. Os dados coletados foram analisados para identificar padrões de alteração no comportamento e no estado de humor dos alunos em resposta às diferentes cores. A análise estatística dos resultados permitiu verificar a hipótese de que as cores escolhidas teriam efeitos significativos e distintos sobre o estado emocional e comportamental dos estudantes.

Figura 2. Cores utilizadas na sala de aula: a) Vermelho: RGB (255,0,0); b) Verde: RGB (98,196,55); c) Azul: RGB (66,133,244). Fonte: Acervo Pessoal (2019)

4. RESULTADOS

Os resultados do estudo foram obtidos a partir dos questionários aplicados aos alunos que avaliaram de forma qualitativa as emoções, sentimentos e sensações frente ao estímulo da cor aplicada à Arquitetura (paredes) e ao mobiliário (mesas e cadeiras forradas com materiais de mesma cor das paredes) por um período de 30 dias para cada cor. O questionário era aplicado no primeiro dia de aplicação da cor – chamado de "Questionário de impacto" e após um mês era realizado o "Questionário de saída da cor" com as mesmas perguntas. Assim, foram tabuladas e analisadas todas as respostas dos alunos que passavam 4 horas diárias no mesmo ambiente. Assim foi mapeado o efeito das cores (vermelho, verde e azul) no comportamento e estado de humor dos participantes. As principais métricas analisadas incluíram níveis de alegria, ansiedade, motivação, otimismo e concentração.

4.1 Resultados das Alterações de Humor frente a uma cor

A análise realizada levou em consideração cinco parâmetros de mensuração em quatro fatores considerados: ambiente, conteúdo programático, conteúdo relativo à disciplina cursada e professor que ministra a disciplina. O intuito era criar o entendimento mínimo entre quatro variáveis que estariam sendo diretamente responsáveis pela emoçao, sensação ou sentimento no instante de preenchimento do questionário pelo indivíduo analisado. Inclusive o mapeamento contou com o nome de cada indivíduo para perceber o histórico de cada realidade envolvida no experimento. Alunos faltosos ou que já estavam em desligamento do centro universitário foram desconsiderados. A Figura 3 exemplifica dois resultados significativos frente ao estímulo da cor aplicada à sala de convivio e estudos cotidianos por 4 meses frente à alegria decorrente da influência da cor.
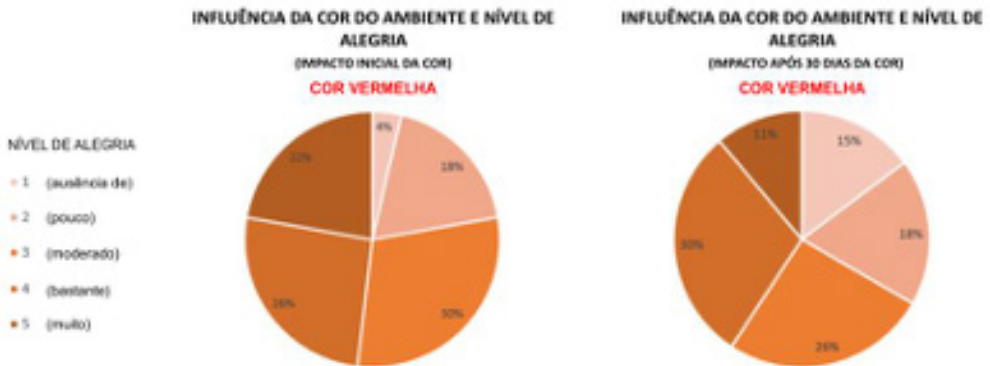
Figura 3. Resultado comprovando a alteração do comportamento e humor frente à cor vermelha aplicada à Arquitetura (paredes e mobiliário) e o parâmetro da Alegria dos indivíduos analisados. Fonte: Acervo Pessoal (2019)

Já na Figura 4 o parâmetro analisado foi o nível de ansiedade mensurado com a cor vermelha.
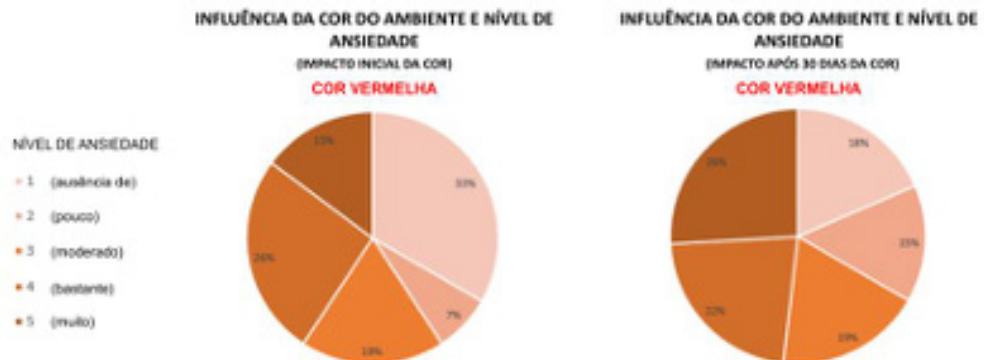
Figura 4. Resultado comprovando a alteração do comportamento e humor frente à cor vermelha aplicada à Arquitetura (paredes e mobiliário) e o parâmetro da Ansiedade dos indivíduos analisados.
Fonte: Acervo Pessoal (2019)

Uma das análises concluiu que em relacao aos níveis de alegria, o Vermelho (RGB 255, 0, 0) escolhido contou com significativo impacto positivo quando 78% dos alunos sentiram certo nível de alegria ao iniciar os trabalhos com a cor. E que, ao final dos trinta dias do mês imersos o índice cai para 67%. Percebe-se que a diferença dos 11% migraram dos que já se sentiam pouco motivados com a cor. Já em termos da ansiedade após o tempo de pesquisa da cor vermelha ter decorrido houve aumento de 50% dos que já se sentiam desconfortáveis em relação à cor vermelha. E outra conclusão expressiva é a de que os que moderadamente se sentiam ansiosos com a cor manteve-se ao longo do tempo. Assim foram conduzidas as análises com as cores verde e azul.

4.2 Análise Comparativa entre as três cores levando em consideração apenas um dos parâmetros analisados

A comparação entre os diferentes efeitos das cores vermelho, verde e azul revelou padrões distintos de comportamento e humor dos indivíduos pesquisados. Para entender melhor a pesquisa realizada, a Figura 4 mostra o primeiro parâmetro da análise realizada que foi o nível de concentração dos indivíduos após trinta dias em imersão do ambiente saturado da cor em estudo por 4h a 5h cotidianas, cinco vezes por semana. Veja Figura 5.
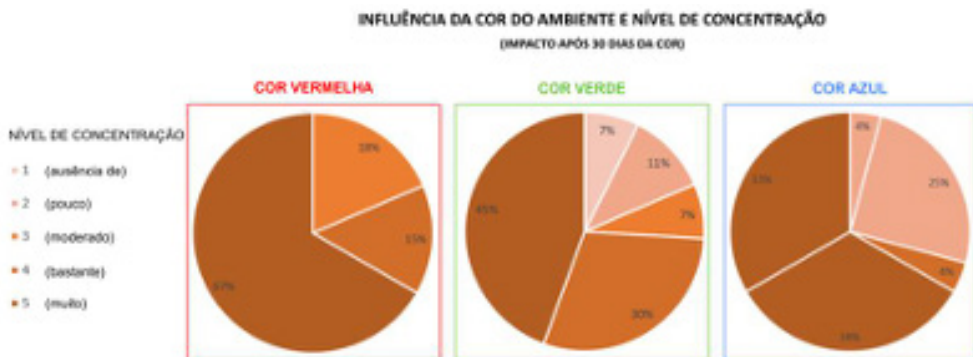
Figura 5. Análise comparativa das três cores em termos da concentração, após trinta dias de exposição à cor.
Fonte: Acervo Pessoal (2019)

O vermelho é frequentemente associado à energia, excitação e urgência, o que pode aumentar a atenção e a velocidade de resposta, mas também pode elevar os níveis de estresse e ansiedade (Kwallek, Lewis, & Robbins, 1988). Estudos em Neuroarquitetura indicam que o vermelho pode estimular a amígdala, a parte do cérebro responsável pelas respostas emocionais, levando a um estado de alerta elevado (Elliot A. , 2015) e portanto, em relação às outras cores, o nível de concentração aumentou na maior parte dos indivíduos entrevistados em número absoluto. Já em relação ao verde, é amplamente reconhecido por seus efeitos calmantes e restauradores. Ele está associado à natureza e à tranquilidade, o que pode reduzir os níveis de estresse

e promover a recuperação emocional (Kellert, Heerwagen, & Mador, 2013). Em ambientes urbanos, a presença de elementos verdes tem sido correlacionada com uma melhor saúde mental e bem-estar geral, sugerindo que o verde pode ajudar a regular o sistema nervoso e promover um estado de relaxamento (Ulrich, et al., 1991). Pela Figura 5 observa-se que fora o maior número de indivíduos que relataram muito e bastante estado de concentração frente às outras cores, juntos tem-se 75% dos indivíduos. Já a cor azul, que é frequentemente associada à calma, serenidade e estabilidade apresentou menor número de indivíduos muito concentrados, 34%. Pesquisas indicam que o azul pode reduzir a frequência cardíaca e a pressão arterial, promovendo uma sensação de tranquilidade (Küller, Mikellides, & Janssens, 2009). Em termos de Neuroarquitetura, o azul pode facilitar a atividade do córtex pré-frontal, melhorando a função cognitiva e a clareza mental (Mehta & Zhu, 2009).

5. DISCUSSÃO

Com todas as questões apresentadas nesse artigo vem à tona sugestões para futuras pesquisas e maior direcionamento da Arquitetura e Urbanismo atuais no sentido da promoção de design pautado em diretrizes que levem em consideração as influências restauradoras da natureza que promovem uma mudança em direção a um estado emocional mais positivo, juntamente com alterações benéficas nos níveis de atividade fisiológica. Essas mudanças são frequentemente acompanhadas por uma atenção sustentada e uma maior ingestão sensorial do ambiente natural.

Como visto, a integração de elementos naturais em projetos arquitetônicos pode melhorar significativamente o bem-estar dos ocupantes. Ambientes que incorporam vistas para a natureza, iluminação natural abundante, e espaços verdes, como jardins e parques, são essenciais para promover a saúde mental e física dos usuários (Ulrich R. S., 1984). Estudos mostram que a exposição à natureza em ambientes urbanos pode reduzir os níveis de estresse, melhorar o humor e aumentar a satisfação com o ambiente construído, já exaustivamente mencionado. Cabe finalmente perceber o ganho na restauração da atenção direcionada que em ambientes naturais pouco se dispersa devido ao campo de visão de baixo para cima em meio ao ambiente natural e totalmente diverso do meio urbano extremo em quantidade de estímulos no campo de visão imediato (Berman, Jonides, & Kaplan, 2008). Tudo isso gera maior desgaste com o stress ao longo de um dia de atividades.

Para arquitetos e urbanistas, isso implica a necessidade de projetar espaços que não só sejam funcionais, mas que também proporcionem experiências sensoriais ricas e oportunidades de interação com a natureza. A inclusão de elementos como jardins verticais, telhados verdes, e o uso de materiais naturais podem aumentar a qualidade dos espaços urbanos e interiores, resultando em comunidades mais saudáveis e felizes (Schertz & Berman, 2019). Ou seja, fazem parte de uma gama de estímulos neurais para uma existencia em equilíbrio internamente e com o meio, mesmo no ambiente urbano.

E finalmente, mas não menos importante, ve-se que a convergencia da pesquisa realizada do uso de cores associadas ao comportamento humano em 2019 e 2020 com as pesquisas e descobertas que vem sendo feitas no mundo. E, na prática projetiva da Arquitetura e do Urbanismo, as cores tem um papel preponderante frente ao comportamento dos indivíduos que experimentam ou vivenciam o espaço.

6. CONSIDERAÇÕES FINAIS

A integração dos princípios da Neuroarquitetura, Neurourbanismo e Arquitetura Sensível no design de espaços interiores e urbanos representa uma abordagem inovadora na promoção da saúde e do bem-estar. Considerando as necessidades emocionais, cognitivas e físicas dos usuários, arquitetos e urbanistas podem criar ambientes que enriquecem a experiência humana, promovendo uma vida mais saudável e satisfatória.

7. BIBLIOGRAFIA

Aries, M., Aarts, M., & Hoof, J. v. (07 de November de 2013). Daylight and health: A review of the evidence and consequences for the built environment. *Lighting Research & Technology, 0,* 1-22. doi: *https://doi.org/10.1177/14771535135092*

Berman, M. G., Jonides, J., & Kaplan, S. (December de 2008). The cognitive benefits of interacting with nature. *Psychological Science, 19*(12), 1207-1212. doi:*https://doi.org/10.1111/j.1467-9280.2008.02225.x*

Boyce, P., Hunter, C., & Howlett, O. (2003). *The Benefits of Daylight through Windows.* New York: The Benefits of Daylight through Windows. doi:Corpus ID: 14840385

Conway, B. R. (2009). Color Vision, Cones, and Color-Coding in the Cortex. *The Neuroscientist, 15*(3), 274-290. doi:*https://doi.org/10.1177/1073858408331369*

Eberhard, J. P. (2009). *Brain Landscape: The Coexistence of Neuroscience and Architecture.* Oxford: Oxford University Press. doi:*https://doi.org/10.1093/acprof:oso/9780195331721.001.0001*

Ekstrom, A. D., & Isham, E. A. (October de 2017). Human spatial navigation: representations across dimensions and scales. *Current Opinion in Behavioral Sciences, 17,* 84-89. doi:*https://doi.org/10.1016/j.cobeha.2017.06.005*

Elliot, A. (02 de April de 2015). Color and psychological functioning: a review of theoretical and empirical work. *FrontiersinPsychology, 6,* 368-375. doi:*https://doi.org/10.3389%2Ffpsyg.2015.00368*

Elliot, A. J., & Maier, M. A. (2014). Color Psychology: Effects of Perceiving Color on Psychological Functioning in Humans. *Annual Review of Psychology, 65*, 95-120. doi:*https://doi.org/10.1146/annurev-psych-010213-115035*

Fisk, W. J. (November de 2000). Health and Productivity Gains from Better Indoor Environments and Their Relationship with Building Energy Efficiency. *Annual Review of Energy and the Environment, 25,* 537-566. doi:*https://doi.org/10.1146/annurev.energy.25.1.537*

Herz, R. S. (March de 2004). A Naturalistic Analysis of Autobiographical Memories Triggered by Olfactory Visual and Auditory Stimuli. *Chemical Senses, 29(3, 29*(3), 217-224. doi:*https://doi.org/10.1093/chemse/bjh025*

IEA, I. E. (2010). *ERGONOMICS GUIDELINES: FOR OCCUPATIONAL HEALTH PRACTICE IN INDUSTRIALLY DEVELOPING COUNTRIES.* Germany: International Commission on Occupational Health. doi:ISBN 978-3-935089-16-3

Jahncke, H., Hygge, S., Halin, N. G., & Dimberg, K. (04 de December de 2011). Open-plan office noise: Cognitive performance and restoration. *Journal of Environmental Psychology, 31*(4), 373-382. doi:*https://doi.org/10.1016/j.jenvp.2011.07.002*

Kaplan, R., & Kaplan, S. (1989). *The Experience of Nature: A Psychological Perspective.* London: Cambridge University Press.

Kellert, S. R., Heerwagen, J., & Mador, M. (2013). *Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life.* New Jersey: John Wiley & Sons. doi:978-0470163344

Küller, R., Ballal, S., Laike, T., Mikellides, B., & Tonello, G. (2009). The impact of light and colour on psychological mood: A cross-cultural study of indoor work environments. *Ergonomics, 49*(14), 1496-1507. doi:*https://doi.org/10.1080/00140130600858142*

Küller, R., Mikellides, B., & Janssens, J. (April de 2009). Color, arousal, and performance - A comparison of three experiments. *Color Research and Application, 34*(2), 141-152. doi:*https://doi.org/10.1002/col.20476*

Kwallek, N., Lewis, C. M., & Robbins, A. S. (1988). Effects of Office Interior Color on Workers' Mood and Productivity. *Perceptual and Motor Skills, 66*(1), 123-128. doi:*https://doi.org/10.2466/pms.1988.66.1.123*

Leaman, A., & Bordass, B. (14 de October de 1999). Productivity in buildings: the 'killer' variables. *Building Research & Information, 27*(1), 4-19. doi:*https://doi.org/10.1080/096132199369615*

Madan, Ö. K., K. C., Duijnhoven, J. v., Aarts, M. P., & Kort, Y. A. (July de 2024). Restorative effects of daylight in indoor environments – A systematic literature review. *Journal of Environmental Psychology, 98*, 102323-102343. doi:*https://doi.org/10.1016/j.jenvp.2024.102323*.

Mehta, R., & Zhu, R. (27 de February de 2009). Blue or Red? Exploring the Effect of Color on Cognitive Task Performances. *Science, 323*(5918), 1226-1229. doi:*https://doi.org/10.1126/science.1169144*

Nations, U. (2023). Transforming our world: The 2030 Agenda for Sustainable Development. *UN 2023 Water Conference.* New York: United Nations. Acesso em 15 de June de 2024, disponível em *https://sustainabledevelopment.un.org/post2015/transformingourworld*

Pallasmaa, J. (2012). *The Eyes of the Skin: Architecture and the Senses.* 2012: John Wiley & Sons. doi:isbn 1119941288, 9781119941286

Schertz, K. E., & Berman, M. G. (2019). Understanding Nature and Its Cognitive Benefits. *Current Directions in Psychological Science, 28*(05), 496-502. doi:*https://doi.org/10.1177/0963721419854100*

Sternberg, E. M. (2010). *Healing Spaces: The Science of Place and Well-Being.* Cambridge: Belknap Press: An Imprint of Harvard University Press. doi: 0674057481

Ulrich, R. S. (27 de 04 de 1984). Science. *View through a window may influence recovery from surgery, 224*(4647), pp. 420-421. doi:*https://doi.org/10.1126/science.6143402*

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (September de 1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*(3), 201-230. doi:*https://doi.org/10.1016/S0272-4944(05)80184-7*

Vischer, J. C. (08 de February de 2007). The effects of the physical environment on job performance: towards a theoretical model of workspace stress. *Stress and Health: Journal of the International Society for the Investigation of Stress, 23*(3), 175-184. doi: *https://doi.org/10.1002/smi.1134*

Vischer, J. C. (28 de May de 2008). Towards a user-centred theory of the built environment. *Building Research & Information, 36*(3), 231-240. doi:*https://doi.org/10.1080/09613210801936472*

World Health Organization, W. (15 de June de 2024). *Constitution of the World Health Organization*. Fonte: World Health Organization: *https://www.who.int/about/governance/constitution*

Zhang, L., Helander, M. G., & Drury, C. G. (1996). Identifying factors of comfort and discomfort in sitting. *Human Factors, 38*(3), 377-389. doi:*https://doi.org/10.1518/001872096778701962*

DETERMINATION OF BIOCLIMATIC COMFORT ZONES BY GEOGRAPHIC INFORMATION SYSTEMS: ERBIL PROVINCE, IRAQ

DETERMINAÇÃO DE ZONAS DE CONFORTO BIOCLIMÁTICO POR SISTEMAS DE INFORMAÇÃO GEOGRÁFICA: PROVÍNCIA DE ERBIL, IRAQUE

Darbaz Mankuri
darbazp@gmail.com
Universidade Lusófona

Hawbir Mohammed
hawbireng@gmail.com
Architectural Engineering, Faculty of Engineering,
Tishk International University, Erbil, Iraq

ABSTRACT

Throughout the world, there are so many unplanned lands where irregular urbanization has been formed. The main reason for this sort of urbanization is due to industrial revolutions. According to the vivid evidence, during the industrial revolution the number of accessible lands for settling people increased. In this respect, it is time to introduce "Bioclimatic comfort" as a tool to adapt people to live in conditions where they use the minimum amount of energy. The goal of this study is to determine Bioclimatic comfort zones in Erbil city. However, before determining bioclimatic comfort level in an area, some important climate elements must be evaluated as a map first ; wind speed (WS), temperature (T), and relevant humidity (RH). By gathering information about wind speed (WS), temperature (T), and relevant humidity (RH) maps, bioclimatic comfort zones of Erbil city can be obtained. In adition ArcGIS 9.3 software, and Inverse Distance Weighting (IDW).

KEYWORDS : guidelines. submission. paper. Model. Architecture. Ambiances. (separated by period and space)

RESUMO

A urbanização irregular em todo o mundo é resultado das revoluções industriais, que aumentaram a disponibilidade de terras para acomodar pessoas. Para adaptar as pessoas a viverem de forma sustentável, é crucial introduzir o conceito de "conforto bioclimático". Este estudo busca determinar as zonas de conforto bioclimático em Erbil, considerando elementos como velocidade do vento, temperatura e umidade relativa. O método inverse distance weighting (IDW) é utilizado para analisar esses dados e mapear as zonas de conforto na cidade. Essas informações são essenciais para criar ambientes urbanos mais sustentáveis e eficientes em termos energéticos. O uso do software ArcGIS 9.3 facilita a visualização e análise dos dados climáticos para identificar as melhores práticas de planejamento urbano e promover o conforto dos habitantes. Com a implementação de estratégias baseadas no conforto bioclimático, Erbil pode se tornar uma cidade mais resiliente às mudanças climáticas e mais agradável para seus residentes.

PALAVRAS-CHAVE: diretrizes. submissão. papel. modelo. arquitetura. Ambientes. (separados por período e espaço)

1. INTRODUCTION

The pathogenicity index is the most informative indication of the influence of weather on a person. It considers the air temperature, the air humidity, the atmospheric pressure, and the wind speed. Calculating bioclimatic indicators is beneficial for establishing the optimal time for climatological therapy and human sunbathing, for example. It is well established that abrupt changes in weather patterns, magnetic storms, and other climatic peaks influence the human body. Additionally, conditionally healthy individuals often respond by elevating their mood and enhancing their

functioning capacity, while conditionally ill people fall into despair, despondency, and chronic diseases deteriorate (Gura et al., 2019). Climatic is a factor affecting human life, health, and activities. Studies to determine the best climatic conditions for human life are relatively new. Climate values and grades have been identified, especially through studies on human comfort. It is also vital to determine these values in order to assess the environment's climatic conditions in relation to average and optimal values (Coccolo, 2017; Dönmez et al., 2018). As we enter a new era of rapid technological advancement, increasing industrial activity threatens the ecological balance and depletes natural resources. As a result, a person's bioclimatic comfort is maximizd. The "climate" is the most important factor affecting outdoor comfort. Despite the wide range of climate parameters, the most important components of bioclimatic comfort are temperature, humidity, wind, and short and long wave radiations (Gura al, 2019). These elements directly influence human physiological state and thus influence human health. Ensuring comfort for the living by creating parks, gardens, and resting areas; recreational areas; aesthetic afforestation; wind gouges for agricultural crops; etc. (Hobbs, 2016; Aydin et al., 2017; Dönmez et al., 2018).

Environment and personal parameters influence bioclimatic comfort, According to Mirza (2014) conducted an in-depth study on environmental factors and individual attributes influence bioclimatic comfort. These include air temperature, air humidity, air movement, radiation, and individual characteristics such as metabolism's temperature regulation in response to activity, activity level, and clothing insulation (Scudo et al,. 2004; Mirza 2014, Aydin et al., 2017).

Olgyay (1973) conducted an in-depth study on the climatic elements that must be considered for bioclimatic comfort as a combination of 21-27.5 ° C temperature in open area, 30% relative humidity, and wind speeds up to 5 m/s. These values have been incorporated into numerous bioclimatic assessments (Toy & YILMAZ, 2009).

Experts are determining which threshold values for bioclimatic comfort should be included in the ambient temperature and which other meteorological parameters exist in addition to the weather temperature. For instance, a study conducted in Turkey determined that the optimal temperature values for providing individuals with a climate-friendly atmosphere should be between 16.7°C and 24.7°C. Additionally, it is highlighted that in addition to temperature values, wind speeds less than 6 m/sec and relative humidity values between 30% and 70% must be considered when determining the comfort zone(Toy & YILMAZ, 2009; Aydin et al., 2017; Dönmez et al., 2018).

The purpose of this study was to create climatic maps of Erbil province using temperature, humidity, and wind data collected over a period of years from climatic stations located throughout the city and districts of Erbil (Erbil, Dashti Hawler, Makhmur, Soran, Shaqlawa, Koya, Khabat, Mergasor, Choman, and Rawanduz). These maps were then merged, and appropriate places determined based on their bioclimatic comfort levels.

2. MATERIALS AND METHODS
2.1 Study area

Erbil province, with a surface area of 15,074 km2, is located in northern Iraq's Kurdish region, between the longitudes 36.5571° N and 44.3851° E., a region characterized by a semi-arid continental climate. Summers (June–September) are hot and dry, whereas winters are more relaxed and wetter. Annual rainfall is limited to October and November, averaging 543 mm. The governorate is bounded on the south by the merging Tigris and Little Zab rivers and the northeast by the Zagros Mountains range (Jawhar, 2018).
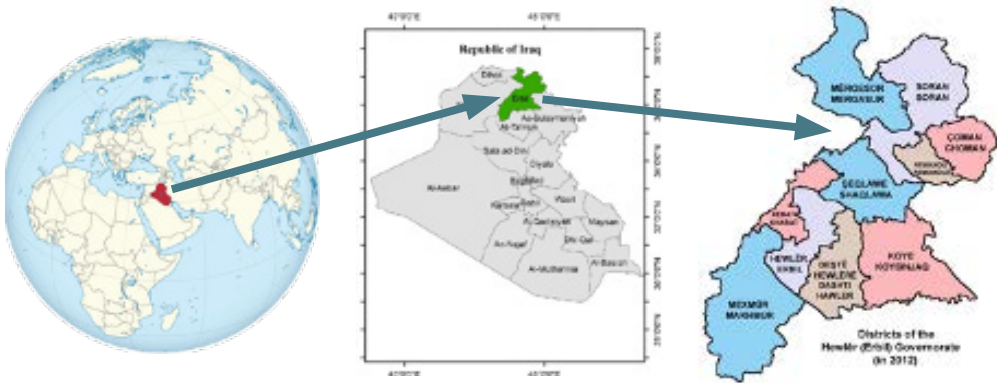
Figure 1. The location os Erbil

The long-term data were used from the General Directorate of Meteorology's Erbil, Dashti Hawler, Makhmur, Soran, Shaqlawa, Koya, Khabat, Mergasor, Choman, and Rawanduz stations. Table 1 contains data on these climate stations.

No	Station No	Province	District	Station Name	Observation Type
1	Erbil	Erbil	Erbil	Erbil	AMOS
2	Dashti Hawler	Erbil	Dashti Hawler	Dashti Hawler	AMOS
3	Makhmur	Erbil	Makhmur	Makhmur	AMOS
4	Soran	Erbil	Soran	Soran	AMOS
5	Shaqlawa	Erbil	Shaqlawa	Shaqlawa	AMOS
6	Koya	Erbil	Koya	Koya	AMOS
7	Khabat	Erbil	Khabat	Khabat	AMOS
8	Mergasor	Erbil	Mergasor	Mergasor	AMOS
9	Choman	Erbil	Choman	Choman	AMOS
10	Rawanduz	Erbil	Rawanduz	Rawanduz	AMOS

Table 1. Meteorology stations and their features

2.2 Methodology

The obtained data is evaluated and mapped using the Inverse Distance Weighting (IDW) Interpolation Technique. This technique necessitates the use of data with a minimum of 10 points. There are a total of ten stations in Erbil and its surrounding districts. **Inverse Distance Weighting (IDW) Interpolation Technique**

It is a type of interpolation technique that is used to determine the cell values of unsampled points using known sample point values. The cell value is determined by the increase in distance and taking into account various points moving away from the relevant cell. Estimated values are a function of the distance and magnitude of neighboring points, and as the distance between them increases, the significance and impact on the cell being estimated decreases. This method does not examine the general distribution, tendency, anisotropy, or clustering of data. Locally, the data are analyzed and compared. This is a deterministic procedure (Korkmaz Başel, Çakın et al. 2008). The IDW interpolation technique is frequently preferred for interpolating grids from sampled point data. The IDW interpolation technique is based on the principle that adjacent points on the interpolated surface have a greater weight than distant points. This technique decreases the weight as it approaches the interpolated point and produces a surface interpolation relative to the sample points' weighted average (Dönmez, Özyavuz et al. 2018). Although there are several IDW methods, the Shaperd's Method is the most well-known. Using n to represent the number of scattered points on the surface, fi to represent the function defining the sample points, and wi to represent the weights, the Shaper's equality is as follows:

$$f(x,y) = \sum_{i=1}^{n} w_i f_i$$

Wi weights are given below:

$$w_i = \frac{h_i^{-p}}{\sum_{j=1}^{n} h_j^{-p}}$$

P is known as the «power parameter» and it usually refers to a positive real number taken as 2. Whereas hi denotes the three-dimensional spatial distance between the sampling points and the interpolation point in the equation (Dönmez et al., 2018).

$$\sqrt{(x + x_i)^2 + (y - y_i)^2 + (z - z_i)^2}$$

Overlay

The purpose of this study is to accurately determine the bioclimatic comfort values of areas within the Erbil city center boundaries. To accomplish this, the maps created in the GIS environment for temperature, humidity, and wind elements are classified and overlaid using bioclimatic comfort values. The following table summarizes the comfort values obtained during the operation. Temperature 15-27 °C
Relative humidity 30% – 70%
Wind velocity 3 - 8 m/s **Results**

Temperature

Table 2 shows the long-term temperature values for ten districts calculated using their average climate values. The values of climate stations in neighboring provinces are also included in this table to improve the accuracy of the interpolation technique. They are not, however, included in the evaluation. When temperature readings are analyzed, it is seen that the coldest regions are Mergasor, Choman, and Rawanduz. The temperature maps generated according to these values are given in Figure 2.

Nº	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Erbil	6.5	9	14	20	24.5	34	36	33	31	22	13	8
2	Dashti Hawler	6.5	9	14	19	24	33	35	33	31	22	13	7.5
3	Makhmur	6.5	10	14	21	25	35	36	33	32	23	13	8
4	Soran	2.5	5	10	15	20	30	32.5	30	24	16	8	4
5	Shaqlawa	3	5	9	14	19.5	29.5	32	29.5	20	15	8	3
6	Koya	4	8	13	17	23	32.5	34.5	32.5	28	16	12	6.5
7	Khabat	6.5	10	15	20	25	35	36	33	31	20	13	8
8	Mergasor	1	3	6.5	12	16	20.5	24	23	18	12	6	1
9	Choman	2.5	4	8.5	14	19	28	31	27	19	14	8	3
10	Rawanduz	3.5	5	9.5	15.5	20	29.5	33	30	21	16	9	4

Table 2. Long -term average temperatures (C °)
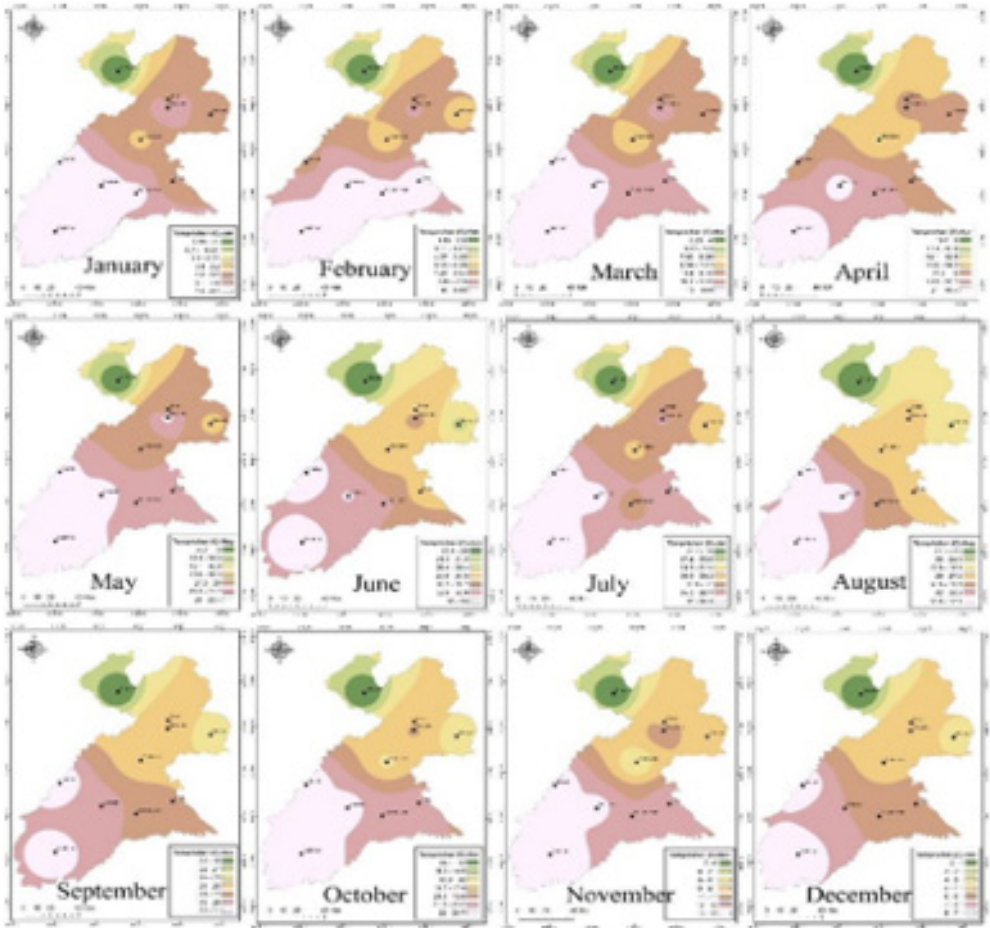
Figure 2. Monthly dispersion of temperature values

Humidity

Average monthly humidity values for Karabük province are given in Table 3. In December, January, and February, humidity levels are found to increase up to 30-45%. The district centers with high humidity values are; Mergasor,Choman, Rawanduz, Soran, and Shaqlawa. The values in the other districts are observed to be lower and closer to each other. In March, April, and May these values are observed to vary between 30-40%. The provinces where these values are measured high are Erbil, Koya, Khabat and Makhmur.Humidity maps generated according to these values are given in Figure 3.

Nº	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Erbil	72.74	65.76	62.56	53.39	40.11	32.33	28.61	29.91	35.64	47.53	62.56	68.98
2	Dashti Hawler	68.1	63.04	61.6	51.5	38.1	32.1	36.2	35.8	31	43.5	58	64.8
3	Makhmur	76.7	65.9	64.5	37.13	37.43	29.5	25.33	28	31.33	50.5	67.5	77
4	Soran	70.33	65.99	48.78	55.99	40.4	22.07	15.26	16.5	27.4	37.01	56.56	72.66
5	Shaqlawa	74.14	66.76	64.32	53.5	43.82	36.5	37.52	32.8	37.48	56.3	65.3	67.76
6	Koya	68.56	67.5	62.56	54.5	41.48	32.06	36.19	36.49	31.51	33.99	57.16	68.34
7	Khabat	25	26	31	26	15	2.5	1.5	1	1	13	24	31
8	Mergasor	35	40	45	36	24.5	10	4	3	3	22	40	42
9	Choman	31	38	42	33	22	8.5	3.5	2.5	2.5	20	38	40
10	Rawanduz	30	36	40	32	21	8	3	2	2	19	37	41

Table 3. Average monthly humidity values (%)
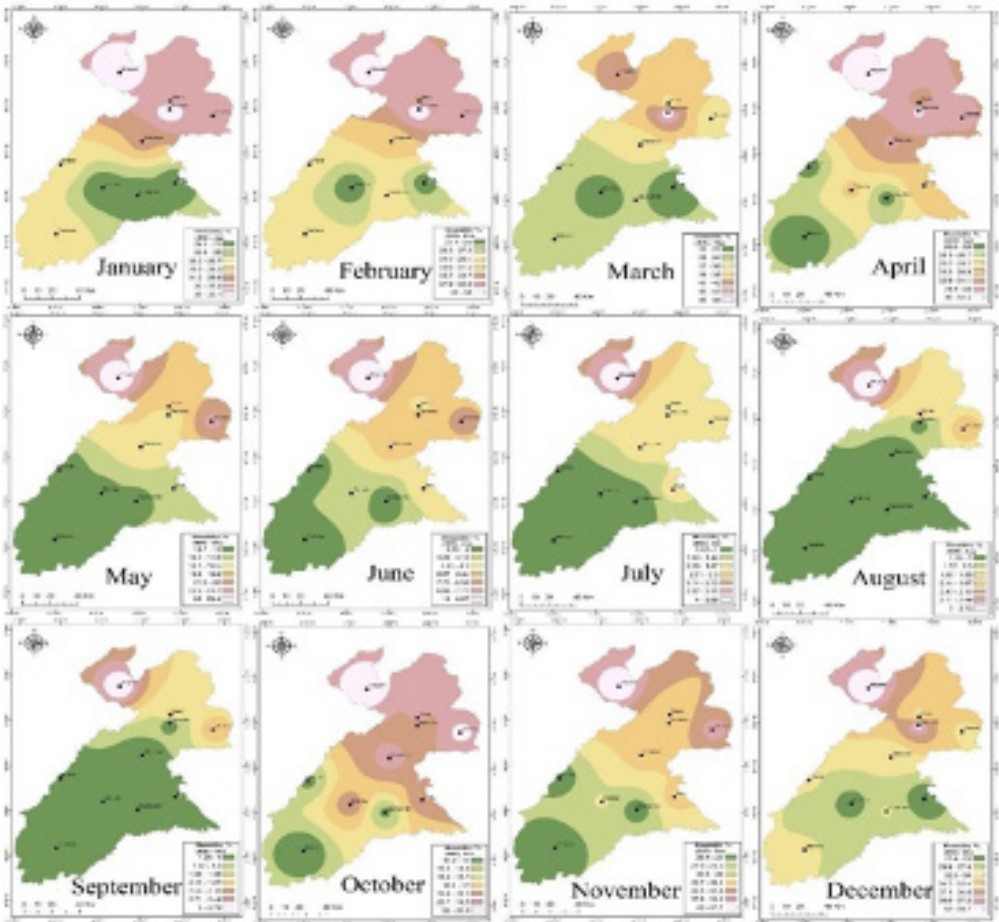
Figure 3. Monthly dispersion of humidity values

Wind

Long-term average wind values are given in Table 4. When the wind values are examined, it is seen that Erbil is a province with normal range of wind due to its geographical location. It is determined that the highest values are found in Mergasor and Dashti Hawler and Koya in July and August, whereas the lowest values are found in Soran ,Shaqlawa , and Rawanduz. The wind maps generated according to these values are given in Figure 4.

Nº	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Erbil	2	1.5	3	2.8	3.1	3.1	3.2	3	3.1	2.9	2.9	2.8
2	Dashti Hawler	2	1.5	3.2	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.1	3.2
3	Makhmur	2	1.5	3	3	3.5	3	3.5	3.1	3.4	3	2.9	2.6
4	Soran	1.5	1.4	2.5	2.8	2.8	2.8	3.1	3.1	3	2.8	2.8	2.1
5	Shaqlawa	1.2	1.2	2.5	2.8	2.8	2.8	3	3.1	3	2.8	2.8	2.2
6	Koya	3	9	3.5	3	3	3.1	3.5	3	3.3	3.3	2.8	3
7	Khabat	2.2	2	3	3.1	3.5	3	3	3.3	3.2	3.1	3.2	2.8
8	Mergasor	3.1	3.1	3.6	3.6	3.6	3.5	3.5	3.1	3.2	3.1	3.2	3
9	Choman	2	3	3	3.1	3	3.5	3.2	3.3	3.3	2.9	2.9	2.9
10	Rawanduz	2.5	1.5	2.5	3.2	3.1	2.8	3	3.2	3.2	2.7	2.8	1.5

Table 4. Monthly average wind values (m/sec)
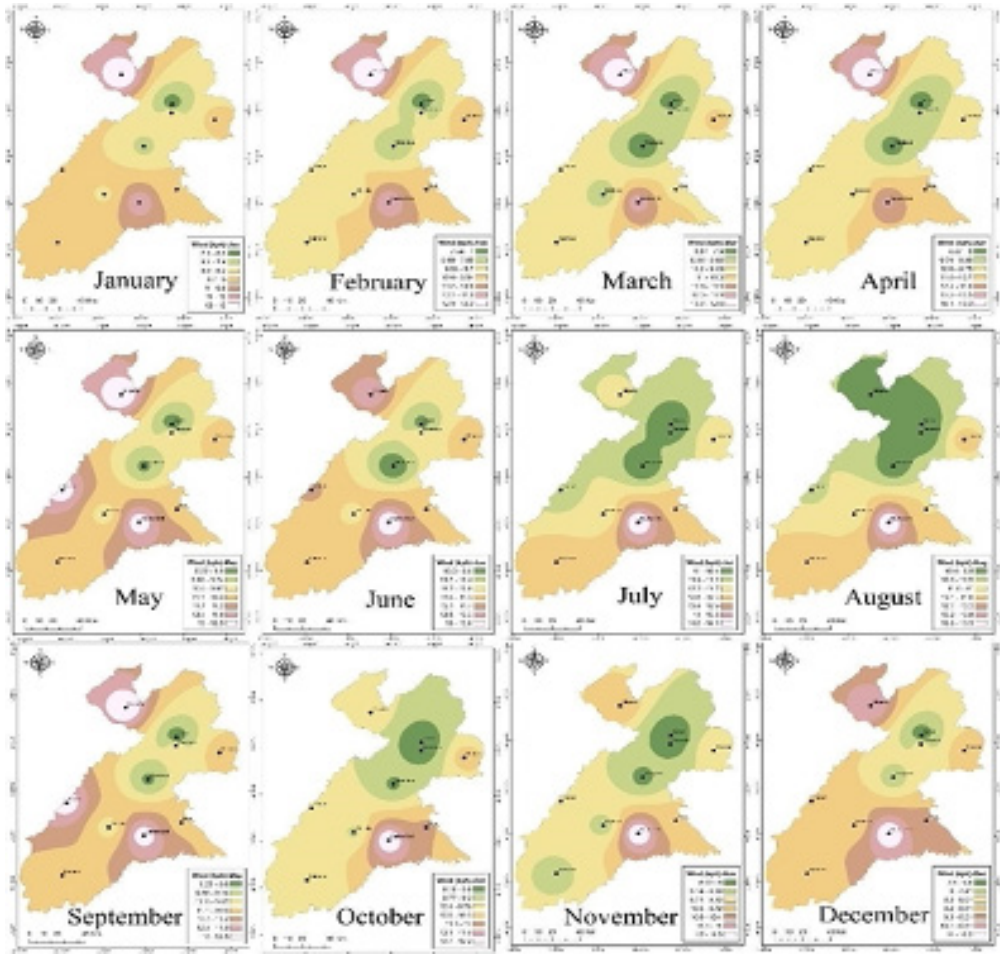
Figure 4. Monthly dispersion of wind values

3. DISCUSSION & CONCLUSIONS

Maintaining bioclimatic comfort must be a primary objective, as all planning and design studies are conducted to benefit human life. These values are overlapping because they are classified differently in the GIS environment. The process's comfort values are listed below.

Temperature 15-27 °C

Relative humidity 30 – 70%

Wind velocity 0 - 5 m/s
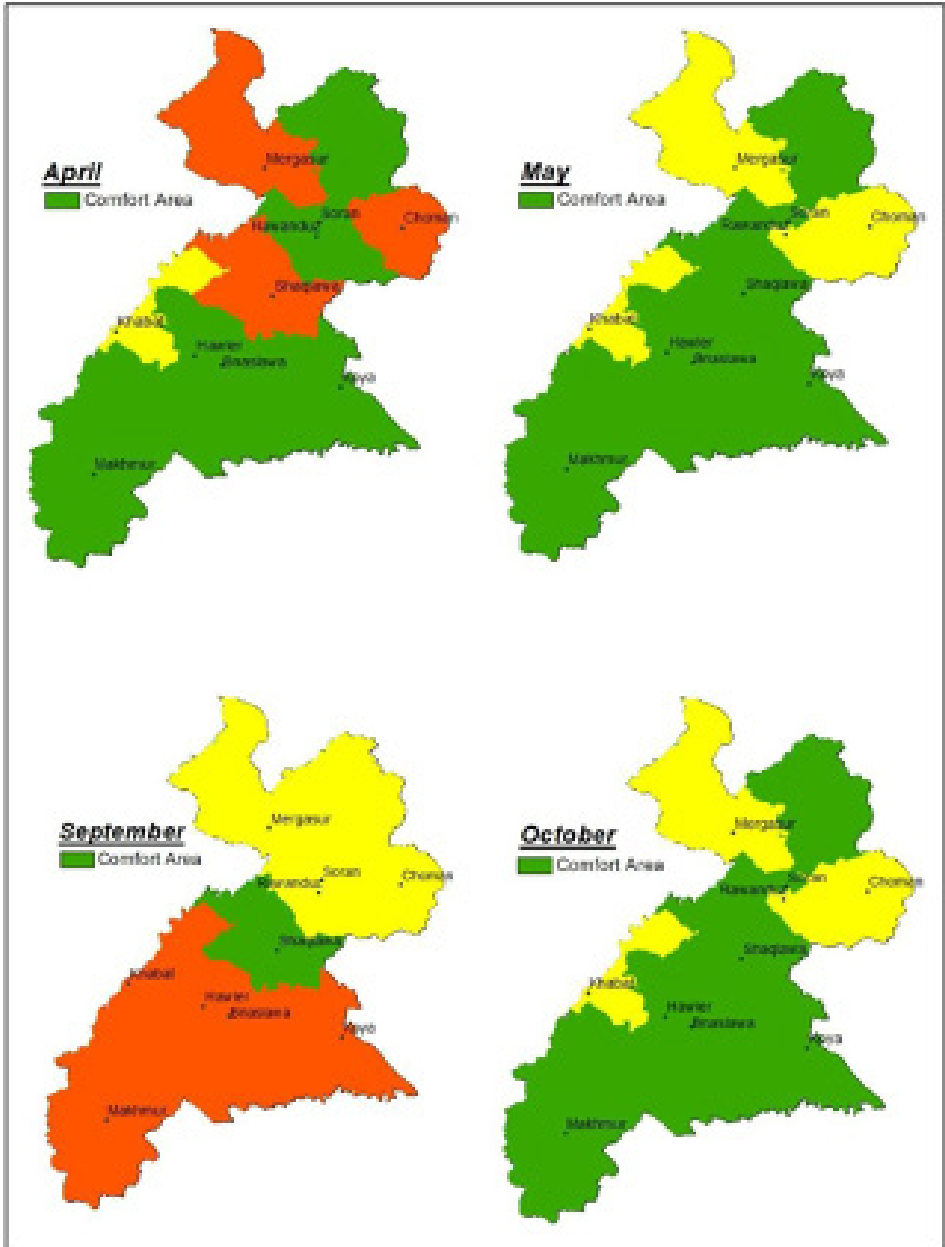
Figure 5. Erbil Province Bioclimatic Comfort Zones

When overlapping areas and values are examined, it is determined that the most comfortable months for climate values are April, May, September and October (Figure5).

The most serious of today's environmental issues is climate change, which is being exacerbated by rising greenhouse gas emissions in the atmosphere. Climate change is a growing threat to human life, bringing with it a slew of problems. This change, which is expected to have ramifications in a variety of fields, has piqued the interest of several professional disciplines (Cosun & Karabulut, 2009).

In the planning and design of urban areas, bioclimatic comfort is completely or partially ignored. The establishment of urban environments, which are critical for bioclimatic comfort, is only possible with urban planning and design that are informed by and evaluated by bioclimatic comfort values for outdoor areas. Due to their microclimate effect on the urban climate, the open-green areas that will be created as a result of planning and design can help prevent the formation of extreme hot and cold environments (Toy & Ylmaz, 2009).

Geographical Information Systems (GIS) is a fundamental information technology and tool in bioclimatic comfort studies, as it is used for updating, processing, and combining national, regional, and local data, as well as performing various analyses and generating data on bioclimatic comfort. The goal of planning should be to develop and change the climate positively in order to identify and understand climatic data that affect planning and to ensure the comfort of living creatures. Most human activity's effects on nature are caused by climatic events, which play a significant role in the lives of living things. Given that all planning and design activities are undertaken to benefit human life, the primary objective must be to ensure bioclimatic comfort (ÇETİN et al., 2010).

Generally, in studies of human bioclimatic comfort, the monthly dispersion of comfort conditions within a region is sought. Additionally, outdoor activities such as tourism and recreation are recommended during times of comfort. Because outdoor planning and design are the primary focus of the landscape architecture discipline, it is necessary to understand the comfortable seasons in the area where landscape planning and design will take place in order to identify the most frequently used seasons. Another benefit of being aware of comfortable times is that outdoor activities can be undertaken. As a result, the use of space can be shaped around these more comfortable times (Dönmez et al., 2018).

Erbil province is located at 300-1100 m height.it has the typical (rainy) Middtirain and red sea climate type. When the climate data of Erbil province are examined, it is determined that the average temperature is 25c the average humidity is %20, and the average wind velocity is 7 k/h. It is possible to say that many natural and cultural factors affect the change in the climatic values of Erbil. The reason for temperature

values being higher in the months remaining in the pit areas such as Erbil city center and Koya city can be attributed to the formation of urban surfaces that occur due to intensive urbanization and the urban heat islands that occur in parallel with these surfaces. It is estimated that Mergasor and Choman are less cold in winter due to their sea level and overcast rainfall.

Climate and bioclimatic values, along with other parameters, are critical components of planners' and designers' sustainable studies. that However, given the formation of distinct microclimates within a city, spatially detecting these values is critical for practical work. The areas are critical for bioclimatic comfort are critical for planners and designers when it comes to creating outdoor public spaces. Green areas that result from poor area selection in development plans do not contribute enough ecologically and socially to cities. As a result, in the work to be done, climatic values, along with other criteria to be considered, will make significant contributions to planners' and designers' plans and projects.

4. BIBLIOGRAPHY

Aydin, F., et al. (2017). "Determination of Flood Plains through GIS (Geographical Information Systems): The Sample of Silivri District." Journal of International Environmental Application and Science 12(1): 90-102. *http://drgipark.org.tr/tr/ pub/jieas/ issue/40287/480774*

ÇETİN, M., et al. (2010). "Biyoiklimsel konforun peyzaj planlama sürecindeki etkinliği : Kütahya örneği." Turkish

Journal of Forestry 11(1): 83-95. *http://dergipark.org.tr/en/pub/tjf/issue/20894/224358*

Coccolo, S. (2017). Bioclimatic design of sustainable campuses using advanced optimisation methods, EPFL.

Cosun, F. & M. Karabulut (2009). "Kahramanmaraş'ta ortalama, minimum ve maksimum sıcaklıkların trend analizi." Türk Coğrafya Dergisi(53): 41-50. *https://dergipark.org.tr/tr/ pub/tcd/issue/21228/227810*

Dönmez, Y., et al. (2018). "Determination of Bioclimatic Comfort Zones by Geographic Information Systems: Karabük Province, Turkey." Journal of International Environmental Application and Science 13(1): 41-49. *https://dergipark.org.tr/tr/pub/jieas/ issue/40187/478365*

Gura, D., et al. (2019). Assessment of bioclimatic comfort of the Krasnodar Krai. IOP Conference Series: Earth and Environmental Science, IOP Publishing. *https:// iopscience.iop.org/article/10.1088/17551315/403/1/012176*

Hobbs, J. E. (2016). Applied climatology: a study of atmospheric resources, Elsevier.

JAWHAR, S. (2018). "THE EFFECT OF THE ROOF AND GLAZING TYPE OF TRADITIONAL COURTYARD HOUSES ON ENERGY EFFICIENCY. A CASE OF ERBIL CITY, IRAQ." NEAR EAST UNIVERSITY, Erbil.
http://scholar.google.com/citations?view_op=view_citation&hl=en&user=PhwbDDUAAAAJ&citation_for_vi ew=PhwbDDUAAAAJ:WF5omc3nYNoC

Korkmaz Başel, E., et al. (2008). Türkiye'nin Yeraltı Sıcaklık Haritası ve Tahmini Isı İçeriği. Paper presented at the VII. Ulusal Temiz Enerji Sempozyumu, İstanbul.

Mirza, E. (2014). Rekreasyonel planlama için biyoiklimsel konfor özelliklerinin belirlenmesi : Isparta kent merkezi örneği, Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü.
http://www.researchgate.net/publication/346562968_REKREASYONEL_PLANLAMA_ICIN_BIYOIKLIMSEL_KO   NFOR_OZELLIKLERININ_BELIRLENMESI_ISPARTA_KENT_MERKEZI_ORNEGI

Scudo, G., et al. (2004). Evaluation of radiant conditions in urban spaces, Designing open spaces in the urban environment: A bioclimatic approach. *http://www.researchgate.net/oublication/23771211   237710211_The_evaluation_of_thermal_comfort_conditions_in_simplified_urban_spaces_The_COMFA_m odel*

Toy, S. & S. YILMAZ (2009). "Peyzaj tasarımında biyoklimatik konfor ve yaşam mekanları için önemi." Atatürk Üniversitesi Ziraat Fakültesi Dergisi 40(1): 133-139. *https://search.trdizin.gov.tr/tr/yayin/detay/97418/peyzaj-tasariminda-biyoklimatik-konfor-ve-yasammekanlari-icin-one*

RESTORE HUMAN WELL-BEING AND URBAN BIODIVERSITY WITHIN THE CITY THROUGH DEVELOPING CITY RESTORATIVES MILIEUX AND CORRIDORS USING BIOPHILIC ARCHITECTURE.

RESTAURAR O BEM-ESTAR HUMANO E A BIODIVERSIDADE URBANA NA CIDADE ATRAVÉS DO DESENVOLVIMENTO DE AMBIENTES RESTAURATIVOS E CORREDORES CIDADES UTILIZANDO A ARQUITECTURA BIOFÍLICA.

Ghadir Hummeid
Architect and PhD candidate
Universidade Lusófona de Porto
e-mail: *Ghhummeid@gmail.com*

ABSTRACT

Human well-being is a major topic in cities' development. The climate and social crisis influence human well-being and cities' livability, calling for the need for new architectural innovations that consider human well-being and cities' restoration as the core of the development process. This article highlights the importance of rethinking cities' restoration starting from a human scale. And aims to map a methodological selection of ambiances at the Gulbenkian Foundation in Lisbon as a case study to provide a database for further phd research. By analyzing this case study and addressing the question of how biophilia can reverse the city to its origin to belong to its people by the amalgamation of human-scale with the principles of biophilia to develop more human-friendly ambiances, investigating how biophilic architecture can promote more restorative urban ambiances and corridors within the city. Therefore, developing cities with more dynamic and restorative milieux for its people.

KEYWORDS: Biophilia, Milieux, Human Scale, Corridors, Wellbeing, Restoratives, Biodiversity

RESUMO

O bem-estar humano é um tema importante no desenvolvimento das cidades. A crise climática e social influencia-o e a habitabilidade das cidades, exigindo a necessidade de novas inovações arquitetónicas, considerando o bem-estar humano e a restauração das cidades como o núcleo do processo. Este artigo realça a importância de repensar a restauração das cidades a partir de uma escala humana. O artigo tem objectivo de selecção metodológica de ambientes na Gulbenkian para fornecer uma base de dados para a investigação de doutoramento. E levará o leitor a explorar como a arquitetura biofílica pode promover ambientes urbanos mais restauradores dentro da cidade. Ao analisar o caso de estudo e abordar como a biofilia pode reverter a cidade à sua origem para pertencer ao sua população comecar de escala humana para desenvolver ambientes e corredores amigáveis para o homem, por isso, desenvolver cidades com ambientes mais dinâmicos e reparadores para a sua população.

PALAVRAS-CHAVE: Biofilia, Meios, Escala Humana, Corredores, Bem-Estar, Restauradores, Biodiversidade

1. INTRODUCTION

Urban environments and physical structures significantly influence human overall well-being and the biodiversity within cities. With the contemporary challenges of climate change, city densities, and social inequality, there is a need to develop new urban solutions that promote and prioritize human well-being and ecological restoration. Urban design has often been developed starting at the city scale, then the human scale, neglecting the importance of considering human health and comfort as the core. For instance, the new urban movements of developing smart

cities have increased the discarding of the importance of incorporating natural urban components and patterns in the development of the city ambiances and mobilities which will influence the wellbeing of inhabitants negatively as human has inherent relationships and need to relate to nature. This article presents a comprehensive systematic methodology to map a selection of ambiances to build phd research that aims to shift towards healthier and liveable public spaces and corridors using biophilic architecture within cities, by integrating natural components and patterns into a city's urban fabric, developing ambiances that prioritize human well-being and urban biodiversity starting from human scale.

2. LITERATURE REVIEW
2.1 Biophilia And Biophilic Architecture

Biophilic architecture is grounded in the theory of biophilia, which implies that we have an inherent connection with nature as humans. The biophilia theory explains an intrinsic biological and genetic relationship between humans and nature. Psychoanalyst Erich Fromm presented it for the first time as "the passionate love of life and of all that is alive" (Fromm, 1973, p. 365). Harvard naturalist Dr. Edward O. Wilson (1986) explained it as" humanity's innate tendency to focus on life and life-like processes" (Wilson, 1986, p. 1). Thus, the human relationship with nature positively impacts their well-being. Earlier projects using biophilia have shown that incorporating natural components and patterns in cities' urban built environments can reduce stress, improve mood, and enhance overall human well-being.

2.2 Biophilic Architecture Advantages in Human Environments

Many projects and research have emphasized that applying biophilic architecture and its patterns has assisted in creating healthier, more liveable, and restorative ambiances. For instance, Ulrich et al. (1984) discovered in their study that hospital patients with views of nature recovered significantly faster than patients without this kind of view. Another study by Kaplan (1995) indicated that environments with natural settings help humans recover from mental fatigue and enhance their cognitive function. More research has used biophilic architecture features such as plants and natural light in workplace environments, which has shown an improvement in productivity and creativity of the workers in offices with more satisfaction and descending stress levels (Lohr et al., 1996). Yet there is a need to study the effects of this architectural approach in public spaces environments. COVID-19 and the climate change challenges and other health crises that face and threaten human health and well-being and the city's development emphasizes the importance of developing public space and corridors using more sustainable and natural approaches. The improvements that have been achieved by biophilic architectural approaches in interior environments are aligned with the current needs of cities to develop better and healthier public ambiances and corridors creating restorative milieux within cities.

2.3 Applications And Dimensions of Biophilic Architecture in Urban Milieux

2.3.1 Urban green mobility and infrastructure: The inclusion of green mobility, such as green walls, roofs, and plant benches, improves the aesthetic attraction of urban spaces provides ecological and healthier advantages, and creates more climate-neutral urban ambiances. New initiatives in the EU such as the EU Urban Mobility Framework initiative strive to enhance the quality of life of the EU urban inhabitants by highlighting the urban mobility challenges such as congestion, urban accessibility, safety, air pollution, etc. By improving the share of sustainable transportation methods, particularly zero-emission public transportation, and active urban mobility.

2.3.2 Urban water bodies and factures: Fountains, artificial waterfalls, and ponds create peaceful atmospheres that encourage human relaxation and mental health.

2.3.3 Natural Light and Ventilation: The use of natural light and maximizing the ventilation within buildings controls circadian rhythms, enhances mood, and improves human well-being creating healthier indoor atmospheres.

2.3.4 Natural materials and patterns: One of the fundamental dimensions of biophilic architecture is the use of natural materials in the design such as wood and stone, and combining patterns inspired by nature improves urban spaces' liveability and sustains them assembling visual and tangible connections to nature which enhances humans' well-being and comfort in these spaces.

2.4 Lisbon city : Integrating Biophilia into Urban Development

Lisbon is the capital of Portugal and like many other capitals, it faces challenges such as urbanization issues, climate change, and human well-being threats. this paper hypothesizes that incorporating biophilic architecture principles into the development of Lisbon city will address these challenges and assist in creating more liveable and restorative ambiances for its inhabitants. The Gulbenkian Foundation is the principal study case as it illustrates the potential of using biophilic architecture to improve city liveability and human quality of life.

2.4.1 Green Urban Mobility and Infrastructure in Lisbon:
Lisbon has made many Initiatives to integrate green mobility and infrastructure into its urban fabric. For instance, the Green Corridor project is a green grid whose main objective is to link diverse green spaces of the city together, encouraging urban biodiversity and providing inhabitants with accessibility to the green natural ambiance which will promote Lisbon inhabitants' wellbeing. The Gulbenkian Foundation Gardens and walls are considered a key component of this green grid, as the foundation illustrates the advantages of integrating nature into the development of city fabric.

2.4.2 Urban water bodies, restoration, and resilience:

The biophilic principles are reflected clearly in the approach that is applied in Lisbon for water management. For instance, Restoring and conserving the Tagus Riverfront spaces assists in the mitigation of climate change and promotes inhabitants of Lisbon's access to water bodies thus their connection to nature.

2.5 The Gulbenkian Foundation Gardens and walls in Lisbon, Portugal. A Case Study in Biophilic architecture.

This article hypothesizes that the Gulbenkian Foundation in Lisbon can be considered an ideal model for using biophilic architecture to form a restorative ambiance within the urban fabric of Lisbon City. The gardens were designed by landscape architects Gonçalo Ribeiro Telles and António Viana Barreto in the 1960s, and the gardens incorporate the principles of biophilic architecture through their integration of natural components into the built environment. The Gulbenkian Foundation Gardens, spread over 7.5 hectares, feature various collections of plant species, water segments, and open ambiance that work to promote human well-being ecological sustainability and biodiversity.

2.5.1 Health and Well-Being: The Gulbenkian Foundation Gardens provide the city with a green oasis, presenting a unique ambiance supporting human relaxation, entertainment, and reflection. Including various greenery and water components thus biophilic dimensions. This natural setting works on improving humans' physical, and mental health and overall well-being by creating a green restorative milieu.

2.5.2 Human Creativity and Social Cohesion: The gardens form a social hub for the city due to their closeness to the Gulbenkian Museum, art exhibitions, and Library, in addition to the having the Open-Air Amphitheatre which enables social and cultural interactions and creates a comprehensive ambiance that influences positively the human mind and the body.

3. DISCUSSION:

The literature on biophilic architecture highlights the countless benefits of incorporating natural components into urban built environments. The Gulbenkian Foundation in Lisbon provides a case study of how biophilic principles can be used to create restorative urban milieux that can encourage human well-being and ecological sustainability of cities. After analyzing this case of study, the following list of chosen ambiances will be analyzed to conduct guidelines from the Gulbenkian Foundation Gardens and walls that can be used to develop a module for a restorative ambiance that promotes human health and well-being and promote more liveable and resilient cities. This article draws a comprehensive methodology of various monitoring ambiances for biophilic architectural and environmental parameters investigation at the Gulbenkian Foundation in Lisbon. Conducting a methodology

to map these ambiances with different architectural settings since it is crucial to determine various conditions and environments to specify variations of air quality, humidity, temperature of both atmospheric and surfaces, CO_2 levels, and sound quality when using different biophilic architecture patterns and dimensions and when not using them. This methodological approach will deliver a detailed knowledge of biophilic patterns and dimensions at Gulbenkian for future study to understand how these biophilic approaches contribute to creating more restorative urban milieux and corridors that can promote human well-being and biodiversity.

3.1 Site selection:

The following monitoring ambiances within the Gulbenkian Foundation have been chosen for detailed study:

3.1.1 Outdoor Garden ambiance:

The garden was designed by the landscape architects Gonçalo Ribeiro Telles and António Vianna Barreto, and it serves as a frame for the foundation and the lake.

- The central garden ambiance : The central forms a beautiful and ecologically harmonious equilibrium of nature, architecture, and art creating a unique human-friendly ambiance in the urban fabric of Lisbon. Accordingly, it is a primary ambiance to measure the biophilic parameters in the studied ambient from temperature, air quality, and CO_2 levels providing a comprehensive database to support the hypothesis of the study.

- Water frame ambiance : Air temperature and Humidity levels influenced by water bodies forming a contrast milieux compared to the other outdoor and Indoor milieux.

3.1.2 Transition ambiances:

- Entrance and Exit : this ambiance is important for observing the effects of biophilic parameters as people move between outdoors and indoors.

- Corridors and Hallways : as it is a transactional ambiance for people within the building it is important to observe temperature and CO_2 levels.

3.1.3 Cafeteria and Social ambiance :

- Cafeteria : to observe the effects of human interactions and the food preparation process on the temperature, air quality, and CO_2 levels inside this ambiance.

- Outdoor gardens Seating Areas : To observe the contrast between the biophilic parameters between indoor and outdoor social ambiance.

3.1.4 Temporary Exhibition ambiances :
As it is an ambiance with changeable environmental conditions. Due to the continually adjustable exhibition settings.

3.1.5 Parking Lots:
To observe the air quality and sound pollution in contrast to the central garden ambiance where biophilic patterns are strongly presented.

3.2 Measured parameters:

3.2.1 Air Quality : to measure air quality using monitors pollutants.

3.2.2 Humidity and Temperature : using hygrometers and thermometers to measure the contrast in different seasons' atmospheric conditions depending.

3.2.3 Surface Temperature : to calculate surface temperatures of different materials in the foundation utilizing infrared thermometers.

3.2.4 CO2 Levels : using CO2 sensors to observe concentration levels between indoor/private and outdoor/public ambiances.

3.2.5 Sound Quality : to measure noise pollution.

3.2.6 Social existence : to observe the percentage human practices of spaces depending on its main function.

4. CONCLUSION:

In between two ambiances
(biophilic milieux, city milieux)

Inside the biophilic ambiance
(biophilic milieu)

Outside the biophilic restorative ambiance
(biophilic milieu)

Within the interior ambiance
(milieu)

Figure 1 The different ambiances that will be analysed
Source: Ghadir Hummeid. (2024).

This article maps a list of ambiances that will be studied in the phd research to conduct a comprehensive methodology for studying environmental parameters at the Gulbenkian Foundation in Lisbon. Supporting the hypothesis that the use of biophilic approaches in public spaces can promote urban well-being and biodiversity within cities. The article built a systematic methodological selection of ambiances to ensure that the phd research will include a comprehensive data collection and analysis of Gulbenkian foundation ambiances and biophilic dimensions that have been used in it to provide a strong database for the research to achieve its primary objectives. Accordingly, after listing the chosen ambiances and parameters to be studied, the articles conclude that the research is missing a particular ambiance to be studied which is the interior patio as it is a semi-indoor/outdoor and private environment and has a direct connection with nature and natural elements but with specific features and atmospheres as it has very specific conditions that can be measure and gives particular biophilic measurements and parameters. Thus, to understand and cover all the biophilic architectural ambiances of the foundation that can be used to develop guidelines of the urban milieux starting from the human scale to prioritize human health and well-being, promoting more comfortable and resilient cities and communities.

5. REFERENCES

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1984). View through a window may influence recovery from surgery. *Science, 224*(4647), 420-421. *https://doi.org/10.1126/science.6143402*

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 15*(3), 169-182. *https://doi.org/10.1016/0272-4944(95)90001-2*

Lohr, V. I., Pearson-Mims, C. H., & Goodwin, G. K. (1996). Interior plants may improve worker productivity and reduce stress in a windowless environment. *Journal of Environmental Horticulture, 14*(2), 97-100. *https://doi.org/10.24266/0738-2898-14.2.97*

Wilson, E. O. (1984). Biophilia. Harvard University Press.

Beatley, T. (2011). *Biophilic Cities: Integrating Nature into Urban Design and Planning.* Island Press.

Rodrigues, A. (2016). *The Role of the Gulbenkian Garden in Urban Biodiversity in Lisbon*. Master's thesis, University of Lisbon.

Pereira, M. (2018). Biophilic urbanism : Analyzing the impact of green spaces in Lisbon with a focus on Gulbenkian Gardens. (Ph.D. dissertation, Technical University of Lisbon).

Alvarez, J. (2019). Biophilic design in urban spaces: The case of the Gulbenkian Garden. *Journal of Urban Design, 24*(4), 578-598. *https://doi.org/10.1080/13574809.2019.1624610*

Sousa, R., & Tavares, R. (2020). Urban biodiversity in Lisbon: The role of the Gulbenkian Gardens. *Ecology and Society, 25*(2), 12. *https://doi.org/10.5751/ES-11582-250212*.

"A HOUSE WHERE THE SUN DOES NOT REACH, THE DOCTOR DOES"

"UMA CASA ONDE O SOL NÃO ALCANÇA, O MÉDICO ALCANÇA"

Thodoris Chalvatzoglou
PhD candidate
National Technical University of Athens
theochalv@hotmail.com

ABSTRACT

Housekeeping manuals emerged in the mid-19th century across Europe and the United States, during a tumultuous period marked by deadly pandemics and diseases. Primarily aimed at housewives, these texts provided detailed tutorials and instructions on various aspects of household management, personal hygiene, women's roles and behavior, and cooking recipes among others. Nearly every manual begins with meticulous guidance on selecting a city plot, constructing a house, choosing the appropriate materials, and furnishing it. Central to all these texts is the emphasis on building a hygienic living environment, avoiding the hidden dangers associated with the materials of newly built houses, and inhabiting spaces in a healthy way. The aim of this paper is to shed light on past, yet still relevant, ideas and practices for creating a healthy living ambiance, both inside and outside the home, from an often overlooked but crucial period in the historiography of architecture.

KEYWORDS: housekeeping manuals. housewives. healthy living. 19th century domestic interiors. medicalization.

RESUMO

Manuais de manutenção doméstica surgiram em meados do século XIX na Europa e nos Estados Unidos, durante um período tumultuado marcado por pandemias e doenças mortais. Destinados principalmente às donas de casa, esses textos forneciam tutoriais detalhados e instruções sobre vários aspectos da gestão doméstica, higiene pessoal, papéis e comportamentos das mulheres, além de receitas culinárias, entre outros. Quase todos os manuais começavam com orientações meticulosas sobre como selecionar um terreno na cidade, construir uma casa, escolher os materiais apropriados e mobiliá-la. Central a todos esses textos era a ênfase em construir um ambiente de vida higiênico, evitar os perigos ocultos associados aos materiais das casas recém-construídas e habitar os espaços de maneira saudável. O objetivo deste artigo é lançar luz sobre ideias e práticas passadas, mas ainda relevantes, para criar um ambiente de vida saudável, tanto dentro quanto fora de casa, de um período frequentemente negligenciado, mas crucial, na historiografia da arquitetura.

PALAVRAS-CHAVE: manuais de manutenção doméstica. donas de casa. vida saudável. interiores domésticos do século XIX. medicalização.

1. INTRODUCTION

This paper takes its title from a well-known mid-20th century Greek folk proverb, which succinctly cautioning where not to build your house. For the residents of the newly industrialized 19th century metropolis, living in a house that ensures healthy living conditions will become a prerequisite and a necessity. How this necessity is reflected in popular culture and the middle urban strata can be traced in a series of housekeeping manuals, which have been integral to households since the mid-19th century, profoundly shaping notions of healthy living and spatial organization. Many

of these original manuals in Greek have been uncovered in archives and libraries, forming part of my ongoing PhD research on late-19th domestic interiors. In the context of this paper, I am interested in commenting on how these manuals present a series of ideals on how to construct a "healthy" house, within a broader context of medicalization in architecture that emerged in the same period.

2. GARDEN CITIES, TUBERCULOSIS AND HEALTHY LEAVING

The industrialization of the 19th century cities, and their incapability to provide good living conditions for the large population masses flowing into them, will make the life extremely difficult (Mumford, 1961). Under those poor living conditions, a series of deadly diseases such as typhus, cholera, yellow fever, and tuberculosis found fertile ground to develop (McKeown, 1965). Perhaps the deadliest disease during this period was tuberculosis. As early as the mid-19th century, the first sanatoria appeared, which based their design on a series of medical texts and beliefs that linked the disease with "unfavorable climate, sedentary indoor life, defective ventilation, and deficiency of light" (Colomina, 2008) and supported as means of treatment practices such as heliotherapy, the temporary stay of patients in calm environments, natural surroundings, and mild exercise (Campbell, 2005).

Thus, a view that cities are unhealthy, compared to the healthy conditions prevailing in the countryside, will gradually develop. In this spirit, the first urban interventions in cities focused on the sanitization of city centers. The "garden cities" - perhaps one of the most influential urban planning models of all time, envisioned by Ebenezer Howard in the late 19th century, aim at such a beneficial combination of a "healthy, natural, and economic combination of town and country life" (Howard, 1902) that will improve the living standards of the workers residing in them.

At the same time, Le Corbusier, as proposed in his book *The Radiant City* of 1935, lifts his buildings from the ground – which for him is "the dispenser of rheumatism and tuberculosis," creating the famous pilotis, and the first chaise lounges – the "cure chairs" (Campbell, 2005), initially designed as equipment for patients in sanatoria, will become a key piece of furniture in domestic interiors. The transformation of a series of medical beliefs into design principles was indeed a decisive and influential factor in the design of the modern cities.

3. MEDICALIZING DOMESTIC ARCHITECTURE: THE 19TH CENTURY HOUSEKEEPING MANUALS

The fear of transmission and spread of new diseases, as well as new perceptions around medicine, gradually materialized in domestic architecture. The medicalization of the house can be traced in a series of housekeeping manuals that were extremely

popular during the period, providing specific—almost medical—advice on how to build your house. These texts offer important insights into 19th-century domestic ideals and "the intricate and relentless labor involved in keeping homes of the time in working order", as well as "the emerging field of domestic science as a specialized sphere of knowledge and activity in which women's expertise reigned," as Baily (2020) notes.

The manuals identified in the context of this research date back to the mid-19th century and are addressed to the average Greek housewife. It seems that to a large extent, they rely on or draw references from similar European manuals (French, Italian, English), as Zygouras (1885) informs us in the introduction to his book *The Practical Guide for the Housewife* (Figure 1). Most of these also serve as educational handbooks for domestic science girl's schools and are usually written by their female teachers. These schools played a crucial role in educating young women (Dalakoura, 2011), many of whom had not previously had access to any form of education, while also significantly contributing to their independence and equal treatment in society. These manuals would be essential guides for housewives for many decades, with similar manuals appearing in Greek publishing production until the late 1980s.
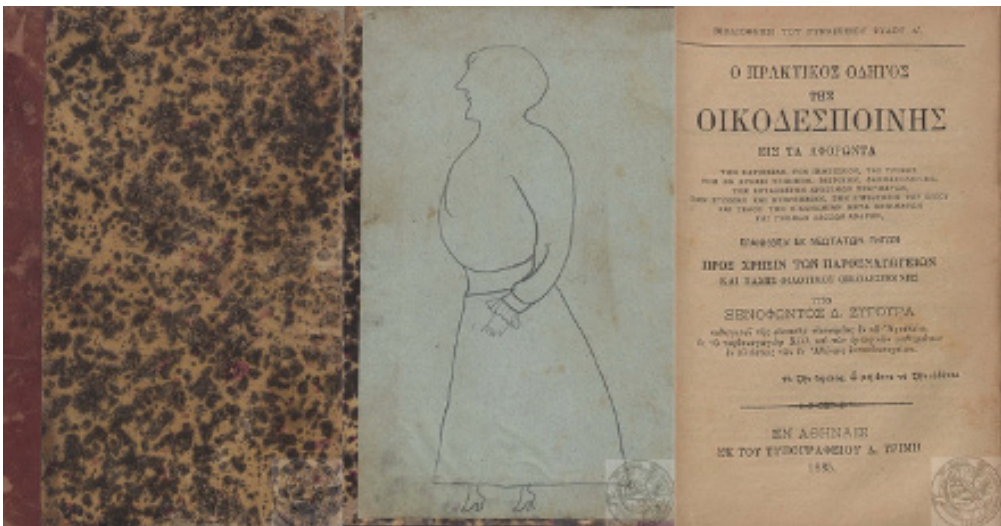
Figure 1. Book cover and first two pages of Xenofon Zygouras (1885). "O praktikos odigos tes oikodespenas" [The practical guide for the Housewife]. On the second page, we can see a handwritten sketch of a female figure "housewife", likely from the first owner of the book.
Source: *https://anemi.lib.uoc.gr/metadata/9/e/d/metadata-1530698276-444346-28996.tkl*

3.1 Structure of the Handbooks

Their purpose is to cover every aspect of domestic life, simultaneously defining the role and position of women in the household. They are almost pocket-sized books that the housewife can refer to at any time. They are particularly dense, ranging in size from 100 to 300 pages, with about 40% of their content focusing on the home,

its development, hygiene rules, and cleaning. Attempting to classify the content of these guides, we would say that it is divided into the following categories:

• Building a House (location, construction, materials, equipment, furnishing)
• Household chores and organization (expenses, income, daily tasks)
• Personal hygiene and medicine (cleanliness, exercise, sleep)
• Behavior (role of woman in the family, married life, education, child-rearing)
• Nutrition (foods, recipes, food preservation and processing)
• Clothing (sewing, embroidery, cleaning, ironing, washing clothes)

3.2 Recipe: how to build a healthy house

Focusing on the first category above, about the "House", we are going to search in the selected manuals for correlations with medical beliefs and views related to constructing the perfect "recipe" for a "healthy" house, from the selection of the plot to its furnishing. What we know, though, is a detailed definition of the "unhealthy" house given by Varouxaki (1903). According to her, these houses have narrow, low-ceilinged, and dark rooms, while the windows are small and few, facing alleyways, corridors, and staircases. She states: "the residents' faces are pale, the children are frail, and anemia, tuberculosis, and other endemic diseases find the perfect environment to thrive."

3.2.1 Choosing the plot

In every manual great emphasis is placed on selecting the best and most "hygienic" location for constructing a new house. This topic constitutes the first section in the chapter on "Houses", with instructions provided to prospective homeowners largely revolving around orientation, location within the city, and the quality of the soil and air. According to Leontia (1887), "an unsuitable dwelling for health shortens life, as it exposes us to serious illnesses." Zygouras (1885) recommends avoiding the purchase of plots in narrow streets with polluted or marshy air and in dark places where light does not penetrate to clean the air. Varouxaki (1903) adds to this list by advising against locations near slaughterhouses, factories, and large forests due to humidity. For Zygouras (1885), a house located near a valley or swamp is plagued by humidity, which he describes as "the destructive demon of families." He continues by suggesting that if it is necessary to live on narrow streets, one should prefer higher floors where "the air is cleaner, circulates faster, and the sun casts its life-giving rays" (Zygouras, 1885). Leontia (1887) states that "the most suitable location is the higher parts of the city, the more suburban areas." Regarding the quality of the soil on which the house is to be built, Varouxaki (1903) insists that it should be dry. Finally, a series of moral and sociological observations are not omitted, such as "a clean, airy, and pleasant house elevates a person," "children grow up inside the home and become perfect men and women," and "in a good house, there is family purity and moral life, while in an unhealthy house there is contamination and moral death" (Zygouras, 1885).

3.2.2 Constructing the house

Significant mention is made in the manuals regarding the placement of the building mass of the residence on the plot to ensure sufficient free ground surface for creating a garden. Leontia (1887) even suggests limiting the size of the house to the necessary to create the largest possible garden area. The garden is associated with health, rejuvenation, and the beneficial properties of nature. Regarding the orientation of the house, Leontia (1887) proposes that the main facade of the house should face north, with the courtyard to the south and the main entrance on the southwest side of the plot. This way, the house is "airy and sunny," two essential qualities for ensuring health, "which mainly depends on clean, dry, and tempered air and the free influence of the sun's rays." She also suggests that in cases where creating a garden is impractical or difficult, large windows should be ensured in the living spaces of the house to allow as much light and air as possible into the rooms. According to Varouxaki (1903), windows should be placed opposite each other in a room to facilitate quicker and easier air renewal, stating that "clean air enters from below and stale air exits from above."

All the authors note the importance of creating a basement space in the house for storage and auxiliary uses. Zygouras (1885) advises injecting an asphalt mixture into the ground before the foundation to prevent the soil moisture from transferring to the structure, while he highlights the need for large windows in the space and exits to the north. Leontia (1887) suggests that the basement should be raised at least half a cubit above the final ground surface.

The walls of the house should be constructed to prevent moisture penetration (Varouxaki, 1903), ideally from ceramic bricks, which retain heat (Leontia, 1887). The foundation walls should be coated with cement and ceresit (Varouxaki, 1903). The interior walls of the house are coated with lime for cleanliness, with wallpaper or oil paint, while it is also important that the final surface of the walls is smooth to be inhospitable to dust (Varouxaki, 1903). Finally, there strict advice is given on when a house can be inhabited. For Leontia (1887), it must dry for at least one year and endure the winter winds and summer heatwaves, so that, as Zygouras (1885) states, "the wet plasters and walls dry out."

3.2.3 Arranging the rooms

The size, extent, and division of the rooms in the house are based on the needs, number of people, and occupation of the host, as mentioned by Zygouras (1885). In the manuals studied, descriptions of houses range from very small single-story houses to two-story buildings with independent apartments with some shared spaces, and even four-story independent houses. Despite the differences in the size of the houses described, we can identify a series of common directions and advice to homeowners on how to divide and organize the house.

In the basement, it is recommended to place **coal and wood storage rooms and the laundry**. These spaces are described as unhealthy and responsible, for the occurrence of "rheumatism, arthritis, and many other diseases", so they must not be close to the everyday life spaces (Zygouras, 1885).

The **kitchen, toilet, and storage areas** should be located on the east side of the house (Zygouras, 1885), away from the bedrooms and the working spaces of the inhabitants. Zalouchou and Zalouchou-Anderton (1930) inform us that the kitchen is "the unhealthiest part of the house" due to both the burning coals and the harmful gases emitted, as well as "the unpleasant odors that arise during cooking." For the kitchen, Leontia (1887) recommends large openings and direct access to the garden, while also giving advice about the materials to be used in its construction: "The kitchen, corridors, hall, stairs, doors, and windows are generally painted with oil paint, because it is healthy, clean, and economical (…) but we must be careful of the smell of this paint, which when fresh is pathogenic." Toilets, on the other hand, "are placed in secluded spaces and far from the house," as they emit bad odors; hence, "they must be cleaned every day for hygiene reasons" (Zygouras, 1885).

The **bedrooms** are placed in the "healthiest, sunniest and airiest" parts of the house (Zalouchou & Zalouchou-Anderton, 1930), ideally in the southeast (Zygouras, 1885) and southwest of the house (Leontia, 1887). Zygouras (1885) states, "We should love ventilation to the point of mania throughout the day (…) and keep the door of the bedrooms open at night so that the air in the room is refreshed." Bedrooms should be spacious, with high ceilings and wide windows, to allow abundant air and light to enter, as without this influence the air is harmful (Leontia, 1887). Zygouras (1885) provides a very detailed description of how to clean the rooms: "It is recommended to sweep the wooden floor of the rooms two or three times a day and to wash it twice a month, but not too much water should fall on it because moisture might accumulate." He continues, "To avoid this trouble, it is recommended to oil-paint the floors of the main rooms, so they only need to be cleaned every 4-5 days with a sponge." Zalouchou and Zalouchou-Anderton (1930) advise that a window in the bedroom should always be slightly open, even in winter. They highlight the beneficial properties of this practice, especially for those suffering from lung diseases, as it can provide "excellent treatment."

The **dining room and the living room** are placed in the northern part of the house (Zygouras, 1887), as these rooms are used less frequently and require less light and heating (Varouxaki, 1903).

3.2.4 Furnishing

The way in which the house is furnished is a significant concern for authors, who delve into very detailed descriptions regarding the furnishing and decoration of the home, always with an emphasis on a healthy lifestyle. We could summarize their points as follows:

The general recommendation for all areas of the house is to avoid unnecessary furniture and decorative elements (such as ceiling moldings) and small items. However, it is recommended to have plants and flowers both inside and outside the house (Varouxaki, 1903) due to the beneficial properties nature seems to have on the health and psyche of city dwellers. In the summer, it is recommended to cover furniture with light fabric to protect it from dust and sunlight (Leontia, 1887). During the biweekly thorough cleaning, furniture should be shaken, cleaned with a cloth, and scrubbed to remove dust, bedbugs, and moths (Zygouras, 1885).

In the bedrooms, only the absolutely necessary furniture should be present to make cleaning easier and to prevent dust accumulation, "which is extremely harmful" (Varouxaki, 1903). The bed should not touch the room walls (Zalouchou & Zalouchou-Anderton, 1930), and the use of metal "English-style" beds is recommended (Zygouras, 1885) in order to prevent the spread of bedbugs (Leontia, 1887). The use of feathers and straw as mattresses and pillows fillings is strictly forbidden (Leontia, 1887). Walls in the rooms should remain free of pictures (Varouxaki, 1903). During the night, vases, aromatic substances, or medicines in the bedrooms are highly prohibited, as "their smell contaminates the air" (Leontia, 1887). For the windows, light and elegant muslin curtains are preferred as they are easily washable, while heavy curtains should be avoided, as they block light and become "spider factories" (Zygouras, 1885).

For the kitchen, being the unhealthiest area, the instructions given are extremely meticulous and thorough. They cover everything from cooking utensils to what cooking clothes the hostess should wear. These instructions are largely related to contemporary ideas about food preservation, food waste, and cooking methods. The authors recommended to store cooking utensils in cupboards to avoid dust, to avoid using copper vessels due to their tendency to oxidize and the potential poisoning they can cause (Zygouras, 1885), and avoid storing acidic liquids or fruits in them due to the salts they create which have "emetic and cathartic properties" (Leontia, 1887). Glasses, cutlery, and other utensils should be cleaned regularly with a dry cloth (Leontia, 1887). The cook's attire should always be clean, and "her hair should be in a net" (Zygouras, 1885). According to Zygouras (1885), disorder and uncleanliness in the kitchen "besides being extremely disgusting, becomes life-threatening."

Toilets, as the second most unhealthy part of the home, should be cleaned daily and very thoroughly. The "English-style" toilet, which constantly circulates the water in it, is preferred. Zygouras (1885) suggests the homeowners to add in the toilet space, "a pipe that carries bad odors outside." According to Varouxaki (1903), in an "unhealthy" home, toilets are in poor condition and "pose a health hazard to the entire family."

4. CONCLUSION
The 19th-century housekeeping manuals emerged as essential guides for middle-class housewives, responding to a pressing need for healthier living conditions amidst rapid

urbanization and industrialization. They offer detailed instructions on building healthy homes emphasizing factors such as the location, building materials, ventilation, sunlight exposure, cleanliness, and proper hygiene to prevent diseases, reflecting contemporary medical theories that linked poor living conditions to health issues.

Nature, fresh air, the sun, and cleanliness seem to a large extent to constitute the "remedy" against diseases, humidity, dust, contaminated soil, and parasites that inhabit homes. The authors of the manuals not only extol their positive contribution to maintaining a "healthy" home, but they go to the other extreme, proposing absurdly meticulous procedures and practices. The fear surrounding diseases during this period is certainly evident, while the authors themselves use disease as a means of describing the "unhealthy" house.

The manuals also seem to shape the social roles and daily lives of women, positioning them as guardians of the household's health and hygiene. They provide advice on managing household chores, personal hygiene, child-rearing, nutrition, and clothing. The structured content underscores the significant labor involved in maintaining a household. The emphasis on cleanliness, orderliness, and health extended to the minutiae of daily routines and home furnishings, advocating for simplicity and functionality. These manuals were instrumental in propagating health-conscious living and architectural practices. They mirrored broader societal shifts towards medicalized domesticity and urban planning, highlighting the intersection of health, architecture, and gender roles. They not only provided practical household management tips but also contributed to the professionalization of domestic science and the empowerment of women within the domestic sphere. Their legacy persists in the ongoing emphasis on health and hygiene in modern domestic environments.

5. BIBLIOGRAPHY

Bailey, L. E. (2020). Waste Is Women's Domain: A Review of a 19th Century Housekeeping Manual. Taboo: The Journal of Culture and Education, 19(3), 165-179. https://digitalscholarship.unlv.edu/taboo/vol19/iss3/11

Colomina, B. (2008). X-ray Architecture: Illness as Metaphor. Positions, 0, 30–35. http://www.jstor.org/stable/25835085

Campbell, M. (2005). What tuberculosis did for modernism: The influence of a curative environment of Modernist Design and Architecture. Medical History, 49(4), 463-488. https://doi.org/10.1017/S0025727300009169

Dalakoura, K. (2011). The Moral and National Education of Girls in the Greek Communities of the Ottoman Empire (c.1800-1922). Women's History Review, 20(4), 651-662. https://doi.org/10.1080/09612025.2011.599627

Howard, E. (1902). Garden Cities of Tomorrow. Swan Sonnenschein & Co.

Le Corbusier (1935). La Ville Radieuse. L'Architecture d'Aujourd'hui.

Leontias, S. (1887). Oikiake oikonomia pros hrisi ton parthenagogion [Household economy for use in Girls' Academies]. Typografio Koromila.

Mumford, L. (1961). The City in History. Its Origins, Its Transformations, and Its Prospects. Harcourt, Brace & World.

McKeown, T. (1965). Medicine in Modern Society. Allen & Unwin.

Varouxaki, A. (1903). Oikiake oikonomia [Household economy]. Ioannis Sideris.

Zalouhou, Z., & Zalouhou-Anderton, I. (1930). Oikiake oikonomia [Household economy]. Typografio Platonos Sella.

Zygouras, X. (1885). O praktikos odigos tes oikodespenas [The practical guide for the Housewife]. Typografio Trimmi.

SONIC INCLUSION: ABLEISM AND THE CULTURAL POLITICS OF LISTENING

William Renel
Director of Research
Touretteshero CIC
will@touretteshero.com

ABSTRACT

This paper takes an auto-ethnographic approach, describing and reflecting on the authors experiences of sound and madness in public spaces in the UK including city parks, cinemas and music festivals. The paper considers the interplay between sound and madness in shaping feelings of social inclusion within existing discourses from critical disability studies and inclusive design, focusing on the emerging terms 'The Auditory Normate' and 'Aural Diversity'. Practical examples of sonically inclusive design are shared alongside discussion of recent policy and legislation relating to sound, accessibility and inclusion. The paper concludes by suggesting that in challenging normative assumptions about sound and madness and orienting the design of public places towards disability justice, opportunities to create a more socially and sonically just world begin to emerge.

KEYWORDS: Madness. Inclusive Design. Disability Justice. Ableism.

1. INTRODUCTION

Content warning: this paper includes descriptions and discussion of potentially triggering themes including madness, psychosis and ableism.

This paper describes and reflects on experiences of sound and madness in public places and considers how such things shape feelings of social inclusion or exclusion. The chapter takes an auto-ethnographic approach (Denshire, 2013), as the author shares and reflects on their personal experiences of sound and madness. 'The Author' is quoted within the text to show when direct reflections appear. The initial reflection below highlights where the author's interest in the arena of sound and madness originates:

> It's August 2023 and I am walking through a city park in the north of England. The sun shines as my children and my dog run ahead. My dad's voice arrives in left ear saying, "let's turn this way, it's time to go over here". I love my dad's voice, it's gentle yet full of purpose. His voice reminds me of being a kid, it makes me feel safe and sounds similar to my own voice. What was significant about hearing my dad's voice that day was not the words that he said, or that his voice sounded similar to mine, but the fact that he had died in June, two months earlier. This experience was part of what several medical professionals later diagnosed as Brief Limited or Intermittent Psychosis - a 'BLIP'. It was also the start of me thinking deeply about what experiences of madness might teach us about sound and, likewise, what sound might teach us about experiences of madness (The Author, 2024).

1.1 Lived Experience as Data

In July 2023 the author started experiencing symptoms of madness and psychosis. This included hearing voices and having visual and tactile hallucinations. The author

began to record these experiences, charting key information including where and when the episodes happened, how long symptoms lasted, descriptions of the events and notes about what the experiences felt like. The data was collated within a spreadsheet and then visualised for further analysis. The graphic below (figure 1) visualises three months of the author's symptoms and experiences of psychosis.
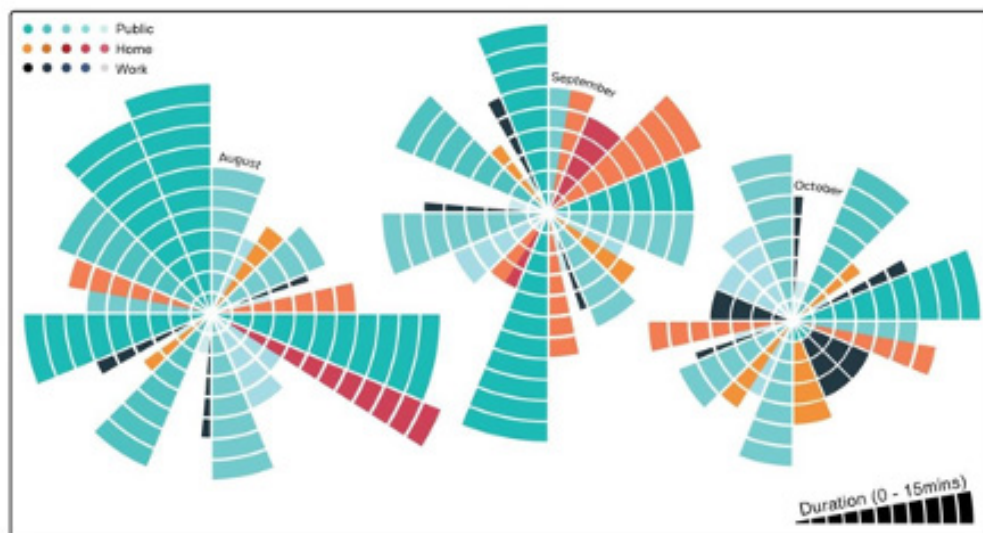
Figure 1. Visualisation of psychosis.
Source: The Author, original (2024).

Some key findings from visualising the data in this way are that 81% of the symptoms were auditory (hearing voices), 100% of the symptoms lasted less than 15 minutes and 63% of the experiences happened in a public place. To provide further detail the following sections of this paper share descriptions written by the author following episodes of psychosis in public places. If you do not wish to read about the experiences in detail, jump to page 5. The descriptions selected include multiple public locations such as Shambala Festival, a city park in the north of England and an inner-city cinema.

1.1.1 Shambala Festival, August 2023

This is confusing. There are overlapping voices, maybe 3 or 4, each is an unknown character, and they are all fighting for attention in my head. I'm surrounded by other festival goers, having a positive time and loving life. The voices are giving me directions such as 'over here is the perfect route . . . this path leads to the next place'. I'm trying so hard to have a nice time with my family and friends, I can see one of my kids going down the Helter Skelter, but I'm totally distracted, overwhelmed and unsure where and how to find peace. Seemingly everyone else is having a very different experience to me. (The Author, 2023).

There is a calm single voice talking to me about random things like weather. The voice is gradually changing in tone and is now my Dad talking slowly almost like a poem. But I am not really listening to what he is saying, his voice is calming. I'm in my campervan, one of my children is asleep next to me. Its late at night. We are in the accessible camping area of the festival, surrounded by other disabled people and their families and friends, it's safe and calm. I can hear the rumble of the festival in the background but it's not too loud. (The Author, 2023).

In the first experience, the process of hearing voices leads to feeling out of control and othered. In the second experience however, the associated feelings are calm and personal. Both are highly sonic experiences with the background and environmental sounds of the festival merging with the complex interplay between the authors internal and external sonic experience.

1.1.2 City Park, August 2023

I'm playing with my three kids in the playground, suddenly I can hear extra voices talking at me. I turn because I presume there is someone in the playground trying to get my attention saying 'where are you going . . . this is the path here . . look out . . . stop . . . commit something else'. But I realise that these voices are in my head, not in the playground. It's distressing but less confusing than times when I've heard the voices before. I am trying to focus on playing with my kids and I am stroking my dog to try and keep calm as I feel my heart rate going up rapidly. I start plotting my route out of the situation, but how do I escape? I'm very aware that no one else around me has any idea what's going on. Then suddenly, one of my kids approaches me and asks if I am ok. She puts her hand on my leg and before I can answer her question she asks if she can have an ice cream. This makes me laugh and the panic that was brewing before bursts. We move to a quieter area near the ice cream van and the voices start to fade as we all pick things from the menu. (The Author, 2023).

This experience highlights the power of internal sounds to elicit feelings of isolation, confusion and panic but also the potential of external sounds (a child's voice in this example) to disrupt negative thought processes. This experience also highlights the importance of having easy access to different sonic environments within public places. Moving from a busy, noisy environment to a quieter, calmer space played a significant role in this experience changing from negative to positive.

1.1.3 Cinema, August 2023

I'm in the cinema watching the movie Barbie. As the film starts there are extra colours dancing around in the dark cinema room. I know that no one else can see them, they are just for me. There are voices in my head which are mixing with the music and singing in the film, but the voices aren't scary or distracting, they are just there. My dad's voice enters, and it feels strange that I can hear him but also kind of nice. I think he would like the tone and the vibe of this film. The cinema

feels open and free, slightly celebratory and a little rowdy. People are cheering, singing, clapping and drinking cocktails. Somehow, we have all been given the message that we are welcome to be and bring our whole selves to watching this film. This is the first time I have felt properly ok about hearing voices and having visual hallucinations. Several days after this I talk to my partner, family, friends and work colleagues for the first time about my experience of psychosis (The Author, 2023).

It's clear from these experience that sound can dictate whether a public place feels welcoming and safe or othering and unsafe for people experiencing madness. However, there is a lack of consideration for sound within inclusive design research (Rychtáriková, et al, 2012; Renel, 2018) and existing considerations of Sonic Inclusion, such as the notion of 'acoustic comfort for all' (Heylighen et al, 2010), focus primarily on acoustics, physical environments and sound sources external to the body and brain. Therefore, by orientating discussions of Sonic Inclusion toward internal sonic experiences such as hearing voices, new opportunities for sonically inclusive practice begin to emerge. There are two existing terms that are valuable in new explorations towards a sonically inclusive future: 'The Auditory Normate' (Renel, 2023) and 'Aural Diversity' (Drever and Hugill, 2023).

2. THE AUDITORY NORMATE

The term The Auditory Normate describes an idealized sonic citizen around which the contemporary world is built (Renel, 2023). The term enables us to consider how the design and management of objects, environments, and services produces auditory hierarchies where certain forms of hearing, listening and communication are given priority over others. This is in short, a description of auditory ableism. The author has discussed examples of how auditory ableism is propagated through design in detail elsewhere (Renel, 2023) but these include:

- Automated phone Services and the barrier these pose to people with Tourettes Syndrome or differing voice patterns
- Environments governed by auditory rules (for example libraries, galleries and theatres) which glorify quietness and silence as the 'right way' to act
- The height of public information speakers which are commonly located at the normative height of a standing adult

Each of these examples highlights how sound can exclude disabled people for accessing an environment or service. Auditory ableism is also embedded in acoustics legislation (Drever, 2017). Rychtáriková et al (2012) contend that the majority of research that informs acoustics legislation assumes an 'average person' with either 'good' or 'bad' hearing. The statistical measure of Absolute Hearing Threshold, which identifies the smallest level of auditory stimulus that a person can detect in order to define the threshold of human audibility (Howard and Angus 2017) is a common

reference in acoustics legislation and has been described as 'the best hearing level of younger people with undamaged hearing' (Truax 2001, p16). However, research since the 1960s has suggested that differences in human hearing thresholds are log-normal (consistently random) with differences as large as 25 – 30 db between 'best' and average hearing thresholds (Herman and Holzman, 1967). The acoustic standard for normal equal-loudness-level contour (BS ISO 226, 2003) is a heavily utilised standard in urban design which defines the acceptable level of ambient noise that can be present within an urban environment based on what the standard describes as an 'otologically normal person'. This person is described as someone

> 'in a normal state of health who if free from all signs and symptoms of ear disease and from obstructing wax in the ear canals, and who has no history of undue expose to noise, exposure to potentially ototoxic drugs or familial hearing loss' (BS ISO 226, 2003)

The standard also stipulates an age range of 18 – 25 years, the period of life when human hearing is often at its strongest and healthiest.

3. AURAL DIVERSITY

In contrast the Auditory Normate, the term Aural Diversity is described as an 'acknowledgement of the complexities of lived and embodied hearing experiences in all their diversity and fluctuation' (Drever and Hugill, 2023). Drever (2017) provides a valuable description of the term Aural Diversity as the 'actual variety of (often less than ideal) hearing that we experience throughout a normal day and throughout our lives'. The Aural Diversity paradigm has been formalized by the creation of the Auraldiversity Network in the UK (auraldiversity.org) which establishes new theoretical and practical approaches that foreground the divergent hearing profiles of the population. Both terms (The Auditory Normate and Aural Diversity) are significant in the creation of a future where the ambiances of urban spaces are more inclusive of disabled people. The following section will introduce practical examples that respond to these two terms.

4. PRACTICAL EXAMPLES
4.1 Sonic Stories

A Sonic Story is and infographic that shows how the sound levels of an environment change over time. The example below (figure 2) was created for a theatre production of Hamlet at Shakespeare's Globe Theatre in London.
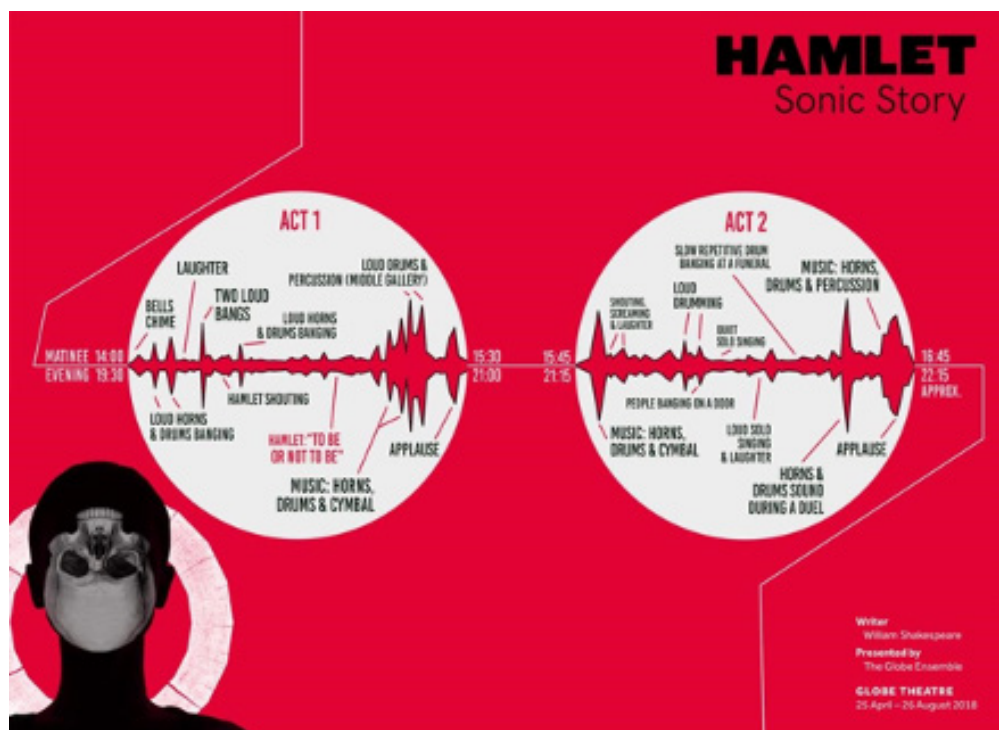
Figure 2. Sonic Story, Hamlet, Shakespeare's Globe Theatre.
Source: The Author, original (2018).

Sonic Stories can also be created to communicate the sonic experience of buildings and larger public environments - highlighting the loudest and quietest rooms and sonic fluctuations within different built environments over time. Sonic Stories are not purposefully designed to include one set of lived experiences but are utilised as part of wider accessibility provisions by anyone who might benefit from an increased understanding of a sensory environment prior to or during their visit. This includes but is not limited to neurodivergent and learning disabled people, people who experience social anxiety and people experiencing madness.

4.2 CHILL-OUT SPACE

Battersea Arts Centre in London has a permanent chill-out space, designed by Rhiannon Armstrong in collaborating with Touretteshero. The space (figure 3) is permanently available to visitors and staff whenever the building is open and includes low lighting, comfortable seating, ear defenders, earplugs and sensory objects.

Figure 3. Chill-Out Space designed by Rhiannon Armstrong, Battersea Arts Centre.
Source: Touretteshero CIC (2019).

The provision of a dedicated chill-out space highlights that a central component of a sonically inclusive space is to offer a diversity of auditory environments and ambiances.

5. CONCLUSION

This paper has described the authors experiences of sound and madness in public spaces. Reflecting on these experiences highlights the lack of sonic consideration within inclusive design historically and the focus on external (rather than internal) sound sources in framing how sound includes/excludes disabled people from society. However, recent developments in legislation and inclusive design are beginning to signal an important shift towards more sonically inclusive practice. The British Accessibility Standard - Design of an Accessible and Inclusive Built Environment Part 2 (BS8300-2, 2018, p154) recommends a dedicated quiet space within built environments in which 'individuals might find peace and calm in order to manage

sensory/neurological processing needs'. This is the first time in British legislative history that such a recommendation has been made. The standard also recommends the provision of multimodal information and way-finding according to the principle of 'at least two senses'. This simple principle states that wherever information is provided by an institution for the use of the public, it should be available in at least two senses (e.g. visual and sonic or sonic and tactile). The Publicly Available Specification - Design for the Mind: Neurodiversity and the Built Environment (PAS 6463,

2022) builds on BS 8300-2 and recommends the creation of sensory maps which clearly communicate the different acoustic profiles present with public places. The International Standard Definition and Conceptual Framework of Soundscape (ISO 12913-1, 2014) acknowledges that factors such as hearing loss will cause human hearing to diverge and should therefore be considered in the design and management of public soundscapes and ambiances. Drever (2017) describes this as a 'sea change' in how an acoustics standard regards hearing, not a fixed sense but rather a divergent and fluctuating modality. The European Cooperation in Science and Technology action TD0804 - Soundscape of European Cities and Landscapes (Kang et al, 2013) represents a critical shift in acoustics - transcending the prioritisation of physical acoustic measurements to include methods from human and social sciences to account for the diversity of soundscapes in the built environment. The action advocates for a holistic approach to urban soundscape design.

Crucially this includes framing environmental sounds as a resource rather than a waste (Kang and Schulte-Fortkamp, 2016). Arup and the Aural Diversity Network have developed an Aural Diversity Toolkit (2024) to help designers create spaces and environments that meet the needs of an Aurally Diverse population.

All of the above signal positive changes with regards to the design and management of more inclusive urban soundscapes and ambiances. The lived experiences of disabled people (such as the experiences of sound and madness discussed above) alongside the contemporary theoretical, practical and legislative trajectories discussed suggest that by challenging normative assumptions about sound within urban ambiances and orientating design towards disability justice, then opportunities for a more sonically and socially just world begin to emerge.

6. BIBLIOGRAPHY

Auraldiversity Network. (2024) *https://www.auraldiversity.org*.

Aural Diversity Toolkit. (2024). *https://www.arup.com/insights/aural-diversity-toolkit*.

BS ISO 226. (2003). Acoustics – Normal Equal-Loudness-Level Contours. London: BSI.

Denshire, S. (2013). Autoethnography. Sociopedia, 12(1), pp221-236. DOI: 10.1177/205684601351.

Drever, J, L., & Hugill, A. (2023). Aural Diversity. Routledge.

Drever, J.L. (2017). The case for auraldiversity in acoustic regulations and practice: The hand dryer noise story, presented at the 24th International Congress on Sound and Vibration, London.

Hermann, E.R., & Holzman, B.R. (1967). Absolute thresholds of human hearing, American Industrial Hygiene Association Journal, 28(1): 13–20.

Heylighen, A., Rychtáriková, M. & Vermeir, G. (2010). The Sound of Inclusion: A Case Study on Acoustic Comfort for All. In: 'Designing Inclusive Futures'. NY: Springer.

Howard, D.M., & Angus, J. (2017). Acoustics and Psychoacoustics. Abingdon: Routledge.

Kang, J., & Schulte-Fortkamp, B. (2016). Soundscape and the Built Environment. Boca Raton, FL: CRC Press.

Kang, J., K. Chourmouziadou, K., & B. Sakantamis. 2013. COST Action TD0804 – Soundscape of European Cities and Landscapes. Soundscape- COST.

Renel, W. (2018). Auraldiversity: Defining a Hearing-Centred Approach to Socially Equitable Design of The Built Environment. Built Environment, Vol 44(1): 36-51.

Renel, W. (2023). The Auditory Normate: Engaging Critically with Sound, Social Inclusion and Design In: Drever, J, L., and Hugill, A. (eds). Aural Diversity. Routledge.

Rychtáriková, R., Herssens, J., & Heylighen, A. (2012) 'Towards more inclusive approaches in soundscape research:The soundscape of blind people', presented at Inter-Noise, NewYork, 19–22 Aug.

Rychtáriková, R., Herssens, J., & Heylighen, A. (2012). Towards More Inclusive Approaches in Soundscape Research: The Soundscape of Blind People. Inter-Noise, New York.

Truax, B. (2001) Acoustic Communication. Westport: Ablex Publishing.

L04

"ART AS DOCUMENT", OPENING HISTORICAL ARCHIVE TO ARTISTIC REGISTERS IN ARCHITECTURE

CHAIR Maria Rita Pais

Architecture research is traditionally addressed on perspectives aiming for object and author comprehension. We propose to change the research point of view from creation to reception. Inspired by the revisitation of Maurice Merleau-Ponty's idea of experience of art, we propose to gather, understand and discuss architecture throughout art production reading, and more specifically to better understand the Architecture of war. This idea also follows Hans Robert Jauss' Aesthetics of Reception, including what happens in the consciousness received and in its aesthetic fruition.

Within the scope of this session, we don't aspire to propose a new methodology, instead, we propose to collect examples, discuss cases and check the potential of art making, creative registers and art reading as a way to interpret space and architecture. We propose to study architecture through the intervening parties from its creation to its use through Jauss's Aesthetics of Reception and the Eco's Opera Aperta. And, in this sense, we understand space as a result of the duality between authors' conceptual ideas, together with the inhabitant understanding, embodiment and social behavior.

In other hand, the sociologist and philosopher Henri Lefebvre is responsible for this approach that crosses this phenomenological basis with a critical analysis of a more political and social content. In his seminal book La Production de l'Espace, Lefebvre proposes an approach based on the triad of the "perceived" space of the "physical" world, the "conceived" space of the "mental" world and the "lived" space of the "social" world, what he defines respectively as "spatial practice", "space representations" and "representational spaces", seeking with this distinction to capture different analytical perspectives on spatial reality.

So in this sense, this session wants to gather and discuss the relevance of the visual archive, and the narration archive to bring these visuality, this physicality, this experience and performativity into the hands of those who study architecture.

OBJECT OF DESIRE LUXURY OBJECTS AND POLITICAL CONFLICTS

OBJECTOS DE DESEJO ARTEFACTOS DE LUXO E CONFLITOS POLÍTICOS

Spela Hudnik, PhD,
Assist. Professor
University of Ljubljana Faculty of Architecture
spela.hudnik@fa.uni-lj.si

ABSTRACT

This article explores the transformation of luxury objects, which belong to political and economic elites, into symbols of global political conflicts, with consideration of their multifaceted manifestations and the social perceptions of luxury, power, and status. It examines how economic power dynamics, geopolitical tensions, distinctive elite lifestyles, and status symbols impact local social, aesthetic, and symbolic norms and perceptions. The study focuses on the case studies of two iconic luxury objects of desire: the Miramar Castle and Sailing Yacht A, both located in the Gulf of Trieste. It is divided into four chapters: Breaking News, Lifestyle, Leisure, and Desire. It aims to document the shift of "imperial" luxury objects towards symbols of global political conflicts and register their perceptions through a comparative research approach. This shift, occurring amidst global power ambitions, challenges and questions the resilience of the Triestino lifestyle and its traditional notions of space, leisure, and cultural heritage.

KEYWORDS: luxury object of desire. elite lifestyle. Gulf of Trieste. Castle Miramare. Sailing yacht A.

RESUMO

Este artigo explora a transformação de objetos de luxo, relacionados com a política e com as elites económicas, em símbolos de conflitos políticos globais, tendo em conta as suas manifestações multifacetadas e as percepções sociais de luxo, poder e de status. E examina como a dinâmica do poder económico, as tensões geopolíticas, os estilos de vida distintos das elites e os símbolos de status impactam as normas e percepções sociais, estéticas e simbólicas locais. A análise centra-se no caso de estudo de dois objetos icónicos de desejo e de luxo: O Castelo Miramar e o Sailing Yacht A, ambos localizados no Golfo de Trieste. O estudo está dividido em quatro capítulos: "Notícias de Última Hora", "Estilo de Vida", "Lazer" e "Desejo". Pretende documentar-se a mudança da ideia de objectos de luxo "imperiais" para a ideia de símbolos de conflitos políticos globais e registar as suas percepções através de uma abordagem de investigação comparativa. Esta mudança, que ocorre no meio de ambições de poder global, desafia e questiona a resiliência do estilo de vida de Triestino e as suas noções tradicionais de espaço, lazer e património cultural.

PALAVRAS-CHAVE: objeto de luxo de desejo. estilo de vida de elite. Golfo de Trieste. Castelo de Miramare. Iate à vela A.

1. INTRODUCTION / INTRODUÇÃO

They can become political pawns, as objects of desire and contention in negotiations between warring countries, messy democracies, and violent distended conflict. Effective as a solvent of differences, the hilarious and dangerous masquerades of retail, business, or trade often mix quite easily with the cunning of political platforms. (Easterling, 2005, p. 1)

The article delves into how luxury objects, desired by political and economic elites, have evolved into symbols of global political implications. It explores the complex interplay between luxury, power, and social distinctions, with consideration of their ambivalent, atmospheric, and aesthetic representations through luxury objects of desire, which Easterling (2005) addresses as "spatial products".

In today's era of pursuits for global dominance, it is more crucial than ever to understand the cyclical patterns of dominance and the succession of ruling "empires" and their lifestyles. As highlighted by economist Jeffrey Sachs (2023), the overarching objective of political, military, and economic actors shaping modern society is to attain hegemony and become the sole great power in the global system. This conception requires acknowledging the strategy of recurrent retreats and resurgences of symbolic values across various historical contexts. To illustrate these concepts, the article juxtaposes the case studies of two emblematic objects situated along the Gulf of Trieste: Castle Miramare, once the epitome of luxury during the Austrian monarchy under Archduke Ferdinand Maximilian, which has borne witness to the reverberations of global imperial conflicts, but which is now perceived as a marker of representative culture; and the Sailing Yacht A, owned by Russian oligarch Andrey Melnichenko, which was once a symbol of extravagant design, indulgence, and wealth, but now serves only as a stark reminder of the consequences of EU sanctions and Russia's involvement in the war in Ukraine.

The article examines the contradictions inherent in architecturally and aesthetically remarkable objects hailing from different epochs and political regimes, in order to reveal a broader narrative about global conflicts, global lifestyles, and the local socio-cultural meanings of habitus, leisure, and community. It highlights how these objects/spaces, initially intended for leisure and enjoyment, become entangled in global and local conflicts. This transformation is indicative of the intricate network of power constructed by various empires—political, military, financial, industrial, or cultural—and warrants reflection on local socialenvironmental conflicts. These objects/spaces now function as media through which observers—rather than their authors—participate in the spatial spectacle of global conflict. This idea aligns with Arjun Appadurai's (1996) concept of "mediascapes", which refers to the global distribution of media content that shapes people's perceptions and realities. Mediascapes contribute to *imagined worlds*, where people construct their own realities and the realities of others, significantly influencing cultural identities and social imaginaries.

The primary aim of the article is to document the metamorphosis of "imperial" luxury objects into symbols of global political conflicts, focusing on the pivotal political causes and consequences of this transformation. It underscores how global icons like Sailing Yacht A and Castle Miramare transition in status from objects of desire associated with the leisure pursuits of elite leaders into symbols of disruption within the picturesque local ambiance of the Gulf of Trieste.

2. BREAKING NEWS – POLARIZATION OF PERCEPTIONS

> What is most important about these mediascapes is that they provide […] large and complex repertoires of images, narratives, and ethnoscapes to viewers throughout the world, in which the world of commodities and the world of news and politics are profoundly mixed. […] The lines between the realistic and the fictional landscapes they see are blurred […] to construct imagined worlds that are chimerical, aesthetic, even fantastic objects, particularly if assessed by the criteria of some other perspective, some other imagined world. (Appadurai, 1996, p. 35)

As discussed by Appadurai, media play an ever-growing role in shaping global cultural dynamics and individual perceptions within an equally ever-increasing interconnectedness of constructed imagined worlds.

On March 12, 2022, Sailing Yacht A, owned by Russian oligarch Andrey Melnichenko, was seized in the Gulf of Trieste by Italian authorities while undergoing maintenance at the Arsenal. This became prominent news in both local and international media. The seizure was part of the European Union's broader sanctions against Russian oligarchs, implemented in response to Russia's military aggression in Ukraine. The unexpected conflict drew significant, especially negative, global attention to the targets of these sanctions, particularly individuals closely associated with President Vladimir Putin. The effective cooperation between the European 'Freeze and Seize' Task Force and the international 'REPO' (Russian Elites, Proxies, and Oligarchs) Task Force facilitated sanction-related actions on a global scale. Commissioner for Financial Services, Financial Stability and Capital Markets Union, Mairead McGuinness, emphasizes: "The focus of our work is to stop money flowing to the Russian war machine. Wealthy oligarchs supporting the Russian war machine need to know that they will not find any safe haven in the EU or elsewhere". (Enforcing sanctions, 2022) At the same time, in statements reported by Forbes and various Russian media, Melnichenko's spokesman denied his client's involvement in Russian politics, stating: "Andrey Melnichenko is an international self-made businessman, entrepreneur, and investor in children's education. He has no relation to the tragic events in Ukraine. He has no political affiliations". (Tognini, 2022)

The incident underscores the complex relationship between luxury assets and global political strategies, highlighting the escalating tensions between Russia and Western powers, which in turn carries implications for regional politics and perceptions of elites. In increasingly polarized arguments and worlds, Melnichenko's ownership of Sailing Yacht A exemplifies the political risks of wealth accumulation. Il Picolo reported that Italian taxpayers have had to pay €80 million to cover the expenses of hosting the ship (Coloni, 2024). The commodity so turns into a spectacle, an erroneous addition to the ambience, and the target of both laughter and disdain.

The present challenge is to understand the status of the rather large repository of mega yachts seized in Italy, such as the Scheherazade, Lady M, Lena, Aldabra, and Yacht A, all owned by Russian oligarchs. While the seizures of these objects represent a significant step in the enforcement of international sanctions, their emerging status raises several questions in a regional context.

3. LIFESTYLE – DISPLAY OF CULTURAL SOPHISTICATION

Then there was the European aristocracy and its boarding school descendants— all of those independent islands of wealth were governed by internal codes of behavior and restraint, reproduced through elaborate sets of arranged marriages. In contrast, the new elite includes Internet entrepreneurs and Russian oligarchs who are globally connected and hypermobile. They share social space and compete for social importance with Saudi princes and hedge fund titans. Within this flattened global field of wealth, elites are no longer anchored to the normative holds of local communities. (Mears, 2021, p. 240)

In the contemporary world, globalization has blurred traditional boundaries between classes and social hierarchies, leading to the emergence of entirely new elites based on factors such as entrepreneurship, technology, and global connectivity. While the concept of aristocracy still survives in Western societies, it does not hold the same political power and influence as it did in previous centuries. The display of wealth and status via collections of luxury objects has long been a central aspect of the elites' identity. While the specific symbols of status have always varied according to local and cultural traditions, the underlying goal of exhibiting social distinction and power remain consistent across political and historical contexts. Pierre Bourdieu (1980) coined the term symbolic capital, which names such symbols not only as markers of personal wealth and taste but also the broader political, social, and cultural dynamics of their respective societies. For example, Castle Miramare once served as a powerful symbol of the Habsburg legacy. It functioned not only as Maximilian's luxury achievement but also as a testament to imperial dominance and cultural superiority by highlighting the owners' wealth, power, and refined taste.

The historical evolution of status symbols among Russia's elite likewise portrays shifts in societal values and the broader dynamics of Russian social structure: from the aristocratic values of the imperial era to the political power of the Soviet period, and finally to the material wealth of the present day.

During the imperial era, status was intimately tied to cultural refinement and intellectual achievement. The aristocracy and intelligentsia valued grand estates, opulent palaces, lavish lifestyles, art collections, and prestigious educational backgrounds as key indicators of their elite standing. These symbols not only demonstrated material wealth but also conveyed a sense of cultural and intellectual superiority. By contrast,

the Soviet period marked a significant shift, with political power and high-ranking party affiliation taking the forefront as the main determinants of one's status. The black Volga automobile, for instance, arrived as an important object of desire and symbol of status. As put by rocket scientist and confectionery entrepreneur Andrey Korkunov: "It was a sign that its owner had achieved something. You had to be a boss or a director. I always wanted to be a director and drive a black Volga". (Schimpfössl, 2018, p. 48) The black Volga represented not only personal success but also the privilege associated with high political or administrative positions. Korkunov's nostalgic recollection of early morning business trips with his father captures the symbolic power of this car: "The town was still asleep, so you could hear the car well before you would see it. Then we hit the road; all those magical conversations in the cocoon of the car. It's a memory so vivid and close, as if I was that little boy again". (Schimpfössl, 2018, p. 48)

In contemporary Russia, material wealth and luxury consumption are the primary markers of elite status. The distinction and power of today's elite has over the last two decades been showcased through the haphazard consumption of quintessential status symbols, such as the discussed collections of mega yachts (Schimpfössl, 2018, p. 47). However, beneath these enduring patterns of taste flows an undercurrent of disdain for the perceived lack of cultural depth among the wealthy, indicating an ongoing struggle for legitimacy and social distinction. As Korkunov laments: "Sadly, the excitement has gone. Now I've got many cars and no longer any Volgas... Everything becomes mundane". (Schimpfössl, 2018, p. 48) Despite the prominence of symbols of materialism and luxury, there is significant cultural critique of such contemporary elite culture. Particularly the nouveau riches are targeted for their perceived lack of refinement and cultural as well as intellectual substance, compared to earlier generations of Russian elite society. These critiques reflect a global trend of broader dissatisfaction with the values and tastes of the current elite classes, or, in Pierre Bourdieu's (1984) terms, their lack of cultural capital. This concept refers to non-financial social assets that facilitate social mobility. Western elites continue to maintain their status through symbolic means such as prestigious titles and honours, as well as their public recognition in social, cultural, and habitus contexts. In Russia (and elsewhere), however, there simultaneously exists a tension between those who possess significant economic capital but lack cultural capital, and those who possess cultural capital but lack economic power. As Elisabeth Schimpfössl (2018) states, the display of wealth is often perceived as vulgar and indicative of a lack of cultural sophistication. This critique is reminiscent of historical tensions between the aristocracy and the emerging bourgeoisie in the 19th century, where old money looked down upon the power ostentatious displays of new money.

4. LEISURE – THE DISPLAY OF GLOBAL OBJECT VS LOCAL SPACE

This space of naturally occurring errors and loopholes is political territory. Error is mined in the areas of intolerance, logical exception, and organizational fall out that result from the collisions of worlds. In this

discussion, the word "error" refers specifically to the naturally occurring extrinsic information. Error is the germ that adds additional material to the pool, or mutates an existing sequence of instructions. It provides the additional information, the learning that extends the intelligence of the organization. As extrinsic information, error might be a means of penetration or resistance—the means of altering an organization by remote or ricochet. (Easterling, 2005, p. 11)

As pointed out by Mears (2021), entire local economies become subsumed by the needs and desires of the newly rich, turning into "centers for wasteful consumption". These global elites' metropolitan circuits of business and leisure, exemplifies with champagne bottles, Gatsby parties, clubbing, and the experience economy, coerce another world. Easterling refers to these latter objects and places as "spatial products that aspire to establish worlds or global regimes—domains of logic that expand their territory with nonnational sovereignty". (Easterling, 2005, p. 4) This other world consists of smaller-sized cities, characterized by a slower, local lifestyle, frozen in time by the beauty of matter, coffee, and beach culture, which is precisely what Morris describes with the example of Trieste.

Ah, such a life, such a life as one leads at the café there! We stretch ourselves and have another coffee. [...] and the wide bay extends before us like a sea of eternity. A tug churns its leisurely way from one pier to another. A solitary man sits over a float that never bobs. And look – remember? – across the water, a small white castle stands, all alone, like a castle in a trance. (Morris, 2010, p. 24)

Jan Morris's exploration of Trieste's leisure highlights the relation between the city and the sea as an exceptional space with a unique history, culture and geography. Even passing into the 21st century, Trieste has maintained pronounced social norms, civic integrity, habitus, and strong civic morals, irrespective of individuals' socio-economic status or the prevailing political regime. The author's portrayal suggests that the city's exceptional qualities contribute to a sense of community cohesion, cultural identity, and sense of belonging.

Henri Lefebvre (1991) posits that every spatial (social) practice carries its own set of codes, and these codifications are produced in conjunction with the corresponding space. Their creation and disappearance involve an encoding-decoding interaction between subjects and their space. This concept can be extended to understand the juxtaposition and distinction of local and global spatial relations in the case of Melnichenko's yacht. In her book, *Very Important People*, Ashley Mears argues: "[...] you will see the rich wasting money without restraint and showcase their economic power on a carefully curated and free-floating global stage." (Mears, 2021, p. 240) However, their distinction, exposure, and disruption become very apparent on a carefully curated local stage like Trieste, a medium-sized Mediterranean city. Its everyday life highlights the ongoing conflict between sanctioned objects, the manifestation of power, wealth, and class dominance.

Figure 1/Figura 1. Sailing Yacht A in Gulf of Trieste.
Source: Gianni Peteani (2024) / Fonte: Gianni Peteani (2024)

This case study offers a profound examination of how luxury objects of leisure consumption, which often emphasize social distinction, exclusivity, and status, interact with a "communitarian" (Arai; Pedlar, 2003) conceptualization of leisure as an alternative to unfettered individualism. This interaction is seen through traditional local social practices, such as the Triestino lifestyle, which focuses on coastal enjoyment, a sense of belonging, and fostering collective pride in the city's heritage and values. Within Bourdieu's (1980) theoretical framework, social dispositions shaping one's cultivated habitus are not inherent but are rather developed and thereby attain meaning within specific social fields or contexts. These dispositions interact with the forces present in these fields, and their significance depends on these relationships. Consequently, practices or behaviours may be interpreted differently or as holding opposing meanings and values depending on the specific configuration within the same field (Bourdieu, 1984). Bachelard's (1994) concept of "topoanalysis" focuses on the subjective and symbolic dimensions and the poetic potential of spaces and their psychological impact on individuals. For instance, the beaches of the Gulf of Trieste function as sites for identity formation and representation, fostering habitual engagement with local beach culture amidst the area's scenic beauty, historical and heritage context, and the unique geographical landscape.

Combining Bourdieu's intricate social interactions with space and Gaston Bachelard's concept of topoanalysis suggests that the presence of the mega yacht, with its record-breaking price and size rivalling that of an 8-story building, symbolizes the epitome of luxury leisure as a "non-inherent body", as described by Lefebvre (1991). In contrast, by that same definition, Castle Miramare functions as an "inherent body", holding profound emotional and imaginative significance in this setting. Its presence

strengthens the historical ties between the city, citizens and the former Austro-Hungarian Empire, shaping local and national identity. Its status as a cultural landmark allows for a reinterpretation of its history, emphasizing artistic and architectural contributions over political implications. While the castle is a source of pride, it also serves as a reminder of the region's complex political history and the autocratic rule that shaped it.

Figure 2/Figura 2. Castle Miramare in Gulf of Trieste.
Source: Gianni Peteani (2024) / Fonte: Gianni Peteani (2024)

This trend of depoliticizing historical monuments highlights a broader shift in focus towards aesthetic appeal rather than connections to autocratic regimes and imperial ambitions. The extraordinary dominant spatial presence of both luxury objects—one in the centre of the scenic gulf and the other atop a cliff—affects observers' perception and behavior, provoking controversy within structured local orders and spatial prevalence. These objects evoke specific emotions and associations among local observers, especially those from generations who actively engage in traditional socio-cultural practices associated with coastal leisure. The stark contrast between the modest surroundings of the Gulf of Trieste and Bourdieu's (1984) concept of habitus underscores social dispositions and tensions between local communities and global elites. Castle Miramare epitomizes cultural status as per Bourdieu's conceptualization, whereas the mega yacht embodies the notion of "pecuniary might" in the vein of Veblen (2008).

5. DESIRE – IMAGE-MAKING POWER

Charged with no responsibility for historical or political reconciliation, the product's ersatz myths may be even more extreme. However familiar these spaces may be, the mixology between cocktails and cultural attributes may create territory that is at once strange and intimate, exposed and in disguise, real and fictional. (Easterling, 2005, p. 3)

Contemporary objects of desire, as desire is theorized by Veblen (2008) in his concept of "invidious comparison", manifest in various forms, from luxury goods, fashion and real estate to experiences shared on social media platforms. The desire to showcase one's lifestyle and achievements often drives our economic choices. Veblen argues that consumption is motivated not only by personal satisfaction but also by the desire to display to others social status and wealth. This dynamic helps explain the aforementioned struggle for legitimacy and social distinction among today's elites.

"Objects, even industrial ones, are not objective in the ordinary sense of the word; they are not independent of the interests and tastes of those who perceive them. They do not impose the self-evidence of a universal, unanimously approved meaning." (Bourdieu, 1984, p. 103) While mega yachts may symbolize the epitome of luxury leisure for some, their extraordinary presence often provokes judgments. Yacht A was designed by Philippe Starck (2017), who wrote: "It is the largest private sailing yacht in history: 145 meters long, 12 700 tons. The masts are 100 meters high with elevators inside. The Sailing Yacht A is a floating sculpture coming from a mental space." Such imposing size and opulent, unconventional futuristic design challenge conventional aesthetics, fuelling perceptions of elitism and inequality in an exclusive social and cultural context. Dubbed as a "monstero", it has been considered the ugliest yacht in the world not only in terms of aesthetics but also ecological standards, as reported by Vela (2023). It thus stands out as not only an object of technological excellence but also as a form of spatial dominance. Its megalomaniac appearance reflects a certain individual's obsession with power, wealth, and grandiosity, often manifesting as an inflated sense of self-importance and a desire for domination over others. This concept intersects with Thorstein Veblen's theory (2008) of conspicuous consumption, which describes the act of purchasing and using goods to publicly display economic power and social prestige rather than meeting basic needs.

In the context of Russia, megalomania can be observed in the behaviour of certain wealthy elites and oligarchs, whose extravagant displays of wealth and power are often seen as both a symptom and a reinforcement of their societal dominance. Such displays are then not merely personal choices but are deeply intertwined with the cultural and socio-economic fabric of society, reflecting broader dynamics of power, inequality, and aspiration.

This is contrasted by the case of Castle Miramare, whose eclectic extravagance seamlessly blends Gothic, Renaissance, and medieval styles with luxurious interiors and expansive exotic gardens, all affected by its dominant cliff position. Its status, however, does not correlate with conspicuous consumption and self-importance, but rather with dominance and national, imperial power. While the castle is a source of pride, it also serves as a reminder of the region's complex political history and the autocratic rule that shaped it.

This phenomenon of difference arises from disparities in ideology, culture, aesthetics, and morality. Lefebvre's theory provides a critical framework for analysing how these disparities shape and transform space, revealing the contested nature of spatial production and the constant negotiation of power dynamics in public spaces, what Bachelard argued as formal and material imagination. Easterling writes that:

> Elaborate costumes and stylistic affectations are often treated as the window dressing for a product that supposedly achieves neutrality by operating as a revenue envelope. Fiction and myth are, in this case, especially slippery, disposable, and comedic for the very reason that absolute meaning may finally be measured only in revenues or the techniques of 'market science'. (Easterling, 2005, p. 3)

6. CONCLUSION

The exploration of luxury objects of desire in the context of political and economic power, status symbols, culture, and consumption exposes the ambivalence between appearance and acceptance in various global and local spatial settings. It examines the relationships between the global elite and the local community, global objects and local spaces, and concepts of "beauty" and "ugliness", as they and associated leisure practices are manipulated and transformed by media displays, globality, and a lack an understanding of the fragile equilibrium of these systems. Understanding these dynamics requires grasping lifestyle complexities and social interactions in regions marked by economic diversity and cultural richness, such as the Gulf of Trieste.

Here, Sailing Yacht A symbolizes the tensions between local communities and global elites, reflecting broader issues of social inequality. Castle Miramare, by contrast, evokes a sense of cultural prestige, even hiding "an echo of common, sometimes ancient, swindles and fantasies". (Easterling, 2005, p. 12) The case studies enrich our comprehension of the forces that shape our built environment, cultural, and social landscapes, indicating how unfettered individualism challenges a collective sense of identity and community values. This raises the question whether, due to its political and economic connotations, Sailing Yacht A, as a contemporary luxury object of desire and symbol of power, may lack the necessary distance, be it in temporality or values, to display absolute aesthetic power. Can such luxury symbols rely on aesthetic and cultural reappropriation, as exemplified by Miramare Castle, or is the aesthetic deviation between these symbols is too significant, potentially resulting in them being ignored?

Understanding the contexts and impacts of these luxury objects of desire provides deeper insights into the socio-political dynamics shaping our world. This resonates with Easterling's observation of global enduring innocence:

> In this portrayal, architecture is often only a servant to worlds where catastrophes, errors, or negations are in the family of the whole, where corporate contrition kills with a masquerade of kindness, and where we are all drops of water in globalization's many maritime metaphors. (Easterling, 2005, p. 10)

7. BIBLIOGRAPHY

Appadurai, A. (1996). *Modernity at Large: Cultural Dimensions of Globalization.* University of Minnesota Press.

Arai, S., & Pedlar, A. (2003). Moving beyond individualism in leisure theory: A critical analysis of concepts of community and Social Engagement. *Leisure Studies, 22*(3), pp. 185-202. *https://doi.org/10.1080/026143603200075489*

Bachelard, G., & Jolas, M. (1994). *The poetics of space: The classic look at how we experience intimate places*. Beacon Press.

Bourdieu, P. (1984). *Distinction: A social critique of the judgment of taste*. Routledge & Kegan Paul.

Bourdieu, P. (1980). *The logic of Practice*. Stanford University Press.

Coloni, E. (2024, March 11). Lo yacht A fermo da due anni nel golfo di Trieste: spesi più die 18 milioni di euro. *https://ilpiccolo.gelocal.it/trieste/cronaca/2024/03/11/news/yacht_a_oligarca_due_anni_golfo_trieste_costi-14136726/*

Easterling, K. (2005). *Enduring Innocence: Global architecture and its political masquerades Keller Easterling.* MIT Press.

Enforcing sanctions against listed Russian and Belarussian oligarchs: Commission's "Freeze and Seize" Task Force steps up work with international partners. (2022, March 17). European Commission - European Commission. (n.d.). *https://ec.europa.eu/commission/presscorner/detail/es/ip_22_1828*

Lefebvre, H. (1991). *The production of space.* Blackwell.

Mears, A. (2021). *Very important people: Status and beauty in the Global Party Circuit.* Princeton University Press.

Morris, J. (2010). *Trieste and the meaning of nowhere*. Faber and Faber.

Sachs, Jeffrey D. (2023, June 29). *The war in Ukraine was provoked-and why that matters to achieve peace*. *https://www.jeffsachs.org/newspaper-articles/wgtgma5kj69pbpndjr4wf6aayhrszm*

Schimpfössl, E. (2018). *Rich Russian. From Oligarch to Bourgeoisie*. Oxford University Press.

Starck, P. (2017). Sailing Yacht A. *https://www.starck.com/sailing-yacht-a-p3368*

Tognini, G. (2022, March 12). Italian police freeze Russian billionaire Andrey Melnichenko's sailing Yacht A. *Forbes.https://www.forbes.com/sites/giacomotognini/2022/03/12/italian-police-freeze-russian-billionaire-andrey-melnichenkos-sailing-yacht-a/?sh=1e73e58d3946*

Veblen, T. (2008). *The theory of the leisure class*. Oxford University Press.

World's ugliest' boat costs Italy too much: 7 million. (2023, January 19). *Vela. https://www.giornaledellavela.com/2023/01/19/yacht-a-costs-italy/?lang=en*

COMPARATIVE STUDY OF VERNACULAR HOUSE TYPOLOGIES: ERBIL'S HISTORICAL DISTRICTS VS. ERBIL GOVERNORATE TOWNS"

"ESTUDO COMPARATIVO DAS TIPOLOGIAS DE CASAS VERNACULARES: DISTRITOS HISTÓRICOS DE ERBIL VS. CIDADES DO GOVERNO DE ERBIL"

Darbaz Mankuri
darbazp@gmail.com

Maria Pais
mariaritapais@gmail.com

Bernardo Pinto
bernardo.pinto@ulusofona.pt
Universidade Lusófona

ABSTRACT

This study offers a comparative analysis of vernacular house typologies in Erbil's historical districts and its governorate towns, examining the architectural, cultural, and environmental interactions between urban and rural architectures. With Erbil's rich history spanning thousands of years, traditional Kurdish houses reflect diverse influences. Using a methodological approach combining field observations, architectural analysis, and interviews with local inhabitants and experts, the research identifies the distinctive characteristics, construction techniques, and materials used in these houses. It explores their adaptations to environmental conditions, socio-economic contexts, and cultural demands. Findings highlight significant architectural similarities and differences, enhancing understanding of the region's cultural continuity and diversity. The study concludes with recommendations for integrating vernacular wisdom into contemporary architectural practices and strategies for conserving Erbil's heritage. This research not only enriches academic discourse on vernacular architecture but also aids in policy formulation for sustainable urban and rural development in the Kurdish region.

KEYWORDS: Typology houses, Vernacular architecture, Cultural heritage preservation, Traditional construction techniques.

RESUMO

Este estudo oferece uma análise comparativa das tipologias de casas vernaculares nos distritos históricos de Erbil e nas cidades do governo, examinando as interações arquitetônicas, culturais e ambientais entre arquiteturas urbanas e rurais. Com uma rica história que abrange milhares de anos, as casas tradicionais curdas refletem diversas influências. Utilizando uma abordagem metodológica que combina observações de campo, análise arquitetônica e entrevistas com habitantes locais e especialistas, a pesquisa identifica as características distintivas, técnicas de construção e materiais utilizados nessas casas. Explora suas adaptações às condições ambientais, contextos socioeconômicos e demandas culturais. Os resultados destacam semelhanças e diferenças arquitetônicas significativas, aprimorando a compreensão da continuidade cultural e da diversidade da região. O estudo conclui com recomendações para integrar saberes vernaculares nas práticas arquitetônicas contemporâneas e estratégias para conservar o patrimônio de Erbil. Esta pesquisa não apenas enriquece o discurso acadêmico sobre arquitetura vernacular, mas também auxilia na formulação de políticas para o desenvolvimento urbano e rural sustentável na região curda.

PALAVRAS CHAVE: Tipologias de casas, Arquitetura vernacular, Preservação do patrimônio cultural, Técnicas tradicionais de construção

1. INTRODUCTION

The environment significantly influences human settlements and is reflected in the architectural styles and materials used in construction. In Kurdistan of Iraq, these differences are primarily due to the availability of local materials and geographic variations. Erbil, in the southern part of the region, exhibits distinct architectural patterns suited to its hot summers and mild winters, contrasting with the mountainous areas in the north and northeast, where the architecture accommodates cold to extremely cold winters and moderate summers (Khoshnaw, 2019). These regional distinctions highlight the adaptive responses to different climatic conditions within the same cultural context (Botan & Abdulrahman, 2018).

Today, vernacular architecture is recognized as a model for sustainable architecture, and the principles that form the foundation of sustainable construction have evolved from the characteristics of this architectural style (Fernandes et al. 2014). Historically, the residents of Erbil and the wider Kurdistan region constructed their homes based on their available resources, needs, local materials, topography, and cultural practices (Khoshnaw, 2019). Without any government regulation, legal constraints, or formal architectural interventions, it was truly the architecture of the people simple and functional (Khoshnaw, 2019).

Erbil, the capital city of the Kurdistan Region of Iraq, stands as one of the oldest continuously inhabited cities in the world, with a history that stretches over 5,000 years (Abbas, 2017). At the heart of Erbil is its iconic Citadel, a UNESCO World Heritage Site that epitomizes the historical and cultural depth of the city (Abbas, 2017). The Citadel, situated on a tell or occupied mound, represents a layered history of human settlement from the Assyrian to the Ottoman periods (Amen & Nia, 2020). As a political, economic, and cultural center, Erbil has seen significant modern development while preserving its rich heritage, making it a fascinating convergence of the ancient and the contemporary (Amen & Nia, 2020). Beyond its historical core, Erbil is surrounded by various towns that contribute to its diversity and economic vitality, serving as hubs for agriculture, trade, and tourism within the governorate (Amen & Nia, 2020).

Figer 1 Erbil city center

Figer 2 Erbil city map in 1921

In this comparative study on vernacular house typologies, it examines a curated selection of houses that highlight the architectural diversity between urban and rural settings within the Kurdistan area. The urban focus is on Erbil, where houses from the historical Erbil Citadel, along with those from the Araban, Tajeel, and Khanqah districts, showcase traditional urban architectural styles deeply rooted in history. In contrast, the rural component features house from Akre, Shaqlawa, Rawanduz, and Koya. These towns not only offer picturesque views of Kurdistan's diverse landscapes but also exhibit unique adaptations of vernacular architecture influenced by their distinct environmental and cultural contexts. By comparing these urban and rural houses, the study aims to uncover how vernacular architecture varies across different geographic and socio-economic environments, providing insights into the region's architectural evolution and cultural heritage.

Figer 3 Erbil citadel with Historical zone   Figer 4 Towns around Erbil

ERBIL HISTORICAL ZONE HOUSES
In Erbil, the historical zones such as Khanqa, Araban, and Tajeel districts are distinguished by their traditional architecture that reflects the rich cultural heritage of the region. These areas are characterized by narrow, winding streets and densely packed houses made from locally sourced materials, primarily mud bricks and stone(Abbas,2017). The houses often feature distinctive elements like courtyards, intricate wooden doors, and ornate balconies. These architectural traits not only represent the historical and aesthetic values of the Kurdish culture but also demonstrate adaptation to the local climate, maximizing natural ventilation and minimizing heat gain. Preservation efforts in these districts focus on maintaining the authenticity of the structures while adapting them for modern use(Abbas,2017).

TOWNS AROUND ERBIL
Akre, Shaqlawa, Rawanduz, and Koya are significant cities near Erbil, each with unique architectural characteristics that provide a comparative perspective to the historical zones of Erbil. Akre is renowned for its terraced layout and traditional stone houses that echo the rugged terrain. Shaqlawa, known for its resort-town vibe, features a blend of modern and traditional constructions adapted to its cooler, mountainous climate.

Rawanduz stands out with its panoramic views and houses built to leverage its dramatic landscape. Koya combines historical depth with modern influences, where traditional Kurdish houses coexist with contemporary structures. Comparing these cities with Erbil's historical districts like Khanqa, Araban, and Tajeel reveals varied approaches to architecture that reflect each area's unique cultural and environmental contexts.

AKRE

Akre, a district in the Dohuk Governorate of Iraqi Kurdistan 90 Kilometers from north of Erbil, carries a rich historical legacy that dates back to Neolithic times. Throughout its long history, Akre has been influenced by several major civilizations including the Assyrians, Babylonians, Persians, and Ottomans, each leaving their mark on its cultural landscape. Notably, during the late 19th and early 20th centuries, Akre was a strategic stronghold in the Kurdish revolts against Ottoman rule, underscoring its historical significance in Kurdish resistance (Bonacossi, Iamoni. 2015). Today, Akre is renowned as the capital city of Newroz, the Kurdish New Year, celebrated with grandeur on March 21st each year. Residents ascend Kale Akre Mountain to light fires, symbolizing rebirth and renewal. Akre's rich cultural traditions, historical sites, and annual festivals continue to define its unique character within the region (Bonacossi, Iamoni. 2015).

Figer 5 Akre city
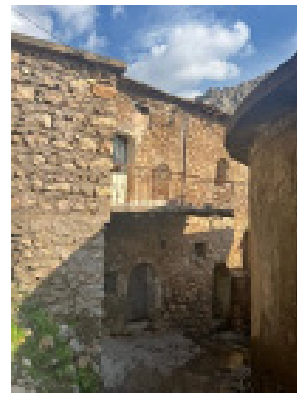
Figer 6 Akre Houses inside city

SHAQLAWA

Shaqlawa, situated in the Kurdistan Region of Iraq, boasts a deep historical lineage that spans thousands of years. Archaeological findings suggest early human habitation in its vicinity, tracing back to ancient epochs (KRG 2015). Historically, Shaqlawa has been a crossroads for various influential civilizations such as the Assyrians, Babylonians, Persians, and later, segments of the Islamic Caliphates and the Ottoman Empire (McDonnell 1992).

Today, Shaqlawa is celebrated as a scenic tourist haven, renowned for its stunning natural landscapes that include lush forests, rugged mountains, and cascading waterfalls (Jaff & Nawzad,2019). The town has also cultivated a lively cultural identity,

with its traditional Kurdish music, dance, and culinary practices drawing tourists from across the region (Botan & Abdulrahman, 2018). In recent years, Shaqlawa has experienced a surge in economic development, fueled by significant investments in infrastructure and tourism, which have played a pivotal role in its modern growth and prosperity (Botan & Abdulrahman, 2018).

Figer 7 Shaqlawa city

Figer 8 Shaqlawa Houses

RAWANDUZ

Rawanduz, located approximately 105 kilometers northeast of Erbil in the Kurdistan Region of Iraq, is a city celebrated for its dramatic landscapes and rich history (Rasheed, 2014). Historically a key site along ancient trade routes, Rawanduz has seen the influence of numerous cultures and empires, including the Medes, Persians, and Ottomans. Surrounded by the rugged beauty of the Zagros Mountains, the city is a prominent destination for nature lovers and adventure enthusiasts (Hassan & Pasha,2010). Its strategic location and natural fortifications once served as a defensive stronghold against various invasions. Today, Rawanduz captivates visitors with its breathtaking views and remains a vibrant spot for both historical exploration and outdoor activities (Jaff & Nawzad,2019).

Figer 9 Rawanduz city
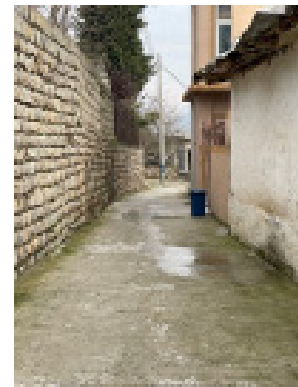
Figer 10 Rawanduz houses

KOYA

Koya, situated to the east of Erbil 60 Kilometers in the Kurdistan Region of Iraq, holds a distinguished place both historically and culturally (KRG 2015). Founded during the Ottoman era, Koya has a rich history that reflects a blend of various cultural influences over the centuries, including Kurdish, Turkmen, and Arab (KUW,2017). This diverse cultural backdrop contributes to its unique heritage. Nestled amidst rolling hills, the city serves as an educational center, hosting several higher education institutions, including Koya University, which attracts students and scholars from across the region. Koya's moderate climate and scenic environment make it an appealing destination not only for students but also for visitors seeking to experience its historical sites and vibrant cultural life (KRG 2015). The city's blend of educational significance and cultural richness ensures its status as a key location in the Kurdistan Region.

Figer 11 Koya city
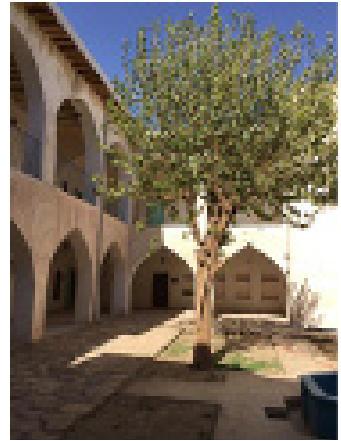
Figer 12 Koya houses

RESULT AND DISCUSSION

There are various types of housing developed in the historical zones of Erbil, Akre, Shaqlawa, Rawandus, and Koya. They can be categorized based on their distinctive architectural features:

Type of Houses	Classification of Characteristics	
Erbil Historical zone houses (Khanqa, Araban, and Tajeel Houses)		Houses in Erbil's historical zones, such as Khanqa, Araban, and Tajeel, are characterized by their courtyard-centric design, with rooms surrounding a central courtyard that serves as the main area for daily activities. These houses feature flat roofs, which are heavily utilized for various purposes, especially during the summer months. Some of the houses include basements, constructed using stone for durability and insulation. The primary construction materials for these houses are brick for the walls and wood and iron, often used decoratively, for the roofs. This traditional architecture reflects a practical adaptation to the local climate and cultural lifestyle.

Akre Houses

Houses in Akre are distinctively designed as a single mass without a courtyard, with rooms interconnected and often featuring basements primarily used for storage. These houses have flat roofs that are not used for activities due to the weather conditions. The staircases are located inside the houses, and the walls are constructed with thicker stone for added insulation and durability. The primary materials used are stone for the walls and basements, and wood and iron for decorative elements, reflecting a robust and functional architectural style suited to the local environment.

Shaqlawa Houses

Houses in Shaqlawa are designed as a single mass without a courtyard, typically consisting of one floor with rooms interconnected. They feature flat roofs made from a combination of concrete and wood, reflecting a simpler architectural style compared to other regions. Marble stones are used for masonry, adding a distinctive aesthetic to the houses. Most activities take place in a large yard surrounding the houses due to the local weather conditions. The staircases are located outdoors, and the walls are constructed with durable stone, emphasizing functionality and robustness in their design.

Rawanduz Houses

Houses in Rawandus are typically two-story structures without courtyards, featuring outdoor staircases and flat roofs with a charming Kurdish style of roofing adorned with decorative woodwork. The architecture includes Kurdish wooden columns and balconies that serve as sitting areas. The masonry walls are constructed using stone, and the walls are plastered with lay for a smooth finish. Inside, the walls are often decorated with built-in niches and other decorative elements for utility and aesthetic purposes, reflecting a blend of functionality and traditional Kurdish design.

Koya Houses
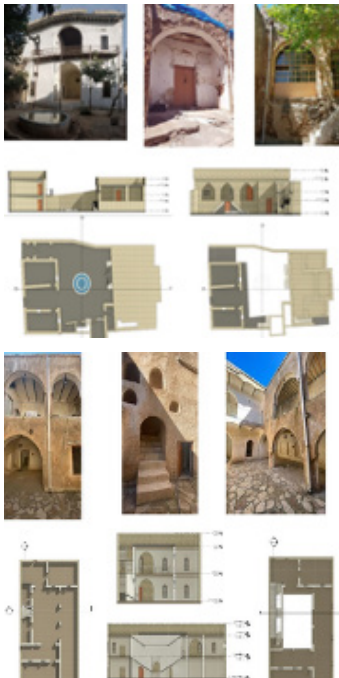
Houses in Koya feature a courtyard-centric design similar to those in Erbil, with arches providing shade and protecting rooms from solar exposure. The walls are constructed using stone and are coated with white plaster, which helps protect against the sun and takes advantage of locally available materials. The courtyards often include water fountains, creating a pleasant and cooling environment. These houses have flat roofs and balconies, and many also include basements, reflecting a blend of practical and aesthetic considerations in their traditional architecture.

DISCUSSION

The vernacular housing in Erbil, Akre, Shaqlawa, Rawandus, and Koya showcases a diverse array of architectural designs, each adapted to its unique environment and cultural context.

Erbil Historical Zone Houses (Khanqa, Araban, and Tajeel) feature a courtyard-centric design with rooms around a central courtyard, flat roofs used during summer, and stone basements. Walls are made of brick, with wood and iron for decoration, reflecting a strong community focus and climate adaptation.

In contrast, Akre Houses are single-mass structures without courtyards, featuring interconnected rooms, flat roofs, indoor staircases, thick stone walls, and stone basements for storage. They lack the communal courtyard space seen in Erbil.

Shaqlawa Houses also lack courtyards and are typically one-floor, single-mass structures. They have flat roofs made of concrete and wood, marble stone masonry, and outdoor staircases, with activities centered in a large surrounding yard.

Rawandus Houses are two-story structures with outdoor staircases, flat roofs with Kurdish-style decorative woodwork, and balconies. They use stone for walls, plastered with lay, and feature inner wall niches for utility and decoration, blending functionality with traditional Kurdish artistry.

Koya Houses mirror the courtyard-centric design of Erbil, with arches for shade, stone walls coated in white plaster, and courtyards with water fountains. They also have flat roofs, balconies, and basements, harmonizing practicality and aesthetics.

CONCLUSION

The vernacular houses in Erbil, Akre, Shaqlawa, Rawandus, and Koya exhibit diverse architectural styles and functional adaptations. Erbil and Koya houses emphasize community living with courtyard-centric designs and features like flat roofs and water fountains. Akre and Shaqlawa, in contrast, have single-mass structures without courtyards, with Akre focusing on robust storage and thick stone walls, while Shaqlawa uses outdoor staircases and large surrounding yards. Rawandus houses are distinct with two-story designs, decorative Kurdish woodwork, balconies, and built-in niches.

Common elements among these houses include flat roofs and stone construction for durability and insulation. Differences lie in layout and decorative details, such as courtyards in Erbil and Koya, and single-mass designs in Akre and Shaqlawa. Each type responds uniquely to local climate, materials, and cultural practices, preserving Kurdish architectural heritage while meeting practical living needs.

REFRENCES

Abbas, A. (2017, June 16). Revitalization of Erbil Citadel and Its Surrounding Districts Erbil Citadel Revitalization and the... Retrieved December 20, 2021, from ResearchGate website: https://www.researchgate.net/publication/333487324_Revitalization_Of_Erbil_Citadel_An d_Its_Surrounding_Districts_Erbil_Citadel_Revitalization_and_the_Presence_of_Its_Eme rgence_History

Amen, M. A., & Nia, H. A. (2020). The effect of centrality values in urban gentrification development: A case study of erbil city. Civil Engineering and Architecture, 8(5), 916-928.

Bonacossi, D. M., & Iamoni, M. (2015). LANDSCAPE AND SETTLEMENT IN THE EASTERN UPPER IRAQI TIGRIS AND NAVKUR PLAINS: THE LAND OF NINEVEH ARCHAEOLOGICAL PROJECT, SEASONS 2012–20131. Iraq, 77, 9-39.

Fernandes, J. E., Dabaieh, M., Mateus, R., & Bragança, L. (2014). The influence of the Mediterranean climate on vernacular architecture: A comparative analysis between the vernacular responsive architecture of southern Portugal and north of Egypt. In World SB14 Barcelona (pp. 1-7). Green Building Council España.

Khoshnaw, R. (2019). Sustainable Construction in Kurdish Vernacular Architecture.

McDonnell, M. G. (1992). The Nineveh Plain and its people: Assyrians, Armenians, Kurds, Yezidis, and Mandacans. Aris & Phillips Ltd.

Kurdistan Regional Government. (2015). Kurdistan: A cradle of civilizations. KRG Ministry of Culture. [This might be available online, but since the publisher is a government agency, it likely doesn't have a traditional author. If you can't find an author, list the government agency as the author.]

Jaff, D. S., & Nawzad, A. R. (2019). Tourism potential and challenges in Kurdistan Region of Iraq. International Journal of Tourism Research, 21(4), 592-607.

Rasheed, H. N. (2014). The development of ecotourism in the Kurdistan Region of Iraq: A case study of the Rawanduz area. International Journal of Sustainable Development and Planning, 9(3), 273-282.

Hassan, A. Q., & Pasha, M. K. (2010). The economic impact of tourism development in the Kurdistan Region of Iraq. Journal of Sustainable Development, 3(2), 191-200.

DRAWING LIKE AN ARCHITECT. A VIDEOGRAPHIC RESEARCH AND CREATION FROM THE "MAX BILL" ARCHIVES

DESENHAR COMO UM ARQUITECTO. UMA PESQUISA E CRIAÇÃO VIDEOGRÁFICA A PARTIR DOS ARQUIVOS DE "MAX BILL

Anne Faure
Lecturer
ENSAG, UGA, AAU-CRESSON
anne.faure@grenoble.archi.fr

Cécile Fournel
Lecturer
UGA, AAU-CRESSON, ESAA Martinière-Diderot
Fournelcecile@yahoo.fr

ABSTRACT

This contribution is based on initial exploratory work conducted on a selection of drawings by Max Bill (1908-1994). The Max Bill Georges Vantongerloo Foundation, located in Zumikon (Zurich) in the second house-studio designed and inhabited by Max Bill himself, holds an archive that attests to the architect's daily practice. The research-creation project in question draws on this corpus to investigate a type of drawing that uniquely borrows its means from the architectural discipline, even when it involves sketches intended for painting projects. The ongoing research aims to produce a series of short videos showing the approach of the painter-architect, without adhering to the criteria of didactic documentary films.

KEYWORDS: Drawing, archives, space, architecture, Max Bill, film, study overlay, geometry, diagram.

RESUMO

Esta contribuição baseia-se num primeiro trabalho exploratório realizado sobre uma seleção de desenhos de Max Bill (1908-1994). A Fundação Max Bill Georges Vantongerloo, situada em Zumikon (Zurique) na segunda casa-estúdio projetada e habitada pelo próprio Max Bill, dispõe de um arquivo que testemunha a prática quotidiana do arquiteto. O projeto de investigação-criação em questão apoia-se neste corpus para examinar uma forma de desenho que tem a particularidade de tomar emprestados os seus meios da disciplina arquitetônica, mesmo quando se trata de esboços destinados a projetos de pintura. O objetivo da investigação em curso é produzir uma série de pequenos vídeos que mostrem a abordagem do pintor-arquiteto, sem no entanto satisfazer os critérios de um documentário didático.

PALAVRAS-CHAVE: Desenho, arquivos, espaço, arquitetura, Max Bill, filme, camada de estudo, geometria, diagrama.

1. INTRODUCTION

Max Bill was as much an architect as he was a painter, sculptor, and designer. His paintings and sculptures are part of the collections of various European and international museums. Some of his archives, such as graphic design and typography elements, have been entrusted to institutions. Other documents belong partly to his son, Jakob Bill, and partly to his widow, Angela Thomas, who chairs the Max Bill Georges Vantongerloo Foundation with Erich Schmid and Anna Bonacci as advisors. The drawing archives are part of this latter collection. We were initially invited to work on a series of fourteen boxes containing small-scale sketches, mostly preliminary sketches for large-scale paintings.

These sketches reflect the research that Max Bill undertook between 1928 and 1994. A few of them are related to modest graphic design projects. Most of them are detailed diagrams. Almost all of them are on tracing paper. Zurich gallery, Hauser & Wirth, is working on highlighting these graphic objects by selecting the most appealing pieces, framing, and exhibiting them.

Our intention here is entirely other: We are interested in the educational value of the drawings as documents. Dated, noted, and presented chronologically, they are evidence of a practice that was nearly daily for Bill at times. Organized chronologically, these archives allow us to follow, year by year, sometimes day by day, the evolution of Max Bill's art production, and to understand his approaches and procedures. These approaches are quite consistent with the architect and painter's thought, which he wrote about in several short theoretical texts.

The current study is of interest to architectural archives in several ways: it highlights the central role that drawing had for modern producers, who were architects before becoming designers; it considers the studies as elements of understanding and of communication around Bill's approach, in painting and in architecture.

One of our research objectives is to produce a series of short videos based on the recordings of graphic documents. This work will examine the shaping of a 2D document, that is inherently limited in space, and the temporality of the video medium. From this perspective, the research-creation project does not draw on the usual resources of documentary film-making.

2. A MATRIX DRAWING

From an archive of more than 1300 drawings and sketches, the works produced in 1928 and 1929 developed a free-form approach to representation that recalls the early abstractions of Paul Klee as well as the fragmented spaces of Wassily Kandinsky. Max Bill was a student at the Bauhaus in Dessau from 1927 to 1929, where he followed painting lessons with the two masters, both of whom he mentions in several of his texts. During this period, Max Bill undertook drawing exploration research using graphite pencils, colored pencils, and watercolors, with a flexible, light stroke. In these representations, which continue to borrow figurative elements from reality, he had already begun to work on abstraction of forms.
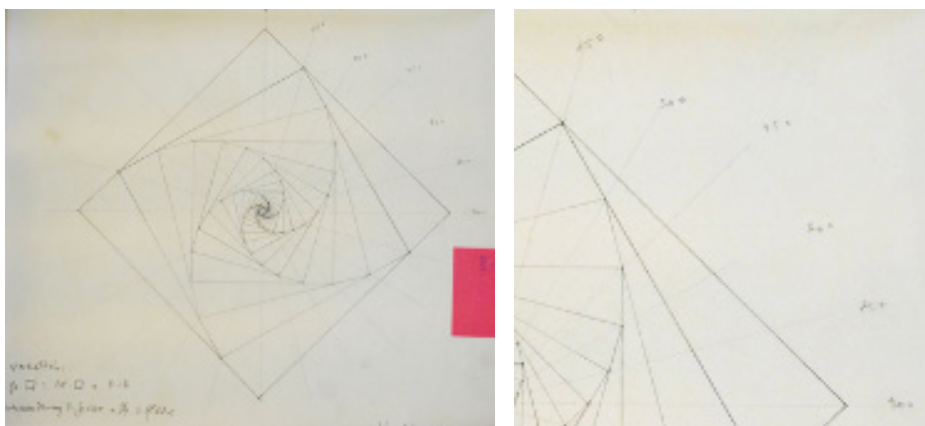
Figure 1 - Max Bill, study on tracing paper, 1940.
Source : Angela Thomas Haus Bill

From the 1930s onwards, his paintings and drawings took a somewhat different path. Most of the figurative elements disappeared, and Max Bill developed a stronger geometric abstraction. The hand, omnipresent, guided the pencil, trace in the production of planar diagrams, which were based on metrically calculated structures (Figure 1). Construction lines, reference points, and numberings are seen on formats that are supports for formal, rhythmic, or chromatic variations.

Drawn with colored and graphite pencils, the explorations were then in some cases transposed onto large paintings. Our initial research done last winter revealed elements of an approach and processes that were clearly inspired by a certain type of architectural drawing. Max Bill approached the preparatory sketches in a way that we consider unique in two ways: first, he uses approaches and tools that are typical of an architect's work to do drawings that belong more to the field of visual arts; moreover, he does not consider drawing as a tool to represent, but uses it as a device of production.

2.1 Functions of the study tracing paper

Most of the drawings are done on tracing paper – a quintessential tool of architects - or else on loose sheets of paper of no particular quality (envelopes, graph paper, letterhead paper, notebook pages). They follow the planimetric and representation codes typical of architectural drawings on tracing paper. The processes are similar: Max Bill's diagrams look like what could be sketches from the very early phases of a concept drawings. The rigorous observation and manipulation of the archives reveal processes that are systematic: the tracing paper allows Bill to carry out a series of localized and successive actions (inversion, addition, rotation). Indeed, Bill proceeds methodically and modifies a limited number of criteria on each new drawing. The transparency of the supports, that can be separated and layered, facilitates such an approach (Figure 2). In architecture, drawing on tracing paper has the advantage of allowing to keep previous satisfactory versions of a project and, if necessary, to come back to them. The transparency of the paper is sometimes combined with other helpful techniques: For example, Daniel Estevez (2001), in a publication focused on the evolution of architectural drawing, draws our attention to the interest of Louis Kahn's charcoal studies on tracing paper. The American architect could erase certain lines easily and by hand. They did not entirely disappear and partially remained. The woks thus retained the memory of the previous drawing. Max Bill's idea was not to "save" his works. The tracing paper allowed him to produce a large number of variables from the same basic system. Together, these graphic representations produce dynamic spatial 'structures' (Graffin, 2018). But Bill never turns back and rarely branches off. He moves forward, from drawing to drawing, in the direction of a perfection he is aiming for, and according to a process that is often selective. For him, artistic conception is a matter of decisions.

Figure 2 - Max Bill, study on tracing paper, 1940.
Source : Angela Thomas Haus Bill

2.2 Art as production

We notice at least two points where Max Bill's intentions diverge from the usual approach to an architectural project. The differences may seem minor, yet they concern several issues regarding what "visual" arts can be in an age of mechanized production.

1) The process does not follow the different progressive steps as is commonly practiced in architectural project approaches. The level of form definition does not evolve. No additional detail is introduced, and successive drawings maintain the same small scale. In one series a metric system, in another sometimes a geometric structure is the basis for "variations" from which Max Bill makes choices. The selected image is then produced on a larger scale, without any intermediary steps corresponding to technical adjustments. Therefore, the drawings have the function of a "prototype".

2) The drawings do not seek to represent or simulate anything figurative. They are not conceptual sketches in which several more or less simplified abstractions would symbolize real spaces. Nor do the diagrams correspond to an initial phase of conception when an architect might engage in notional drawing. They are variations of purely "concrete" structures. The "concrete" we are talking about is not metaphysical (neither in the sense of religious metaphysics nor in the Lyotardian sense of logical determinism). It is mathematical. It consists of developing, without of context and outside of any indications of scale, series of sequential operations (figure 3). These operations are no less "creative." Thus, we consider that Max Bill practices "matrix" drawing. He produces drawing systems from an initial matrix that resembles a generating device. Structures, forms, and rhythms take root, develop, and are generated based on traces that

are mechanical (freed from expressionist traditions) but not automatic (will and intelligence participate in this drawing activity).

Figure 3 - Serial research / Collage, Anne Faure & Cécile Fournel, 2024
Source : Angela Thomas Haus Bill

"Prototypal" and "matrix-based," the drawing as was done by Max Bill, though it diverges from the use of representational approaches found in architectural project work, makes little distinction between the methods and tools of "mechanized" generating in all fields. Max Bill worked in institutions that did not establish hierarchies between buildings, equipment, decorative arts, and other so-called "visual" arts, which he considered no less technical than the applied arts. Thus, just as construction can adopt the principles of prefabrication and industry standards, objects can develop in systems, and artworks can be produced in series. This is the position held in a text entitled " Artworks in Multiples" (Bill, 1968). Max Bill identifies three types among these works: those "designed to be produced in series" regardless of whether they are industrial or artisanal; "artwork reproductions" whether manual or mechanical, and symbolic works like idols, produced in multiple copies to help to spread ideas, even in their own time.

Bill downplays the importance of "original" works by putting forth two main arguments: the cult of the original corresponds to a market rational tethered to the notion of "value"; Whereas the artistic significance depends on an activity of conception and is not determined by the execution skills. Thus, the idea prevails when

the accomplishment of the work can be "outsourced" to machines or other people. He concludes this text with this idea, which applies to both sculpture and painting: "constructive art, in particular, depends solely on the creative idea. There are enough constructivist works executed perfectly to show that execution alone does not lead to a lesser artistic result" (Bill, 1968). To some extent, drawing, as it conveys the idea precisely, and attests to a number of decisions, is enough for the artwork.

2.3 The issues in modern drawing

It is essential to understand what makes Max Bill's drawing practice unique in the modern overview of pictorial productions. A proponent of a "mathematical thought," Max Bill is involved in the "concrete art" approach that had been put forth by Theo Van Doesburg. This movement took a more scientific turn from the 1950s onwards. Drawing then became a "gateway" between art and science (Dewitte, 2003), but no longer with any reference to natural models.

2.4 Historical issues

Drawing is a major issue in the history of architectural field, which has questioned, since the 19th century, the place of geometry and of descriptive geometry. This is the subject of Viollet-le-Duc's narrative text, "Histoire d'un dessinateur" (1879). The parable compares two approaches to instruction and introduces early reflections on upcoming transformations in the teaching of applied arts (architecture and applied arts): the renunciation of the teaching of styles, the adoption of practical courses, learning through objective observation of the laws of nature. The book aims to show the intelligences of an analytical drawing that was to be preferred over more "impressionistic" renderings that were only interested in the appearance of things (through shading, lighting and textures). One protagonist practices drawing from a graphic model, while the other is initiated into observational drawing by learning the rules of perspective or anatomy. Little Jean is then questioned about the pleasure he might derive from this kind of exercise ("Do you enjoy drawing circles and squares?"). Indeed, architecture and then design saw a confrontation between those who adhered to ornamental rendering (John Ruskin then William Morris) and those who preferred still figurative but more abstract line (Owen Jones). The latter - geometric drawing – in which every natural form is composed of solids translatable into figures, seemed more able to capture and render the appearance of things of the world around us. The former - ornamental drawing - was considered an expression of a "the pleasures of life." Max Bill's drawings do not correspond to either of these historical positions. On one hand, his line is neither hasty nor spontaneous. The marks are organized like sequences of colored notations that demonstrate a rather delightful practice, not devoid of pleasure. On the other hand, he adheres to a method that "consists of performing each operation at the appropriate time" (Viollet-le-Duc, 1879) but does not see drawing as a tool for analyzing the real world, nor as a construction process that combines elements or systems. These two uses - analysis and construction - thus do not recapitulate all the possible uses of a modern geometric drawing. Max Bill envisioned another path is not based on the concept of a diagram.

2.5 Theoretical issues

A diagram is not a blueprint. A blueprint responds to a requirement for a specific "stylization" of what has been called an "industrial aesthetic" led by mechanical production approaches: Le Corbusier spoke of "geometric poetry" which he thought was better accomplished by the precision of machines; Frank Lloyd Wright also spoke of his preference for the blueprint as opposed to freehand drawings, the former corresponds to the workmanship of the machine, which he described as a "stylizing agent" (1953). The diagram is something else. The concept comes from Kantian philosophy, which defines it as a middle term between the category and phenomenon. Distinct from an image, it synthesizes a diversity of intuition into a general process of productive imagination that allows to develop sensitive concepts. The renewal of this concept around Max Bill's abstractions seems fruitful to us for two reasons. Firstly, the idea of the diagram aligns well with how Max Bill conceives his "figures," which he wants to remain close to shareable concepts. This approach resists the "laws of change" and prefers to look for "aesthetic units of measure" (Bill, 1951) that will promote the general nature of the production. Furthermore, Max Bill embraces his preference for mathematical thinking, which does not borrow anything from the classical concept of imagination.

His criticism of the concept of imagination, is unique for someone who considers himself an artist. This criticism aligns with very contemporary positions on what a "diagram" can be in the age of "technological imaginations." Pierre-Damien Huyghe, Philosopher, design theorist, and author of various publications, including a publication on the establishment of Bauhaus (1999), recently devoted an article to "graphic operations" that he believes suit the "present of devices" (2023). The text begins by expressing reservations about the classical concept of "imagination." This classical concept of imagination calls representation. With a mimetic tendency, the author opposes the possibility of renouncing "creating scenes" in an artistic practice that will consist of giving shape to the "technical information." The text looks into Albrecht Dürer's invention, the perspectograph, and Dürer's famous engraving illustrating the draftsman at work. The renowned engraving is split into two parts, one in which the model is seen, the other in which the draftsman "measures with a compass and a square" (Dürer, 1525). What interests the Huyghe in Dürer's engraving is what the device placed at the center of the image does to the art: It makes it a non-scientific operation (which would require theoretical knowledge) and no longer "creative" (which would imitate, that is, compose according to the criteria of resemblance to objects seen or known), but simply technical. And while pictorial art in Dürer's time still consisted of considering an image as a resemblance, this is no longer the case in modern times. For example, in Paul Klee's painting "half of Dürer's device has disappeared. It is as if only the right half remains. The artist no longer faces a scene, and it is no longer through the artist's gaze but through his hand that his work begins. The endeavor is therefore not first optical, but tactile. And if sight plays a role here, if there is indeed something to see in the matter, sight is secondary (it does not aim, it observes by following)." So "creation depends less on what it renders

than on its very procedure, a procedure that the image does not negate: It maps it out." (Huyghe, 2023). This transformation of art into a technique that is no longer or very little based on realistic demands of representation, calls for a device replaces direct vision and entails adjustments (of positions, distances and landmarks). Artificial perspective, insofar as it proposes surfaces of inscription and projection marked out, and a whole geometry of settings, can be considered such a device.

The question of perspective representation and Paul Klee's work interested Max Bill, who wrote about them in a text entitled "From surface to space" (1951). This is not a coincidence: in those years, Bill favored drawing of "structures" based on metric systems to drawing of "imagination." In this text, Bill notes the relevance in his elder's research on spaces of unusual abstraction: these "neither fall into the category of trompe-l'oeil space of perspective nor into that of what can be called "spatial forms without volume." They are a way of "going beyond Euclidean space" by "integrating an unreal magnitude into the space of the painting: the irreducibility of a-perspective space" (Bill, 1951). From the 1950s onwards, all figuration – and especially any scene – disappeared from Max Bill's paintings and drawings, which then only displayed structures generated according to "projective" techniques. The combinations of geometric figures seem to question the space of the format: the primary forms are never entirely full; they are open or partially outside of the image. They draw a space rhythmically based on a metric principle around themselves. In apparently flat works, he is inspired by topology, a branch of mathematics that studies the relations between spatial entities. These proposals are probably not lacking in current relevance and correspond to what the era presupposed in terms of production.

3. FILMING WITHOUT "DOCUMENTING"

Max Bill did not produce a "theory" of art or design, but is the author of a significant number of texts published in journals. These texts are synthetic and rather general. He always showed his interest in a space whose qualities are renewed by mathematics and expresses his attachment to the concepts of "form" ("gestalt") and "beauty." These are as important as function, if not more so, in arts and applied arts (1949). His painting and drawing practice, as we have seen, involves highly controlled lines inspired by geometry, considering the space of the format rather than the limits of the figure, and is interested in visual phenomena (colors, rhythms and structures). It thus corresponds precisely to statements he made during exhibitions and conferences.

Our initial phase of investigation has clarified the ambitions of a research-creation project. This involves filming and editing: The objective is to produce a series of short videos aimed at developing a certain understanding of the artist's thought.

3.1 Videographic project: descriptions

The visual language envisioned uses the technical properties of film and has been developed as we have discovered with the material made available to us. The editing

will organize drawings and series of drawings by Max Bill into a limited number of shots (figure 4). This "simple" way of "doing" corresponds to the aesthetic and political position supported by Max Bill as well as his taste for "reduced" forms. However, the shots could be brought to life, locally, through camera movement, the appearance of an insert in the image, widening of the format, image sweeping like in a "Ken Burns effect," the accumulation of images, or by combining two by two using a "split screen" process.

Archival documents could visually encounter other drawings, paintings, or productions by Max Bill. We are thinking particularly of architectural works filmed "in situ." In addition to these visual video assemblages, we plan to create audio-visual works with a soundtrack. The sound recordings will consist of text readings, with the reader(s) appearing on screen or with the voices remaining "off." The corpus of texts can be built upon historical criteria, and call upon Max Bill's contemporaries, either people he knew personally and intellectually (Gropius, Klee, Moholy-Nagy, Le Corbusier). Another option would be to use thematic criteria: L. Moholy-Nagy, for example, commented on the "objective quality" of a technical drawing; a theorist of our time, such as P.-D. Huyghe wrote about the question of drawing of Bauhaus (1999). Reading Max Bill's own writings seems yet more pertinent: He is central in the history of industrial production and in the thought of 20th-century art and architecture, yet remains relatively unknown in French architecture schools. Introducing a selection of his texts into the videos is an opportunity to focus on his texts, written in German, sometimes translated into English, but rarely carefully translated into French. In this sense, this "research-creation" project can help respond to a gap in theory accessible in French.
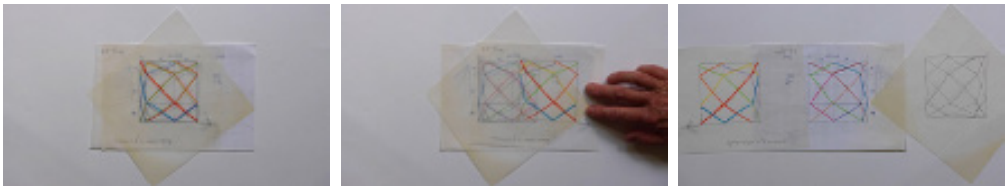
Figure 4 - Serial research / Film, Anne Faure & Cécile Fournel, 2024
Source : Angela Thomas Haus Bill

3.2 Videographic project: objectives

The filming project thus explores theoretical questions that Max Bill was concerned with. However, it is conceived as a series of visual readings. They belong more to film techniques, than to the documentary genre, this latter consisting more of simply "recording" and "editing."

Leaving the film to its technique, essentially means renouncing any shots of commentary on the image, and it means filming without presuppositions around the right delivery of the message. Thus, the project distinguishes itself a from a tradition of "educational" documentaries. It aligns with a research approach that does not aim to be conventionally "didactic."

The first reason is that the term "didactic" concerns a teaching theory linked to the specificity of disciplinary fields. The term and corresponding methods call for specialized content. Thus, they do not correspond well to the drawing practice of a multifaceted producer who continuously exploits the permeabilities between architectural drawing and visual arts practices. The second reason relates to the conditions of "fostering appreciation of the related knowledge," which must be redefined "politically."

Current trends tend to favor alternative formats and writing approaches when addressing non-specialist audiences. This project fits into this approach by choosing, for instance, to produce short videos well-suited to digital platforms. It still maintains a focus on instruction, but an instruction that prefers to question or even challenge the knowledge, rather than to simply convey it. Thus, the visual and audio-visual editing will leave certain gaps: the images—and where applicable, the texts read out loud—will not be strictly linked to one another, nor completely explain one another. The "transitions" from one shot to another which are not strictly "logical" will encourage free associations and infinitely descriptive images. These spaces will not disturb the coherence of the whole, but, on the contrary, promise to stimulate thought.

Also, the project involves accounting for a number of archival documents. These archives are drawings. The issue is to question the formatting of a 2D document in the space and time of the film medium. Filming archives is not a common task. It turns out that the recent history of film offers more examples of this than the documentary genre does. Filmmaker Ken Burns, for example, produced a series of nine films on the civil war (Civil War, 1990) in which he limited himself to showing, with very few rare exceptions of outdoor footage shorts, archival photographs which he zooms and zooms out on, or pans. José Luis Guérin has in a much less "historical" film approach. He juxtaposes excerpts from home films in black and white (Le spectre du Thuit, 1997), and thus "documents" the filming of John Ford's The Quiet Man by putting together shots from the film with still views of current Irish landscapes (Innisfree, 2002), and creates an entire story using only series of black and white photographs (Dans la ville de Sylvia, 2008).

4. CONCLUSION

This video project is a commitment to rewriting. It promises to rewrite a modernity embodied by the figure of Max Bill by "practicing" different traditions: a documentary tradition, accustomed to still images; and cinematographic tradition. The position that we put forth is to consider the archive as a lively "visual" document: freed, at least for a time - the time of recording - from its historical properties. From there, it can no longer be subject to endless maintenance (that of "conservation"), and it can offer different and infinite ways to see and think space and architecture.

5. BIBLIOGRAPHY

Anker, V. (1979). Max Bill ou la recherche d'un art logique. Ed. L'âge d'homme.

Anker, V. et Bill, M. (1972). Max Bill. Musée Rath. Genève.

Bill, M. (1951). De la surface à l'espace. In Max Bill, œuvres : 1928-1969. CNAC / Archives de l'art contemporain.

Bill, M. (1968). Les œuvres d'art démultipliées. Max Bill, œuvres: 1928-1969. CNAC / Archives de l'art contemporain.

Bill, M. (1949). La pensée mathématique dans l'art de notre temps. In V. Anker, Max Bill ou la recherche d'un art logique. Ed. L'âge d'homme.

Bill, M. (1949). «Schönheit aus funktion und als funktion». Das Werk.

Bill, M. (1949). Die gute form. Wanderaustellung des swb.

Bill, M. (1965). Structure as art? Art as structure?», in G. Kepes, Structure in Art and in Science, ed. George Braziller New York.

Dewitte, J. (2003). Préface. in A. Portmann, La forme Animale. Ed. La bibliothèque.

Dürer, A. (1925). Instruction sur la manière de mesurer à l'aide du compas et de l'équerre. Ed. du Seuil.

Estevez, D. (2001). Dessin d'architecture et infographie : l'évolution contemporaine des pratiques graphiques. CNRS édition.

Fabbri, R. (2017). Max Bill ; espaces. Ed. Infolio.

Graffin, E. (2018). Max Bill, le chercheur d'espace in Archiscopie, 13, 96-98.

Huyghe, P.-D. (1999,2015). Art et industrie. Ed.Circé.

Huyghe, P.-D. (2023). Travailler pour la forme. In Imaginaires technologiques. Ed. Les presses du réel.

Le Corbusier (1928). Une maison, un palais. Ed. Connivences.

Lyotard, J.-F. (1988, 2014). L'inhumain. Ed. Klincksieck.

Moholy-Nagy, L. (1944-46). Nouvelle méthode d'approche, le design pour la vie. In Peinture, photographie, film. Ed. Jacqueline Chambon.

Thomas, A. (1990). Max Bill. Galerie Denise René.

Thomas, A. (1993). Max Bill. Fondation Saner student.

Thomas, A. (2004). Max Bill zeichnungen. Haus Bill.

Viollet-le-duc, E. (1879). Histoire d'un dessinateur, comment on apprend à dessiner. Ed. Infolio.

Wright, F. L. (1953). L'avenir de l'architecture, vers l'éclatement des villes. Ed. Gonthier.

LO5

ATTUNING WITH THE WORLD: IMAGINING AND MAKING ATMOSPHERES

CHAIRS Aleksandar Staničić
Shanti Sumartojo

The relationship between atmospheres, imagination, and architectural design is a complex one. While the built environment is often described, experienced or recalled as atmospheric, we contend that we need new methods of imagination in architectural and design practice - and in particular through making - to advance design for and with atmospheres.

One reason for this is that imaginative processes of making are powerful in helping people feel their way into atmospheres, by engaging directly with materials and their affordances, by working collaboratively with other people and non-humans, and by engaging in complex manual problem solving that requires people to attend carefully to the actual, situated conditions of their practice. Moreover, architectural methods of visualising, drawing and modelling are intended to support design processes that focus on the structure itself more than the experience of those who might one day encounter it. Such processes necessarily reduce the built environment to flattened and abstracted propositions. While these may be imagined as atmospheric by the architect or designer, if, as Edensor and Sumartojo (2015) insist, atmospheres cannot be designed, then how can we actually develop an atmospheric attunement with the world? How might we develop an atmospheric praxis - a possibility that brings a deep conceptual engagement with the past decade of thinking about atmospheres together with the expertise and methodological rigor of architectural practice? In this panel we invite submissions that discuss new methods for designing with, through or for atmospheres. We hope to hear from both creative practitioners who work with a concept of atmospheres in the built environment, and researchers who consider imagining or making built environments. In particular, we wish to focus on:

New approaches to methods of imagination or design - how can we speculate about built futures atmospherically? What does an atmospheric lens or practice make possible?

How can architecture's role as a means by which culture is produced, reinforced and challenged be approached through an atmospheric lens.

How can we attend to and account for sensory aspects - light, sound, touch, temperature, the movement of air, proprioception and more – achieved through various architectural elements?
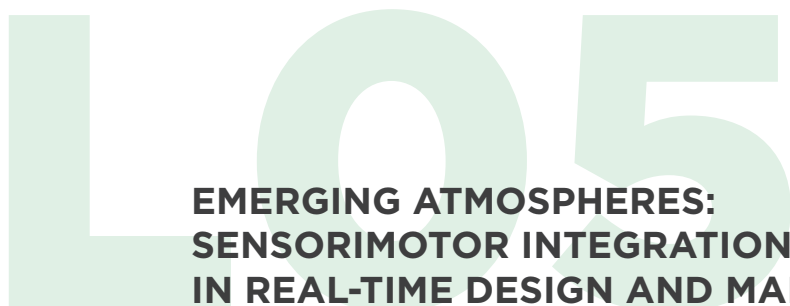
EMERGING ATMOSPHERES: SENSORIMOTOR INTEGRATION IN REAL-TIME DESIGN AND MAKING IN THE UNIVERSE OF AFFECTIVE MATERIALITIES

ATMOSFERAS EMERGENTES: INTEGRAÇÃO SENSORIOMOTORA EM TEMPO REAL NO DESIGN E NA CRIAÇÃO NO UNIVERSO DAS MATERIALIDADES AFETIVAS

Eleni Danesi
Architect, Independent Researcher:
Perception of Spaces through Movement & Embodiment
MKRZ Lab, AT & LatoMeioLAB, GR
danesi.eleni@gmail.com

ABSTRACT

This paper explores an innovative methodology for embodied and interdisciplinary prototyping for digital and analog interfaces based on the enactive approach to embodied cognition as the foundation for embodied design processes. This approach enhances creativity and spatial awareness and proposes a dynamic framework for understanding design as a deeply embodied and situated internal experience that takes shape and materializes through our interaction with the world. Drawing on the intersections of neuroscience, somatic practices, and phenomenological philosophy, this study articulates how architectural atmospheres can transcend traditional aesthetic boundaries to engage more holistically with the enactment of situated human perception. This emergent paradigm will look into the interplay between the body, the mind, and the material world, through the "theatrical enactment" of *"the Universe of Affective Materialities"* (UoAM), a context-based role-play exercise that questioned the position of material culture during the process of designing spaces for learning and innovation, performed during the interdisciplinary research project "Alternative Lab for Future Skills", by the MKRZ Lab in Austria.

KEYWORDS: Emerging Atmospheres. Imagination and Innovation. Enactivism. Interdisciplinary Prototyping. Awareness through Movement. Neuroscience and Architecture. Affective Materialities.

RESUMO

Este artigo explora uma metodologia inovadora para prototipagem incorporada e interdisciplinar para interfaces digitais e analógicas baseada na abordagem enativista da cognição incorporada como base para processos de design incorporados. Esta abordagem aumenta a criatividade e a consciência espacial e propõe uma estrutura dinâmica para a compreensão do design como uma experiência interna profundamente incorporada e situada que toma forma e se materializa através da nossa interação com o mundo.

Baseando-se nas intersecções da neurociência, das práticas somáticas e da filosofia fenomenológica, este estudo articula como as atmosferas arquitetônicas podem transcender as fronteiras estéticas tradicionais para se envolverem de forma mais holística com a representação da percepção humana situada. Este paradigma emergente examinará a interação entre o corpo, a mente e o mundo material, através da "representação teatral" do "Universo de Materialidades Afetivas" (UoAM), um exercício de dramatização baseado no contexto que questionou a posição da cultura material durante o processo de concepção de espaços de aprendizagem e inovação, realizado durante o projecto de investigação interdisciplinar "Alternative Lab for Future Skills", do MKRZ Lab na Áustria.

PALAVRAS-CHAVE: Atmosferas Emergentes. Imaginação e Inovação. Enativismo. Prototipagem Interdisciplinar. Consciência através do Movimento. Neurociência e Arquitetura. Materialidades Afetivas.

1. INTRODUCTION

The argument presented in this research paper is that movement and physical connection with materials and spaces can activate the brain through sensory activity while navigating environments and interacting with various entities, can stimulate analytical and synthetic cognitive processes. This enactive and embodied approach to analog or digital prototyping through sensorimotor awareness, explores new pathways to individual and collective creative processes and their impact on the enhancement of personal and interpersonal competencies, both for the designers and the users.

Our design team of four combined a wide web of information and embodied explorations from a variety of fields such as neuroscience, somatic arts, phenomenology, cognitive science, developmental psychology, neuropsychology, psychoanalysis, sociology, choreography, performing arts and theater of the Oppressed, to come up with a series of open innovation days with hands-on case studies. This pedagogical and design approach aims to bridge the scientific findings of neuroscience, which reveal the functional operation of the brain, with the integration of the cultural dimension of senses and movement during processes of improvised prototyping in the field of architectural design.(Vroman & Lagrange, 2019).

Furthermore, we reflected on the design process of this experience/experimental exploration, to speak about the potential in the design of architectural atmospheres from a reverse point of focus; that of designing relational interactions through dialogues with the affordances of materiality (Jelić et al., 2016) which will produce the atmosphere of the emerging architectures through the enactment of minds. Within this framework, one of the main goals was to explore the impact of body prototyping and the act of 'making' as a thinking pathway, on cognitive competencies and social skills, the so-called 4Cs of the 21st Century Skills: Collaboration, Communication, Critical Thinking, and Creativity.

2. THE CASE STUDY AND THE TEAM

The UoAM is one of these case studies where approaches of somatic and kinetic spatial exploration, inspired by the pedagogic systems of Jacque Lecoq, the choreographer Liz Lerman, the Body-Mind Centering method by Bonnie Bainbridge Cohen, blended with the mental mapping psychological cartography by Kevin Lynch. These overlapping methodologies were implemented in a setting of real-time improvised prototyping for ideation and embodied research on the topics: *"Embodied Knowing, Material Culture and Thinking with the Hands", "Affective Materialities"* and *"Atmospheres of Co-Created Realities"* to design invitations for collaborative spatial enactments, based on 6 performative roles: the Maker, the Mover, the Surveyor, the Landscaper, the Storyteller, and the Time-Keeper. (Figure 1)

Figure 1. The series of cards is part of the author's project on modern archetypes for human and non-human characters and is based on the theory of multiple intelligences.
Source: Designed by the author, 2023

This exploratory workshop involved ten participants from diverse professional backgrounds, including occupational therapy, textile arts, musical instrument restoration, architecture and experience design, software engineering, and social and environmental sciences. The group participated in a full open innovation day that included somatic awareness arriving practices, self-introduction through body-prototyping, lightning talks on the topic of body-prototyping in architecture and design, reflective rounds and concluded with the two-hour session of building the UoAM, designed to explore the intersection of materiality and perception through sensorimotor activities and the role of memory and imagination in the co-creation of social realities (Barrett, 2017).

More precisely, the workshop theme focused on understanding material cultures and perception of relational dynamics via sensorial and cognitive stimuli, which facilitated spatial navigation and ignited a process of making, acting, and communicating (verbally or non-verbally) grounded in sensorimotor invitations mediated by the imaginative scenario and role play. Providing a setting of constructive ambiguity, or in Sennett's terms: *planned instructive ambiguity made by design,* (2008), the set design of the exercise offered a strategically positioned variety of materials and elements in an empty 600sqm room, a pop-up playground that provided the participants an opportunity to explore senses, movement, affordances of material and objects, and moving qualities of human and non-human actors.

These activities challenged the participants to navigate the space in ways that created tangible outputs through intangible experiences and made evident the interplay of sensations, movements, and imagination. The enactment of roles was an attempt to reflect on contemporary archetypes, socially constructed normative perceptions, upon which action is generated through our bodies, following the scenario of a collective mission: to discover the material qualities and their symbolic realm, revealed through the emergence of a collective MIND, referred to from now on as 'The Mind of the Present'.

3. THEORETICAL BACKGROUND AND METHODOLOGY

Influential philosophers and artists like Merleau-Ponty, Giles Clark, and Maxine Sheets-Johnstone, have made significant contributions to the understanding of the central role of movement in cognition and perception. Anthropological approaches by G. Simondon, T. Ingold, and B. Latour helped us think about the processes of individuation and emergence of the collective as central to understanding the relational and dynamic nature of the bodily experience. The elaborations of the psychologist Dan Siegel on inter-connectivity, intra-connectivity, and belonging enhanced our understanding on the embodied nature of consciousness. As we wove our narrative around the above-mentioned notions, we explored further this 'new' perspective of BODYMIND as a unified entity and the integrative paradigm of cognition, emotion, and an enactive conception of mind and body in the context of architectural experience and making.

3.1 Enactivism and the Mind of the Present

Our case study adopts an enactive approach (Jelić et al., 2016) and constitutes a practice on the stages of dynamic entanglement between perception, action, sensations, emotions, analysis (interpretation), reality, imagination, and cognition. It presented a situated and time-based experience which triggered realizations on social and spatially relational tendencies, projections for radical action, transformative scenarios for social impact, ownership of one's opinion or choices, awareness of self limitations or surprises upon one's potential, experiencing the positive impact of collective thinking-negotiating-acting, the fear of boredom and inaction, the confrontation of confusion and the feeling of being lost, and the power of arriving back to the present moment for physical, sensory and mental evaluation to continue further.

The concept of the "Mind of the Present" introduced in this context, is a signifier for the "Emerging Atmospheres", which indicates the presence of an arising occurrence within a given situation, circumstance, and network of objects, materialities, and present agents. The concept is grounded in neuroscientific research, such as the work of Lisa Feldman Barrett (2017),(2020) and Daniel Siegel (2020), who explore the dynamic and relational nature of the mind, examining how the brain's activity is inherently linked to the experience of the prediction of social realities and the relational experiences we construct around and inside us. In this context, we asked how material culture determines the qualities of our thoughts, and actions, in other words, the spatial enactment of of our minds. How do our actions (more specifically, our design choices) predict the concepts of the social realities we want to live in? Where does the responsibility of these choices lie, and what kind of interactivity can we predict among us so that the 'right' realities emerge?

3.2 Reciprocity, agency and responsibility in performative improvisation

Reciprocity and interaction are central to this approach, as the process of future perception and appropriation of architectural situations is directly interconnected with the process of their conception. Building on this foundation this exploratory paper will reflect on the use of embodied practices, including movement and making improvisation as processes of tangible meditation (Le Quense, 2015), to foster a deeper understanding of interoceptive awareness and how the individualized or collectively negotiated interpretations of those sensations inform our perception of environments and hold implications for architectural design (Alaçam, 2014; Jelić et al., 2016; Voigt, 2019).

In addition, we questioned the position of somatic practices not only as body-regulating experiences but as instrumental perspectives of the design methodologies, which offer an understanding of the bodily, cognitive, and relational dimensions of architectural making and inhabitation. Through the lens of "Individuation" and "transindividuation" (Scott, 2014), the study examined the impact of this practical approach both on the design choices and the qualities of interpersonal communication and interactivity, from which the architectural and emotional atmospheres of the 4Cs emerge. At its core, this approach attempted to reverse-engineer the architectural experience, arriving at the physical formation of the UoAM though prediction of body-material interaction and sensorimotor invitations from the material to the agents and around (Bennett, 2010).

Through its theatrical dimension, the exercise in the UoAM examined the role of motivation and agency and the notions of individual and collective responsibility around the quality of our results. Movement and Performative Improvisation Practices (MPIP) often confront the practitioners with the realization of self and collective responsibility. In MPIP settings the participants get familiar with the action of "witnessing" and "being witnessed" as detailed processes of exteroceptive (space and environments), proprioceptive (body awareness in space), and interoceptive (sensations and emotional activation) awareness of our physical and perceived positioning in the environments we inhabit and interact with.

Such practices equip the participants with the implicit understanding that the situations are co-created and influenced by their presence and that they have the choice to be passively or actively involved in the emergence of the plot. Through predictions, the improvisers choose to either stay back- a state of neutrality and receptivity before someone chooses to act (Lecoq 1997) they might act intuitively without judgment or constructs of what is expected from them, or use 'planned action' anticipating to see predicted results. All levels of interactivity are part of the realities we build together and they are simply different states of how our brain operates. (Barrett 2017)

4. ON UNCERTAINTY, UNPREDICTABILITY, PLANNED AMBIGUITY, AND CONFLICT & ON TAKING THE GAME 'SERIOUSLY'

Informed by the insights of post-humanist philosophies, particularly the works of Bruno Latour, Rosi Braidotti, and Donna Haraway, the foundation of our spatial narrative lies in encouraging a paradigm shift. This shift emphasizes the interconnectedness of humans, non-human entities, and technologies, urging us to reconsider traditional boundaries and foster a more inclusive and ethical framework for understanding our place in the world. Furthermore, it's an invitation for the 'self' to embody a variety of human and non-human perspectives and practice ways to skillfully and effortlessly manage the perceptive flow between all of them. In other words, we provided the scenario of embodying qualities of material and objects (Bennett, 2010), or non-human species in the room (Saraceno, 2020), to observe, analyze, and most importantly sense their presence as it resonated from inside the participants' bodies. (Figure 2)

Figure 2. (Left, middle) A solo explorer in the UoAM discovers a message, an invitation to sense the playful mood between light and shadows. (right) Discovering and interacting with Termites' activity.
Source: the Author's archive from the UoAM, 2023

4.1 From Uncertainty to Emancipation

One of the challenges we faced in the design phase was the different levels of engagement with the practice of 'embodiment' which revealed blocks and difficulties our participants would potentially also face during the exercise. These blocks were mainly presented through difficulty or objections in the interpretation of 'embodiment' as well as ambiguity and indecisiveness in what exactly should be the action that one should take to experience 'embodiment in themselves' and 'embodiment of Otherness'. Our internal debate informed our design decisions, and as we decided to include the debate in our scenario, we opened up new avenues for fostering affective resonances, triggering unexpected pathways of thoughts and feelings, and cultivating a heightened awareness of our entanglement with the more-than-human world and material (Renold & Ivinson, 2019).

Designing for overcoming "the fear of freedom", a term by the psychologist Erich Fromm (1942), the UoAM allowed for a safe, playful, and deeply immersive context in which the participants could explore the fluidity of identity, individuality as a path to self-discovery, and the power of collective emergence. (McNeur, 2008; Jelić et al., 2016). Erich Fromm defines freedom not only as the liberation from external restrictions or controlling forces but most importantly the liberation from the restrictions we impose on ourselves that permit for freedom to take personal action (Fromm, 1942; Le Quensne, 2015). Through this embodied and experiential approach, the participants were able to viscerally grasp the dynamic, and interconnected nature of architectural experience, where the boundaries between self and environment, mind and body, become porous and permeable (Pallasmaa, 2005), which allows for profound and insightful enactment to arise.

4.2 Transformation of Imaginaries: a Source for Innovation

These unpredictable events are very important for the experience of 'Innovation'. Innovation comes when inner change or transformation in the doing, thinking or moving brings us to a new perspective, a new understanding or even a new discovery. How is innovation through the activation of embodied thinking and embodied ideation different than 'seated brain-storming'? How can somatic practices, when embedded into the design process and take significant space and time, inform and determine the end architectures and their constituted atmospheres? (Figure 3)

In our context, our reflective discussion which followed the process, revealed the multiple layers of reading our interactivity and the profound exploration of the intricate interplay between imagination and the inventive processes. Our design intentions aimed to reflect the concepts of "Individuation" and "Transindividuation" from the work of Gilbert Simondon, and extend it to the concepts of "Interconnectivity" and "Intraconnectivity" found in the work by Daniel Siegel. While Simndon's approach shows a dynamic process where the individual and the collective are continuously co-constituted (Scott, 2014), Siegel integrates insights from neuroscience, emphasizing how brain development and function are profoundly influenced by social interactions (2020). He explores how neural connections are shaped by our relationships, leading to the co-construction of mental states and experiences.

Guided by this rich literature on the origins of innovation, the practice presented in the UoAM primarily questions: how can we ignite the awareness of this foundational and structural yet invisible activity of our brains to inspire new design processes and atmospheric aesthetics that stem from the relational qualities between bodies in/and spaces?

Figure3. (Left) Lightning Talk sessions by guest speakers. (Right)
After the presentation the participants get into making and playing, an exploration of materiality
and affordances using suggestions by "prepared dice", a game we called "The Making Cubes".
Source: The Authors archive from the UoAM, 2023

5. CURIOSITY AND TRANSFORMATION:
AN INNOVATION LEADER'S JOURNEY IN THE UOAM

Even though each participant had a special experience and unique story to reflect upon, here, we chose to elaborate on the perspective of one of them. He is the head of the innovation department of a production company and the reason that brought him to join our open innovation day was his curiosity for something he wasn't sure what it was. From the beginning, he seemed more distant from the practices and the methodology but maintained a curious and playful approach to the process. The first part of the day was familiar to him, as it contained presentations and quick hands-on reflective games which brought the participant to an interactive making and creative state.

Upon transitioning to the UoAM and assigning roles to each participant, he appeared disoriented and struggled to find his position in the context of the improvised exploration The emptiness of the space where the UoAM was set up seemed irrelevant to him, leading him to inquire, "What are we doing here eventually?" This response is not uncommon among individuals unfamiliar with the integration of creatively critical methodologies, particularly when these methodologies are derived from artistic practices such as theater, improvisation, or movement-space awareness, and are applied to decision-making or problem-solving contexts.

Our approach is significantly influenced by neuroscientific studies which demonstrate that such overlaps are a natural function of the brain. (Barrett 2027) These findings suggest that it is both unnatural and impractical to force ourselves to operate without this integration in our daily activities, yet in most cases analytical thinking and creative practices are widely considered two distinct brain operations. This raises the question of whether the obsessive

internal separation leads to external dysfunctions. Does the belief in a separation between logic and creativity, a Cartesian distinction between body and mind, and a separation of physicality and imagination, hinder our self-actualization as individuals and collectives? Does this separation contribute to our sense of incompleteness within our bodies and, by extension, within the broader ecological bodies?

The UoAM was designed in such a way as to support the participants along their exploration with hints and suggestions that created a shift of perspective. The space eventually became a 'safe territory to act and interact, to sense, to make, and to play changing the initial question from "What do others expect of me?" to "What do I sense? How do I perceive the situation? What do I contribute?" and from "What is going on here?" to "What can we grow here?". (Figure 4)

By the end of the session, he confessed a sense of "an enjoyable state of playful craziness", as he described. During our reflective round, he realized how little space there is in the business environment for playful ideation and even interaction with colleagues, engaging in creative activities and play. These activities for him are connected, in his words, to 'other spaces'.
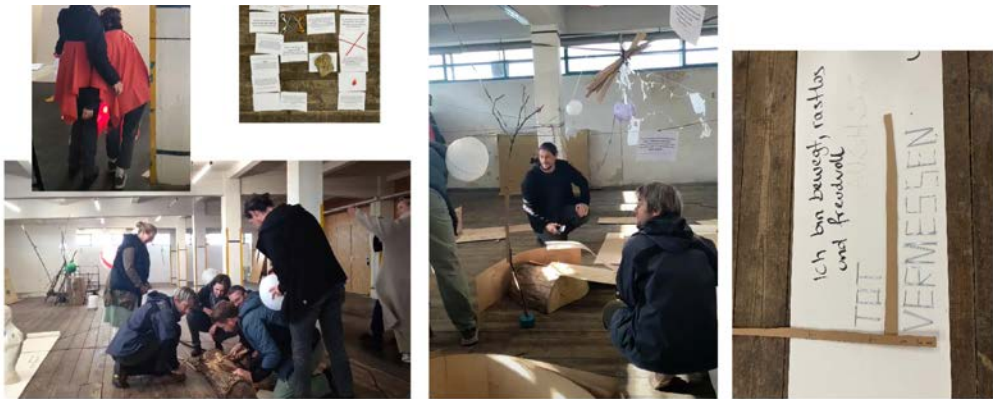
Figure 4. Collaborations in the UoAM. (Up left)A couple experimenting with attuned movement and inter-body communication.
(Up Middle) Quotes extracted from interviews with participants were used as guiding messages in the UoAM (Bottom left & middle) Groups during negotiations, active investigation, and building. (right) "I am moved, restless and joyful".
"Totally measured"
Source: the Author's archive for the UoAM, 2023

6. CONCLUSION: WHAT ARE WE DESIGNING AFTER ALL? A PARADIGM SHIFT?

The reflective round after the UoAM was rich in embodied experiences and revealed the potential benefits for such quality of interaction in environments where creativity is still considered an artistic talent and not a nature of our brainal activity. Sensations and emotions remain distinct from operational processes, yet the character of

the atmosphere within workspaces mirrors the quality of our relationships and interactions there, as well as the quality of the physical architecture that encompasses these interactions.

What are we designing, after all?

Besides the freedom that it provided, the Universe of Affective Materialities was very intentional in one fantasy: *the complexity and the multidimensionality of the emerging minds is an experience we are on a mission to uncover while we co-create it, rather than a predefined reality.* Are we still holding on to the illusion that we are complying with suggestions coming from the outside world or are our responses a way "to make the proposals of the outside world evident?" as Jacque Lecoq indicates? Introducing spaces and time for reflective games and we will soon realize that "the dynamics of memories are more important than the memories itself" (Lecoq 1997) and we will welcome the invitation to be the architects of our future memories through our conscious architectural enactments in the present. (Figure 5)
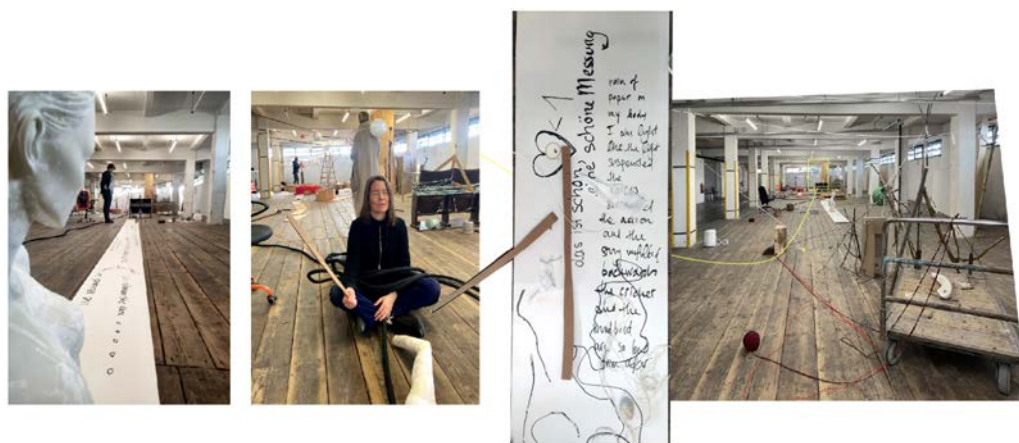
Figure 5: (Left) Participants as external and internal observers. Self and Environment acknowledgment.
(Right) Overview of the Universe of Affective Materialities the day after.
Source: The Author's archive from the UoAM, 2023

BIBLIOGRAPHY

Alaçam, S. (2014, February 16). Exploring the role of bodily experience in spatial thinking during the architectural design process. *https://doi.org/10.1145/2540930.2558152*

Barrett, L. F. (2017). How Emotions Are Made: The Secret Life of the Brain. Houghton Mifflin Harcourt.

Barrett, L. F. (2020). Seven and a half lessons about the brain. Houghton Mifflin Harcourt.

Bennett, J. (2010). Vibrant Matter: A Political Ecology of Things. Duke University Press.

Fromm, E. (1942). The Fear of Freedom. Routledge.

Jelić, A., Tieri, G., Matteis, F D., Babiloni, F., & Vecchiato, G. (2016, March 31). The Enactive Approach to Architectural Experience: A Neurophysiological Perspective on Embodiment, Motivation, and Affordances. *https://doi.org/10.3389/fpsyg.2016.00481*

Kearns, L. W. (2010). Somatics in Action: How "I Feel Three-Dimensional and Real" Improves Dance Education and Training. Journal of Dance Education, 10(2), 35–40. *https://doi.org/10.1080/15290824.2010.10387158*

Le Quensne, L. (2015). An Intricate Field: In search of freedom and togetherness: a tangible meditation on inter-subjectivity and materiality in shared spaces. In S. Whatley, N.G. Brown, K. Alexander (Eds.), Attending to Movement: Somatic Practices on Living in this World. Triarchy Press.

Lecoq, J. (1997). The Moving Body (Le Corps Poetique): Teaching Creative Theatre. Methuen Drama.

McNeur, L. A. (2008, March 1). The intimate dance of Being, building, body and psychotherapy. Routledge, 3(1), 19-30. *https://doi.org/10.1080/17432970701664530*

Pallasmaa, J. (2005). The Eyes of the Skin: Architecture and the Senses. John Wiley & Sons.

Renold, E., & Ivinson, G. (2019, September 1). Anticipating the more-than: Working with prehension in artful interventions with young people in a post-industrial community. Elsevier BV, 112, 102428-102428. *https://doi.org/10.1016/j.futures.2019.05.006*

Scott, D. (2014). Gilbert Simondon's Psychic and Collective Individuation: A Critical Introduction and Guide. Edinburgh University Press.

Sennett, R. (2008). The Craftsman. Yale University Press.

Sheets-Johnstone, M. (2010). The Primacy of Movement. John Benjamins Publishing Company.

Siegel, D. J. (2020). The Developing Mind: How Relationships and the Brain Interact to Shape Who We Are. Guilford Press.

Spider/webs and Tomás Saraceno, founding member of Arachnophilia Invertebrate Rights for "Down to Earth", 13.82020 billion, ABB (After Big Bang). *https://studiotomassaraceno.org/invertebrate-rights-for-down-to-earth/Big Ba*

Voigt, K. (2019, December 16). Reciprocity and Interaction. De Gruyter, 321-330. *https://doi.org/10.1515/9783035620238-031*

Vroman, L., & Lagrange, T. (2019, December 16). Move to Design, Design to Move. De Gruyter, 331-340. *https://doi.org/10.1515/9783035620238-032*

Vrobel, S., & Dubois, D. M. (2010, January 1). The Extended Mind: Coupling Environment and Brain. *https://doi.org/10.1063/1.3527164*

L05

ATMOSPHERIC DEVICES FOR ARCHEOLOGICAL NARRATIONS

DISPOSITIVOS ATMOSFÉRICOS PARA NARRAÇÕES ARQUEOLÓGICAS

Francesco K. Baudouin Simi
PhD Candidate, Researcher
La Sapienza University of Rome, CEAACP – University of Coimbra
francescok.simi@uniroma1.it

ABSTRACT

This contribution investigates the role of atmospheres in the valorisation processes of archaeological areas through architectural design. It is argued that the valorisation of these particular *heterotopias* often relies too heavily on historical and speculative narratives, neglecting the emotional and corporeal dimension of the visitor. As a result, these areas remain isolated from contemporary vital processes, confined within boundaries that are physical, cultural, and perceptual, becoming true places of absence. The felt-body, with its anachronistic dimension, and the atmospheres amplified through it, offer a resounding threshold for bridging this distance caused by the rigidity of the Cartesian gaze. The investigation will be conducted through the review of two case studies in Germany and an archaeological enhancement project in Portugal, all of which, to varying degrees and with different levels of intentionality, deploy atmospheres as an integral part of their narrative strategy.

KEYWORDS: atmospheres. architecture. valorisation project. archaeology. cultural heritage.

RESUMO

Esta contribuição pretende explorar o papel das ambiências nos processos de valorização de áreas arqueológicas através de projetos de arquitetura. Argumenta-se que a valorização destas heterotopias particulares se baseia muitas vezes demasiado em narrativas históricas e especulativas, negligenciando a dimensão emocional e corpórea do visitante. Como resultado, estas áreas ficam isoladas dos processos vitais contemporâneos, estabelecendo fronteiras que vão para além das preocupações físicas e relacionadas com a conservação. O corpo-sentido, com a sua dimensão anacrónica, e as ambiências que através dele se amplificam, oferecem um limiar retumbante para colmatar esta distância provocada pela rigidez do olhar cartesiano. A investigação será conduzida através da revisão de dois estudos de caso na Alemanha e de um projeto de valorização arqueológica em Portugal, todos os quais, em diferentes graus e com diferentes níveis de intencionalidade, utilizam as atmosferas como parte integrante de sua estratégia narrativa

PALAVRAS-CHAVE: ambiências. arquitetura. projeto de valorização. arqueologia. património cultural.

1. BEYOND THE ANATOMIC BODY OF ARCHAEOLOGY

The isolation of archaeological sites from contemporary transformations leads to their detachment from the vital dynamics of the city and its surrounding territory. This disconnection also resonates on a larger scale, where constellations of fragmented sites remain isolated within expanding urban contexts. These archaeological sites, understandable as chronotropic portals, are not just static remains of an extinguished past, but they participate to the multidimensional temporality of cities and territories being, not only a potential source of new shared meanings, but a *presence*, active both phenomenologically and affectively.

Evidence of the Cartesian separation of these realities is found in the very definition of these spaces, which, across all languages, are succinctly termed 'archaeological'—a rather peculiar designation upon closer examination. These unique spaces are identified primarily by the discipline that studies them, rather than by the intrinsic elements that define them[1]. This is akin to defining human beings merely as 'anatomical bodies' because they are subjects of anatomical study—a technically correct, yet overly reductive definition.

More broadly, this marginalization is thought to result from cultural bias and protection policies that have had counterproductive effects. While a detailed examination of this issue is beyond the scope of this discussion, it is worth noting that addressing this situation requires a different *way of seeing*. We must reconceptualize the city and territory as a 'mode of perception' (De Matteis, 2018) and view the archaeological site not solely in its 'anatomical' dimension, but as a resonant element extending beyond its historical-anatomical context, embedded within an atmospheric continuum.

Conversely, examining the archaeological site from within, it reveals its reality-construction nature made of contextual reconstructions, historicist narratives, and new imagery. These narratives, although erudite and engaging, remain on an intellectual and pedagogical level, focusing on the *res cogitans*, and exclude the involvement of the body as a tool of knowledge (Merleau-Ponty, 1964). Moreover, from a disciplinary perspective, archaeology reconstructs knowledge based on data that are inherently incomplete, as it is impossible to fully reconstruct the past both materially and temporally (Renfrew & Bahn, 2000). This gap represents the porous nature of archaeological data, which, while leading to rigorous scientific reconstructions, relies heavily on a substantial interpretative process. We believe that this gap between data and interpretation is crucial for initiating dialogue and establishing physical and affective connections—multitemporal and multi-spatial—between the *heterotopia* of archaeological spaces and contemporary places. This gap can be articulated through atmospheres and underscores the synergy between design and research as essential for realizing its full potential.

Based on what has been presented so far, we believe that the collaboration between architects and archaeologists is the point of convergence that can unravel and orchestrate broadening of meanings and foster the experiential potentials of the archaeological areas through a synergy between research and design. Marcel Otte, a Belgian paleoanthropologist, underscores a critical point by advocating for the need to 'reconcile knowledge and imagination' (Otte, 2000) and we believe it is a strategic passage for the creation of those new images, working on the etymological tension between *invenire* in the double meaning of 'discovering' and 'inventing'. To achieve this reconciliation, we believe, it is necessary to interlace the design nature of the archaeological process with the architectural design understood as a research process by embedding the atmospheric paradigm (Schmitz, 2019) as a cohesive element.

---

1 Not to mention the other taxonomic term related to 'site,' 'park,' etc., which refers to enclosed spaces.

The atmospheric paradigm is already prominently present in the architectural debate (Bohme, 2017; Pallasmaa, 2014; Pérez-Gómez, 2016; Zumthor, 2006) and the identification of the peculiar object of the discipline as the affective space (De Matteis, 2021) is the key element to find trans-disciplinary contacts points with archaeology and implement this need of 'invention' mentioned above. Conversely, archaeology has already begun to incorporate the atmospheric approach into the analysis of past architectures (Sørensen, 2015) and, even more significantly, starting to think about disciplinary extensions (Hamilakis, 2013) thanks to the expansion of the common, historical, 'sense' of time. The triangle appears to come full circle with the initial attempts at reconciling architecture, atmosphere, and archaeology in a common discourse (Bille & Sørensen, 2016).

Furthermore, the imperative to transcend historicist and hermeneutic paradigms necessitates the incorporation of the dimension of presence, thereby reconciling interpretative approaches with the acknowledgment of dimensions that may not be entirely intelligible (Gumbrecht, 2014). The conception of time extended to the anachronistic dimension of the body, using atmospheres to enrich the interpretative narrative, is a way to focus the discourse on the dialogical tension between subject and object, as an alternative to overly Cartesian readings of reality.

We can observe this dialogic tension between object and subject in the ontological conception of what constitutes the 'object' of Cultural Heritage. Recent discussions in heritage studies notably reference what could be termed a third dimension of heritage—the connection between material and immaterial aspects (Simi, 2024). This third 'pole' is reflected in the *Quebec Declaration on the Conservation of the Spirit of Place* (ICOMOS 2008), which underscores the necessity of exploring the relationship between tangible and intangible heritage, defining it as the 'spirit of place'. While not explicitly referencing its theorist (Norberg-Schulz, 1980), the declaration underscores its relational nature as characterized by "a pluralistic and dynamic character, capable of possessing multiple meanings and singularities, evolving over time, and belonging to diverse groups" (ICOMOS 2008). The document urges a multidisciplinary redefinition of the spirit of place, expanding its semantic scope. This orientation aligns with international charters (Faro Convention, 2005), highlighting that it is not merely objects and sites themselves that constitute identity, but the meanings and uses attributed by people for the values they represent within a communal heritage.

A key interpretative lens for this expanded understanding of the spirit of place, in a relational sense, is inseparably tied to the corporeal dimension. This mediative element, as the felt body, absent in Norberg-Schulz's original Genius Loci definition, is considered the resonating chamber through which networks of relationships reverberate, creating new meanings and significances. Here again the atmospheric approach (Schmitz, 2019) of neo-phenomenological nature is the conceptual horizon that can catalyse the strategic role of the body as a generator of the spirit of place (Griffero, 2015).

In this complex network of relationships, the affective dimension is central to generating both a sense of belonging (in a broad sense) and a sense of presence, and to stimulating care actions. Indeed, it is only when something is 'present' to us beyond any rhetoric that we can establish a sense of belonging with it that could be defined as reciprocal, that is, bidirectional. The act of caring, which is the most delicate because it requires dedication, must be based on these premises to be sustained over the long term.

Within this theoretical framework, the paper seeks to investigate practical design examples that explore ways of imbuing presence within the archaeological discourse, embracing a multiplicity of temporalities (Tamm & Olivier, 2019).

It is important to note that the reality of archaeological site enhancement projects is highly diverse, and there are no ready-made solutions that can be universally applied. Typically, a set of site-specific and tailor-made design actions is recommended. Therefore, our goal is not to find ready-made formulas but to understand how, through the atmospheric approach, we can enrich the temporal narrative by integrating and dialoguing between scientific data and imaginative dimensions, between the temporal depth inherent in an archaeological site and the *hic et nunc* that emerges between the body and the place.

2. ATMOSPHERIC DEVICES FOR ARCHAEOLOGY

In the first sections, two case studies related to archaeological enhancement projects and atmospheres are presented. In particular, the first case, which will be discussed in more detail, aims to illustrate how certain design choices and devices —what we might call *proto-atmospheric,* in that they are not explicitly defined as such—succeed in expanding the historical narrative in two very different ways, actively engaging the visitor's experiential dimension. We use the term 'device' in a broad sense, referring both to objects and to a design approach capable of incorporating various elements and making them resonate together. A collection of such devices - an *assemblage* - works harmoniously to create an atmospheric field that, in concert with the historical-artistic narrative, constitutes the chronotopic medium in which the visitor moves.

2.1 Kalkriese archaeological park: the Varus battlefield site (Lower Saxony, Germany)

The archaeological park of Kalkriese is unique, narrating a historical an event rather than representing a stationary entity like a city or settlement. The site is the supposed theatre of one of the most significant military defeats by the roman empire: the Battle of the Teutoburg Forest. In 9 CE the battle, led by Arminius against Publius Quinctilius Varus and his Roman legions, resulted in a devastating ambush that annihilated the Roman forces.

For the purposes of synthesis, this analysis will concentrate on two principal aspects of the Gigon & Guyer project (Marquez, 2000), while recognizing that the project encompasses additional noteworthy elements: firstly, the pathway system designed to immerse visitors in the kinetic dynamics of the battle, and secondly, the narrative strategy of the pavilions.

Figure 1 - The different types of pathways according to the diverse narratives. Source: Francesco K.B. Simi (2023)

2.1.1 The dynamic perception of the path system between discovery and invention

The paths within the network (Fig.1) serve as the primary framework for the unfolding narrative, following two distinct design paths. One focuses on the Germanic rampart, a significant archaeological feature restored to its original height and topped with a shrub fence based on archaeological findings. The other path reconstructs the route of the Roman troops, extrapolated from fragmentary evidence and artifacts discovered from the battle. Design principles emphasize material authenticity, using poor materials like earth, wood, and raw steel, and aim to enhance dynamic perception within the open landscape, actively engaging visitors. The paths themselves are integral to the exhibition, particularly in the southern part of the park where an organic track network allows visitors to navigate the dense Teutoburg forest, experiencing the original landscape and the perspective of the Germanic forces just prior to their attack.

2.1.2 The pavilions as an experiential and sensorial time-short-circuit

A system of three pavilions is arranged along the sinuous path in Corten steel slabs that evoke the march of the Roman legions. The aesthetic output of the pavilions recalls that of the main building that houses the museum: essential geometric shapes and the Corten cladding. This makes these mysterious objects of the elements only seemingly episodic, fragmentary, but, in reality, immediately referring to the unity of the whole exhibition apparatus. The pavilions are located in between the roman legion path and the Germanic front, highlighting both metaphorically and semantically their connective nature, in the middle of the action. We will focus in particular on two, considering that the third one was under refurbishment during my last visit.

The first pavilion (Fig.2), following the visit route, is the 'Seeing' pavilion. An ascending ramp emphasizes the detachment from the plane of the narrative giving access to an alienating environment, immersed in darkness. It is a darkroom that projects, through a lens full of water, the upside-down image of the surrounding landscape. The pavilion has no educational or descriptive intentions: it is the opportunity, on

the part of the visitor, of a moment of recollection, the message remains open and ambiguous: it is up to the sensitivity and interest of the visitor to process it. Is this the last distraught look of a Roman soldier falling in battle? Is it a suggestion to flip our point of view and to broaden our awareness about the nature of these places? Or is it the underlining of how our contemporary gaze is, to some extent, hopelessly distorted with respect to the historical time depth.

Figure 2 - The 'seeing pavilion' (on the left) gives us a different perspective on the physical and historical landscape. The 'earing pavilion' with the acoustic device that rotates to intercept the different sounds of the surroundings. Source: Francesco K.B Simi (2023)

The second pavilion along the path focuses on auditory perception (Fig. 2), accessed similarly to the first but notably elevated from the ground. Inside, the space is acoustically isolated, dominated by a large sound pipe that occupies most of the small area. Visitors can manually adjust the pipe to capture sounds from the surroundings. This amplification pavilion, akin to its predecessor, immerses visitors in a present experience, fostering engagement and curiosity. The playful design, resembling an antique ear trumpet, encourages imaginative listening to natural sounds that once accompanied Roman legions, juxtaposed with the chaotic Germanic attack. Alternatively, visitors can contemplate the profound silence that time has left behind, alongside heightened awareness of contemporary site sounds, such as those from nearby highways.

In conclusion these sensory pavilions establish an additional layer of the narration; they do not add information, they do not provide a unique narrative, but they create sensorial and perceptual moments that enrich the experience of the site visit. They represent an important implementation to the archaeological account which is usually dominated by the visual description. In this sense this narration strategy founds an active and present association: a short circuit between the fragmentary traces of the past and the transient continuity of the present.

2.2 Xanten archaeological park (North Rhine-Westphalia, Germany)

The opposite approach is represented by the Archaeological Park of *Colonia Ulpia Traiana*, located on the *Limes,* the ancient border between the territories of the Roman Empire and the Germanic peoples. This site offers an intriguing contrast to the Kalkriese example and merits brief mention, expanding the framework of atmospheric application in the field of archaeology.The strategy here is not allusive; a partial reconstruction is preferred, resembling ruins in the case of the Temple and complete

in the case of the domus or city gates (Fig.3), even extending to reconstructing furniture and wall decorations. Although it may seem a very definitive approach to the theme of reconstruction and evoking the past, walking through these reconstructed environments activates a series of emotions that not only resonate with the places visited but also resonate with those already experienced in other parts of the Roman world, especially in ruined contexts. In Xanten, from an atmospheric perspective, the kinaesthetic dimension is emphasized with a preference for reconstruction.

Figure 3 - The massive reconstruction of environments, risky from the point of view of correct interpretations, nevertheless allows for an immersive experience of the body through movement within the reconstructed spaces. Source: Francesco K.B. Simi (2023)

2.3 Valorisation project of the central archaeological area of Beja (Alentejo, Portugal)

In this paragraph, we will examine an architectural project developed as part of a master's thesis focused on the synergy between archaeology, architecture, and landscape. The work was carried out as research through design, enabling operational engagement with specific theoretical aspects; It is for its experimental level that the study is presented here. The project focuses on the valorisation of an archaeological excavation within an urban context. To achieve this goal, a strategy using architectural devices was employed to create atmospheres and enhance visitors' experiential engagement with the site, all while remaining grounded in archaeological data and consistent with scientific methodologies.

2.3.1 Contextualisation of the Project area

The project focused on the city of Beja, in southern Portugal, and the enhancement of the archaeological area of the ancient Roman *forum* of what was then *Pax Iulia* (Lopes, 2003). This context was considered suitable for operationally testing and applying operational concepts related to atmospheres. From a geomorphological perspective, the city of Beja is isolated atop a hill, contrasting with the surrounding plains. Historically, however, it occupies a central position within an ancient communication network between the Guadiana and Sado rivers. Since the end of the second millennium BCE, these rivers have formed the backbone of the region's development. Considering these factors, Beja can be considered as an interface: holding a central position relative to the primary rivers, the secondary hydrographic network, the fertile belt, and the ancient road network, and it is equidistant from both the Atlantic and the Mediterranean. The historic city is surrounded by medieval walls built on Roman foundations. Four main gates align with the principal axes of the Roman city,

Pax Iulia, the capital of *Conventus Pacensis* and the second city in Lusitania. Founded on a 7th-century BCE Iron Age settlement on the hilltop, the Roman city expanded during Julius Caesar's time, extending eastwards. From the 8th century CE, it became *Kura* of Beja, an Islamic administrative center. Few remnants of this period survive, with the Islamic city's image now reduced to scattered portals and approximations from archaeological excavations. In the early 16th century, Roman monuments were repurposed for public buildings. The city center shifted to the area of the Roman Forum, reconfiguring itself on the oldest urban form. The archaeological area under excavation and the proposed enhancement project, are located at an outlying point of the fortified city, isolated within an urban block between the medieval wall and the major public square of the city. Based on current knowledge, this archaeological window is interpreted as the roman *forum* of *Pax Iulia*. Today, archaeological evidence from all phases of the city's history is condensed into an urban area of approximately 1,000 square meters, illustrating the city's evolutionary process (Fig.4).
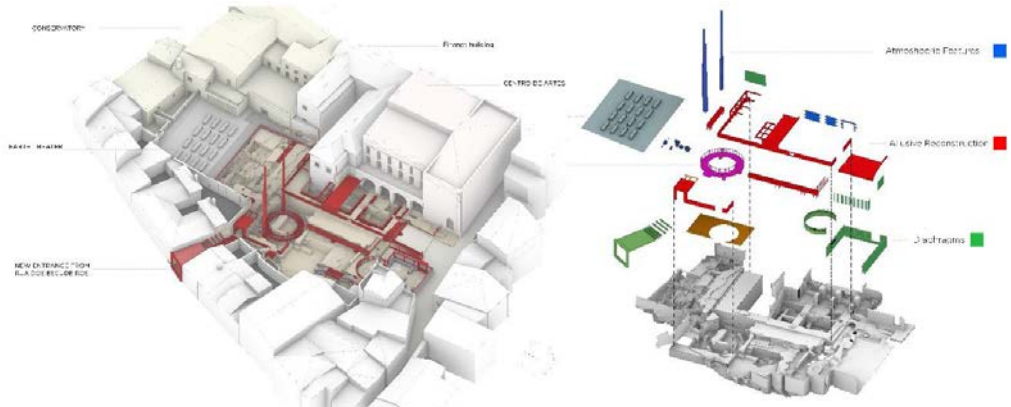
Figure 4 – Isometric view of the project and the archaeological area. Isometric diagram of the main elements of the project

An Iron Age structure, still in use during the city's Roman founding, includes a partially explored defensive wall. Around 25 BCE, Augustus initiated a temple, later replaced during Tiberius's reign. These Roman edifices now survive only as foundations, impacted by subsequent occupations leading to their deterioration. Neglected since the late 14th century, the area saw rediscovery during reservoir construction in 1943. A fire in 2008 prompted expanded excavations and the controversial dismantling of the damaged water tower in 2015, despite local sentiments regarding its symbolic value.

Figure 5 – the Islamic shadow. Render.

2.3.2 The project

The archaeological area is not a *sterilized* space that favours the narration of one historical era over another; rather, it is a place of contamination, especially in an urban context. It is of strategic importance, with the help of archaeologists, to find a shared narration mediating all the elements of the excavation context.

Derived from initial analysis, the project's main strategic elements for this study are as follows: ensuring connectivity between the site and the city, facilitating interaction with key buildings and the major square of the city; enhancing community involvement and ownership through a public space respectful of archaeological remains and tied to collective memory; using archaeology to explore the city's dynamic evolution, offering a narrative spanning ancient to modern times; and creating immersive visitor experiences that eschew didactic approaches, focusing on atmospheric creation and encouraging return visits.
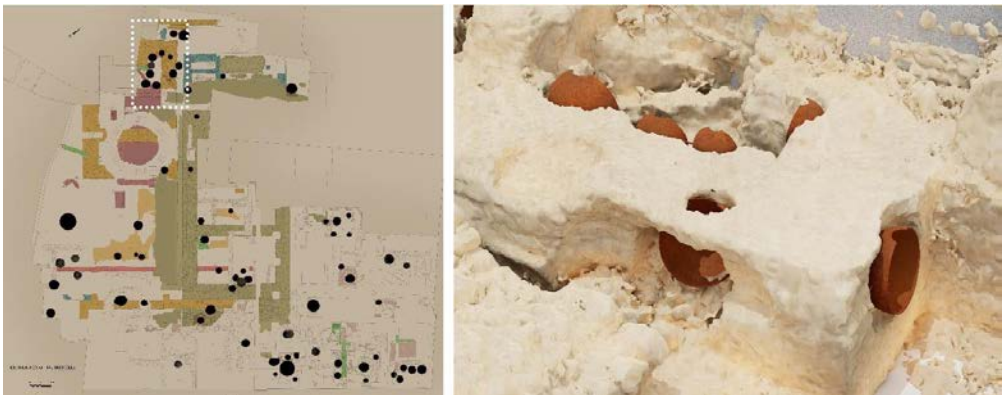
Figure 6 – On the left: the archaeological plan on the site highlighting the void presence of the talhas and the intervention area. On the right: render of the 'resounding talhas' placed in the voids scattered throughout the foundations of the Augustan temple.

The project is structured accordingly to these strategic points and follows the proposed goals. It stands as an open work that can be modified accordingly with archaeological needs, both from the scientific and the local community point of view. or the purposes of this study, we will focus exclusively on the narrative elements that exemplify the atmospheric paradigm, even at the expense of making the overall project less comprehensible. Specifically, three interventions are planned, referred to in this work as *objects à réaction atmosphérique*, clearly echoing Le Corbusier's *objets à réaction poetique (Fig.4)*. With the *objects a réaction atmosphérique* we refer to the part of the project that leaves room for a dimension less strictly linked to the archaeological data while being inspired by it. This approach, so intimately place based, has been possible thanks to the direct experience in the months of excavation; an interpretative drift that associates the spirit of the place with the scientific data.

The phase of the Islamic occupation is manifested through the almost pervasive presence of large pits and intrusions in the ancient structures for the purpose of reusage. The eastern part of the temple of Tiberius is characterized by a vacuous space in which is just possible to perceive the shape of the Islamic building cut in the opus signinum of the water basin. Inspired by Islamic windows, we propose to install filters, closing the City's Museum arches, respecting the height of the podium of the temple (Fig.5). The idea is to re-establish the relationship of the cut-out space of the Islamic phase with the well-preserved remains of the opus signinum, using a play of light and shadow. Towards the sunset the shadow filtered by the characteristic plot of Islamic windows is projected onto the opus signinum recreating this connection in a sensorial perceptual way and, creating a space of shade, of coolness, protecting from the scorching summer temperatures of this geographic area.

The pits, which are the only remains of the Islamic phase, housed large terracotta jars (*talhas* in Portuguese) for the preservation of food. In the eastern side of the foundations of the temple of Augustus the concentration of these holes is particularly significant.
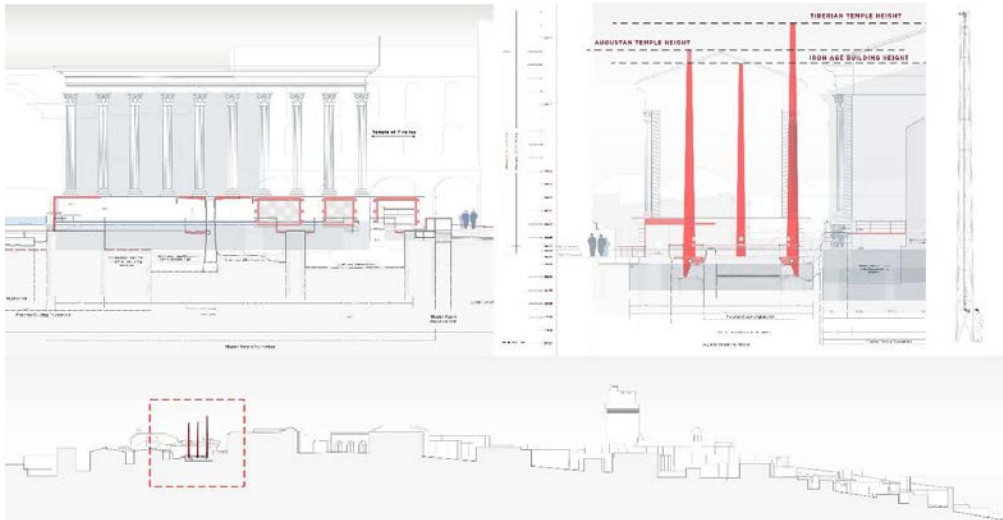
Figure 7 – Top left: the architectural elements of the project recreating in an allusive way the basement of the Tiberian temple. Right and bottom: The masts in their context connecting visually the site, the city and the territory.

Here it is planned to house, in the recesses of pits, specifically designed hollow metal hemispheres evoking the presence of the *talhas (Fig.6)*. These hollow half-spheres are conceived with different thickness so that, affected by rain, they would resound in different wavelengths. This would optimize, we believe, the discrete presence of voids as resonant shapes. Within each of the three vertical elements a periscope is placed, looking at three different directions of the landscape. From the circular platform while visiting the archaeological features it is possible to observe inside the periscopes (Fig.7). They are objects that we define atmospheric in as much as they add an additional experiential dimension, engaging body, senses and movement. They respond to the reconnection of the site to the city and the surrounding landscape in a dual visual relationship. From the outside to the inside: they engage in the city skyline, establishing a visual reference. From the inside to the outside: they project an external image of three different points taking advantage of the orographic conformation of the city.

3. FROM HETEROTOPIA TOWARDS KAIROTOPIA

An archaeological site will always remain, in Foucault's (1986) terms, a *heterotopia*— a space of otherness or a world within a world. However, through the atmospheric approach, we can intertwine an affective dimension with these otherworldly realms by engaging the lived body. The body thus becomes an active part of the process of knowledge.

In conclusion, this brief excursus has highlighted how an alternative approach can reveal the potential of the archaeological site to engage with the present and convey

phenomenological realities that complement scientific data, achieving results that extend beyond mere empirical findings and traditional narrations. In this context, the emphasis has been placed on a qualitative dimension of time—referred to in ancient Greece as *kairos*, as opposed to the quantitative concept of *chronos*—that occurs within specific spaces (*topoi*). This leads to the conceptualization of the archaeological site as a locus of opportune time, or *kairotopos*.

4. BIBLIOGRAPHY

Bille, M., & Sørensen, T. F. (Eds). (2016). Elements of architecture: Assembling archaeology, atmosphere and the performance of building spaces. Routledge.

Böhme, G. (2017). Atmospheric architectures: The aesthetics of felt spaces. Bloomsbury Academic.

De Matteis, F. (2018). The City as a Mode of Perception: Corporeal Dynamics in Urban Space. Handbook of Research on Perception-Driven Approaches to Urban Assessment and Design. IGI Global.

De Matteis, F. (2021). Affective spaces: Architecture and the living body. Routledge.

Lopes, M.C. (2003). A Cidade romana de Beja: Percursos e debates em torno de 'Pax Iulia'. Universidad de Coimbra.

Otte, M. (2000). L'archéologie et l'architecture. Etudes et Documents.

Foucault, M. (1986). Of Other Spaces. Diacritics No. 16, 22-27

Griffero T. (2015). Trovato o creato? Il Genius Loci come esperienza (atmosferica), in SENSIBILIA 9. Mimesis.

Gumbrecht, H. U. (2014). Our Broad Present: Time and Contemporary Culture. Columbia University Press.

Hamilakis, Y. (2013). Archaeology and the senses: Human experience, memory, and affect. Cambridge University Press.

Marquez, F. (ed.) (2000). El Croquis No. 102: Annette Gigon & Mike Guyer 1989-2000. El Croquis.

Merleau-Ponty, M. (1964). The primacy of perception. Northwestern University Press.

Pallasmaa J. (2014). Space, place and atmosphere. Emotion and peripheral perception in architectural experience. Lebenswelt, 4(1), 230–245.

Pérez-Gómez A. (2016). Attunement. Architectural meaning after the crisis of modern science. MIT Press.

Renfrew, C., & Bahn, P. G. (2000). *Archaeology: Theories, methods and practice.* Thames & Hudson.

Schmitz, H. (2019). New phenomenology: A brief introduction. Mimesis International.

Simi, F.K.B. (2024). Patrimonio Culturale come Patrimonio Relazionale. 39° convegno internazionale Scienza e Beni Culturali. Edizione Arcadia Ricerche.

Sørensen, T. F. (2015). More than a feeling: Towards an archaeology of atmosphere. Emotion, Space and Society, 15, 64–73. *https://doi.org/10.1016/j.emospa.2013.12.009*

Tamm, M., & Olivier, L. (Eds). (2019). Rethinking historical time: New approaches to presentism. Bloomsbury Academic.

Zumthor, P. (2006). Atmospheres. Birkhäuser.

THE CITY AS A COSMOPOLITICAL BOARD GAME: CANDOMBLÉ TERREIROS IN BAHIA, ATMOSPHERES, AND DESIGN GAMES

A CIDADE COMO UM JOGO DE TABULEITO COSMOPOLÍTICO: TERREIROS DE CANDOMBLÉ NA BAHIA, ATMOSFERAS, E JOGOS PROJETUAIS

Bruno Andrade
Researcher
REMIT - Research on Economics, Managament,
and Information Technologies
Department of Architecture and Multimedia Gallaecia,
Portucalense University
brunoandrade@upt.pt

Leonardo Izoton Braga
Assistant Professor
ESDI - Industrial Design SchoolDepartment of Architecture and Urbanism,
Rio de Janeiro State University (UERJ)
lizoton@esdi.uerj.br

Celso Almeida Cunha
PhD Candidate
EtniCidades: Ethnic-Racial Studies GroupSchool of Architecture,
Federal University of
Bahiacelso.almeida@ufba.br

ABSTRACT

The Anthropogenic march of urbanization and environmental degradation threatens our built heritage and countless species. Imagine a board game where heritage-based design integrates human and non-human agents, their spaces, and atmospheres, creating a playfield for climate adaptation reflections. The proposed board game concept is a journey through the mood of Candomblé Terreiros in Bahia, Brazil, where players role-play as spiritual leaders, community champions, government organisations, plants and animals. They negotiate climate adaptation challenges to preserve sacred rituals, cherished artifacts and sacred groves, all while navigating a living map of Salvador. As players succeed to collaborate, their decisions shape the narrative, blending reality and imagination with cosmological proportions. Methodologically grounded in the literature, this game aspires to be an educational and a heritage management tool of Afro-diasporic cosmoperceptions. The result is a reflexive proposal, a conceptual exercise that demonstrates the game's potential in translating sensory experiences into actionable preservation strategies.

KEYWORDS: Atmospheric Architecture. Design Games. Heritage-Based Design. Human and Non-Human Agency. Cosmopolitics.

RESUMO

A marcha antropogênica da urbanização e degradação ambiental ameaça nosso patrimônio construído e inúmeras espécies. Imagine um jogo de tabuleiro onde o design baseado no patrimônio integra agentes humanos e não humanos, seus espaços e atmosferas, criando um campo de jogo para reflexões sobre adaptação climática. O jogo de tabuleiro conceitual proposto é uma jornada através do ambiente dos Terreiros de Candomblé na Bahia, Brasil, onde os jogadores assumem papéis de líderes espirituais, defensores comunitários, organizações governamentais, plantas e animais. Eles negociam desafios de adaptação climática para preservar rituais sagrados, artefatos preciosos e bosques sagrados, tudo isso enquanto navegam por um mapa vivo de Salvador. À medida que os jogadores colaboram com sucesso, suas decisões moldam a narrativa, mesclando realidade e imaginação em proporções cosmológicas. Metodologicamente fundamentado na literatura, este jogo aspira ser uma ferramenta educacional e de gestão do patrimônio das cosmopercepções afro-diaspóricas. O resultado é uma proposta reflexiva, um exercício conceitual que demonstra o potencial do jogo em traduzir experiências sensoriais em estratégias de preservação acionáveis.

PALAVRAS-CHAVE: Arquitetura Atmosférica. Jogos Projetuais. Projeto Baseado no Patrimônio. Agência Humana e Não Humana. Cosmopolítica.

1. INTRODUCTION

Anthropogenic impacts of unprecedented planetary urbanization and environmental degradation have been affecting the conservation of built heritage and the life of

many species on Earth. We argue that such phenomena can be investigated as a network made of human and non-human agents (Latour, 1993; 2007; Grusin, 2015), spaces and their atmospheres, and can be experienced, and represented as a geogame.

Geogames, participatory geo-location games (Ahlqvist and Schlieder, 2018), can provide a group of players, with individual agendas, goals, and a shared value system program (Andrade and Pereira Roders, 2022), the possibility to design from heritage (Meurs, 2016). Urban atmospheres (Gandy, 2017) can be experienced as a living board, where agents make choices, negotiate, and face constraints about where, how, and when to move and change an existing field (Habraken and Gross, 1988; Helmersen and Silberberger, 2018).

A Modern Board Game (MBG) (Tan, 2014; Sousa, 2023) can be a type of geogame, a method of individual and collective imagination, and a path to think about issues of situated knowledges (Haraway, 1988). We aspire to expand MBG by introducing non-humans' agencies as a cosmopolitical dimension (Stengers, 2005), associating values to architecture, animism, and species on the construction of shared realities. This brings together reality and fiction, narratives and play, physical places and imagined places.

Through role-playing and storytelling, the board game under development will allow players to experience the mood of one of the eight nationally listed Candomblé Terreiros in Bahia, and to support its preservation through architectural and urban design. Hence, the goal is to develop a board game design concept in order to allow players to experience the mood of the place and support its preservation through design. The concept is structured as a multi-player collaborative game, with agents' profiles, rules, obstacles, rewards, and winning conditions.

Atmospheres are the spheres of felt bodily presence, mediations between objective facts of the environment and subjective feeling of them (Böhme, 2017). Candomblé Terreiros, Afro-diasporic and religious places of worship in Brazil, is an example of how atmosphere can be created to modify people's moods through bodily experience. Candomblé is practiced through dancing, singing, playing drums, embodying orishas[1], cooking for and eating with them.

The preservation of these temples has been at risk due to increasing extreme climate events. These have been threatening the integrity of attributes and associated values (Tarrafa Silva and Pereira Roders, 2021), i.e., 1) compromising the performance of ritualistic practices and transmission of traditional knowledge, and 2) damaging

---

[1] The Orixás are Nagô deities brought together in Bahia by enslaved Africans, forming a pantheon distinct from their worship in Africa, where each region venerated specific deities. The Orixás embody the pure, concentrated energies of nature. Pierre Verger, in his studies of African and Brazilian traditions, connects the Orixás to the concept of family, suggesting that these deities represent deified ancestors. These ancestors, in life, established relationships with natural and cosmic forces—such as thunder, wind, and water—or mastered specific activities like hunting, metalwork, or medicinal plant use, thus securing their divine status (Velame, 2019).

immovable and movable attributes. Hence, we undertook literature review and questionnaires to produce the board game concept. Built heritage and ritual practices will be translated over a board, where the atmospheric architecture is set up.

2. REFERENCE CASES

In exploring geogames aligned with our topic, "Odoyá" (Araújo et al., 2021) stands out as an educational digital game designed to explore the cultural and spiritual values of Candomblé through the narratives of Yemanjá, the orisha of the sea, a pivotal deity within the Afro-Brazilian pantheon. Players engage in missions to protect marine and coastal ecosystems, blending mythological teachings with real-world ecological challenges. This game highlights the role of traditional knowledge in addressing climate change impacts.

Similarly, "Terra Indígena" addresses environmental and cultural challenges faced by indigenous communities, and "Quilombola" explores the history and struggles of Quilombola communities (Araújo et al., 2021). These games set a precedent for how interactive experiences can convey the importance of intertwining the preservation of both cultural heritage and environmental integrity. These reference games highlight the significance of collaboration, adaptive thinking, and the preservation of a diverse network of cultural values - spiritual, ancestral, and environmental.

3. CASE STUDY: ILÊ AXÉ IYÁ NASSÔ OKÁ (CASA BRANCA DO ENGENHO VELHO)

The Casa Branca terreiro in Salvador is one of the oldest and most recognized Afro-diasporic temples of worship that have shaped the cultural and spiritual landscape of Bahia and Brazil. The terreiro is celebrating 40 years of heritage classification by the National Institute of Historic and Artistic Heritage (IPHAN), as it continues to overcome challenges and shape the preservation of Candomblé temples and sacred groves.

Casa Branca emerged as a sanctuary for enslaved Africans and their descendants, offering a space for religious and cultural expression at a time when such practices were harshly suppressed. Over the centuries, the temple has evolved, adapting to changing social and political contexts while staying true to its core values and rituals (Sant'Anna, 2012). It is more than just a place of worship, but a living archive, embodying the resilience, creativity, and cultural synthesis of the Afro-Brazilian heritage (Dourado, 2015).

The heritage classification ignited an unprecedented social mobilization movement both in Bahia and nationally. This movement opposed the threats of expulsion and destruction that loomed over Casa Branca's architectural complex. Casa Branca's cultural significance is multifaceted. It is a crucial repository of traditional knowledge,

oral tradition, oracle, music, dance, language, cuisine, traditional clothing, crafts, rituals and festive events (Serra, 2008). Moreover, its recognition by IPHAN highlights the importance of Afro-Brazilian heritage within the national narrative, promoting greater awareness and respect for the contributions of African-descended peoples to Brazilian culture.

However, despite its recognized status, Casa Branca faces several preservation challenges. Heritage management and policymaking need to address ongoing threats posed by urbanization, environmental degradation, and climate change. Casa Branca is not only a vital cultural and spiritual place but also a symbol of the enduring legacy of Afro-Brazilian heritage. Preserving it requires comprehensive and innovative heritage-based design and management approaches, especially targeting young people, to address current issues and anticipates future impacts.

4. THEORETICAL FRAMEWORK

Our theoretical framework is an intricate and adventurous journey comprising four key elements: cosmopolitical proposal, aesthetics of atmospheres, geogame concept, and cultural heritage values. These elements converge to build the main thesis: the city as a cosmopolitical board game.

Firstly, we consider the city as an expression of Gaia. The city is a dynamic assemblage of humans and non-humans, a hybrid network that co-creates the urban fabric as an artifact. In the Anthropocene era (Crutzen & Stoermer, 2000), humanity has transcended biological influence to become a geological force, posing significant threats such as climate change, pollution, deforestation, and mass extinction. Recognizing the agency of non-humans in this material network is crucial. As James Lovelock posited, "The Earth system behaves as a single, self-regulating system comprised of physical, chemical, biological, and human components" (Lovelock, 2010, p. 179).

The challenge lies in bringing non-humans - things, technologies, animals, plants, and minerals - into the political arena as active actors within an intricate network and turning objects into subjects of a complex system that we call Gaia This shift requires us to transform our anthropocentric view, perceiving objects and phenomena as ongoing processes that can be continuously rebuilt or recombined. This critical stance involves valuing non-humans as active agents. It does not equate humans and non-humans in terms of intentionality but legitimizes their presence as active nodes within the assemblage of multiplicities that express itself as Gaia.

Stengers (2005) introduced the cosmopolitical proposal to explore the production of worlds by integrating science and politics. This approach perceives each fact as a constructed result of negotiations between humans and non-humans, establishing a knowledge politics. Combining material constructivism and political ecology, Gaia is

viewed as an assemblage of living processes, where non-human agencies are valued to rethink possible regenerated worlds. Bodies, things, and environments are fibers of the same flesh of Gaia, a concept not merely metaphorical (Coccia, 2021).

The city emerges as a space-time of conspiracy, an arena of encounters and conflicts among diverse beings, forging politics through everyday interactions. This assemblage of humans and non-humans blurs the boundaries between nature and culture, calling for a new paradigm of knowledge that transcends the Modern Constitution of purity (Latour, 1993).

In seeking to experiment with producing new realities, we conceptualize the city as a geogames (Gaia + Game), a metaphorical and living board game where 'geo' extends beyond just Earth. This game is situated, with modes of feeling, epistemologies, and environments that create a gameplay experience which makes us face Gaia (Latour, 2017). The game is a meaningful political and collective act, fostering complex relations aligned with the cosmopolitical proposal. Thus, we advance the idea of the city as a cosmopolitical board game, embracing plural knowledge systems and fostering a heterogeneous community of differences where every actor is an important agent in the network with an active voice and rights, contributing to a more sustainable, equitable, and improved world.

In this framework, we view the city as a geogame and cosmopolitical game, a process of atmospheric production. A game aiming to achieve these objectives must produce narratives, characters, territories, and rules that, together with a multiplicity of agents, create urban atmospheres (Gandy, 2017). These atmospheres link environmental qualities and human states, fostering a co-responsibility among agents, objects, and territorialities within the game, cultivating new ways of thinking, feeling, and acting in daily life (Böhme, 2017). Co-responsibility emerges from the creation of collective and shared atmospheres that integrate body, territory, culture, and play. It is sustained by an ethical, aesthetic, and political commitment to engage with gaming rules, actions, and goals. Then, we can conceptualize the city as a geogame, a technology of cosmopolitical mediation.

This approach merges the pleasure of play with learning through cultural and urban narratives. It opens possibilities for acting and performing diverse knowledge and characters, creating situations that require physical and intellectual engagement, feeling and thinking. The geogame experience can be seen as soft politics, a dispute over the creation of possible worlds in cognitive and fictional realms. It is an exercise of individual and collective responsibility, decision-making amidst the dangers and potentialities of inhabiting anthropogenic climate environments. Soft politics serves as a playful yet serious engagement in everyday political life, mediating between communities and governments and contributing to the regeneration of Gaia.

5. METHODOLOGY

Building on the "Preserving Legacies: A Future to Our Past" project, in which Candomblé Terreiros are an Observer Site, we aim at developing experimental research to investigate afro-diasporic cosmoperceptions (Castro, 2001; Oyěwùmí, 1997; Santos, 2012; Sodré, 2019; Velame, 2019), and describe a different sensually enculturated way to experience space over a board game. This paper focuses on the first step of an original game currently under development, a Gaia-oriented geogame in the form of a board game concept.

Historically, board games have served as mediums for learning, entertaining, and socializing, with origins tracing back to ancient civilizations like "Senet" and "Mehen" in Egypt (3500-3000 B.C.), "Backgammon" (3000 B.C.), and the "Royal Game of Ur" in Mesopotamia (2500 B.C.) (Depaulis, 2020). In the Roman Empire, they were played in public spaces and baths, known as "tabula lusoria", offering social interaction and revealing players' moral and intellectual qualities through strategic play.

Building on this, Modern Board Games (MBG) incorporate unique themes, components such as cards, dice, and boards, and intricate mechanics involving rules and interactions (Sousa & Bernardo, 2019). In Brazil and Portugal, the board gaming community is thriving, with numerous groups, associations, shops, cafes, and events like "LeiriaCon" in Leiria and "SeJoga" in Rio de Janeiro. Reflecting this growing interest, the global market is projected to expand significantly, from $18.93 billion in 2022 to $39.99 billion by 2028.

How can shared atmospheres be produced in a board game to translate the sensory aspect as being there? The reference game cases have been foundational in shaping and validating our board game concept centered on experiencing and preserving cultural heritage amidst climate threats. We followed the principles of design games (Habraken & Gross, 1988), focusing on designing as a social activity involving cooperation and negotiation, and as a process of morphological change. By exposing the atmospheres of cultural heritage - assemblage, cosmopolitics, and cosmoperception - we enhanced the design focus.

Our board game concept focuses on preserving Casa Branca's architectural complex by merging storytelling and experiential design. It aims to engage players in safeguarding the site from climate threats, using atmospheres and storytelling to evoke the sacred and historical essence of the terreiro. At the core of the concept is the exploration of diverse perspectives and collaborative decision-making. Players assume roles representing both human and non-human entities within and around the site.

Through semi-structured gameplay, participants discuss and propose design interventions for climate resilience while preserving the spiritual and architectural integrity of the temple. The game mechanics simulate real-world challenges faced by Casa Branca, integrating elements of resource management, strategic planning, and

ethical decision-making. Players navigate scenarios that balance climate resilience with cultural preservation, confronting dilemmas that challenge their understanding of heritage agency. The narrative unfolds through immersive storytelling, where atmospheric cues and thematic events evoke the spiritual and cultural dimensions of Casa Branca, enhancing players' emotional engagement and ethical reflection.

By immersing players in this interactive experience, the board game not only aims to educate about the cultural significance of Casa Branca but also fosters a collective responsibility towards its preservation. Through collaborative dialogue and imaginative design proposals, participants gain insights into the complexities of cultural heritage management amidst climate risks. This promotes a holistic approach to sustainability rooted in cultural sensitivity and respect for diverse worldviews.

6. RESULTS

The board game concept "Guardians of the Terreiro" serves as a heritage education tool, using narrative design to preserve and disseminate the cultural heritage of the temple. Players assume diverse character roles, each with unique abilities, to navigate challenges and collaborate on protecting and managing the terreiro against climate threats. This critical and immersive narrative provides a dynamic method to understand and appreciate the rich cultural heritage of Casa Branca, fostering a connection and awareness among players and integrating a more-than-human perspective. The detailed development of the board game concept is presented below as well as possible gameplays to illustrate the board game dynamics.

6.1 Board Game Concept: A Cosmopolitical Simulation

In "Guardians of the Terreiro" the gameplay transforms the city of Salvador into a dynamic map where atmospheres play a crucial role in fostering a sense of co-responsibility among players. As they navigate the challenges of preserving the Casa Branca terreiro amidst climate threats, the game's atmospheres - created through a blend of environmental, cultural, and spiritual elements - become a central force driving player collaboration. These atmospheres are essential in shaping how players think, experience, and design.

By immersing players in the rich and nuanced atmospheres of the temple, the game cultivates an understanding of the interconnectedness between heritage, environment, and community, prompting players to negotiate and act as guardians who are co-responsible for the site's resilience and preservation. This approach not only blurs the boundaries between nature and culture but also cultivates a shared responsibility for managing these worship temples. To illustrate this, below follows a few possible gameplays and illustrated images of our geogame concept to be further developed.

6.1.1 Gameplay example 1: The Ritual of Resilience

In this scenario, players begin their journey with a severe storm approaching the city, threatening to flood the temple and its surrounding community. Each player selects a character, such as a spiritual leader, an ancestral spirit (Egun), or a blue-green infrastructure element like a sacred tree. The game board, an atmospheric map of Salvador, is marked with paths leading to key areas in the terreiro where players must act to prevent damage and preserve cultural practices.

As the storm draws closer, players must use their unique abilities to collaborate on reinforcing the terreiro's structures, protecting sacred artifacts, and ensuring the continuity of ritual practices. The spiritual leader might lead a community ritual to appease the orishas, while the ancestral spirit uses their wisdom to guide others towards sustainable solutions. The blue-green infrastructure may help absorb excess water, preventing flooding in critical areas. Players earn wisdom points for successful actions, which contribute to maintaining key values and attributes. The storm passes, and players assess the impact of their decisions, learning valuable lessons about resilience and the importance of cultural heritage in the face of climate change.

6.1.2 Gameplay example 2: The Drought of Memory

In this scenario, players face the challenge of a prolonged drought that threatens the natural resources essential to the Casa Branca terreiro's rituals. As water sources dry up, the community's ability to perform critical ceremonies diminishes, putting the transmission of traditional knowledge at risk. Players must choose characters like a community researcher, a preservation institution representative, or an Orisha divine spirit, each bringing different skills to the table.

The game begins with the board indicating the areas most affected by the drought. Players must navigate these challenges by securing alternative water sources, advocating for environmental protections, and finding innovative ways to sustain rituals despite the lack of water. The researcher might gather knowledge on drought-resistant plants to support the terreiro's green areas, while the preservation institution works to secure funding for sustainable infrastructure. The Orisha divine spirit might lead players to hidden natural resources that could be utilized to sustain the community. As players collaborate, they gain or lose wisdom points based on the effectiveness of their strategies, directly influencing the terreiro's ability to maintain its cultural and spiritual values.

Figure 1. Board Game concept illustrated.
Left: The city as a board game metaphor. Right: One representation of the board gameplay.
Source: Made using Abacus.AI Smaug and ChatGPT 4o.

7. DISCUSSION

The proposed cosmopolitical board game design concept incorporates storytelling and role-playing mechanics to create an immersive experience of Casa Branca's atmospheres. It explores the memories and histories of various agents within the context of the terreiro. This approach enables players to explore the mood and ambiance of the site while striving to preserve values and attributes at risk through thoughtful and imaginative design.

7.1 Heritage Management: there is no lack of good intentions to integrate heritage in a design

The board game encourages players to consider the sacred nature and atmospheres of the terreiro, which adapt to worship demands, the will of deities, and notions of essential preservation. This oversight reveals a gap in heritage management, where dynamic aspects are overshadowed by static conservation frameworks. Players come to understand the adaptive nature of the temple's architecture and cultural significance, contrasting with preservation efforts that risk undermining these sacred spaces' essence. This cosmopolitical approach fosters a nuanced, culturally sensitive perspective that respects and integrates the intrinsic attributes, values, and practices of the Afro-Brazilian religious community.

7.2 "Axé": heritage values and attributes are (not) safe in the hands of architects

The board game dynamics do not seek the general and indiscriminate permanence of built attributes, but rather focus on preserving the ones essential to expressing the worldviews of Afro-Brazilian communities, emphasizing axé. Axé, the force

ensuring dynamic existence and enabling events and transformations (Santos, 2012), is contained and transmitted through specific elements of temples, certain ritual objects, and plant species. Understanding preservation practices in terreiros requires acknowledging that to maintain and enhance axé, certain materials must be replaced, transformed, and allowed to return to nature.

The game guides players to preserve these materials, which hold meanings and purposes linked to ancestry, kinship relations, and exchanges between the living and the gods. Conservation efforts should therefore focus on the immaterial dimension of these heritage attributes, a perspective often unfamiliar to preservation institution technicians. Thus, the preservation design game is inherently participatory, guided by spiritual leaders and experienced practitioners to ensure cultural sensitivity and relevance.

8. CONCLUSION

In the Anthropocene, proposing the city as a Geogame - a cosmopolitical board game - offers an arena for new learnings and the sharing of knowledge and worldviews. It facilitates the development of cosmoperceptions, with its atmospheres creating embodied experiences that can aid in regenerating our collective selves. It serves as a tool for decolonizing subjectivities and rebuilding our co-creation with / for Gaia.

Playing this game involves making ethical choices within a collective and situated process, highlighting that play signifies both creation and care. Each action in the game is a negotiation of effects within a network, impacting the reality it helps to produce – creation or destruction. The cosmopolitical board game, therefore, emerges as a political field projecting a horizon of becoming, aligned with a Gaia-oriented design. It prompts reflection on preserving the ecological, spiritual, and material heritage of Casa Branca's terreiro in Bahia.

This cosmopolitical stance addresses what Latour (2015) describes as "the war of the worlds" between the Earthbounds - those recognizing the Anthropocene and aligning with Gaia politics -, and the Humans - climate denialists who believe we are still in the Holocene. As Earthbounds, our board game aims to seed possibilities for a future where all things, species, and humans co-inhabit as expressions of Gaia. The assemblage of Candomblé's cosmoperceptions and the preservation of cultural heritage can be a crucial tool for building atmospheres that foster Gaia's regeneration, paving the way for new, sustainable practices and coexistence.

Policymaking should prioritize education and capacity building to empower local stakeholders in the stewardship of their heritage. Orality, documented over a board game, could play a crucial role in this process, allowing the wisdom and traditions of the past to be conveyed through generations in a way that is both dynamic and engaging. This includes a profound respect for the earth, or Aiyê, which in Yorubá

culture and in Candomblé's cosmology is personified as a deity of the material world. By proposing the use of board games as educational tools for atmospheric architectural design, we have bridged traditional knowledge and contemporary climate challenges. Future research will build on this foundation. The follow-up and second paper will focus on converting the board game concept into a tangible prototype, using secondary data and interviews with key stakeholders. This will provide a framework for developing an effective and culturally resonant game. The final and third paper will explore the board game's implementation within the local community, assessing its impact on preserving the terreiro. Together, these studies will show how board games can support the preservation and transmission of Candomblé heritage, empowering communities to safeguard their own legacy.

9. BIBLIOGRAPHY

Ahlqvist, O., & Schlieder, C. (2018). Geogames and Geoplay. Cham, Switzerland: Springer International Publishing.

Andrade, B., & Pereira Roders, A. (2022). Value-based redesign in gamified learning environments. In R. Rocco, A. Thomas, & M. Novas-Ferradás (Eds.), Teaching Design For Values: Concepts, Tools & Practices (pp. 292-317). TU Delft OPEN.

Araújo, J., Alves, L., Pereira, F., & Oliveira, B. (2021). Jogos de todos os santos: um estudo da construção de mundos ficcionais nos videogames baianos. Salvador: EDUFBA.

Böhme, G. (2017). Atmospheric Architectures: The Aesthetics of Felt Spaces. Bloomsbury Publishing.

Castro, Y. P. de. (2001). Lugar e identidade: A construção social dos lugares de culto. Rio de Janeiro: Editora FGV.

Coccia, E. (2021) Metamorphoses. Polity Press.

Crutzen, P. J. and Stoermer, E. F. (2000) The Anthropocene in: Global Change Newsletter, 41 : 17-18.

Dourado, O. (2015). Orixás e Ancestrais: Tradições Afro-Brasileiras e seus Espaços Sagrados. Salvador: EDUFBA.

Gandy, M. (2017). Urban atmospheres. Cultural Geographies, 24 (3), 353-374. *https://doi.org/10.1177/1474474017712995*.

Grusin, R. (ed) (2015). The Nonhuman Turn. University of Minnesota Press.

Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. Feminist Studies, Vol. 14, No. 3, pp. 575-599.

Habraken, N. J., & Gross, M. D. (1988). Concept Design Games. Design Studies, 9(3), 150-158.

Helmersen, K. N., Silberberger, J. (2018). The City as a Board Game: Towards an Assemblage Representation of the Urban. CA²RE, Community for Artistic and Architectural Research.

Latour, B. (2017). Facing Gaia: Eight lectures on the new climatic regime. John Wiley & Sons.

Latour, B. (1993). We have never been modern. Harvard University Press.

Latour, B. (2007). Reassembling the social: An introduction to Actor-Network Theory. Oxford University Press.

Latour, B (2015). Telling friends from foes in the time of the Anthropocene. In Hamilton, C., Gemenne, F. and Bonneuil, C. The Anthropocene and the Global Environmental Crisis: Rethinking modernity in a new epoc. London : Routledge.

Lovelock, J. (2010). The vanishing face of Gaia: A final warning. Basic Books.

Meurs, P. (2016). Heritage-based design. TU Delft.

Oyěwùmí, O. (1997). "Visualizing the Body: Western Theories and African Subjects." In The Invention of Women: Making an African Sense of Western Gender Discourses, Oyèronké Oyěwùmí (ed), pp.1–30. Minneapolis: University of Minnesota Press.

Sant'Anna, M. (2012). Preservação e Cultura Afro-Brasileira: O Terreiro Casa Branca da Bahia. Salvador: Pallas.

Santos, J. E. (2012) Nàgô e a morte: Pàde, Àsèsè e o culto Égun na Bahia. Petrópolis, RJ: Editora Vozes.

Serra, O. (2008). Ilê Axé Yá Nassô Oká, Terreiro da Casa Branca: Laudo antropológico. IPHAN: Salvador.

Sodré, M. (2019). O terreiro e a cidade: a forma social negro-brasileira. Mauad Editora Ltda.

Sousa, M. (2023). Mastering modern board game design to build new learning experiences: the MBGTOTEACH framework. The International Journal of Games and Social Impact, 1(1), 68-93.

Stengers, I. (2005). The cosmopolitical proposal. In Bruno Latour & Peter Weibel (eds.), Making Things Public. MIT Press. pp. 994-1003.

Tan, E. (2014). Negotiation and design for the self-organizing city: Gaming as a method for urban design. TU Delft.

Tarrafa Silva, A. M., & Pereira Roders, A. P. (2021). Taxonomias do significado cultural do património: valores e atributos. In Gestão do Património Cultural: experiências e desafios (pp. 10-31). University of Algarve.

Velame, F. M. (2019). Arquiteturas da ancestralidade afro-brasileira: o Omo Ilê Agboulá, um templo do culto aos Egum no Brasil. Salvador: EDUFBA.

Velame, F. M. (2019). Arquiteturas da Ventura: os terreiros de candomblé de Cachoeira e São Félix. Federal University of Bahia.

ATMOSPHER(IC) TACTICS IN DESIGN EDUCATION: CAVERNOUS EXCAVATIONS

TÁTICAS ATMOSFÉRICAS NA EDUCAÇÃO EM DESIGN: ESCAVAÇÕES CAVERNOSAS

Aybike Batuk
Research Assistant
Kadir Has University
aybike.batuk@khas.edu.tr

ABSTRACT

This pedagogically grounded research delves into the affective potential of atmospheric thinking within architectural design education. The study adopts the concept 'atmosphere(ic),' instead of atmosphere, implementing the concept in a more operational manner to generate imaginative prompts in studio briefs that create a temporary 'suspension' for students. This approach fosters students' intrinsic attunement to the context, thereby allowing them to develop unique atmospheric tactics for designing affective spatial experiences. The experiment was conducted as an assignment in a first-year interior design studio, students were challenged to create immersive affective experiences within interior spaces embedded in fictional cavernous topographies inspired by close-up images of natural caves. Learning from the studio challenge, this paper emphasizes the correlations between affective experiences and atmospheric thinking as well as the interconnectedness of interior and exterior.

KEYWORDS: atmosphere. atmospheric. suspension. design education. affect. interiority

RESUMO

Esta pesquisa, fundamentada pedagogicamente, explora o potencial afetivo do pensamento atmosférico na educação do design arquitetônico. Este estudo adota o conceito de 'atmosfera(ic)' em vez de atmosfera, implementando-o de maneira mais operacional para gerar sugestões imaginativas em briefs de estúdio que criam uma 'suspensão' temporária para os alunos. Esta abordagem promove a sintonia intrínseca dos alunos com o contexto, permitindo-lhes desenvolver táticas atmosféricas únicas para projetar experiências espaciais afetivas. O estudo foi realizado como uma tarefa em um estúdio de design de interiores do primeiro ano, onde os alunos foram desafiados a criar experiências imersivas e afetivas em espaços interiores embutidos em topografias cavernosas fictícias, inspiradas em imagens de close-up de cavernas naturais. Aprendendo com o desafio do estúdio, este artigo enfatiza as correlações entre experiências afetivas e pensamento atmosférico, bem como a interconexão entre interior e exterior.

PALAVRAS-CHAVE: atmosfera. atmosférico. suspensão. educação em design. afeto. interioridade

1. INTRODUCTION

In architectural design, the concept of atmosphere has tended to be perceived either as a superficial add-on or to be approached through a conventional phenomenology, which focuses on subjective experience and can sometimes limit imaginative interpretation. However, this study challenges such conventional views by reconceptualizing atmosphere as 'atmosphere(ic),' shifting the focus from subjective qualities to affective experiences, considered as a state of suspension and adopted as a pedagogical approach. Implementing the concept in a more operational manner helps to develop an intrinsic attunement to atmospheric space-making processes.

Considering the concept of 'atmosphere' in the field of architecture, one can easily fall into the misconception that it can be entirely captured within a predetermined framework. This approach leads to two seemingly opposite, yet related, tendencies: projecting one's highly subjective experience onto atmosphere-making and excessively objectifying it. Gernot Böhme (2016), addresses the concept of atmosphere from an aesthetic perspective, emphasizing the quasi-objective and intersubjective aspects of the concept that indicate spatial and intersubjective affective dimensions. Atmosphere is not only between space and the body experiencing it but also in conjunction with the modes of transmission between bodies, objects, and spaces. In line with this idea, this study embraces the intersubjective nature of atmosphere, especially within the context of design pedagogy, where imaginative communication holds significant importance. With a focus on the communicative and relational features of atmosphere, the study of atmospheres as 'intersubjective intensities' - a concept introduced by Brian Massumi (2002), who argues that these intensities are the forces of subjects entangled in each other - is particularly useful. While these intensities are often impatiently categorized as emotions, affect is a state before any form of emotion; it is rawer and more operable (Shouse,2005). Because of its inherent openness and formlessness, affect can be a powerful concept for a design process in which communication and relationship are at the fore.

Affect is a non-subjectified form of experience that encompasses ungrounded experiences that extend beyond and become independent of them (Deleuze and Guattari, 1994). These experiences are iterations of the forces in movement between distinct states as potentialities for processes whose outcomes cannot be predetermined. For this reason, emphasizing the openness and ambiguity of the concept highlights the autonomy of affect. However, focusing only on vague aspects can also lead to a superficial understanding of affect, isolating it from relational networks and treating it as a practical tool for generating 'good' emotions, which is intertwined with conservative forms of architectural phenomenology (Frichot, 2020).

In the 21st century, there has been an increase in the prominence of affect and emotion-driven tendencies in social and political discourses as well as architecture. This shift redirected affect in the direction of effects generated by pre-determined emotions, all hidden under the mask of atmosphere. According to Richards (2020),

the relationship of architecture to affect is itself rather unsettling, so the impulse here is to reduce complex affects to familiar and pleasant effects. Such attitude reduces the potential affective experience to the subjectified sentiment of a prototype of a generic subject. Architecture's frustrations with affect are evident in both the creation of so-called autonomous atmospheres and their supposedly objective and comprehensive representation. However, these approaches, which seem to be on the verge of objectivity or subjectivity, are conducted through the urge of control, where predetermined perceptions are desired. These tendencies orient not only spatial design products but also design processes to the control-based zone, which contrasts with the atmosphere's very affective nature. According to Lavin (2011), recognizing this inadequacy in the first place can push architecture to abandon the fantasy of absolute autonomy and absolute comprehensiveness. Since the creative process itself is in a suspended state, it is filled with possibilities of open-ended relations.

To conclude, architectural design processes, even when based on atmosphere, run the risk of becoming a control-oriented, effective way of making. To address these tendencies, the studio experiment prioritized affectivity over effectiveness, using a state of suspension as the primary method for attunement. The pedagogical prompts are therefore designed to keep the students temporarily suspended, creating an imaginative tension that helps to attune to the context in a more intrinsic and authentic way. The prompts act as immaterial structures to allow atmospheric tactics to emerge in each student's unique process.

2. IMAGINATIVE PROMPTS TO ATMOSPHERIC TACTICS

Conducted as a four-week assignment titled 'Cavernous Excavations' within a first-year interior design studio, the project tasked 13 students with creating experiential interiors embedded within imaginative cave topographies. The expectation was for students to create immersive affective experiences propelled by architectural space. Inspired by historical caves, where natural formations are integrated with authentic climatic and material conditions that create sophisticated atmospheres and rich affective experiences, students were initially asked to create fictional topographies with cave formations inspired by close-up images of natural caves.

The two-step translation process started with students discovering ways to represent atmospheric qualities of close-up photographs, such as weather, texture, materiality, and light, within a box with a peephole. The peephole creates an intriguing distance. This prompt placed the students in a state of suspension between the proximity of the actual hyper-realistic imagery of a photograph and the indirectness of the peephole lens and the inability to see the whole model as it is in a box. Secondly, the students started to expand their miniature caves into larger topographies on a given scale, which suspended them between not only different scales but also assemblages

of factual and fictional spaces. Subsequently, each student was challenged to design an experimental inner space within cavernous excavations, employing concepts assigned to them individually and randomly. This prompt helps students discuss the concepts of interiority and exteriority in an unconventional way, as the borders between them are inherently blurred.

2.1 Proximate to Distant, Distant to Proximate

Caves have an authentic type of atmosphere where darkness, shadows, liquids, and earthy textures mix, and these conditions have the potential to create an immersive affect. In his book 'Subnature', Gissen (2009) aims to draw attention to the cave atmosphere in the context of the 'dankness' and remphasis its value in architectural production. As Gissen (2009) notes, caves are considered some of the most primitive and inadequate spaces, where the damp, dark and wet environment has always provoked contradictory perceptions, especially in the early modern period where some viewed them as fundamentally opposed to architectural principles, while others recognized their influence on the early architectural forms. However, the differing perceptions of these spaces gradually disappeared in the nineteenth century and subsequently became vilified by modern architectural theories. During the initial reading sessions in the studio, the students were influenced by Gissen's thoughts on the atmospheric potential of caves as a valuable and under-explored spatial environment. These initial discussions support the studio participants' embrace of the cavernous space as a fertile zone for the exploration of atmospheric qualities in spatial design.

The study began by taking close-up images of caves from various geographical locations and different climatic conditions and randomly distributing them to the students, who were then prompted to prepare a mini model of a cave within a 20x20 cm box, without assigning any scale. A peephole was placed in the box, which served as the only means for observers to view the model. By looking at these images, which are photographic but do not give a complete scene, students try to imagine these caves and understand their atmospheric characteristics. It is also unknown whether the cave spaces are repetitious or how formations might be repeated. This first prompt, then, urges students to focus solely on the atmospheric materiality of the cave, to imagine the atmospheric qualities of the context without really knowing the geometric or spatial formations.

The students found themselves suspended between the photorealism of the close-up image and the indirectness of viewing through the peephole. Anderson (2009) suggests that affective atmospheres possess an ongoing, incomplete nature; they are continuously emerging and vanishing. The incomplete essence of the atmosphere opens up imaginative possibilities for atmospheric perception to fill the gaps more freely. In relation to this openness, Umberto Eco (1989) presents it as a fundamental question in creative practices, urging authors to embrace their work as unfinished and open to change and alteration. By stepping back from the

close-up view, these absent qualities create a setting that encourages unrestricted imagination. This perspective resonates as students began to discover tactics to represent atmospheric qualities, with the creation of cavernous interiority as their essential requirement. Although they were in the first semester of their first year, they tended to choose materials that they were familiar with from their previous studies, but they knew that they had to use these materials in a different way than they were used to. Techniques such as scraping the material instead of cutting it, creating cavities through spontaneous interventions, and even melting it with glue — despite and thanks to the difficulty of controlling the process—were often observed. Moreover, glue was frequently repurposed not for its intended use but for its qualities of transparency, fluidity, glossiness, and stickiness. There were also techniques involved painting or staining porous materials like sponges and insulation foam to emphasize their natural textures Additionally, students conducted experiments with the insulation foam while it was still in its soft, pliable state before it hardened. This allowed them to explore and manipulate the material's properties more freely during the initial stages of its transformation. The combination of unexpected materials, such as cotton and glue, served as a cross-sensory tactic that enabled students to imagine tactile experiences akin to muddy textures and the dank, sticky sensations found in caves. During those material actions, students imagined the natural forces that created the cavities as they shaped these materials. (Figure 1).
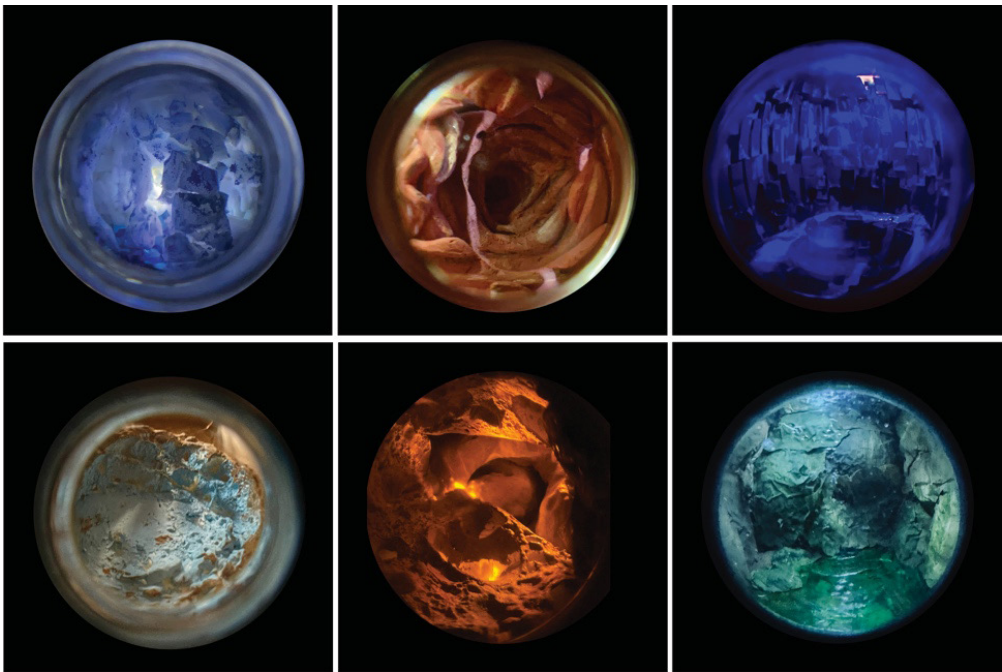
Figure 1. Student works.Peep-hole view of model boxes (Top row, from left to right: Sude Gedikoğlu, Didem Tosun, Bengisu Akdeniz.) Bottom row, from left to right : (Yiğit Şen, Şimal Aydoğdu, Dilara Doğan.)
Source: Batuk (2024).

As this project was carried out in a closed box, the work remained dark unless lighting was specifically designed. Students experimented with creating semi-transparent materials with some degree of opacity using paint or ink, incorporating reflective textures that could reflect light onto surfaces, and placing light sources or openings between the layers of the model to emphasize depth. This often created an effect of depth beyond the physical reality of the model.

Finalizing this peephole phase of the assignment, all studio members gathered to view the models and discuss their affective experiences to find intersubjective effects. Although it was an in-studio exhibition format, it was somewhat ironic that this exhibition never offered a total view of the works, as each work was in a different container. A further layer of distance in the experience arises from the need to bend down to view the cave and the restriction that the view can only be seen through the peephole, which provides a monocular perspective (Figure 2). As a result, this intriguing interplay between proximity and distance has managed to evoke enveloping and immersive affects in design actions.

Figure 2. Photographs from the in-class exhibiton of peep-hole model boxes.
Source: Batuk (2024).

2.2 Factual to Fictional, Fictional to Factual

The assignment continued with another prompt challenging students to expand their miniature caves into larger topographies by multiplying cavernous formations on a given scale, which suspended them between different scales and created assemblages of both factual and fictional spaces. Scaling up involved two concurrent processes: transitioning from a realistic cave image to a highly fictional landscape by 'exaggeration', and adapting the modeling technique to the new scale, akin to a form of 'excavation'. The exaggeration process mainly includes tactics for multiplication and repetition of the caves, which provide a rhythmic quality to the process, as conceptualized by Albena Yaneva in her approach to moving between scales. Yaneva

(2005) expresses the process of changing scale in architectural design as "jumping between up and down," conceptualizing it as moving between different intensities and speeds, giving it a rhythmic sense. This rhythmic interplay between scales not only enriches the spatial imagination but also underscores the dynamic nature of design process.

Without sufficient factual topographic data to accurately scale up the caves, students also found themselves suspended between the factual and the fictional. With each iteration, they faced material failures and disappointments, which compelled them to rethink their earlier modeling tactics in favor of exploring fictional possibilities. Consequently, they were compelled to develop new excavation tactics. Even in cases where identical materials were used similarly in both the peephole and larger topography models, there appears to be a distinct shift in the crafting process. For example, in a notable instance from one of the students, the peephole model required shaping layers individually and assembling them later. However, in this case, layers were assembled beforehand to create larger masses for the fictional topography. These masses were subsequently excavated, and the extracted pieces were integrated into the topography, marking a clear progression from initial action to excavation processes.

There were also cases where two-dimensional materials transitioned into three dimensions during the scaling up and multiplication process. These two-dimensional pieces were previously advantageous due to the single perspective offered by the peephole and were subsequently substituted with different materials. For instance, the use of creased papers in the peephole model was combined with structural materials such as wooden sticks to enhance durability and achieve a more three-dimensional form. This integration forged novel interactions between the materials: the wooden sticks provided structural support, while the creased and painted paper either covered, intersected with, or was punctured by them, creating cavernous spaces within the voids. Another instance involved the shift from creased paper to egg cartons, where the cartons were cut to form apertures, multiplied as modules, and paired with permeable and fluid materials like glue. Additionally, there were meticulous processes focused on material experimentation, generating cavernous interiorities between iterative modules. For example, one student bent wire and affixed it to foam board, then covered it with a sock, hardened the structure using a mixture of baby powder and glue, and added gauze for texture. Inspired by glacier caves, these components were designed to be flexible and capable of bending and twisting to replicate the cave's changing forms throughout the year (Figure 3).

Figure 3. Details from cavernous topographies (Top row, from left to right : Sude Gedikoğlu, Didem Tosun, Elif Bayrak.)
Bottom row, from left to right : (Bengisu Akdeniz, Elif Özdemir, Badesu Aydoğan.)
Source: Batuk (2024)

Based on the tactics and more, these atmospheric approaches to imagining affective spaces function as assemblages that connect not only different scales but also reality and fictionality. The assemblage is inherently patchy, as a complete, controlled, and photorealistic view of the atmosphere is never the objective. Borrowing Anna Tsing's (2015) notion of patchiness as a generator of open-ended assemblages, to name a mixture of factual and fictional, and everything in between, sets the tone for suspension (Figure 4).

Figure 4. Cavernous topographies exhibited in a grid pattern on the floor.
Source: Batuk (2024).

2.3 Interior to Exterior, Exterior to Interior

The last part of the studio challenge was to design an experimental inner space within cavernous excavations, employing the concepts assigned them individually and randomly. The expectation was for students to generate immersive affective experiences propelled by architectural space. Building upon the preceding phases which emphasized individual imagination, this final phase encourages a shift towards more intersubjective engagements. Students were tasked with envisioning pavilion-like spaces within fictional terrains, intended for public interaction. This transition aimed to focus more on the intersubjective openings of atmospheric making, echoing Anderson's (2009) re-conceptualizing of atmosphere as 'collective affects' that arise and dissolve concurrently and creates a suspension in the process.

The concepts provided—integrating, spreading, intensifying, obscuring, labyrinthine, smoothing, expanding, porosifying—are intended to emphasize the importance of intersubjectivity in the design process, as each concept aims to describe a specific affective experience to be designed. Those concepts are not descriptive, they can be interpreted openly to generate affects.

This part of the experiment focuses on the stratification of the atmosphere, as it involves adding another layer of interiority to an existing one. In this context, the landscape ceases to be merely exterior; it transforms into a topographical interiority where affective qualities permeate and shape spatial experiences. In this part of the process students suspended in-between interior and exterior. Based on this approach, students frequently use techniques such as zooming in on cave images to sketch details or creating storyboards to imagine themselves in those interiorities. What was also interesting is that they were so fascinated by the immersiveness of their own fictional topographies, there were lots of hesitation on designing an architectural layer in it. Putting atmosphere in center and spending lots of time on atmospheric qualities by observing, imagining, crafting brings a big amount of sensitivity on the terrestrial. That must be why the general attitude was to design a route through the topography to create a wholesome experience not to exclude the contextual atmospheric qualities while designing a new layer in the cavernous space. The walking paths encompass various surfaces: on the ground, floating on water, utilizing, and crafting material combinations to instruct different levels of transparency and light and shadow plays. Initially, the students were expected to choose a spot within the cavernous topography and construct a pavilion based on a given concept. However, it was through this concept that they interpreted and designed the experience of these routes. As a result, these walkways feature labyrinthine circuits that can make observers feel both lost and found as they navigate through the caves, along with paths that fork, suddenly narrow, widen, or come to an end. Also, some works challenge hypothetical visitors with routes that compels to bodily actions, put them closer to surfaces and materiality of caves to enhance sensory, especially haptic, experiences. Lastly, a few students made a contrasting gesture by creating alien-like spaces within the caverns, aiming to provide temporary isolating experiences that provoke baffling affects (Figure 5).

Figure 5. Details from experimental inner space within cavernous excavations
(from left to right : Öykü Nisa Kabadayı, Sude Gedikoğlu, Elif Bayrak, Didem Tosun.)
Source: Batuk (2024).

Finalizing the experiment, it can be observed that, rather than focusing solely on designing spaces for affective encounters, the design process itself becomes an affective experience. This approach highlights the transformative potential of relational and intersubjective atmospheres, intertwining with the creation of affective spaces. By exploring these themes, the studio aimed not only to produce architectural designs but also to provoke critical reflections on the relational dimensions of atmosphere-making.

3. CONCLUSION

There is a prevalent tendency to perceive the concept of atmosphere as a singular, complete image, overlooking its inherently abstract nature that cannot be fully represented or controlled. Consequently, it is often manifested in processes that either create autonomous yet hyper-subjective experiences or appear to be comprehensive while simultaneously objectifying. In the realm of imagining and creating atmospheres, rethinking its adjectival derivative as 'atmosphere(ic)' can offer a conceptually and cognitively affective approach. This reframing facilitates the imaginative acts within design processes by encouraging the consideration of atmosphere as an operational tool. Not only do these imaginative acts challenge the conventional practices associated with atmosphere, but they also enrich the design studio briefs, which encourage students to be more imaginative and open-minded in their approaches. To conclude, this pedagogical experiment aimed to exemplify an appropriate field for capturing immersive, sensational, and imaginative affective experiences. It serves to uncover atmospheric tactics and their profound impact on affective experiences throughout the spatial design process.

4. ACKNOWLEDGEMENTS

Gültekin, and Yiğit Şen for their incredible effort in this short and niche studio experiment and for the beautiful discussions they brought to the table.

5. BIBLIOGRAPHY

Anderson, B. (2009). Affective Atmospheres. Emotion, Space and Society, 2(2), 77-81. https://doi.org/10.1016/j.emospa.2009.08.005

Böhme, G. (2016). The Aesthetics of Atmospheres (J.-P. Thibaud, Ed.) (1st ed.). Routledge.

Deleuze, G. and Guattari, F. (1994). What is Philosophy? London and New York, NY: Verso.

Eco, U. (1989). The open work. Harvard University Press.

Frichot, H. (2020). Infrastructural affects. In Jobst, M., & Frichot, H. (Eds.), Architectural Affects after Deleuze and Guattari (pp. 10-25). Routledge.

Gissen, D. (2009). Subnature: Architecture's Other Environments. Princeton Architectural Press.

Lavin, S. (2011). Kissing Architecture. Princeton University Press.

Massumi, B. (2002). Parables for the Virtual: Movement, Affect, Sensation. Duke University Press. https://doi.org/10.2307/j.ctv11smvr0

Richards, K. (2020). Deleuze, Guattari, and the non-subjectified affects of architecture. In Jobst, M., & Frichot, H. (Eds.), Architectural Affects after Deleuze and Guattari (pp. 113-131). Routledge.

Shouse, E. (2005). Feeling, Emotion, Affect. M/C Journal, 8(6). https://doi.org/10.5204/mcj.2443

Tsing, A. L. (2015). The Mushroom at the End of the World. Princeton University Press.

Yaneva, A. (2005). Scaling Up and Down: Extraction Trials in Architectural Design. Social Studies of Science, 35(6), 867-894. https://doi.org/10.1177/0306312705053053

L05

MEMORIES AND ATMOSPHERES: LEARNING FROM THE PAMMATONE COMPLEX IN GENOA

MEMÓRIAS E ATMOSFERAS: APRENDENDO COM O COMPLEXO PAMMATONE EM GÊNOVA

Elisabetta Canepa
Marie Curie Fellow
Department of Architecture and Design
Polytechnic School, University of Genoa
elisabetta.canepa@edu.unige.it
Adjunct professor
Department of Architecture
College of Architecture, Planning and Design, Kansas State University
elisabettacanepa@ksu.edu

Valter Scelsi
Full Professor
Department of Architecture and Design
Polytechnic School, University of Genoa
valter.scelsi@unige.it

ABSTRACT

We need memories to co-generate affective atmospheres, which are unique to the extent that they develop from analogies with other experiences. The greatest atmospheric engagement occurs in spaces resonating with our embodied habits, emotional affinities, and body memories. This paper investigates strategies that make a space memorable and observes how memories trigger the atmospheric potential of certain places. Our case study is the Pammatone business and housing complex designed by Franco Albini and Franca Helg in the Piccapietra district in Genoa in the mid-20th century. We purposely selected a building that resulted from an enduring atmospheric praxis rather than an attempt to induce sensorial oversaturation: Albini and Helg were pioneers in teaching how to stage atmospheric spaces—long before the current "atmospheric turn."

KEYWORDS: memory. atmosphere. co-generation. Albini Helg. Pammatone

RESUMO

Precisamos de memórias para co-gerar atmosferas afetivas, sempre únicas na medida em que crescem em analogias com outras experiências. O êxtase atmosférico mais forte envolve espaços que ressoam com nossos hábitos incorporados, afinidades emocionais e memórias corporais. Este artigo investiga estratégias para tornar um espaço memorável e observa como as memórias ativam o potencial atmosférico de alguns lugares. Nosso estudo de caso é o complexo empresarial e habitacional Pammatone projetado por Franco Albini e Franca Helg no distrito de Piccapietra, em Gênova, em meados do século XX. Selecionamos propositalmente um edifício que não induz uma supersaturação sensorial, mas resulta de uma práxis atmosférica duradoura: Albini e Helg foram pioneiros em ensinar como encenar espaços atmosféricos—muito antes da atual "virada atmosférica".

PALAVRAS-CHAVE: memória. atmosfera. co-geração. Albini Helg. Pammatone

1. MEMORY AND ATMOSPHERE
1.1 Co-generating experiences

We need lived experiences to *co-generate* experiences. When we listen to a story, for example, the words build images if they trigger similar memories and universal sensations that convey the situation the writer wishes to portray. Describing colors, sounds, and smells activates our imagination and makes us feel immersed and engaged. Associations of entities give rise to formal resonances through which we better comprehend our surroundings and extract meaning (Scelsi, 2022). This analogy-based dynamic is unavoidable since, as Roland Barthes warns (1975/1994, p. 44), we cannot escape analogy: "no sooner is a form seen than it must resemble something."

We hypothesize that this happens with atmospheric experiences as well. Architectural atmospheres gain identity and intensity as we integrate their evocative potential by relating what we are *now* experiencing to what we have *already* experienced. As Aldo Rossi has observed about identity, we realize that "every place is unique to the extent that it possesses limitless affinities or analogies with other places" (1981, p. 40). This idea explains why we desire houses that recall spaces where we have felt safe and happy, such as our childhood homes (Canepa, 2024, p. 112); or we search for entertainment venues staging our favorite fairytale and movie universes (Buiatti, 2016, p. 45); or we feel better attuned to the world when we can couple our bodies with its affordances (Robinson, 2021). The greatest atmospheric engagement is offered by spaces that resonate with our lived experiences, affective affinities, and body memories. After all, perception and the memory of spatial interactions are associated with the same brain area: the posterior parietal cortex (Whitlock, 2017), behind the primary somatosensory cortex.

1.2 Memorable spaces

Before delving into how memory and atmosphere affect each other, it is crucial to consider what makes a space memorable. The most influential psychological theories of human memory posit that only consciously grasped information can be recalled later (Windhorst & Sutton, 2011, p. 90). If we do not linger on our surroundings' details, we cannot remember them, regardless of their salience. Multiple factors (e.g., physiological, sociocultural, and situational) interact at different levels and timescales to affect our experience of architecture (Canepa, 2022a). This experience has three unique, essential features, as synthesized by Walter Benjamin (1936/2007). First of all, while "many art forms have developed and perished," "architecture has never been idle" (pp. 239–240). This is especially true today, as we have become an indoor species, spending most of our time inside rooms or vehicles. Second, despite its central importance in our lives, architecture is rarely at the forefront of our attention because we move through spaces in a pre-reflective and habitual way, namely "in a state of distraction" (p. 239). Lastly, "we appropriate buildings in a twofold manner: by use and by perception—or rather, by touch and sight" (p. 240), meaning that our architectural experiences always involve the immersive, multisensory engagement of our bodies.

Setting aside the fact that we tend not to forget a building that our society insistently promotes, architects have two main strategies to make a space memorable (Colombetti, 2022). They can conceive an extraordinary project that is perceptually striking, such as a monument *(wow-memorability)*, or provide ordinary solutions that become memorable through our automatic and implicit interactions *in* and *with* them, as is true for spaces we occupy daily *(habit-memorability)*. A third strategy, suggested by an enactive approach to architectural experience (Jelić et al., 2016), integrates the mechanism of body memory embedded in habit-memorability with the attention-capturing ability of wow-memorability. By subtly "rupturing" our instinctively distracted interaction with space, architecture acts directly on our

bodies, emotions, and behaviors, nudging us to focus on our surroundings and, concurrently, on ourselves as embodied, situated, and feeling agents. Our bodies and the places where we are become evident, explicit, and memorable. This *rupture-memorability* dynamic can be triggered by an architectural detail (such as a step) or an atmospheric condition (such as an interplay of light and shade) capable of affording opportunities for sensorimotor interaction and emotional resonance.

2. CASE STUDY

To test the importance of past experiences in co-generating atmospheres as hypothesized in the first paragraph, we will study the Pammatone complex (Figure 1), which was designed by Franco Albini and Franca Helg in the Piccapietra district in Genoa (1955–1962). Discussing their pioneering atmospheric approach will help us observe certain rupture-based affordances that, resonating with our bodies as we experience them, make the building more memorable and an interesting example of atmospheric design.

Figure 1. Pammatone complex seen from Pope John Paul II gardens.
Source: adapted from Canepa (2021). © Francesca Iovene.

2.1 Piccapietra district

Genoa is nestled on the northwestern coast of Italy. During the Second World War, it was a primary target for the Allied bombing campaigns due to its important harbor and industries. Air raids and naval bombardments heavily damaged the harbor and devastated broad portions of the city, including the Portoria quarter. Extremely strategic for its central location, Portoria had been undergoing urban transformation projects for years, dating back to the late 19th century. The war's massive destruction offered the opportunity to entirely remodel this medieval area by leveling the Piccapietra hill and designing a modern business district—something that was long overdue (Fuselli, 1932). Priority was given to providing high-speed roads and abundant parking lots. Only a few historical buildings survived the demolition: Villetta Serra and the churches of Saint Camillo, Saint Catherine, and Saint Martha. Following the 1953 master plan developed by the municipal planning division (then headed by Mario Braccialini), with the assistance of Franco Albini, Eugenio Fuselli, and Mario Pucci, the new Piccapietra district was born to house administrative, financial, and commercial structures, as well as high-income residential units (De Marpillero, 1966). Just one building was not intended to pursue real-estate profits but artistic-cultural activities, namely the Modern Art Museum (Patrone, 1982, pp. 129–131), which was never constructed.

The Piccapietra intervention featured some key figures in the Italian architectural scene of the mid-20th century, such as Franco Albini, Luigi Carlo Daneri, Franca Helg, Robaldo Morozzo della Rocca, and Giovanni Romano (Franco & Musso, 2016, pp. 140–143). Years after their completion, critics emphasized that the projects were unremarkable despite their renowned authors. "The attempt to create continuous spaces and pedestrian paths by means of arcades and small plazas came to naught because of the design's overall geometric formalism," which showed a "total disregard for the fabric of the surrounding areas" (Spinelli & Prina, 1991, p. 50). One exception was the Pammatone business and housing complex by Albini and Helg.

2.2 Pammatone complex

Pammatone is a four-building residential complex surmounting a triangular, three-floor, multipurpose base (Cerruti, 1967; Canepa, 2021). Car traffic permeates the structure, embodying the zeitgeist of the 1950s: Pammatone Street pierces the base, severing the sequence of arcades (a design decision so striking that it gave the building its name); an underground garage spans two levels, with ramps leading from Pammatone Street and Saint Camillo Square; the vehicle-accessible roof of the base provides parking lots for the apartments. When engaging with the existing urban context, Albini and Helg paid homage to the local building tradition (Franco, 2016, pp. 187–188). Except for Dante Datta and Marco Dasso, who designed an office block on Andrea Podestà Avenue nearby (Franco & Musso, 2016, p. 143), they were the only architects involved in the Piccapietra reconstruction to adopt elements, materials, and colors typical of Genoese architecture. They aimed to shape a "contemporary tradition" (Albini, 1955, p. 48).

Analyzing the façades of the four condominiums, we recognize some characteristic elements, such as the plastic projection of the eaves, the bold lines marked by plastered stringcourses, and the extensive use of plain surfaces. Albini and Helg used locally sourced materials, including pinkish stone from Finale Ligure for the façade cladding, gray-black slate for the roof shingles, and white marble for the window sills and doorsteps. Complementing the rose-tinted palette, as frequent in the Genoese landscape, the window frames are bright white and the railings and roller shutters bottle green. The alley-like passages and external stairs inlaid into the base revive geometries, shades, and impressions typical of the medieval urban fabric, connecting the building strongly to its surroundings; however, they are simultaneously capable of articulating spaces with independent atmospheres (Figure 2). For example, the back entrance serving the residential units offers a peaceful oasis from the noise of the contiguous, congested roads. Suddenly, it seems as if you are no longer in the heart of the city.

By building upon tradition to craft spatial qualities resonating with our past and everyday experiences, Albini and Helg attuned their project to the people visiting and inhabiting this place over the years, making it widely lived and critically acclaimed as "a harmonious episode in the renewal of the city center" (Franco, 2016, p. 188). The well-maintained condition of interiors and exteriors, combined with the high occupancy rate of the complex in a neighborhood with ever more numerous shop closures and apartment vacancies, further demonstrates the design's success. The desire to connect with places that belong to us and to which we want to belong is innate (Moore, 1977) and explains our pleasure when we feel such a sense of belonging. Think about the sensory immersion provided by light bathing a church aisle and inducing, as we move through it, a feeling of presence and co-participation. We can touch its atmospheric essence and prolong its emotional effects through our memory because, as Aldo Rossi states (1981, p. 40), "each place is remembered to the extent that it becomes a place of affection, or that we identify with it."

Figure 2. Pammatone complex seen from Saint Catherine staircase.
Source: adapted from Canepa (2021). © Francesca Iovene.

3. ATMOSPHERIC PRAXIS
3.1 Atmospheric spaces

Literature about architectural atmospheres commonly focuses on authors staging or hoping for sensorial choreographies to inflame emotions. The three most quoted representatives are Olafur Eliasson (2022), master of large-scale atmospheric art installations; Peter Zumthor (1998, 2006), who has become the atmospheric architect par excellence; and Juhani Pallasmaa (1996, 2014), a prolific essayist who discusses atmospheric phenomena from the perspective of architectural theory. The Pammatone complex, while not aimed at sensory oversaturation, provides a compelling case study stemming from its designers' long-standing atmospheric praxis.

The Italian architect Franco Albini (Robbiate, 1905 – Milan, 1977) was a pioneer in valorizing the importance of atmosphere in architecture and encouraging the design of *atmospheric spaces* (Canepa, 2022b, pp. 52–55), as he did in a seminal lecture at the Iuav University of Venice seventy years ago—long before the current "atmospheric turn" (Griffero, 2010/2014, p. 3; 2021, pp. 13–27), an outgrowth of the more general "affective turn" that blossomed in the humanities in the early to mid-1990s. Here are his words from 1954.

> The inventive exhibition design should engage the visitor in its game; the right atmospheres should be generated around the works to enhance them, but without ever overwhelming them. Architecture should be the mediator between the audience and the things on display, it should give value to the environment as a powerful element for the creation of impressions in the visitor. To achieve this, in my view, one must use spatial rather than plastic solutions: we need to create *architectural spaces,* to underline existing ones, linking them in absolute unity with the works exhibited. In my opinion what must be constructed is precisely the empty space, as air and light are construction materials. The atmosphere should not be still, stagnant, it should be vibrant, and the viewer should feel immersed and stimulated (Albini, 2005, p. 99).

3.2 Rupture-memorability

Franco Albini acknowledged the architectural space as the driving force of each project, capable of engaging us in a vibrant, immersive, and inspirational atmosphere. The restoration of Palazzo Bianco in Genoa (1949–1951) was one of several assignments in which Albini tested his theoretical intuitions. The building, hosting a rich art collection, was devasted by Allied bombing raids in the fall of 1942. Appointed by Caterina Marcenaro, director of the municipal Fine Arts Office, Albini conceived a radically innovative way to display paintings and sculptures that critics immediately celebrated. His method became enormously influential later (Irace, 2006; Bucci & Rossari, 2016), affecting the Italian postwar museum design.

The following two examples give form to his interpretation of atmospheric spaces and enable us to better explain the mechanism of rupture-memorability. In the

Palazzo Bianco galleries, handles attached to the painting frames were designed to pivot on metal supports. The idea was to let the visitor grip the handle and pull the painting away from the wall (unfortunately, moving the works is no longer permitted). Interacting with the painting tangibly promotes an intense experience that primes our physical sensations and breaks our distracted reception. The sense of surprise when discovering a decorated surface on the frame back reinforces the impressions prompted by our bodily engagement. In a nutshell, motor affordances embedded in the display space generate an episode of rupture-memorability that goes beyond the possible wow-memorability of the painting's subject and context. This dynamic is even more evident in the most famous actualization of Albini's atmospheric praxis (Figure 3): the display device (1950–1951) designed for Giovanni Pisano's fragment from the tomb of Margaret of Brabant (1313), turning it into an "elevatio animae" (the soul's journey to the heavens). Albini made this sculpture mechanized and mobile thanks to a hydraulic piston that allowed the marble fragment to raise, lower, and spiral through the air (Brawne, 1965, pp. 32–33; Scelsi, 2023). "With lightness, an aerial sensibility, the isolation of objects, the juxtaposition of old and new, […] and the production of atmospherics" (Ellard & Johnstone, 2019, n.p.), this floating object works as a powerful experiential medium and memory primer.
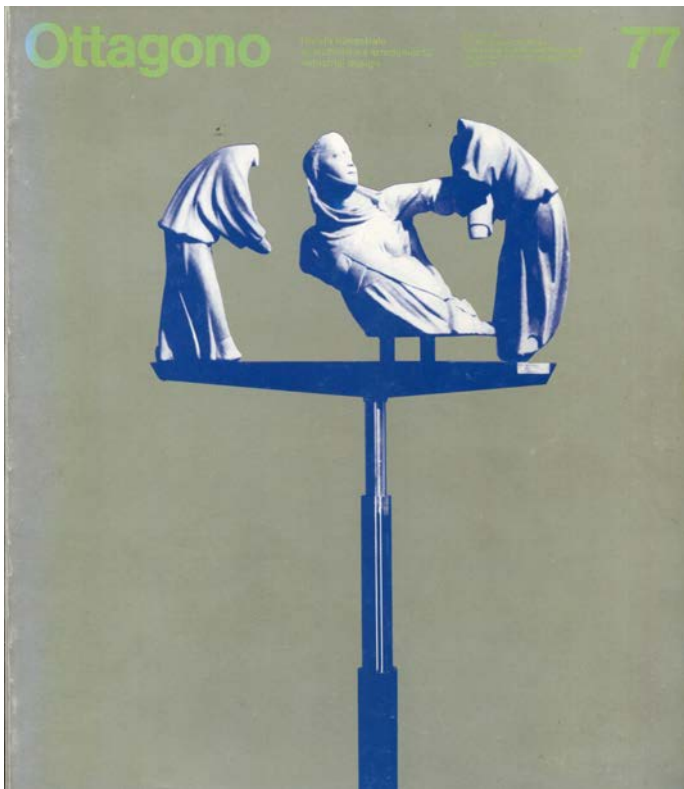
Figure 3. Display device for the *elevatio animae.*
Source: adapted from *Ottagono* 77 cover (1975).

Franco Albini and Franca Helg tested similar rupture-affording principles on the Pammatone building, adapting them into different architectural solutions. The sidewalks surrounding the complex, for instance, have a geometric pattern of bicolored square stone tiles that produces a sophisticated optical illusion of movement due to the variation in the number of elements from one course to another. As we walk on this surface, we may abandon our usual distraction, switching our attention to our bodies by recalibrating our visual focus and adjusting our postural behavior. What happens recalls what Andrea Jelić and colleagues (2016) wrote about Carlo Scarpa's stairs at the Brion sanctuary in San Vito di Altivole (1968–1978), where four overlapping, square steps help the visitor to climb 70 centimeters in a very compressed space (Pietropoli et al., 2008, p. 24). They noted that the unique structure of these steps— each meant only for the left or right foot—forces us to glance down and prepare the appropriate action, focusing on the configuration of the stairs and our movements (Jelić et al. 2016, p. 8). While experiencing Pammatone's sidewalks and their sensorimotor effects, the sequence of squared arcades, the perspective flow, and the interplay of light and shade (Figure 4) intensify the *vibrant* character of the overall atmosphere that should make us "feel immersed and stimulated," as Albini wished in his 1954 lecture at the Iuav University (2005, p. 99). The atmospheric and light sensibility experimented in his aerial exhibition devices emerges in the constellation of interior staircases (Canepa, 2021, pp. 14–15), which strike for their ever-changing design, sculpture-like geometries, and enveloping handrails.

Figure 4. Pammatone complex seen from the arcade running along XII October Street.
Source: adapted from Canepa (2021). © Francesca Iovene.

4. CONCLUSIONS

Franco Albini and Franca Helg, although not from Genoa, masterfully conceived a project tuned to the Genoese building tradition and Genoese citizens' embodied memories. The architects orchestrated a coherent atmosphere rooted in the city's material and chromatic essence, to which our memories add layers to co-generate unique emotional nuances that echo other lived experiences. Spatial solutions that play with subtle perceptual and sensorimotor ruptures encourage passersby and residents to focus on their surroundings, which become more memorable and then more atmospherically prolific to the extent that the stored memories will prime future experiences.

5. ACKNOWLEDGMENTS

6. AUTHOR CONTRIBUTIONS

Elisabetta Canepa conceptualized the research and wrote the paper. Valter Scelsi supervised the research and contributed to the revision of the paper. All authors provided their final approval of the version submitted for review and publication.

7. BIBLIOGRAPHY

Albini, F. (1955). Quattro opere di un architetto emiliano. *Casabella-Continuità*, 205, 48.

Albini, F. (2005). My Experiences as an Architect in Exhibitions in Italy and Abroad (1954). *Casabella*, 730(2), 99–100.

Barthes, R. (1994). *Roland Barthes* (R. H. Howard, Trans.). University of California Press. (Original work published 1975).

Benjamin, W. (2007). The Work of Art in the Age of Mechanical Reproduction (H. Zohn, Trans.). In H. Arendt (Ed.), *Illuminations: Essays and Reflections* (1968) (217–251). Schocken Books. (Original work published 1936).

Brawne, M. (1965). *Neue Museen: Planung und Einrichtung*. Gerd Hatje.

Bucci, F. & Rossari, A. (Eds.). (2016). *I musei e gli allestimenti di Franco Albini.* Electa.

Buiatti, E. (2016). *Forma mentis. Neuroergonomia sensoriale applicata alla progettazione.* FrancoAngeli.

Canepa, E. (2021). *Pammatone 2 5 7.* Sagep.

Canepa, E. (2022a). The Atmospheric Equation and the Weight of Architectural Generators. In E. Canepa & B. Condia (Eds.), *Generators of Architectural Atmosphere* (18–55). New Prairie Press.

Canepa, E. (2022b). *Architecture is Atmosphere: Notes on Empathy, Emotions, Body, Brain, and Space*. Mimesis International.

Canepa, E. (2024). Empathic Imagination: Nurturing Architectural Creativity in Video Games and Virtual Reality Simulations. In G. Leandri (Ed.), IDEA—*Innovation Design Application (2024 edition): Conference Proceedings* (109–127). Genoa University Press.

Cerruti, M. (1967). Franco Albini e Franca Helg: Complesso residenziale, direzionale e commerciale a Genova Piccapietra. *L'architettura. Cronache e storia*, 135(9), 572–577.

Colombetti, G. (2022). What Makes a Building Memorable? A Perspective from Philosophy. In *ANFA Center for Education (ACE)'s meeting* (February 24).

De Marpillero, G. (1966). Il piano di Piccapietra a Genova. *Casabella*, 308, 16–43.

Eliasson, O. (2022). *Experience* (revised and expanded ed.). Phaidon.

Ellard, G. & Johnstone, S. (2019). An Aerial Sensibility: Notes on Franco Albini, Caterina Marcenaro, and a Museum of Floating Objects. *Afterall.* Retrieved May 2, 2024, from *https://www.afterall.org/articles/an-aerial-sensibility-notes-on-franco-albini-caterina-marcenaro-and-a-museum-of-floating-objects*

Franco, G. (2016). Architettura contemporanea in contesti storici. Per un sistema di valori. *Techne*, 12, 182–189.

Franco, G. & Musso, S. F. (2016). *Architetture in Liguria dopo il 1945*. De Ferrari.

Fuselli, E. (1932). Il piano regolatore di Genova. *Architettura*, XI(XII), 687–700.

Griffero, T. (2014). *Atmospheres: Aesthetics of Emotional Spaces* (S. De Sanctis, Trans.). Ashgate. (Original work published 2010).

Griffero, T. (2021). *The Atmospheric "We": Moods and Collective Feelings.* Mimesis International.

Irace, F. (2006). *Albini. Zero Gravity.* Electa.

Jelić, A., Tieri, G., De Matteis, F., Babiloni, F. & Vecchiato, G. (2016). The Enactive Approach to Architectural Experience: A Neurophysiological Perspective on Embodiment, Motivation, and Affordances. *Frontiers in Psychology*, 7, 481. *https://doi.org/10.3389/fpsyg.2016.00481*

Moore, C. (1977). Foreword. In J. Tanizaki, *In Praise of Shadows* (n.p). Leete's Island Books.

Pallasmaa, J. (1996). *The Eyes of the Skin: Architecture and the Senses.* Wiley.

Pallasmaa, J. (2014). Space, Place and Atmosphere: Emotion and Peripherical Perception in Architectural Experience. *Lebenswelt: Aesthetics and Philosophy of Experience,* 4(1), 230–245.

https://doi.org/10.13130/2240-9599/4202

Patrone, P. D. (1982). Daneri. Sagep.

Pietropoli, G., Renai, E. & Zanarotti, C. (2008). *Carlo Scarpa: La tomba Brion.* Grafiche Vincenzo Bernardi.

Robinson, S. (2021). *Architecture is a Verb.* Routledge.

Rossi, A. (1981). *A Scientific Autobiography.* MIT Press.

Scelsi, V. (2022). *Osservazioni su architettura e analogia*. Quodlibet.

Scelsi, V. (2023). *Il supporto alla Elevatio animae*. Sagep.

Spinelli, L. & Prina, V. (1991). I piani e le vicende urbanistiche (1945–1990). *Domus,* 727, 44–71.

Whitlock, J. R. (2017). Posterior Parietal Cortex. *Current Biology*, 27(14), R691–R695.

https://doi.org/10.1016/j.cub.2017.06.007

Windhorst, C. & Sutton, J. (2011). La memoria. In M. Marraffa & A. Paternoster (Eds.), *Scienze cognitive. Un'introduzione filosofica* (75–94). Carocci.

Zumthor, P. (1998). *Thinking Architecture.* Birkhäuser.

Zumthor, P. (2006). *Atmospheres: Architectural Environments. Surrounding Objects.* Birkhäuser.

DIGITAL TECHNOLOGY AS A TOOL FOR CREATING A MULTI-SENSORY AMBIANCE IN ARCHITECTURE

A TECNOLOGIA DIGITAL COMO FERRAMENTA PARA CRIAR UM AMBIENTE MULTI-SENSORIAL EM ARQUITECTURA

Edanur Fettahoğlu
Research Assistant
Karadeniz Technical University
edanurfettahoglu@ktu.edu.tr

Umay Bektaş
Research Assistant
Karadeniz Technical University
umaybektas@ktu.edu.tr

İrem Karadeniz Dündar
Research Assistant
Karadeniz Technical University
iremkaradeniz@ktu.edu.tr

ABSTRACT

The research is based on the question "Do technology and the digital transformation that comes with it move us away from a multi-sensory and human-centred design approach by focusing only on the sense of vision?" The aim of the research is not to prove this right or wrong, but to explore the potential of digital technology as a tool for creating a multi-sensory spatial atmosphere. To this end, immersive experience spaces, one of the most important examples of digitalization in architecture, will be discussed. Example projects designed for different functions were analysed. As a result of the research, it was concluded that digital technology can be used as a tool to create a multi-sensory environment. Many variables such as the function, purpose, user group and usage process of the space determine which senses it will be designed for and, more importantly, what kind of content will be constructed.

KEYWORDS: digitalization in architecture. digital experience. multisensory design. space ambiance. immersive experience space.

RESUMO

A investigação baseia-se na seguinte questão: "Será que a tecnologia e a transformação digital que a acompanha nos afastam de uma abordagem de design multissensorial e centrada no ser human, concentrando-nos apenas no sentido da visão?" O objetivo da investigação não é provar que isto está certo ou errado, mas sim explorar o potencial da tecnologia digital como ferramenta para criar uma atmosfera espacial multissensorial. Para tal, serão discutidos os espaços de experiência imersiva, um dos exemplos mais importantes de digitalização na arquitetura. Foram analisados exemplos de projectos concebidos para diferentes funções. Como resultado da investigação, concluiu-se que a tecnologia digital pode ser utilizada como uma ferramenta para criar um ambiente multisensorial. Muitas variáveis, como a função, o objetivo, o grupo de utilizadores e o processo de utilização do espaço, determinam os sentidos para os quais será concebido e, mais importante ainda, o tipo de conteúdo que será construído.

PALAVRAS-CHAVE: digitalização na arquitetura. experiência digital. design multissensorial. ambiente espacial. espaço de experiência imersiva.

1. INTRODUCTION

There is an important question that has been discussed since the early days when the computer became a part of the architectural design process: "Do technology and the digital transformation that comes with it move us away from a multi-sensory and human-centred design approach by focusing only on the sense of vision?". One of the most common views on this subject is the concern expressed by Pallasmaa, (2005) that design technologies can gradually make architecture more visual. The study was based on this question; however, instead of looking for a direct answer, it questioned the impact potential of technology on architecture when considered a tool to create a multi-sensory ambiance.

Today, digital technology is used effectively in every field of architecture, from the design process to implementation (Abel, 2007; Szalapaj, 2014). Therefore, it is essential to question the impact of digital technology on today's architectural practice when considered as a tool. Designers, with their desire to explore for the new, have the instinct to take almost every development as a tool and turn it into design. For this reason, digital technology, from the most basic computer programs to artificial intelligence, has somehow continued to be among the areas that nourish architecture (Kolarevic, 2003; Laing, 2018). One of the most striking examples of this is immersive experience spaces, where digital technology goes beyond the design and implementation process of the space and becomes a part of the usage process. In these spaces, which can be defined in various ways, such as digital experience space and hybrid space, the digital and physical environments intertwine and become a whole. It provides the user with a digital experience in a physical space. This situation affects the relationship between architecture and technology and the questioning of concepts such as boundary, time, movement, and stasis, which are the basis of architectural design.

2. METHODOLOGY

To investigate the research question, the sample group was selected from immersive experience spaces, which are among the most advanced examples of digital experience design. In order to investigate how multisensoriality is achieved in different design scenarios, 8 different projects designed for different functions and enabling multi-sensory interaction were analysed.

2.1 Exploring the Relationship between Technology and Multi-Sensory Design through Immersive Experience Spaces

Today, immersive experience spaces are commonly designed for artistic purposes. However, in addition to these projects, this study also examined projects designed for non-artistic purposes, such as restaurant and healthcare, and questioned the role of the senses in the design processes according to the information and visuals obtained. These projects are as follows:

2.1.1 Immersion Oceano Monaco

The interactive museum, which allows visitors to experience the beauty and fragility of the polar region up close, is installed on a 650 m2 projection surface. 6 different symbolic scenes have been prepared and at the same time the museum has been transformed into a playground with the interactive design. In the project, where the concept of "interaction" is effective, visuality and tactility are at the forefront and are designed in coordination. In addition, each animation is supported by a voiceover (Figure 1).
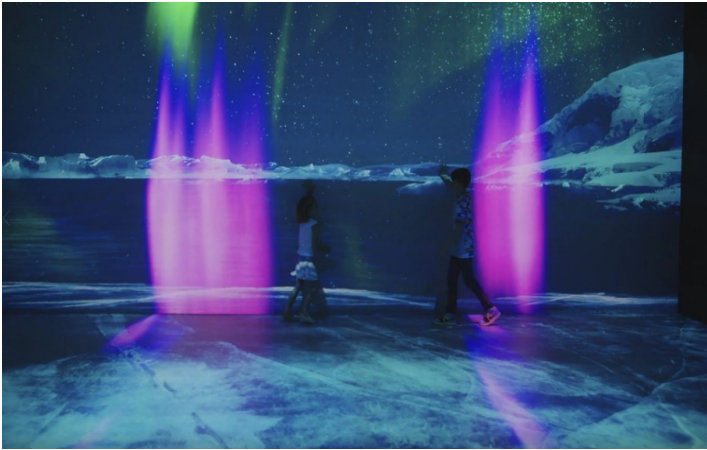
Figure 1. Immersive Oceano Monaco, Superbien, Massimiliano Siccardi et al, 2022
Source: Superbien. (2024).

2.1.2 Aurora

The work on display at the Arte Museum in Las Vegas is inspired by the city's natural and cultural background. It is designed to provide visitors with a multi-sensory, immersive experience based on three basic senses. A moving, vibrant, large-scale image is presented with a specially created soundscape and scent. From the moment the visitor enters the area, the aim is to create a strong, sumptuous spatial atmosphere that envelops the visitor and effectively stimulates many senses (Figure 2).

Figure 2. Arte Museum : Beach Aurora, d'strict, 2020
Source: Arte Museum. (2024).

2.1.3 Haydn's Creation at The Barbican

In this project for a 3-act oratorio about the creation of man and the universe, the main aim was to harmonise music and space. The aim was to reflect the rising and emphasised parts of the music in the space. To this end, a project was developed in which the live

performance and the space could transform simultaneously. Like the live performance, the space reacted instantly to the music, creating a lively, moving composition. The project considered the senses of sight and hearing as active in the whole design process and the project was built primarily around these two senses (Figure 3).

Figure 3. Haydn's Creation at The Barbican, Nina Dunn Studio, 2021
Source: Nina Dunn Studio (2024).

2.1.4 Circle of Life

In the project, which focuses on the continuous cycle of nature from life to death and rebirth, the concept of "cycle" is explained through a cyclical movement. The fictionalised story is reflected in the prepared dance choreography. The space was used as a dominant element in the narration of the scenario, moving in harmony with the dancer. Motion capture technology was used to adapt the dancer's movements to the digital animation projected onto the space. The music used also enhanced the effect created (Figure 4).

Figure 4. Circle of Life, Limelight, 2022
Source: Limelight. (2024).

2.1.5 MoonFLower Sagaya Ginza

The restaurant is designed around the concept of "Worlds Unleashed and then Connected". The dishes on the menu, digital animation and music are connected to each other as well as to nature and change with the seasons. The concept of "integrity" is based on the fact that the visual space, the music and the taste of the food are in harmony from the moment the diner enters the space, creating a sensory integrity. Artificial intelligence observes everything on the table and organises the layout according to the user's needs. The fiction created is supported by the sense of touch (Figure 5).

Figure 5. MoonFLower Sagaya Ginza, Teamlab, 2017
Source: MoonFLower Sagaya Ginza. (2024).

2.1.6. Colour Your Move

The project was designed to inspire athletes to move. The concept of "movement" was the starting point. The area designed is like a playground. The floor forms a grid system with screens, and with each step the movement turns into colour and paints the floor. In line with its main function and the concept of movement, the senses of touch and sight have been considered together. The atmosphere created was also enhanced by the sound used (Figure 6).
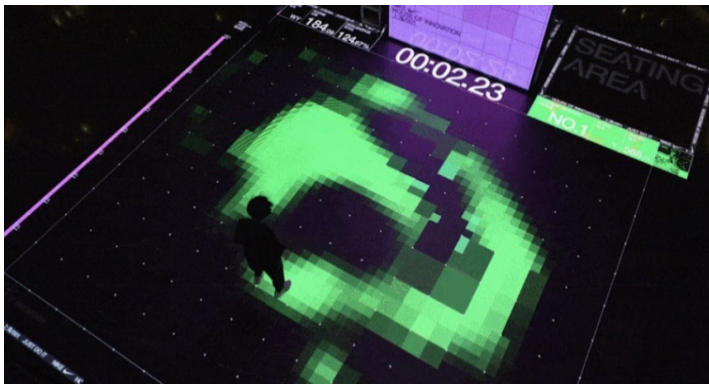
Figure 6. Colour Your Move, Studio Nowhere, 2021
Source: Studio Nowhere. (2024).

2.1.7 Immersive Monet : Immersive Yoga

In the project, which uses art as a therapeutic tool, the space is animated with works by the famous painter Monet. The moving animation, which covers the entire space, encourages visitors to move, rest their minds while challenging their bodies. The project, designed to offer a multi-sensory spatial experience, creates a choreography in harmony with music, sound, light and moving images, and aims to make visitors a part of this choreography (Figure 7).

Figure 7. Immersive Monet : Immersive Yoga, Massimiliano Siccardi et al, 2023
Source: Immersive Yoga – A Unique Wellness Experience. (2024).

2.1.8 FHOCG: Neurorehabilitation

The project is designed to be used as a tool in the rehabilitation of hemianopsia, which causes partial or complete loss of the patient's visual field. In collaboration with a clinical psychologist and a design agency, different scenarios have been created and visualisations have been prepared. It is possible to interact with the elements projected in the room where the sessions take place. For example, digital drawings can be made on the surfaces of the room using a control panel to activate the patient's peripheral vision. The patient can make drawings on the digital image prepared with a control panel. It has been observed that some patients who have used this method have started to do daily activities that they could not do before and their focusing problems have decreased. The project focused on the sense of sight to improve the patients' visual perception. The sense of touch was also effective in the project process, increasing interaction with the space (Figure 8).

Figure 8. FHOCG: Neurorehabilitation, Broomx, 2022
Source: Broomx. (2024)
.

When the 8 projects selected to be analysed in the study are evaluated, it is seen that the scenarios of the projects differ in line with variables such as purpose, function and user group. This difference also affects which senses are focussed on and at what level. In this direction, it would be useful to evaluate how the multi-sensory experience created in the projects can change according to which variables.

3. FINDINGS

In the design process of an architectural project, the designer uses tools such as colour, light and texture to give the message to the user. In this study, digital technology is considered as a tool and the place of digital technologies developed for various senses in the design process is questioned. Therefore, firstly, the interaction between the design scenario and the senses is examined. Which sense the designer wants to stimulate for what purpose and which technology is used for this purpose is examined.

Then, the findings obtained in line with the research problem were questioned. Which senses the projects directly focus on and which other senses support these senses were analysed.

3.1 Content Details and Sensory Distribution of The Projects

It can be seen that projects designed with different scenarios for different functions can be designed to appeal to many senses. Accordingly, the 8 projects analysed were categorised according to their function, concept, digital tools-methods and the senses for which they were designed (Table 1). The purpose of this categorisation is to question the relationship between the content designed in the multi-sensory immersive space design process and the senses intended to be stimulated.

PROJECT	FUNCTION & PURPOSE	CONCEPT	DIGITAL TOOLS & METHODS	SENSES				
				Sight	Hearing	Touch	Taste	Smell
Immersion Oceano Monaco	Museum ↓ Training	Interaction Nature Harmony	- Projection - Audio system - Motion capture	✓	✓	✓		
Aurora	Exhibition ↓ Cultural Event	Magnificence Strength Nature	- Projection - Audio system - Scent	✓	✓			✓
Haydn's Creation At The Barbican	Cencert Hall ↓ Cultural Event	Creation Harmony Rhythm	- Projection - Audio system	✓	✓			
Circle of Life	Dance floor ↓ Entertainment	Loop Movement Harmony	- Projection - Audio system - Motion capture	✓	✓	✓		
MoonFLower Sagaya Ginza	Restaurant ↓ Commercial	Connection Integrity Harmony	- Projection - Audio system - AI	✓	✓	✓	✓	
Colour Your Move	Sports court ↓ Sport - Gaming	Movement Excitement Inspiration	- Projection - Audio system - Motion capture	✓	✓	✓		
Immersive Monet	Yoga Room ↓ Therapy	Movement Tranquillity Harmony	- Projection - Audio system	✓	✓	✓		
FHOCG: Neurorehabilitation	Rehabilitation Center ↓ Healthcare	Focusing Perception Healing	- Projection - Control panel	✓		✓		

Table 1. Content details and sensory distribution of the projects

When examining the table that organizes the projects into categories, it's clear that spaces capable of creating a multi-sensory environment with digital experiences can be designed for various purposes. These purposes range from entertainment and health services to artistic events. The function of the project influences its content, and the content influences the senses for which it is designed. While sight is the most effective sense in the design process, it has been observed that hearing and touch are almost as effective as sight in the process. Depending on the nature and content of the project, taste and smell may also be central to the scenario. This situation has also affected the methods used in the design process and the implementation phase, requiring the use of digital technologies for different senses.

3.2 Digital Technology-Based Spaces as an Alternative for Multi-sensory Design: Opportunities and Challenges

The analyses showed that the design scenarios of the projects are related to the sensory atmosphere created. In other words, digital technology was able to contribute to the creation of a multi-sensory spatial ambience. With this finding, the starting point of the research, «Do technology and the digital transformation that comes with it move us away from a multi-sensory and human-centred design approach by focusing only on the sense of vision» can be reconsidered.

Architecture is often created and produced for the sense of sight, so it tends to neglect non-visual senses such as hearing, touch, smell and taste (Mau, 2018; Spence, 2020). This is also related to the dominance of our sense of sight (Posner et al., 1976; Hutmacher, 2019). The argument that technology further increases this dominance is related to the fact that digital technology encourages designers to design with visual tools. The digital technology-based immersive experience spaces analysed show that there may be alternatives to make this possible. It is seen that the sense of sight is again a dominant sense in the projects. However, technologies for different senses were also actively used. At this point, it would be useful to examine the senses that come to the fore according to the function of the space. For example, the project «Haydn's Creation at The Barbican» is an oratorio and auditory senses are expected to be at the forefront. However, since sound and image are handled as a whole in the project, it can be said that the sense of sight is also used effectively. This situation can be evaluated as both an opportunity and a challenge: The image can be considered as an element that supports the sound, or it can be said that it prevents the sound from being a dominant sense alone. Both possibilities are possible from different perspectives. Another example, the stage analysed in the «Circle of Life» project, is a dance performance, and therefore a movement and sound-oriented performance. On the other hand, the sense of touch was also actively used in the show, and the concept of «movement» was supported by the use of motion capture technology. This project is an example of how digital technologies developed for different senses can be actively used in a project focussing on the sense of sight.

Based on the analyses, it can be concluded that each project has similar opportunities and challenges in the context of the relationship between digital technology and multisensory design. Therefore, when designing a project for multisensory ambience, the possibilities that may arise from the digital technologies to be used should also be considered and questioned.

4. RESULTS AND DISCUSSION

The study examined examples of immersive experience spaces based digital technology, such as how technology was used and what method was followed to make-ambiance desired to be created for the user. In the spaces examined, it was observed that designers tried to make a spatial experience that envelops the user by appealing to many senses. The fact that the senses are effective in the design process and become part of the scenario is promising for the dissemination of the multi-sensory design approach. Furthermore, it was observed that the concepts emphasised in the design scenarios were also related to the senses. For example, the sense of touch was prioritised to reflect concepts such as movement and interaction, and the sense of hearing was prioritised to reflect the concept of rhythm. The fact that the concept of harmony is often emphasised in the project scenarios, and that different senses are used together to achieve this harmony in a way that creates integrity, is also one of the notable findings. Multi-sensory design has also influenced the tools and methods used.

When the methods used are discussed, it has been determined that not only technologies focused on visual senses, such as projection and mapping, but also technologies focusing on different senses, such as audio systems and motion capture devices are frequently used. The ambiance the designer wants to create visually surrounds the space with animations. With the sound design, users are auditorily surrounded, and the body-space relationship is strengthened with tactile elements. Additionally, projects using the senses of smell and taste have also been encountered. The harmonious design of the function, the scenario and the technological tools and methods used contributes to the creation of a multi-sensory environment. For this reason, the scenario to be constructed and the multi-sensory approach to be developed should be carefully planned from the beginning of the design process. As a result, the examples examined show that digital experience spaces have great potential. However, such places, which are still in development, may have negative consequences due to the intensity of emotions they create. So, a new question should be opened for discussion: "Digital technology can be used as a tool to create a multi-sensory ambiance in architecture, but how should this process be structured?"

5. BIBLIOGRAPHY

Abel, C. (2007). Architecture, Technology and Process. Routledge.

Arte Museum. (2024). Beach: Aurora.

https://lasvegas.artemuseum.com/aurora

Broomx. (2024). FHOCG: Neurorehabilitation

https://broomx.com/case-studies/all-case-studies/hemianopsia

Hutmacher, F. (2019). Why Is There So Much More Research on Vision Than on Any Other Sensory Modality?. Frontiers in psychology, 10, 2246.

Immersive Yoga – A Unique Wellness Experience. (2024). Immersive Monet.

https://www.immersivemonet.com/immersive-yoga/

Kolarevic, B. (2003). Architecture in The Digital Age. Design and Manufacturing. Nueva York-Londres: Spon Press-Taylor & Francis Group.

Laing, R. (2018). Digital Participation and Collaboration in Architectural Design. Routledge.

Limelight. (2024). Circle of Life.

https://www.limelight.art/portfolio/circle-of-life

Mau, B. (2018). Designing Live. In E. Lupton, & A. Lipps (Eds.), The senses: Design beyond vision, Hudson: Princeton Architectural Press.

MoonFLower Sagaya Ginza. (2024). Concept.

https://moonflower-sagaya.com/en/#concept

Nina Dunn Studio. (2024). Haydn's Creation at The Barbican.

https://somethinggraphic.net/2022/03/01/academy-of-ancient-music-barbican-centre/

Pallasmaa, J. (2005). The Eyes of The Skin: Architecture and the Senses. Wiley.

Posner, M. I., Nissen, M. J. & Klein, R. M. (1976). Visual dominance: An information-processing account of its origins and significance. Psychological Review, 83(2), 157–171.

Spence, C. (2020). Senses of place: architectural design for the multisensory mind. Cognitive research: principles and implications, 5(1), 46.

Studio Nowhere. (2024). Colour Your Move.

https://studionowhere.com/color-your-move/

Superbien. (2024). Immersion Oceano Monaco.

https://www.superbien.studio/projects/immersion

Szalapaj, P. (2014). Contemporary Architecture and The Digital Design Process. Routledge.

ATTUNEMENT WITH-IN MOTION: TRACING AS-IN PLACE

SINTONIZANDO COM O MOVIMENTO: RASTREANDO COMO ESTÁ NO LUGAR

Rowan Tandiwe Watson
Lecturer
Atlantic Technological University, Sligo
rowan.watson@atu.ie

ABSTRACT

This paper introduces an original embodied method of tracing and attuning to the dynamics (sights, sounds, movement, and sensations) with-in a site. The practices discussed can also be used during design to describe, feel, and imagine a future design as if inside it. Developed during a transdisciplinary PhD, this approach uses movement to bridge the sensory gap between the architect-designer, the animate site of the future building, and the experience of future inhabitants. This method requires no prior dance training and is influenced by Laban Movement Analysis, Movement Improvisation, and Non-verbal Communication. It uses familiar gestural movement to perceive, trace and attune to the multisensory characteristics of a place in real-time. By echoing and embodying surrounding spatial relationships, rhythms and densities, designers can achieve a memorable understanding of both dynamic and static place characteristics, enhancing the designer's attunement with the site or design.

KEYWORDS: architecture. design. movement. embodied. space. rhythm. density. attunement. dynamics.

RESUMO

Este artigo apresenta um método incorporado original de rastrear e sintonizar a dinâmica (visões, sons, movimentos e sensações) dentro de um local. As práticas discutidas também podem ser usadas durante o design para descrever, sentir e imaginar um design futuro como se estivesse dentro dele. Desenvolvida durante um doutorado transdisciplinar, esta abordagem utiliza o movimento para preencher a lacuna sensorial entre o arquiteto-designer, o local animado do futuro edifício e a experiência dos futuros habitantes. Este método não requer treinamento prévio em dança e é influenciado pela Análise de Movimento Laban, Improvisação de Movimento e Comunicação Não-Verbal. Utiliza movimentos gestuais familiares para perceber, rastrear e sintonizar as características multissensoriais de um lugar em tempo real. Ao ecoar e incorporar as relações espaciais, ritmos e densidades circundantes, os designers podem alcançar uma compreensão memorável das características dinâmicas e estáticas do local, melhorando a sintonia do designer com o local ou design.

PALAVRAS-CHAVE: arquitetura. projeto. movimento. corporificada. espaço. ritmo. densidade. sintonização. dinâmica.

1. INTRODUCTION

This paper introduces an original movement-based method of tracing and attuning to the existing dynamics (sights, sounds, movement, and sensations) with-in the sites of future buildings. This embodied mapping captures multi-sensorial impressions, and thus foregrounds what is perceptibly moving, happening and alive on-site. This movement praxis can also be used in-studio, to describe, feel, and imagine a future design as if inside it. As illustrated in Figure 1, the practices of *Place Trace* introduced here were trialled both on-site and later in-studio through the design of a dwelling, during a PhD that sought to explore new and accessible ways of using movement to aid architectural design.

This practice research was motivated by personal design experience that seemed distanced from both site dynamics and the experience of future inhabitants. Static site representations such as plans, photographs and sections, favoured inert site characteristics; failing to offer intuitive ways of recording the changing dynamics and interactions of the life already present on-site. Relatedly, existing patterns of life on site could be overlooked during subsequent design decisions. Furthermore, "top-down" (Robinson, 2021, p.203) representations such as site plans failed to capture the insider perspectives of future inhabitants.
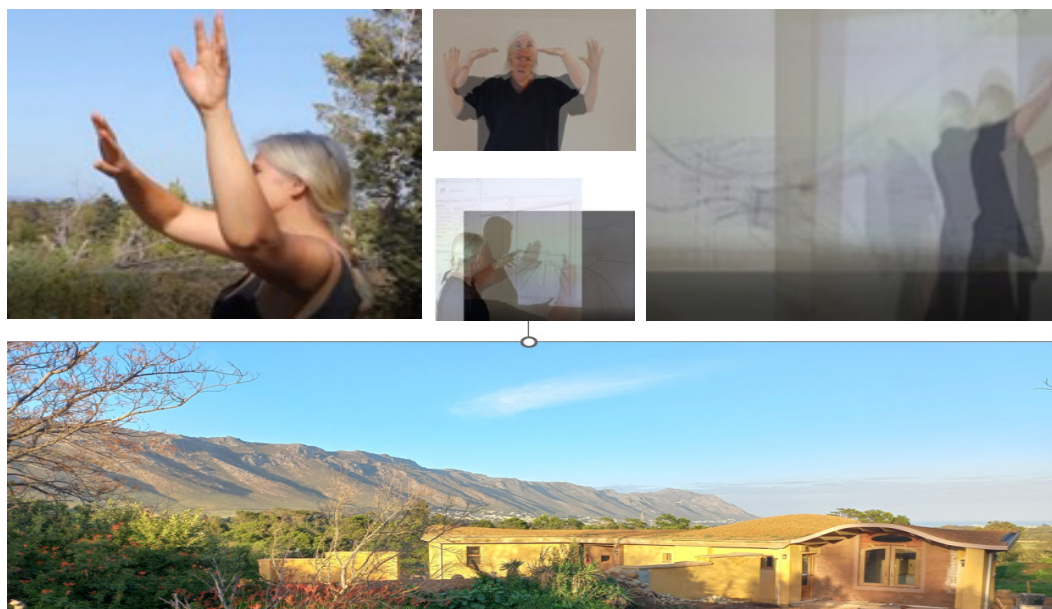
Figure 1. Practicing Place-Trace on site and in studio for the design of the dwelling shown below.
Source: Adapted from author's film records during practice and doctoral dissertation (2023).

Personal experience of dance-movement was noticeably different from that of architectural design. It was a multisensory and dynamic experience, engaging my entire body interactively with my surroundings. This connects strongly with ecological

approaches, in particular the ecological perceptual theories of Eleanor Gibson (Gibson, 1969; Gibson & Pick, 2000) and James Gibson (2014). These emphasise the interactional and dynamic nature of the senses in action, as we and other creatures move through, respond to, appropriate, and survive our surroundings. Likewise, whole-body movement necessitates heightened sensory awareness as continual changes occur in the body's interactions with its surroundings (Moore & Yamamoto, 2012). Consequently, during movement a heightened awareness of the relationship between the body and its environment strengthens a sense of immediacy, of the present: right-now, and right-here.

Arguably, we use our combined senses to understand the dynamics of the situations surrounding us, and our moving bodies to respond to the demands of the situations perceived. The fundamental capacity to read, respond and attune to surrounding dynamics is present from infancy (Stern, 2010; Stern, 2009). Daniel Stern's (2010; 2009) research suggests that during interpersonal communication, for example that between mother and baby, we mimic the dynamic or "vital" (Stern 2009, p.10) characteristics of each other's actions and communication. This echoing practice, that includes both movement and voice, affects an attunement between the dynamics of baby and carer, fostering identification and empathy. Similarly, movement and voice work together during nonverbal communication, in response to the dynamics of the interpersonal situation (Argyle, 1988; Moore & Yamamoto, 2012). This paper will outline the simple core themes (or prompts) of *Place Trace* that are applied during movement to translate and echo the dynamics of place: seen, heard, and felt around the body-self. It will also discuss aspects of the practice which foster attunement between the moving practitioner and the place described.

2. IDENTIFYING PURPOSE AND FOCUS OF ARCHITECTURAL MOVEMENT PRACTICE
2.1 Purpose and Aims of Practice Research

During the first phase of the PhD, connections found between my own movement and concurrent imagination of place suggested that it might be possible to use movement during design as a type of non-verbal communication with self. This method of tracing real or imagined place around the body-self might be used to mark and consider both static and dynamic place-qualities, alongside other common architectural activities. The intention was to explore ways of using whole-body movement, both when learning about the site and when designing in-studio.

On-site, gestural movement and walking were used to map and note both static and dynamic site characteristics in important locations and along key routes (see Figure 1-left). Site specific information about the movement and habits of wildlife, the interplay of sound in differing locations, the behaviour of wind and moisture on site, and the spatial experience of the landscape from key locations, was traced three dimensionally around the body in real time to inform later design decisions.

In studio, during design, spaces and routes could be imagined and tested from the centre of the body out. Head and torso became the inhabitant. Eyes, arms and hands, moving around the body, traced and represented the imagined surrounding space. This practice varied in scale from subtle movement using the torso and eyes, to gestural explorations and large drawings using hands, eyes and arms around the body (see Figure 1 middle and right).

During the PhD design explorations, the relationship between people and their surroundings was understood to encompass both subjective and intersubjective experiences. The research aimed "to identify and trial an original approach to embodied architectural [practice] that employ[ed] movement to inform and enhance the architect's experience of designing *with-in* the animate site and *as-if-in* the future design" (Watson, 2023, p.14). The phrases *with-in* the site and *as-if-in* the design promoted an attuned embodied awareness of the place explored. The term *with-in* was useful when conceptualising how I meant to relate to the site, moving both subjectively *in* it and intersubjectively in sync *with* it. The term *as-if-in* helped when conceptualising the processes of moving *as-inside* the imagined design, and *as-if* its qualities. The movement practices tested during design provided practical, immediate, and memorable ways of exploring surrounding qualities. However, Place Trace was also characterised by feelings of closeness or immediacy to those aspects of place embodied in movement.

2.2. Identifying the Movement Focus

Phenomenological thinkers such as Merleau-Ponty (1962) maintain that the way in which we perceive and understand the world is interpreted through our senses and physical experience. Thus, both the research motivations and the methods employed were Phenomenological. I wished to establish a movement practice that would be easy and adaptable during design, focusing on themes important to my body in motion rather than on an intellectual understanding of place. To identify such movement-place associations Phase 1 of the research adapted methods from the Experiential Phenomenological Method (Price & Barrell, 2012) and Interpretative Phenomenological Analysis (Smith et al., 2009). Throughout a year, 356 involuntary mental images of imagined places were recorded in the studio during 500 short, improvised movement events, as illustrated in Figure 2.

Figure 2. Records of Event 1:18-05-14
Source: Adapted from author's doctoral dissertation (Watson, 2023, p.34).

Post practice analysis of Phase 1 event-records identified several connections between movement qualities and concurrent imagined place qualities. These associations suggested the importance during movement of spatial relationships, felt rhythmic qualities, and the material and spatio-temporal density of body-place encounter. During subsequent design trials, of a seat and then a dwelling, these three themes became prompts that influenced both the movement focus and the way I thought about the evolving design. Interpretation of these themes was influenced by prior experience of the effort qualities in Laban Movement (Maletic, 1987). Also, movement exposure to Gabrielle Roth's Five Rhythms (Roth 1998) suggested that the shifting rhythm of body-place interaction (seen, heard or felt) could contribute to the atmosphere or dynamic experienced when moving through a space or situation. Rhythm, density and relational space were understood as follows:

- **Relational space** referred to space as experienced from the centre of the body out, incorporating body relative distance, scale, position, and shape.
- **Felt density** referred to the intensity, urgency, or immediacy of the felt interaction between body and place. It could for example, relate to the closeness of confines, the hardness of materials, the strength of pressure, or the loudness of sound. During movement, density would be felt as the degree of tension or effort used during an action.
- **Rhythm** was the term used to describe the pattern of change experienced through time, incorporating both tempo and the quality of transitions as illustrated in Figure 3. A rhythm could be, for example, sharp and quick with small sudden changes, or smooth and gradual. Rhythm could relate to dynamics experienced in real time, for example a bird in flight, or insect noise. But it could also be experienced when running hands along an edge of a static form, or eyes along the contours of a room.
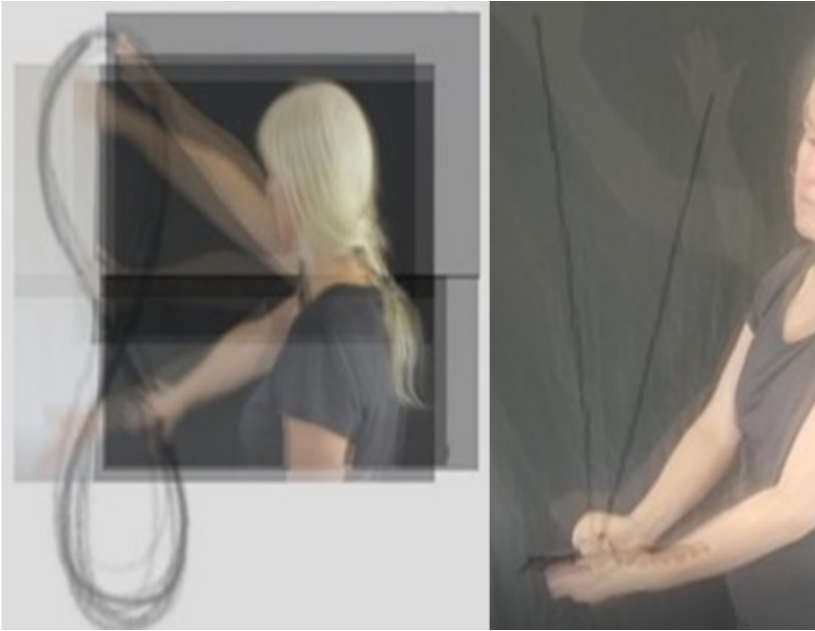
Figure 3. Felt rhythms with smooth and sharp transitions.
Source: Adapted from author's movement study and doctoral dissertation (2023).

3. THE PRACTICE
3.1 Tracing Multisensorial Properties of Place

When moving in direct and aware physical spatial relationship within place, I moved with attention to the rhythms and densities around me, as indicated in Figure 4. When gesturing around my body to describe my surroundings, I traced the spatial paths, positions and edges of forms and life sensed around me, simultaneously attending to their felt rhythms and densities.
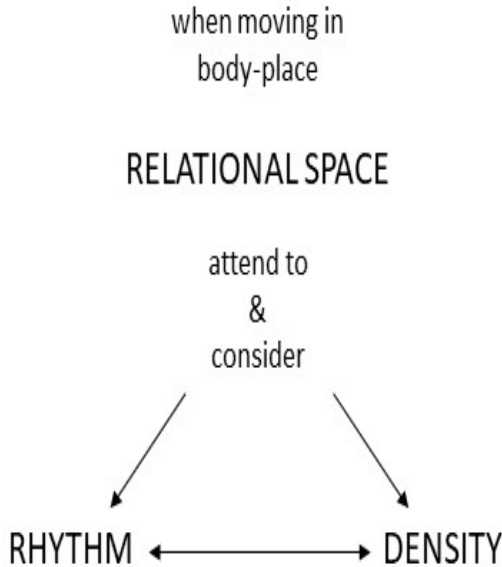
Figure 4. Approach to working with three main prompts.
Source: Author's doctoral dissertation (Watson, 2023, p.114).

On-site, movement helped me to sense and translate the multi-sensory impressions surrounding me. The perceived dynamics of place echoed in movement had attributes of tempo, spatial quality, and intensity. For example, something seen, heard, or felt could, be sharp, high, and light. Or it could glide slowly, evenly and softly. The heavy rumble of passing traffic, for example, was echoed with a strong, tense tumbling action, focused through hands and forearms, that followed the sweeping linear path of the vehicles as shown in Figure 5. The flitting of birds was traced using quick, airy, light swooping movements that skimmed around me. On-site and in-studio, tracing landscape silhouettes or the forms of the design evoked feelings that included intensity and rhythmic qualities. Gradual curves felt different from broken edges. The scale of the sensation also changed with the scale and proximity of the object described. Thus, through time and during repeated occasions, impressions of the perceptible dynamics in each location were amassed during movement, to inform both practical and experiential design decisions.

Figure 5. Tracing traffic noise on-site.
Source: Adapted from author's records during practice.

Echoing and moving with the dynamics seen, heard, or felt around me seemed easy. The way in which I described and interpreted movement was inevitably influenced by prior movement influences such as Laban Movement Analysis (Laban, 1948; Maletic, 1987; Fernandes et al., 2015) and Gabrielle Roth's Five Rhythms (Roth 1998). However, Daniel Stern's (2009) research into interpersonal infant communication revealed parallels with the dynamic qualities attended to in my own practice. Likewise, infants and their carers read and attune to the spatial flow, tempo, and intensity of each other's expression. Furthermore, Stern (2010) describes how the echoing of movement and voice transfers across the senses. For example, a baby's waving gesture can be echoed by a caregiver's corresponding vocal sounds. Thus, Place Trace employs modes of reading and echoing situational dynamics that are familiar since infancy.

3.2 Using Gesture with Posture to Feel and Attune

The movement approach trialed drew on Laban Movement Analysis, Movement Improvisation, Mindful Movement, and Non-verbal Communication. Using a combination of gestural and postural movement supported a familiar and accessible practice. Non-verbal communication, including gesture and posture, often occurs alongside speech and aids in spatial cognition (Tversky, 2019; Wilson, 2002; Wilson & Gibbs, 2007). Similarly, architects use gesture and drawing to explore ideas (Ganshirt, 2007). Gesture around my moving body-self provided me with a familiar way of describing the surrounding site and design. However, gesturing with my hands alone did not provide a strong enough sense of connection to the place-qualities described.

Hands operate peripherally and can be used to explore abstract ideas and objects at a distance from us. In contrast, posture has been found to bear a strong universal relationship to emotion and feeling (Argyle, 1988). However, gestural movement affects posture.

When gesturing to describe surroundings, the clearness and closeness of the characteristics echoed in movement was amplified by attention to sensation felt in the center of the body. In essence, I was listening to the dynamics of the site as I felt them in movement. In the context of interpersonal attunement, Hübl and Avritt (2023) advocate an empathetic listening to, and getting alongside with, the physical, emotional and mental dynamics of the person that needs help. Likewise, in relation to site-dance, Hunter describes a process of "multisensorial listening" (Hunter, 2015, p. 303). In relation to somatic practices, Eddy supports Topf's practice of "listening, waiting, accepting, and allowing" (Eddy, 2016, p.120) to strengthen an awareness of what is present. I too found that I needed to be both patient and receptive as I mapped and felt the dynamics, events and morphology surrounding me.

4. ECOLOGICAL IMPLICATIONS OF ATTUNEMENT

The research discussed in this paper engaged in dynamic architectural experience from within the body and from inside place. It considered architecture to be interactive and experienced dynamically, rather than inert and separate from its occupants (Robinson, 2021; Pallasmaa, 2011). During the design trials, Place Trace supplemented rather than replaced other ways of researching the ecology and dynamics of the site, adding a small but engaging layer to the information influencing the design. These practices focused on the small but unique local ecologies of place, aligning with philosopher Lorraine Code's assertion that a "focus on habitat as a place to know" is "central to ecological thinking" (Code, 2006, p.370). For example, movement on site helped me to understand where to zone for the habits and positions of birds; how and where to block traffic noise; and how to work with site morphology, planting, and wind. Thus, Place Trace aligns with ecological architectural thought that advocates for an awareness of the dynamic relationships inherent in places and the rich particulars of life present on-site (Rawes ed., 2013). These practices are intended to complement, rather than replace, other sustainable design methodologies such as reducing energy consumption or considering the environmental impact of building materials (Braungart and McDonough, 2009). The practices tested during this study address ecological and sustainability concerns by providing new ways of mapping and engaging with the dynamic ecologies present in the sites of future development.

5. CONCLUSION

Notably, *Place Trace* draws on and adds to an expanding body of work, in a wide range of disciplines, which emphasizes connections between movement experiences and understanding of the environment. The practice of *Place Trace* offers accessible and multisensorial ways of attending to surrounding spatial characteristics, rhythms, and densities within movement. The practice works with both subjective and intersubjective experience, moving both *with* and *in* the site; and exploring an emergent design *as-if-in* it. This practice research aimed to identify some helpful first steps or ways into moving to explore place, that can be shared with others and developed further. Movement is already part of the way in which we communicate with others, spatialise ideas, and know the world. *Place Trace* harnesses what are already implicit ways of relating to others using non-verbal communication. It offers intuitive ways of engaging in whole-body movement whilst tracing the characteristics of a living, moving place. It also brings the designer-practitioner into a situated and dynamic attunement with-in the ecologies of the site.

6. BIBLIOGRAPHY

Argyle, M. (1988). Bodily Communication. 2nd edn. Routledge.

Braungart, M. & McDonough, W. (2009). Cradle to Cradle: Remaking the Way We Make Things. North Point Press.

Code, L. (2006). Ecological Thinking: The Politics of Epistemic Location. Oxford University Press.

Eddy, M. (2016). Mindful Movement: The Evolution of the Somatic Arts and Conscious Action. Intellect Books Ltd.

Fernandes, C., Miranda, R., Mota, J., Hand, J., Scialom, M., Schlicher, S., Grassman, R. (2015). The Moving Researcher: Laban/Bartenieff Movement Analysis in Performing Arts Education and Creative Arts Therapies. Jessica Kingsley Publishers.

Gänshirt, C. (2007). Tools for Ideas: Introduction to Architectural Design. Birkhauser.

Gibson, E. (1969). Principals of Perceptual Learning and Development. Prentice Hall Inc.

Gibson, E.J. & Pick, A.D. (2000). An Ecological Approach to Perceptual Learning and Development. Oxford University Press.

Gibson, J. J. (2014). The Ecological Approach to Visual Perception. Psychology Press.

Hübl, T. & Avritt, J. J. (2023). Attuned: Practicing Interdependence to Heal Our Trauma-and Our World. Sounds True.

Hunter, V. (2015). Dancing the Beach: in Between Land, Sea and Sky. In: V. Hunter (Ed.), Moving Sites: Investigating Site-specific Dance Performance (pp. 295-309). Routledge.

Laban, R. (1948). Modern Educational Dance. MacDonald & Evans Ltd.

Maletic, V. (1987). Body - Space - Expression: The Development of Rudolf Laban's Movement and Dance Concepts. De Gruyter Mouton.

Merleau-Ponty, M. (1962). A Phenomenology of Perception (C., Smith, Trans.). Routledge and Paul Kegan. (1945).

Moore C. & Yamamoto, K. (2012). Beyond Words: Movement Observation and Analysis (2nd ed.). Routledge Taylor and Francis Group.

Pallasmaa, J. (2011). The Embodied Image: Imagination and Imagery in Architecture. John Wiley & Sons Ltd.

Price, D.D. & Barrell, J.J. (2012). Inner Experience and Neuroscience: Merging both Perspectives. MIT Press.

Rawes, P. (2013). Relational Architectural Ecologies: Architecture, Nature and Subjectivity. Routledge.

Robinson, S. (2021). Architecture is a Verb. Routledge.

Roth, G. (1998) Sweat Your Prayers. Tarcher Putnam Books.

Smith, J. A., Flowers, P., Larkin, M. (2009). Interpretative Phenomenological Analysis: Theory, Method and Research. Sage.

Stern, D. (2010). The issue of vitality. Nordic Journal of Music Therapy, 19(2), 88–102. https://doi.org/10.1080/08098131.2010.497634

Stern, D. N. (2009). The First Relationship. Harvard University Press.

Tversky, B. (2019). Mind in Motion: How Action Shapes Thought. Basic Books.

Watson, R. T. (2023). Place Trace: Embodying Site and Architectural Experience through Movement Praxis. (Doctoral dissertation). Birmingham City University.

Wilson, N. L. & Gibbs Jr, R.W. (2007). Real and Imagined Body Movement Primes Metaphor Comprehension. Cognitive Science, 31(4), 721-731. https://online library.wiley.com/doi/pdf/ 10.1080/15326900701399962

Wilson, M. (2002). Six Views of Embodied Cognition. Psychonomic bulletin & review, 9 (4), 625-636. https://link.springer.com/content/pdf/10.3758/BF03196322

APPROACHING WALKABILITY THROUGH AMBIANCE AS A STRATEGY FOR FOSTERING INHABITANT AGENCY WITH REGARD TO THE WALKABILITY OF SUBURBAN ENVIRONMENTS: THE CASES OF EYBENS, FRANCE AND BROSSARD, CANADA

ABORDANDO A CAMINHABILIDADE ATRAVÉS DA AMBIÊNCIA COMO UMA ESTRATÉGIA PARA PROMOVER A AGÊNCIA DO HABITANTE NO QUE DIZ RESPEITO À CAMINHABILIDADE EM AMBIENTES SUBURBANOS: OS CASOS DE EYBENS, FRANÇA E BROSSARD, CANADÁ

Mathilde Loiselle 1, @
1 : Univ. Grenoble Alpes, CNRS, ENSAG*, AAU-CRESSON, 38000 Grenoble,
France * School of Architecture Univ. Grenoble Alpes
AAU CRESSON

ABSTRACT

This article presents the results of a methodological exploration aimed at promoting resident agency in relation to walking ambiances in the suburbs. This project is part of a thesis in urban planning which focuses on the walkability of these environments for a plurality of walkers. The thesis seeks, on the one hand, to understand what contributes to the walkability of suburbs in its morpho-functional and sensitive dimensions. It then explores the potential of creative approaches to promote resident agency in relation to the walkability of these environments. An ambiance-based approach is used from data collection to analysis and proves to be a powerful tool for mediating needs. The sensitive dimensions of the walking experience also appear to be predominant among the criteria of walkability in inhabitants' narratives. It is the interest of the methods used to bring out resident agency in relation to the ambiances of walking in the suburbs that this article proposes to discuss.

KEYWORDS: Walkability, Suburbs. Ambiances. Agency. Creative methods.

RESUMO

Este artigo apresenta os resultados de uma exploração metodológica destinada a promover a agência dos residentes em relação aos ambientes de caminhada nos subúrbios. Este projeto faz parte de uma tese em planejamento urbano que foca na transitabilidade desses ambientes para uma pluralidade de caminhantes. A tese procura, por um lado, compreender o que contribui para a caminhabilidade dos subúrbios nas suas dimensões morfofuncionais e sensíveis. Em seguida, explora o potencial de abordagens criativas para promover a agência dos residentes em relação à transitabilidade desses ambientes. Uma abordagem baseada na ambiência é utilizada desde a recolha de dados até à análise e revela-se uma ferramenta poderosa para mediar necessidades. As dimensões sensíveis da experiência de caminhar também parecem ser predominantes entre os critérios de caminhabilidade nas narrativas dos moradores. É o interesse dos métodos utilizados para realçar a agência dos residentes em relação aos ambientes de caminhada nos subúrbios que este artigo se propõe discutir.

PALAVRAS-CHAVE: Caminhabilidade, Subúrbios. Ambientes. Agência. Métodos criativos.

1. INTRODUCTION

The com This paper addresses the potential of an ambiance-based approach to foster inhabitant agency in relation to the walkability of living environments for a plurality of inhabitant profiles. There are numbers of benefits related to walking. In terms of health, walking is one of the most recommended physical activities (WHO, 2010). This can be explained, among other qualities, by its affordability and the possibility to walk as part of a transportation chain. On a social level, walking also has many

virtues. Favoring co-presence and encounters, walking helps to anchor people and give them a sense of belonging in their living environment (Thomas, 2007). Walking also contributes to inclusion and sociability (Bordreuil, 2000; Lefebvre, 1968), particularly as people age (Bigo, 2018; Negron & Lord, 2019). In ecological terms, walking is the mode of travel with the smallest ecological footprint. Walking has a zero-greenhouse gas emission balance, has no imperative to mineralize surfaces and produces no noise emissions likely to disrupt biodiversity (Barr, 2018). These many benefits of walking explain the growing concern of public administrations to ensure a positive walking experience within their living environments (WHO, 2022).

2. ENHANCING WALKABILITY IN THE SUBURBS, HOW AND WHO ?

The theory guiding urban intervention to ensure a positive walking experience is essentially based on the principles of density, diversity and design (Cervero & Kockelman, 1997; Cloutier, Lachapelle, & Rancourt, 2021; Gehl, 1987). However, these criteria, which have proved their worth around the world, are limited in their applicability to central urban contexts. They also overlook the sensitive aspects of the walking experience and their effects. In definitive, these criteria shed only partial light on what should guide urban intervention to improve walkability, especially in the suburban context. Suburbs are, among other things, characterized by low density and functional segregation, which often imply long distances to the various service, leisure and shopping destinations in the area. They are also mainly located on the outskirts of dense urban centers. Overall, their morpho-functional context limits the possibility for public administrations to intervene according to the above-mentioned criteria throughout these spread-out territories. The economic feasibility of such intervention is a first major obstacle, the question of land ownership a second. Nevertheless, suburbs are home to over 60% of Canada's population (Gordon & Janzen, 2013) and continue to represent an envied development model for Canadians (Statistics Canada, 2022). In France, suburbs are home to 29% of the population and have the highest populational annual increase (2007-2017) (Vallès, 2019). In this context, our work poses the initial question: How can we transform suburbs to encourage more people to walk?

To ensure a holistic approach that takes into account both the physical dimensions of the walking experience and the sensitive ones, the notion of ambiance is used as a masterpiece of the theoretical framework. Previous works from Augoyard (1998), Thibaud (2012), Chelkoff (2003) et Thomas (2004; 2007; 2010) are particularly mobilized to understand the concept and its applications and identify useful methods for understanding it. There is, strictly speaking, no definition of urban ambiance. Most researchers who are interested in this notion to understand urban phenomena nevertheless agree that it implies a subject who is both receiver and producer of ambiance. It is made up of physical signals which interact with the

subject's perception and their social and cultural representations (Augoyard, 1998, p. 8). With the aim of understanding the context of walking in the suburbs, the notion of ambiance provides valuable insight as it allows the spatial and sensitive context of this experience to be taken into account simultaneously. The same spatial walking context generates a plurality of experiences depending on the sensitive context and the perceiving subject. The mediation of these experiences appears facilitated when approached through the lens of ambiances.

As part of a participatory project, the ambiance-based approach poses the challenge that not all participants are sensitive to the same situations, to the same tools. A wide range of tools is often necessary to allow the reflexivity of the methodological approach during the interview and thus to mobilize the best tools depending on the interview in progress, the participant, the interviewer, their moods and availability at that exact moment.

The simple expression of an experience – here, under the lens of ambiances – does not necessarily translate into a projection of change. The translation from the current walking experience to a projected walking experience and what contributes to its configuration finally calls for the insertion of a driver of change in the project. The concept of agency is used here to guide this transformative dimension of the project. The agency means in a simplified manner the capacity of a person to act on a situation (Bandura 2006). As referred to here, the walker is not considered as an external agent to the walking experience that he is given to experience, but rather as an actor of it, both through his presence and his actions.

The paper is part of a thesis on walking experiences in the suburbs. Approached under the notion of ambiance, the walking experience is understood in its morpho-functional and sensitive dimensions. Two objectives are pursued: 1) to understand what contributes to the configuration of walking experiences in the suburbs; 2) to awaken imaginations about the possible transformations of these experiences and their actors. It is this second objective of the thesis that is discussed here, with a focus on what participates in engaging inhabitants in an imaginary of transformation to the benefit of an increased practice of walking. The hypothesis formulated here is that an ambiance-based approach to walking encourages residents to become involved in transforming their environment and practices associated with walking.

3. METHODS

A qualitative methodological strategy is used to identify the brakes and levers of inhabitant agency in relation to walking practices in the suburbs. Two field of study are selected according to their urban form, density and walkability related characteristics. The first field of study is located in La Tuilerie, Eybens, in the metropolitan area of Grenoble. La Tuilerie has a functional segregation and a steep hill. The second field of study is located in sector P of Brossard in the metropolitan area of Montreal.

Individual, spontaneous and in situ interviews are conducted in each field of study. An ephemeral workshop was set up at locations likely to be busiest in the study areas. Interested passers-by are invited to take part in spontaneous interviews. The ephemeral workshop mobilizes various creative methods to ensure this appeal and encourage sensitive exchange with inhabitants. Photography, sound recordings, story assemblies and sensitive maps are examples the methods used. The map and story assemblies are created on site during interviews, based on the shared experiences of local residents. In its in situ version, the sensitive map is based on textiles and created in the manner of a bas-relief sculpture. A graphic version will then be created for analysis and sharing results purpose.

Interviews begin with a presentation of the project and its objectives. Participants are then asked open-ended questions designed to explore different dimensions of the walking experience. Questions about walking motives often serve as icebreakers. Gradually, the interview seeks to refine understanding of what shapes people's walking experience, what they value more or less about it. Based on the theoretical benefits of the walkability of living environments, we then explore ways of transforming the environment. Depending on the individual, the interview delves into different dimensions of the experience and its transformation, offering over time a broad portrait of the inhabitants' walking experience and its possibilities. Assembled narratives, photos and the sensitive map are thus used to discuss the various walking experiences encountered and suggest avenues for transforming both spaces and practices.

The analysis is carried out by thematization and gives rise to grounded theory. The verbatims are codified and allow the grouping of thematic information for the purposes of analysis. The analysis is carried out by the student researcher who also ensured the collection of all the interview data.

4. RESULTS

In all, more than 80 interviews were conducted at the workshops. Inhabitants' agency in regard to the walkability of their living environment appeared to be encouraged by the methodological experiment in two forms: 1) A personal agency regarding people's own walking practices was noted; 2) a collective agency was noted in relation to enhancing general walkability of the neighborhood. Figures 1 and 2 show extracts of these results.

1) Imaginaries of changes related to personal walking practices

The most common imaginaries of change noted in the inhabitants' narratives are related to the physical and functional dimensions of walkability. We note for examples desires for enhanced connectivity of the pedestrian routes and nearer access to public transportations.

AGENCY LEVEL	THEME	CRITERIA	EXTRACTS
Externe	Services	Nearer access to public transport	EYB_13. I heard there is a project to make a new bus stop up the hill. That would encourage people to take the bus ! We are almost 300 people living up here. Most of us take their car. EYB_19. The bus stop is so far away. It's a disaster for me ! I could move around more easily if the bus stop was nearer.
	Physical aspects	Access to a park	EYB_05. *We keep asking for a park, either for children or for dogs !*
	Physical aspects	Enhanced pedestrian connectivity	EYB_17. We asked the co-ownership desk to open a pedestrian access on des Frêne st. They refused. So now, we would like to open over their, at the end of Olympe de Gouges… It was accepted, but we need money to do it. EYB_37. *Me, I would have added a pedestrian route here [towards des Frênes St.]*
	Physical aspects	Materiality : softer areas for walking	EYB_04. *We need softer floors.*

Table 1 – Imaginaries of changes related to personal walking practices in inhabitants' narrative

The changes imagined in the first level of agency do not imply that the person involves in their implementation.

2) Agency levers related to the general walkability of the neighborhood

Narrative assembly – Martha (extract)	Participants reactions (extracts)
Martha is aging. She no longer drives, and she finds walking more and more difficult. She struggles to get around to do her shopping and to get to her medical appointments. She will be moving out of the neighborhood next week.	*«I wish I had known! I could have helped! People should not be afraid of asking for help. […] I am worried for my own aging.» If I ever have health problems, it will be complicated here. »*

Narrative assembly – (extract)	
«The climate changes are quickly transforming the high mountain landscapes of the Alpes. Changes are noted from year to year. The snow is melting fast. Many mountain tops that used to have eternal snow don't keep it all year round anymore. It causes problems to climbers. There are more avalanches then there used to be. »	*« I try not to use the car some days a week to get to work, to do my part… »* *« Since two or three years, I feel more worried about climate changes. I make time to walk instead of taking the car ».*

Table 2 – Martha's Narrative Assembly and participants' reactions

5. DISCUSSION

These proceedings briefly report on a methodological experiment that uses in situ creative methods to foster inhabitant agency in order to improve walkability of suburban environments. From this experiment, I draw four lines of analysis: 1) The imaginaries of inclusion; 2) The educational scope of the device; 3) The unexpected imaginaries for a preserved nature; 4) The barriers to inhabitant agency regarding the walkability of the suburbs.

1) The imaginaries of inclusion: Many participants were quite receptive to the story assemblies. One of these presented the difficult walking experience of an elderly lady. Her physical incapacities became so important that she could neither drive nor walk to the bus stop anymore. It became impossible for her to stay in this neighborhood. When reading the story of this elderly, several participants expressed a desire to help her. Physical incapacities can sometimes be overcome by social support. These results, among with other accordingly, suggest that a collective agency can be encouraged by the ephemeral workshop methodologies. It also suggests that social support to walking practices in suburbs is possible if given the chance.

2) The educational scope of the device: The ephemeral workshop offers a special opportunity to exchange both scientific and experiential learnings on walkability. The workshop becomes a place of sharing and mutual understanding that has contributed to foster change in inhabitant discourses regarding their mobility habits. Some participants learned about possible walking practices in their neighborhood, others learned about unsuspected benefits of walking for communities.

3) The unexpected imaginaries for a preserved nature: Largely documented, the benefits of nature on mental health are part of the main motives expressed by participants for walking. Most of the participants who walk to be in contact with nature therefore take their car to get to more natural environments. To reduce the urge for nature, these results suggest that it could be a fruitful

intervention avenue to ensure a more immersive relation to nature in suburban areas. Moreover, stretches of streets where there are many trees are presented as destinations in the resident's narratives of walking.

4) The barriers to inhabitant agency in regard to the walkability of the suburbs: We cannot overlook the limitations related to personal capacities when discussing walkability issues. The distance also appears to be a problem for many participants wishing to walk more in their living environment. The lack of commercial destinations is pointed out as a main limit to walking for participants

Another important collective barrier to walking and to enhancing walkability of suburban environments that was identified in these results concerns the perception of roles related to urban planning and design. There seem to be a general disengagement of inhabitants regarding public spaces and their design or maintenance. Public administrations are considered as the unique actor responsible for public spaces. This is an important matter to address because inhabitants could play a crucial role to enhance the walkability of suburbs. Regarding their practices, their mobility choices have a great impact on the quality of the overall walking experiences. The way they take care of their personal outdoors also impact greatly the walking experience. By choosing to plant or not to plant trees, by keeping it clean or not, by offering benches to passer-by, they contribute to the walking experiences of their neighborhood. The disengagement of inhabitants regarding waking spaces means that they do not take measure of the importance of their power of action regarding the walkability of their living environments.

Preliminary results suggest that creative approaches are useful tools for better understanding the sensitive dimensions of walking experiences in suburban areas. The results also suggest that the ambiance approach fosters the emergence of empathy in participants' discourse. It is thus a tool for mediating needs between inhabitant profiles and between living beings more broadly. In line with the concept of agency, the process engages participants as actors of potential spatial and behavioral transformations.

6. REFERENCES

Augoyard, J.-F. (1998). Éléments pour une théorie des ambiances architecturales et urbaines. 3(42-43), pp.7-23.

Bentz, J. (2020). Learning about climate change in, with and through art. Climatic Change, 162(3), 1595-1612. doi:10.1007/s10584-020-02804-4

Blanc, N., & Legrand, M. (2019). Vers une recherche-création : explorer la portée transformatrice des récits dans les relations au milieu de vie. ACME: An International E-Journal for Critical Geographies, 18(1).

Böhme, G. (2008, 2008-09-10). Un paradigme pour une esthétique des ambiances : l'art de la scénographie. Paper presented at the 1st International Congress on Ambiances, Grenoble 2008, Grenoble, France.

Bordreuil, J.-S. (2000). Micro-sociabilité et mobilités dans la ville. In Les Territoires de la mobilité (pp. 109-126). Paris cedex 14 %J Sciences sociales et sociétés: Presses Universitaires de France.

Brown, K., Adger, W. N., Devine-Wright, P., Anderies, J. M., Barr, S., Bousquet, F., . . . Quinn, T. (2019). Empathy, place and identity interactions for sustainability. Global Environmental Change, 56, 11-17. doi:*https://doi.org/10.1016/j.gloenvcha.2019.03.003*

Burke, M., Ockwell, D., & Whitmarsh, L. (2018). Participatory arts and affective engagement with climate change: The missing link in achieving climate compatible behaviour change? Global Environmental Change, 49, 95-105.

doi:*https://doi.org/10.1016/j.gloenvcha.2018.02.007*

Chelkoff, G. (2001). Formes, formants et formalités : catégories d'analyse de l'environnement urbain. In J.-P. Thibaud & M. Grosjean (Eds.), L'espace urbain en méthodes (pp. 102-124). Marseille: Éditions Parenthèses.

Cox, R. S., Scannell, L., Heykoop, C., Tobin-Gurley, J., & Peek, L. (2017). Understanding youth disaster recovery: The vital role of people, places, and activities. International Journal of Disaster Risk Reduction, 22, 249-256. doi:*https://doi.org/10.1016/j.ijdrr.2017.03.011*

Ericson, T., Kjønstad, B. G., & Barstad, A. (2014). Mindfulness and sustainability. Ecological Economics, 104, 73-79. doi:*https://doi.org/10.1016/j.ecolecon.2014.04.007*

Jacob, J. (1961). The Death and Life of great american Cities. New-York: Random House.

Jones, P., & Jam, C. (2016). Creating ambiances, co-constructing place: a poetic transect across the city. Area, 48(3), 317-324. doi:10.1111/area.12262

Lavadinho, S., & Winkin, Y. (2012). Vers une marche plaisir en ville : boîte à outils pour augmenter le bonheur de marcher: Lyon, France : Certu.

Lefebvre, H. (1968). Le Droit à la ville suivi de Espace et politique. Paris: Anthropos.

Matthey, L., & Walther, O. (2011). Un « Nouvel hygiénisme » ? Le bruit, l'odeur et l'émergence d'une new middle class. Articulo, 1. doi:*https://doi.org/10.4000/ARTICULO.931*

Särkelä, E., & Suoranta, J. (2020). The Method of Empathy-Based Stories as a Tool for Research and Teaching Teaching. Qualitative Report, 25, 399-415. doi:10.46743/2160-3715/2020.4124

Scott-Bottoms, S., & Roe, M. (2020). Who is a hydrocitizen? The use of dialogic arts methods as a research tool with water professionals in West Yorkshire, UK. Local Environment, 25(4), 273-289. doi:10.1080/13549839.2020.1732897

Thibaud, J.-P. (2007). La fabrique de la rue en marche. Essai sur l'altération des ambiances urbaines. Flux - Cahiers scientifiques internationaux Réseaux et territoires, Metropolis / Université Paris-Est Marne la Vallée(66), 111119.

Thibaud, J.-P. (2012). Petite archéologie de la notion d'ambiance. Communications, 90. doi:10.3406/comm.2012.2659

Thomas, R. (2004). Quand le pas fait corps et sens avec l'espace. Aspects sensibles et expressifs de la marche en ville. Cybergeo : European Journal of Geography. doi:10.4000/cybergeo.4304

Thomas, R. (2021). Une critique de l'urbain depuis le champ des ambiances. Ambiances, Varia.

Thomas, R., Balez, S., Bérubé, G., & Bonnet, A. (2010). L'aseptisation des ambiances piétonnes au XXIe siècle, entre passivité et plasticité des corps en marche. Retrieved from *https://halshs.archives-ouvertes.fr/halshs00596914*

Vallès, V. (2019). Une croissance démographique marquée dans les espaces peu denses. Retrieved from *https://www.insee.fr/fr/statistiques/4267787*

Zitcer, A., Hawkins, J., & Vakharia, N. (2016). A capabilities approach to arts and culture? Theorizing community development in West Philadelphia. Planning Theory & Practice, 17(1), 35-51. doi:10.1080/14649357.2015.1105284

MULTISENSORY DESIGN AND CARING ARCHITECTURE : THE CASE OF VOLUME'S FEELINGS IN THE ORB PAVILION, FRANCE

DESIGN MULTISSENSORIAL E ARQUITETURA DE CUIDADOS: O CASO DAS SENSAÇÕES DO VOLUME NO PAVILLON DE L'ORBE, FRANÇA

Pillot Angèle
angele.pillot@crenau.archi.fr
1 : AAU-CRENAU
CNRS, Nantes Université, Nantes University, Ecole Centrale Nantes, CNRS,
GeM, UMR 6183, UMR AAU -ENSA Nantes, AAU CRENAU

Tesson Marie
tessonm@outlook.com
2 : FoAP
Conservatoire National des Arts et Métiers (CNAM), HESAM Université, FoAP Cnam.

ABSTRACT

This article proposes the use of multisensory design as a tool for creating caring architecture. Drawing on the works of André Bruyère, a postmodern architect with a particular interest in designing architecture as a form of supportive care, we illustrate our argument with the first author's experience of the sense of volume in the Orb Pavilion. Designed by André Bruyère, the pavilion incorporates many multisensory features. The sense of volume allows one to perceive spatial and material variations, thresholds, and the proximity of surfaces by analyzing sound reflections. By grounding our reflections in the context of atmospheres, we suggest that Bruyère designed affective affordances that enable us to connect with the building. Finally, we hypothesize that the design of multisensory affective affordances could be a key element in creating caring architecture.

KEYWORDS: sense of volume. caring architecture. architectural atmospheres. multisensory design. sensitive experience.

RESUMO

Este artigo propõe o uso do design multissensorial como uma ferramenta para criar uma arquitetura acolhedora. Com base nas obras de André Bruyère, um arquiteto pós-moderno com um interesse particular em projetar arquitetura como uma forma de cuidado de apoio, ilustramos nosso argumento com a experiência do primeiro autor sobre a sensação de volume no Pavilhão do Orbe. Projetado por André Bruyère, o pavilhão incorpora muitas características multissensoriais. A sensação de volume permite perceber variações espaciais e materiais, limiares e a proximidade de superfícies ao analisar as reflexões sonoras. Ao fundamentar nossas reflexões no contexto das atmosferas, sugerimos que Bruyère projetou affordances afetivas que nos permitem conectar com o edifício. Finalmente, hipotetizamos que o design de affordances afetivas multissensoriais pode ser um elemento chave na criação de uma arquitetura acolhedora.

PALAVRAS CHAVE: sentido do volume. arquitetura cuidadosa. atmosferas arquitectónicas. conceção multissensorial. experiência sensível.

1. THE MULTISENSORY EXPERIENCE OF PLACES

Over the past three decades, there has been a growing interest in the sensory and affective experience of architecture. This interest is rooted in phenomenology, particularly in the twin concepts of ambiance and atmosphere. These concepts suggest that the character of an environment is evaluated through a complex, multisensory integration of various factors, rather than solely through visual perception, as often assumed (Zumthor, 2006).

Pallasmaa (2014) expands on this by stating that « atmospheric perception also involves judgments beyond the five Aristotelian senses, such as sensations of orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination (Pallasmaa, 2014, p.231). Therefore, the characteristics of a space are experienced in an embodied, pre-

reflective manner, perceived as a diffuse whole rather than in a conscious, precise, and focused way (Pallasmaa, 2014).

When exposed to atmospheric variations, the body-in-feeling resonates with the environment. According to Griffero (2020), experiences described as « resonance » occur when individuals do not expect them and are in an appropriate state of mind. He hypothesizes that our societal model, which increasingly pulls us away from the present moment, distances us from, or even deprives us of, this resonance. While resonance can affect our mental states in either pleasant or unpleasant ways, its absence could be unnatural and harmful. Immersed in the environment, emotional resonance arises from ecological qualities known as affective affordances (Griffero, 2020).

Atmospheric experience is inherently multisensory, and resonance with the environment is essential for our internal balance. But what occurs in a sensorydeprived environment, where aesthetics are predominantly designed for sight, thereby limiting the body's diverse sensory experiences? In this article, we argue for the necessity of investigating multisensory design as a tool for creating caring architecture. To ground our proposal in concrete and embodied elements, we present the specific case of experiencing the sense of volume in André Bruyère's Orb Pavilion. Consequently, the following sections will present André Bruyère's multisensory approach, the Orb Pavilion, the concept of volume perception, and *the first author's* experience of volume within the pavilion.

2. THE MULTISENSORY APPROACH OF ANDRÉ BRUYÈRE

The work of André Bruyère (1917-1998), a French architect, stands out as a unique embodiment of the emerging postmodern awareness of the critical connection between architecture and human welfare. Bruyère holds a deep conviction that architectural tenderness and consideration, significantly contribute to the experiences of those who frequent the space (Bruyère, 1968). He developed an observational practice grounded in his personal experiences with existing spaces and a keen awareness of others' experiences, demonstrating a high sensitivity to situations of vulnerability.

André Bruyère's architecture engages multiple senses, moving beyond visual aesthetics to prioritize and combine diverse modes of perception. His designs are distinctly multisensory, addressing hearing with specific musicalities and areas for silence, touch with tactile materials, smell with aromatic plants and fragrance dispensers, taste through small kitchen designs, and sight with carefully curated spatial discoveries. While his notes (Bruyère, n.d.) outline these sensory considerations, they do not fully capture the comprehensive richness evident in his drawings and spaces, which include additional multisensory elements.

Much of his intentions come from an attentive observation of people and contexts. André Bruyère spends time on site, taking notes, experiencing places with his body,

and observing and listening to others. He also document himself through literature and discussions with experts, including psychologists or doctors.

André Bruyère's work prompts questions about whether a multisensory aesthetic could enhance well-being through positive affective outcomes. Employing a method akin to action research, he empirically explored using sensory variables to create architecture that supports care. This approach led him to develop architectural elements aimed at promoting well-being. The Orb Pavilion, discussed further, embodies the latest iteration of these principles.

3. THE ORB PAVILION (FRANCE)

The Orb Pavilion, inaugurated in 1991 in Ivry-sur-Seine, was designed in response to a call for end-of-life care proposals by the AP-HP (Public Hospitals of Paris) in 1986. It provides care for individuals suffering from various pathologies and disabilities, particularly those facing advanced age and progressive loss of autonomy. At the inception of the building, the majority of residents are women, half of whom have mental illness. The facility sees a monthly mortality rate of 5%. While some residents maintain mobility and speech, others have lost these abilities. Many spend their remaining time in the institution, receiving dedicated care from a medical and paramedical team.

André Bruyère formed a diverse team, including a lawyer, doctor, engineers, journalist, and philosopher, to design an 86-bed unit at Hôpital Charles-Foix in Ivrysur-Seine (cf. Choussat, Gille 1988). The Orb Pavilion's design departed from the Napoleonic hospital style, rejecting orthogonality. Bruyère addressed spatial dysfunctions after spending a day and night in the existing ward. He focused on rectilinear corridors and door alignments that created sensory discomfort and a lack of hope, aiming to foster perspectives, exchanges, and connections to the outside world (Bruyère, 1986).

Building on these insights and previous architectural considerations, André Bruyère and his team proposed a single-story structure that opens onto gardens and is organized to evoke a forest. The design features pathways, clearings, and spaces varying between shelter and openness, offering a spatially rich experience with diverse ceiling heights, widths, openings, and levels of privacy. This interconnected space allows easy access to various points while providing secluded areas for tranquility, yet remains integrated with crossroads and gathering spots. The architectural vision of the Orb Pavilion aims to enhance the well-being of both patients and caregivers.

The Orb includes scent diffusers, speakers, two gardens with fruit trees, a fireplace, and a private kitchen for use with relatives. It offers various spaces with different layouts, levels of privacy, and sizes for tea or lunch. Quiet window areas connect to the garden, and the hall features a weather vane and a double water point. Initially adorned in orange and ochre tones, the Orb combines carpets with walls of brick, concrete, and plaster.

The architectural elements manipulated in the Orb Pavilion can be categorized by the senses they engage (touch, smell, etc.) or the modes they affect (texture, spatiality, color, etc.). This study specifically explores the sense of volume, a perceptual aspect influenced significantly by architectural design choices.

4. THE SENSE OF VOLUME

The sense of volume [sens des masses], a term used by visually non-sighted individuals and professionals in visual impairment, refers to the ability to detect and locate solids and voids in one's surroundings. Currently, this concept lacks a formal scientific definition (Pillot et al., 2023). It is mainly associated with echolocation, where individuals analyze sound reflections in their environment (Pigeon, 2012; Norman and Thaler, 2017). However, it likely involves other senses as well (Ammons et al., 1953).

Although traditionally used by non-sighted individuals for navigation, Pillot and colleagues (2024) shows that blindfolded sighted individuals quickly perceive sensations of volume. This indicates these sensations exist in a pre-reflective state, enhancing the overall sensory experience, including atmospheres.

Our understanding of the sense of volume comes from in vitro experiments with precise but less ecologically valid stimuli and urban environment studies (Pillot et al., 2023). It has never been studied at the architectural scale.

Gordon and Rosenblum (2004) studied auditory perception of opening width and height. In two experiments, blindfolded sighted participants judged if they could pass through openings using only sound cues. They found that larger openings were perceived as more passable and that participants were especially sensitive to openings close to their body dimensions. These findings show how echo-acoustic information and proprioceptive cues aid in spatial perception.

Kritly and colleagues (2021) showed that sighted individuals can differentiate wall textures using ambient sound variations. They tested flat, convex, open, concave, crenelated, and staircase walls at 81 cm and 500 cm distances. Distinguishing flat and circular textures was hardest (68% detection), followed by crenelated and parabolic walls (73% and 75%). The wall with an opening and the staircase were the most distinguishable (81% and 84%).
Ashmead and Wall (1999) studied sighted individuals' ability to perceive a wall using ambient sound variations. Participants listened to simulated tracks of a wall at distances from 25 cm to 200 cm. By manipulating acoustic features, they found perception thresholds of 48 cm, 59 cm, and 34 cm in three experiments, with an average threshold of about 47 cm. This distance marks the point at which sighted individuals can detect a wall using only sound cues.

Delong and colleagues (2007) studied the ability to distinguish materials by their echoes. Sighted participants listened to echoes from steel, aluminum, brass, nylon, and glass spheres, identifying the test stimulus and the other material. Differences in pitch and timbre allowed participants to discriminate between materials. Recognition rates were 55% for aluminum, 66% for brass, 74% for nylon, and 39% for glass. Each material produced distinct sound effects, showing how material properties influence auditory perception.

These studies suggest that wall texture, openings, wall proximity, and material choices significantly influence the experience of the sense of volume at the architectural scale. The Orb Pavilion's design, with diverse spatial configurations, curved structures, and deliberate material selection, incorporates elements that resonate with this sense. Influenced by his empirical knowledge, André Bruyère used these variables to enhance user experience. Our exploration of the sense of volume in the Orb Pavilion aims to provide insights into how a multisensory aesthetic can promote well-being and care for users.

5. FEELING VOLUMES IN THE ORB PAVILION

To support our investigation, we documented the sensory and affective experience of *the first author* in the Orb Pavilion. She focused intensely on these sensations, exploring the building without prior knowledge of its layout or the architect's intentions. Using the method of a commented walk, she systematically covered the lobby and various spaces (common areas, bedrooms, corridors, alcoves) without the use of sight. This approach filtered out sensations from other perceptual modalities to isolate those linked specifically to the sense of volume. Her analysis identified four main types of experiences: spatial perceptions, encounters with thresholds, sensations of presence, and perceptions of materiality.

5.1 Spatialities

During her exploration, *the first author* vividly describes encountering various spatial configurations with each step, guided by sensations of volume. She observes the curves of walls and ceilings, perceiving their dynamic interplay of approaching and receding dimensions.

The curved walkways evoke a forest-like atmosphere, with irregular spatial presences akin to scattered trees. The curves subtly contract and expand around her, maintaining a continuous engagement with the building and occasionally causing a slight disorientation.

The alcoves spaced along the walkways captivate her interest, with gradually decreasing ceiling heights. Entering one, she finds herself drawn to a corner where a chair is conveniently placed by a window, feeling a sense of safety and isolation from external sounds.

In larger areas like the entrance hall, the sense of volume is less pronounced, and the feeling of enclosure diminishes.

5.2 Presences

The first author senses surfaces (walls, large furniture, ceiling) around her, feeling the walls when walking through corridors. She notes intense sensations, such as the rhythmic movement of her steps along the curves of walls and ceilings. Changes in ceiling height prompt instinctive reactions, causing her to slow down and reach forward to avoid touching closer surfaces. Bathrooms with low, curved ceilings create a heightened sense of proximity. Walls and low partitions guide her movement and mark transitions, like a half-height wall in the tea area that requires navigation around it. These elements engage her body and maintain alertness throughout her exploration.

5.3 Thresholds

In the pavilion, the sense of volume facilitates transitions and thresholds between different spatial areas. Some transitions are gradual, characterized by subtle shifts in dimensions and spatial form. Others are abrupt, marked by sharp contrasts between adjoining spaces.

Arriving at the alcoves positioned at the ends of walkways is a gradual experience. *The first author* notes her body gradually tensing as she adjusts to a new environment, a sensation closely linked to the decreasing ceiling height (see section 5.1).

Other transitions are more sudden, such as those between the expansive entrance hall and the walkways, bedrooms and bathrooms, and walkways and the restaurant. Doorways often create bottlenecks that accentuate these shifts. Throughout the exploration, these thresholds consistently denote a change in space usage.

As she navigates, *the first author* associates a 'trace' of each environment with her sense of volume, aiding in her recognition of traversed spaces and fostering a sense of agency.

5.4 Materialities

During her exploration of the Orb Pavilion, the first author highlights instances of simplified materials localized within the space. She finds the overall texture of her volume perception to be rather 'cold', particularly criticizing the use of plastic flooring and limited wall material variety. She suggests that incorporating wood or textiles could have provided a softer, warmer ambiance.

Interestingly, the 2014 renovation aimed for a streamlined material palette, opting for smooth surfaces like plasterboard instead of the original ochre brick cladding. This change resulted in a significant loss of color, texture, inertia, and resonance. The original dark, subtly soft nylon carpet in the bedrooms was replaced with a glossy grey plastic covering. Distinctive porthole doors were replaced with plain

ones lacking any detail or openings, and the entire space was repainted in white and grey, necessitating additional signage for visitor guidance.

6. MULTISENSORY DESIGN AS A TOOL FOR CARING ARCHITECTURE

In this article, we argue for the necessity of investigating multisensory design as a tool for creating caring architecture.

The work of André Bruyère, using architectural elements to imbue projects with empathetic qualities, has led to the conclusion that employing sensory diversity could be instrumental in meeting this challenge. Bruyère pondered the qualities he could integrate into his buildings and sought to incorporate affective affordances. Consequently, the Orb Pavilion offers a variety of sensory experiences that engage the entire body.

The focused study of volume perception in the Orb Pavilion reveals essential architectural characteristics: spatial arrangements, thresholds, boundaries, and materials. This sensory exploration embodies the architect's vision. Through *the first author's* analysis of sensory and emotional engagement, we observe mechanical and emotional reactions to these stimuli. The spatial experience parallels Griffero's concept of lived space (2014), where embodied experiences unfold (Pillot et al., 2024). Curved pathways in the pavilion evoke sensations of contraction and expansion, akin to atmospheric qualities described by Schmitz (2019), also felt at thresholds and near surfaces. However, the perceived uniformity of material textures following the 2014 modifications lacks sensory richness in volume perception. Thus, volume perception engages the body in space and a sonic environment, unlocking the pavilion's affective potential and creating resonance in the present moment.

In order to evaluate whether these parameters could contribute to the practice of architecture as a form of care, we need to recall the concept's definition. The ethics and politics of care have gained increasing influence since Joan Tronto's 'Moral Boundaries' (1993). Her work highlights the inequities perpetuated by global capitalism, particularly affecting the outsiders in wealthier nations and the Global South. Tronto advocates for greater consideration and care for individuals, communities, and the environment, with a focus on future generations.

Tronto applied her framework to the architectural realm (2019), emphasizing the responsibility of all stakeholders within the construction industry for social and environmental justice. While her focus was primarily on the production of buildings, she did not extensively address the role of design. We propose that design practices significantly impact both the environment and the well-being of communities and individuals, regardless of their role as building users.

A sustainable building fosters connections with people, allowing them to live comfortably, accomplish tasks, and adapt over time due to its spatial design. Sustainability in architecture goes beyond durability; it includes spatial qualities that enhance user comfort, satisfaction, and a sense of belonging. Architecture thrives on people's attachment and requires societal investment in its maintenance ans preservation, creating a reciprocal relationship where the building also cares for its caretakers and for their living and working conditions.

These emotional connections are influenced by various factors, with high-quality, attentive design, especially multisensory experiences, being pivotal. Architecture that understands human communities behavior, accommodates diverse atmospheres and spatial needs, and respects users' and caretakers' unique attributes can establish profound connections. The Orb Pavilion exemplifies this with its rich diversity of colors, scents, materials, shapes, intimacy, openings, temperatures, lighting, perspectives, and sounds, engaging a wide range of senses - each uniquely stimulated - while harmonizing as part of a cohesive architectural vocabulary.

If multisensory design contributes to the creation of a caring architecture, it is not the only dimension and cannot be sufficient on its own. The combination of multiple factors such as attentive programming, consideration of social, health, resources and climate impact, and care for non-humans plays a significant role in the development of a caring architecture.

BIBLIOGRAPHY

Ammons, C.H., Worchel, P. & Dallenbach, K.M. (1953). « Facial Vision » : The Perception of Obstacles out of Doors by Blindfolded and Blindfolded-Deafened Subjects. The American Journal of Psychology, 66(4), 519553.

Bruyère, A. (1968). Tract aux étudiants, In Pourquoi des architectes ? (p.20). J.-J. Pauvert.

Bruyère, A. n.d. [1986 ?]. Hébergement vieillards, incomplete reference, unpublished, Fonds d'archives André Bruyère de l'Ifa, personal traduction.

Bruyère, A. (1986). Notes sur l'hospitalisation des vieux, unpublished, Fonds d'archives André Bruyère de l'Ifa.

Bruyère A. (1993). 'L'Orbe' et 'L'Orée' : des espaces de retrouvailles pour le grand âge. Gesthome, revue des professionnels des établissements pour personnes âgées, 26, 34-37.

Choussat, J. & Gille, A. (ed.) (1988). Architectures du grand âge. Variations architecturales sur la fin de vie. Le Moniteur.

DeLong, C.M., Au, W.W.L., & Stamper, S.A. (2007). Echo features used by human listeners to discriminate among objects that vary in material or wall thickness : Implications for echolocating dolphins. The Journal of the Acoustical Society of America, 121(1), 605617.

Gordon, M.S. & Rosenblum, L.D. (2004). Perception of Sound-Obstructing Surfaces Using Body-Scaled Judgments. Ecological Psychology, 16(2), 87113.

Griffero, T. (2020). Better to Be in Tune. Between Resonance and

Responsivity. Studi Di Estetica, 17, 93-118.

Kritly, L., Sluyts, Y., Pelegrín-García, D., Glorieux, C. & Rychtáriková, M. (2021). Discrimination of 2D wall textures by passive echolocation for different reflectedto-direct level difference configurations. PLOS ONE, 16(5), e0251397.

Norman, L. N. & Thaler, L. T. (2017). Human echolocation—Spatial resolution and signal properties. In A. B. Balleri, H. G. Griffiths, & C. B. Baker (Éds.), BiologicallyInspired Radar and Sonar : Lessons from nature (pp.209-227). Institution of Engineering and Technology.

Pallasmaa, J. (2014). Space, place and atmosphere. Emotion and peripherical perception in architectural experience. Lebenswelt. Aesthetics and philosophy of experience. 1 (4): 230245.

Pigeon, C. (2016). Mobilisation attentionnelle des piétons aveugles: Effets de l'âge, de l'antériorité de la cécité et de l'aide à la mobilité utilisée (Doctoral dissertation, Université de Lyon).

Pillot, A., Rommel, D., de Vignemont, F. & Lescop, L. (2023). Le sens des masses : quand la réflexion des sons donne à voir l'architecture [poster]. 62e congrès de la Société Française de Psychologie, Nîmes.

Pillot, A., Genoist, M., Rommel, D., de Vignemont, F. & Lescop, L. (2024). How sighted people experience the sense of volume? A phenomenal study. InterNoise conference proceedings.

Schmitz, H., Müllan, R. O., & Slaby, J. (2011). Emotions outside the box—The new phenomenology of feeling and corporeality. Phenomenology and the Cognitive Sciences, 10(2), 241259.

Tronto, J. (2019). Caring Architecture. In A. Fitz, E. Krasny (Ed.), Critical Care. Architecture and Urbanism for a Broken Planet (pp.26-32). Architekturzentrum Vienna, The MIT Press.

Tronto, J. (1993). Moral Boundaries. A Political Argument for an Ethic of Care. Routledge.

Zumthor, P. (2006). Atmospheres: Architectural environments, surrounding objects. Birkhäuser.

FUTURE SOUNDSCAPES: PARTICIPATORY URBAN FUTURING THROUGH SOUND

FUTURAS SOUNDSCAPES: FUTURO URBANO PARTICIPATIVO ATRAVÉS DO SOM

Stephen Williams
Postdoctoral Researcher
University of Oslo
stephengarywilliams@gmail.com

ABSTRACT

The arts in all forms attempt to portray complex relationships, reimagine the place of the human in natural relationships, and uncover future possibilities for human-nature interaction where humans live in, with, and as natural systems. While art and culture in the form of public spaces, art works, and parks are often a result of planning and urban development, they are much less often part of the planning and development process itself. This paper investigates the role of sound and music as a bridge between urban development, public engagement, and sound art to investigate a new form of collaborative future visioning that engages with nature and sustainability.

KEYWORDS: sustainability transitions. soundscapes. urban planning. art-science.

RESUMO

As artes, sob todas as formas, tentam retratar relações complexas, reimaginar o lugar do humano nas relações naturais e descobrir possibilidades futuras para a interação humano-natureza onde os humanos vivem, com e como sistemas naturais. Embora a arte e a cultura, sob a forma de espaços públicos, obras de arte e parques, sejam frequentemente o resultado do planeamento e do desenvolvimento urbano, fazem muito menos frequentemente parte do próprio processo de planeamento e desenvolvimento. Este artigo investiga o papel do som e da música como ponte entre o desenvolvimento urbano, o envolvimento do público e a arte sonora para investigar uma nova forma de visão colaborativa do futuro que se envolve com a natureza e a sustentabilidade.

PALAVRAS CHAVE: transições de sustentabilidade. paisagens sonoras. planejamento urbano. arte-ciência.

1. INTRODUCTION

The arts in all forms attempt to portray complex relationships and reimagine the place of the human in natural relationships. The arts have the potential to make tensions between land use and global low-carbon transitions more visible and reimagine future possibilities for human-nature interaction where humans live in, with, and as natural systems (Pascual et al., 2023). While art and culture in the form of public spaces, art works, and parks are often a result of – and respond to - planning and urban development, they are much less often part of the planning and development process itself (Weibel, 2019). As one of our collaborators notes, sound and music is very underestimated as a tool in city planning except the limits of noise pollution that regulates traffic. At the same time, while 'speculative improvisations' have been used in participatory futuring for urban sustainability, sound and music are generally not part of the futuring process nor are sounds and music co-created with participants (Neuhoff et al., 2023). This paper investigates the role of sound and music as a bridge between urban development, public engagement, and sound art to investigate a new form of collaborative future visioning that engages with nature and sustainability.

When residents are asked what kind of neighbourhood they want to live in they often say they want a quiet neighbourhood. But by quiet, they do not mean silent! Residents want to hear the sounds of children playing, birds in the trees, and glasses clinking at cafés but may not want to hear sounds of traffic, construction, or planes overhead (Groth & Mansell, 2021). In partnership with Centre for Sustainable Urban Futures at Chalmers University, the Gothenburg Centre for Sustainable Development, and Göteborgs Stad, The Future Soundscapes project in the Lindholmen neighbourhood of Gothenburg SE engaged local residents to record sounds they want to hear more of and sounds they want to hear less of in the future. Sounds were collected, categorized, and a soundscape of the future neighbourhood created based on the collaborative inputs of local residents. This soundscape was then performed as part of the Swedish International Science Festival and was used as the basis for a backcasting workshop to explore possible futures.[1]

2. THEORETICAL BACKGROUND

There have been increasing calls to explore the role of arts in sustainability transitions more deeply. Such as the Environmental Science & Policy upcoming special issue - "What dominant mindsets, assumed scientific truths or myths, and ontological logics require unlearning and undoing?", the IST 2024 session track 'Reimagining nature and the arts in sustainability transitions', transitions literature calling for embedding imagination, experimentation, and exploration in processes (Loorbach et al., 2017; McCrory et al., 2020; Saleh & Brem, 2023), and exploration of the role of "cultural beliefs, feelings or attachment, or other collective imaginaries" (Tàbara et al., 2024) in transitions. The arts in general, and sound more specifically, have been proposed as a new way of engaging the interplay between natural/unnatural, urban/nature, human/non-human sounds and futures (cf. Cronon, 1996; Tsing, 2010; Pascual et al., 2023). Sound and soundscapes open ways for voices of the non-human to be included in participatory processes, support new relationships and co-production of knowledge (Dusyck 2013; Williams & Robinson, 2020) and allow us to navigate different forms of knowledge and ways of knowing. This is especially important as "emotions, moods, thoughts, wellbeing, and behaviour" have been highlighted as important in sustainability transition processes (Prior, 2022). Auditory concepts such as noise, signal, and interpretation have been linked to transformation processes as van der Leeuw notes, "noise is thus 'significance that remains to be found', not unlike 'felt meaning'. Extending the arguments of Tett, one could therefore also begin by identifying cognitive dimensions and interpretative structures for what is considered noise" (2024, p. 34). Finally, arts & culture are crucial in creating, perpetuating, and changing worldviews and beliefs systems where "…the perceptual or cultural region related to areas socially constructed by cultural beliefs, feelings or attachment, or other collective imaginaries" (Tàbara et al., 2024, p. 333). As Ekström from Göteborgs Stad notes, "sound and music is very underestimated as a tool in city planning (except

---

1 See *https://bit.ly/3WPBsxp* for more on project design, workshop implementation, and technical details.

the limits of noise pollution that regulates traffic, etc.)" (Personal communication, 19.10.2023). This represents an opportunity to explore novel approaches to public engagement in planning and contribute to theoretical development on uses of sound and music in socio-ecological and socio-technical transformations and change processes (Williams et al. 2023; Maggs & Robinson, 2020).

At the same time, literatures on urban and regional environments and transformation point to several challenges that need response. For example, urban and regional environments are often sites of experimental governance and multi-level governance literature highlights challenges in cross-scale learning scaling experiments across spatial boundaries (Gonzales-Iwanciw et al., 2020). Yet questions remain on how assess the contributions of such experiments to transformation and how learning from experiments can be embedded within incumbent institutions (Haddad et al., 2022; von Wirth et al., 2019). Now, a deeper engagement between the arts and sustainability is emerging. Recent work suggests that music can influence the "emotions, moods, thoughts, wellbeing, and behaviour" which has been highlighted as important in sustainability transition processes (Prior, 2022). Art has also been proposed as a way to foster reflection and dialogue (Maggs, 2014) while sound art scholars have investigated how sound and music may serve as a platform for stakeholder engagement and transition design (Woodruff, 2020).

2.1 Research questions

This project starts an exploration of three sets of research questions. First is how may sound be used as method to reimagine sustainable futures. Maggs & Robinson (2020) propose organizing arts-sustainability integrations into three modes: greening the sector, raising the profile of sustainability, and reimagining our world. Despite great efforts in sustainable arts sectors and communication, the question of how the arts can help reimagine the world, and what art can do that other forms of engagement cannot has been less explored (Vervoort et al., 2023, Maggs & Robinson, 2020). Second, is the role of the sound in supporting urban and regional transformation. What are the modes of engagement that the arts can support in urban areas? How do local approaches translate across spatial scales? I explore institutional engagement with planning by arts/culture agencies, arts/culture institutions, urban and regional governance processes. Third is how sound might facilitate justice in urban and regional transformations. The arts operate in terms of flows, disjunctures, and dynamic relations as resistance (Horne, 2019; Jorgensen, 2007) and can be seen as social movements of resistance that can enhance the visibility of marginalized perspectives (Horne, 2019; Williams & Doyon, 2019). For example, in addition to FSS being a novel exploration of the use of sound in urban planning and future studies, the project tests using sound for urban planning in a way that is inclusive of residents where Swedish or English is a second language. As FSS was a small-scale pilot project, this paper represents an exploration of potential and discussion of methodological and theoretical possibilities and does not claim to have full answers to all research questions. However, we feel that our results illustrate a new direction for exploration of sound in sustainability transitions.

3. METHODS

Through conversations with Barbara Ekström at Göteborgs Stad Kulturförvaltningen (Cultural Administration) we selected Lindholmen as the site for the pilot project. The neighbourhood is going through substantial change with, for example, construction of Scandinavia's tallest building – Karlatornet -- with further development planned. Lindholmen is the site of Gothenburg's shipbuilding yards, historically one of the region's largest employers (see Figure 1). Several methods were used for data collection in the project. First, group interviews with Berlin pilot and Gothenburg workshop 1 (W1) focused on two elements. First on the process itself, second on reactions to the soundscape – what did they hear? What was missing? Group discussions also took place following the public performance (P1) and workshop 2 (W2). W1 also collected demographic data on participants including age, live and work locations, and experience with sound or urban planning. Discussions were recorded for future coding and analysis. Following this paper, W1 participants will also take part in a post-event survey as will P1 and W2 participants. Survey questions are designed to elicit response to the FSS and, in particular, to understand how this method might unlock different ways of approaching urban sustainability transitions in practice. Post-project interviews with participants and partners, especially city (planned). Here the focus will be questions about integration with formal planning processes. For example, what happens when a city planner that normally works with maps and documents receives an audio file that represents a desired future soundscape? What policies and processes are affected? Outputs of W1, P1, and W2 will be analyzed through several methods including spectrographic and sonic elements, etc. (Woodruff, 2020). These will also be compared (sonically and qualitatively) to past and present soundscapes. Here we must recognize the limitations of the pilot project in comparison. Reliance on archival sound from the past and giving freedom to participants to record and create sounds of the future means that exact comparisons (e.g. by frequency distribution or loudness) are not possible for a specific site. However, a deeper understanding of what sounds are 'desirable' will be useful for further research. Perhaps more importantly is understanding why these choices were made. As discussed further in Section 5 below, preliminary results seem to indicate that the use of sound prompted more integration of emotion and feeling into planning suggestions than traditional futuring processes. Note that data analysis is still in progress.

4. DISCUSSION

In this section with my observations and reflections on the FSS process itself. I then expand on the implications of insights from participants followed by an extended discussion on the potential for the use of sound as method in sustainability transitions.

4.1 Process observations

A first observation is that, surprisingly to me, the technical process of field recording, audio sorting and editing, arrangement, and playback was quite smooth. While there

were several minor technical glitches, the process was robust and has great promise for future use with some caveats. First, the workshops worked well for smaller groups. With current technical setup, there is a limit of 3 groups, each with 4 people. Larger groups may be possible but would require additional audio gear and perhaps revised facilitation or workshop timing. Second is workshop timing. W1 was a full day with W2 a ½ day. This time is needed for a full explanation of sound fundamentals, time for field recording, editing, and discussion. Having this time meant that participants were fully engaged, not just listening to something someone else created but co-creating a new piece. However, this time commitment inevitably constrains participation as not everyone can afford to take that time off work during the day. As I discuss later, there are possibilities for a range of engagement opportunities to cater to different time availability in participants. Another observation is the impact of visuals and the video background. As an artist, I knew that visuals have a great impact and chose to have the 'future' section of the live performance black so as not to influence perceptions of sound. However, I underestimated the impact of the visuals for the 'past' and 'present' sections. Future workshops could experiment with performing with and without visual backgrounds.

There were also benefits and drawbacks in working so fast with arrangement of soundscapes. On the positive side, my artistic intent was not imposed on participants as the arrangement was fairly random. In addition, the arrangement process was fast enough to produce a version of the future soundscape in time for participants to listen and reflect. On the negative side, a quick arrangement meant that some sounds were covered by others (either by differences in level or frequency collision) and were difficult to hear. Also, while each group made suggestions on how to arrange their own sounds, there was not an opportunity to collectively arrange the soundscape. This is something that could be added to a future workshop, however, that would also add more time.

A final observation is the interplay between 'raw' recordings, the co-created future soundscapes, and the artistic performance. Participant editing and efforts to make an artistic work changed the sounds sometimes beyond recognition. This created an engaging and aesthetically interesting work, but raises the question of how much context is needed or desirable? How clear are the sounds? Should they be clear? How does this change from workshop to performance to workshop? How understandable are the sounds for listeners who were not part of the workshop and co-creation process? I have addressed these questions in previous works on 'disclosure' in sound art processes – how much context should be provided to audiences (Williams, 2022)? In this case, the soundscape and performances sparked rich conversations in post-listening environments. Perhaps this is a necessary component of such sound-based engagement processes. Further exploration with different kinds of context (e.g. pre-performance artist talk, printed material, etc.) would be useful.

4.2 Participant insights

Several participants commented they were missing a 'story'. This was in response to the past and present video along with the co-created future soundscape in W2. Most musical piece, indeed most of human art, is story-based with concepts such time, conflict and resolution, tension and release that are embedded in the composition. These comments about story lead to a broader conversation about what story do we tell (consciously or unconsciously) with the soundscapes we create? Who is telling that story? And where is that story taking place. As was raised during the post-performance discussion, soundscapes are connected to place. Further investigation of this phenomena could be explored by bringing temporal or spatial locations into the soundscape. Another potential would be to bring the soundscape 'out into the world' through spatially located soundwalks.

One of the most interesting questions that emerged from participant conversations was 'why nature?' Participants in all workshops and the post-performance discussion raised this question. Common to all soundscapes produced was the desire for more sounds of nature – birds, animals, water, plants, wind in the trees. But the more interesting question is why? Participants suggested that connection to nature, living harmoniously with nature, and breaking down the barriers between humans and nature are all reasons. This has implications in how and where we introduce sounds of nature. The example of introducing sounds of birdsong into shopping malls shows how the simple addition of sound does not build that kind of connection. Participants also noted the sound isolation present in the Karlatornet apartments, further disconnecting from nature and environmental sounds.

So how might we approach introducing sounds of nature? An example is the sound of water in cities. One approach often taken by urban planners is the introduction of constructed water features such as fountains or waterfalls made of concrete. However, an alternative could have been uncovering (daylighting) the streams that are already in our cities, buried by layers of infrastructure.[2] Such an approach has the benefit of revealing sounds of water that are latent in urban environments (c.f. Lacey (2017). This approach also models a move from living from or in nature (both anthropocentric approaches), to living with (biocentric) or as nature (pluricentric) (Pascual et al., 2023).

A final insight from participants was the role of sound in sparking more discussion of the feelings and reasonings behind suggesting steps to move to a future soundscape (e.g. 'attractive' playgrounds, flexible meeting spaces). The use of metaphors for futures, 'colours' of sound, and the introductory exercise sharing early memories of sound all primed participants for a deeper conversation about urban interventions. These underlying feelings can be useful in future planning endeavours to more closely align urban infrastructure with desired characteristics and feelings of a neighbourhood. In future, this could be further clarified by spending more time in the

---

2 Thank you to Thomas Laurien for sharing this example during a seminar at Gothenburg University 23.05.2024

workshops asking participants to describe the feelings/characteristics of the present and future soundscapes in W1 then use as use as guiding principles for FSS W2 and performance.

4.3 Sound as Method

Here I extrapolate from early findings and propose several ways of thinking about sound as method. Some have been explored in the FSS project while others may serve as entry points into future empirical and theoretical research projects.

In any musical or soundscape composition, a key question is who decides on the arrangement? Who writes the score? Who decides on the performance? Who is the conductor? These questions open possibilities to use sound as an engagement and co-production method. For example, what might an improvisational response to futures sound like? Could this be a connection to O'Brien's conception of adaptation as transformation (O'Brien & Sygna, 2013)? In parallel with sound as co-production is sound as engagement method. Sound opens up a range of possibilities for sharing academic and artistic research with local communities and stakeholders. This is possible in cultural settings and local communicates along with more formal engagement though conferences and planning processes. Such engagement methods can reach local communities (especially those involved in co-production activities), local stakeholders and decision makers, and scholars. We may also question who we are reaching and who is participating. Like many urban areas, the population and demographics of Lindholmen change radically between working hours, evenings, and weekends. Which people 'count' for futuring? Neighbourhood residents? Neighbourhood workers? Gothenburg residents? Visitors? All will have different views on a desirable future soundscape.

While 'speculative improvisations' have been used in participatory futuring for sustainability, sound and music are generally not part of the futuring process nor are sounds and music co-created with participants (Neuhoff et al., 2023). Sound can serve as a bridge between planning and public engagement to investigate a new form of collaborative future visioning that engages with nature and sustainability. Integrating sound and the arts into governance processes (formal and informal) opens up a new set of conceptual and methodological questions. What are the modes of engagement that the arts can support in sites of energy development? How do local approaches translate across spatial scales? And how do grassroots participatory processes integrate with and challenge formal planning and governance processes and institutions? A further set of questions revolves around how socio-ecological and socio-technical transformations and change processes occur across spatial scales (Williams et al., In Review). As Howitt notes in discussing musical scale and geography, "what changes in [musical] analysis is not the elements themselves… but the relationships that we perceive between them and the ways in which we might emphasize specific elements for analytical attention" (1998, p. 55). These questions challenge conceptions of scale and analysis within sustainability transitions theory

and may lead to novel theoretical concepts. Sound also has great potential to make the future concrete. We can synthesise and co-produce sounds that do not yet exist (i.e. sounds of electric vehicles in cities) and abstract concepts (i.e. the sound of humans living harmoniously with nature).

While the above methods have practical use in sustainability transitions, we go further and explore how sociomaterial methods can foster dialogue around ontologies of sound, futures, sustainabilities, and transitions, especially how we might mediate between ontological and epistemological understandings of scale, relationships, and futures (Barlindhaug, 2020). Sound as an entry point to ontological shifts, especially as related to reimaging more sustainable worlds, can provoke discussions and prompt new collaborations. Rather than thinking of method as observation, we can consider method as supporting an ontological turn in considering sustainability transitions. Maggs & Robinson (2020) propose organizing arts-sustainability integrations into three modes: greening the sector, raising the profile of sustainability, and reimagining our world. Despite great efforts in sustainable arts sectors and communication, the question of how the arts can help reimagine the world, and what art can do that other forms of engagement cannot has been less explored (Vervoort et al., 2023). For example, how might sound be used as a method to not simply give a new view of the world but to reimagine a different world?

A first step is to consider the implications of sound as a boundary object or instrument in research projects. Roads notes that "as a sound's duration passes from one timescale to another, it crosses perceptual boundaries. It seems to change quality. This is because human perception processes each timescale differently" and further that "in some cases, the borders between timescales are demarcated clearly, but ambiguous zones surround other boundaries" (2001, p.51). In contrast, geographical boundaries such as national borders are usually clearly demarcated. We find the same phenomena in boundaries between methods, between actors, between humans and nature, and between disciplines. Sound provides the opportunity to hold (seemingly) binary states at the same time. Temporal scales exist at the same time yet are experienced differently or perhaps not noticed at all. How can a human perceive an 800,000-year evolution in climate? What happens when those changes are brought into the range of human perception through sound in the duration of a composition, a musical phrase, a repetitive motion, changes in timbre through to micro sound?

We can also ask how might we de-centre the human in research, sound, and performance (Haraway, 2013)? And how might this metaphor help stakeholders and researchers hold tensions that are inherent in unpredictable futures? We may also question how to use feedback and feed-forward to challenge conceptions of scales as discrete entities or layers. Feedback can provide a visceral illustration of connection and cascading cross-scale interactions found in nature (Peters et al., 2004). This challenges our conception of agency in transitions whereby humans in the Anthropocene are both cause and solution. Barad argues that agency, especially

the non-human, is "an enactment" (2007, p. 176). Could feedback in performance that gives agency to plants, data, and material objects quite literally serve as 'an enactment'? Could this be a way to approach bringing voices of the non-human into conversations about the future? (Lim, 2023). Connecting these ideas is their focus on 'relation' and fostering new appreciations for inter-relationships between scales. Relations between artist and audience, residents and place, past and future, are elements that are always present in the communal spaces in which we perform, hear, and experience sound.

3. FURTHER RESEARCH

Several future research directions have already been alluded to in this paper. Here I mention three that are deserving of further exploration. First is experimenting with variations on workshop formats and lengths. This could range from simple and easily accessible versions that could be at a stand in a farmers' market to more advanced methods such as co-arrangement and production, or even co-creating and synthesizing future sounds. A second area of exploration is development of more case studies and cross case comparisons. Another version of the project is planned for July/August 2024 in Utrecht NL which will generate a new future soundscape. It will be useful to compare the process in a different country and the resulting desirable future soundscape. Are there convergences in future sounds across geographies? What sounds are wanted and unwanted? What sounds are to be preserved? There is also room for experimentation in integrating senses beyond sound. This project tested in a very simple way the integration of visual media, but this deserves more investigation. In addition, experimentation with light, touch, infra/ultrasonic sounds, and data sonification in combination with sound could generate even more opportunities for participatory futuring. Related to this point is a need for further research to explore the role of sound in different methods of futuring. This paper explored the role of sound in backcasting but that is only one futuring method. Connection with urban futures and sustainability transitions scholars using different futuring methods would be useful to support future research and projects.

6. CONCLUSION

While Future Soundscapes was a small pilot project, we submit that the use of sound in urban futuring holds great promise. The co-produced future soundscapes prompted a more nuanced view of urban infrastructure planning in participants, created new avenues for discussing human-nature relationships, and shows promise in engaging participants that are not normally part of urban planning processes. We also see great potential in broadening planning processes conception of sound in urban and regional environments. Our early experiments have already informed Göteborgs Stad's development of "culture sound zones" through the introduction of "soundscapes" for future neighbourhoods. This is but one example of the potential for sound to unlock new reimagined futures for urban and regional sustainability transitions.

Acknowledgements

References

Cronon, W. (1996). The trouble with wilderness: or, getting back to the wrong nature. *Environmental History, 1*(1), 7-28.

Doyon, A., Boron, J. and Williams, S. (2021). Unsettling transitions: Representing Indigenous peoples and knowledge in transitions research. *Energy Research & Social Science* 81, 102255 2021.

Forssén, J., Gustafson, A., Pont, M. B., Haeger-Eugensson, M., Achberger, C., & Rosholm, N. (2022). Effects of urban morphology on traffic noise: A parameter study including indirect noise exposure and estimated health impact. *Applied Acoustics, 186,* 108436.

Gonzales-Iwanciw, J., Dewulf, A., & Karlsson-Vinkhuyzen, S. (2020). Learning in multi-level governance of adaptation to climate change–a literature review. *Journal of Environmental Planning and Management, 63*(5), 779-797.

Groth, S. K., & Mansell, J. (2021). *Negotiating Noise: Across Places, Spaces and Disciplines*. Sound Environment Centre at Lund University.

Haddad, C. R., Nakić, V., Bergek, A., & Hellsmark, H. (2022). Transformative innovation policy: A systematic review. *Environmental Innovation and Societal Transitions,* 43, 14-40.

Holmén, J., Williams, S. and Holmberg, G. (2022). Comparing sustainability transition labs across process, effects and impacts: Insights from Canada and Sweden. *Energy Research and Social Science*. Volume 89, July 2022, 102522

Horne, G. (2019). *Jazz and justice: Racism and the political economy of the music*. NYU Press

Jorgensen, E. R. (2007). Concerning justice and music education. *Music Education Research, 9*(2), 169-189

Howitt, R. (1998). Scale as relation: musical metaphors of geographical scale. *Area.* Vol 30 Issue 1, pp. 49-58.

Lacey, J. (2017). *Sonic Rupture*. Bloomsbury Academic.

Loorbach, D., Frantzeskaki, N., & Avelino, F. (2017). Sustainability Transitions Research: Transforming Science and Practice for Societal Change. *Annual Review of Env. and Res.*, 42(1), 599–626

Maggs, D. (2014). *Artists of the floating world : rethinking art/sustainability relations in the late days of modernity* (Thesis). University of British Columbia.

Maggs, D. & Robinson, J. (2020). *Sustainability in an Imaginary World: Art and the Question of Agency.* Routledge.

McCrory, G., Schäpke, N., Holmén, J., & Holmberg, J. (2020). Sustainability-oriented labs in real-world contexts: An exploratory review. *Journal of Cleaner Production, 277,* 123202.

McCrory, G., Holmén, J., Schäpke, N., & Holmberg, J. (2022). Sustainability-oriented labs in transitions: An empirically grounded typology. *Environmental Innovation and Societal Transitions, 43*, 99-117.

Neuhoff, R., Simeone, L., & Laursen, L. H. (2023). Forms of participatory futuring for urban sustainability: A systematic review. *Futures,* 103268.

Pascual, U., Balvanera, P., Anderson, C.B. Diverse values of nature for sustainability. *Nature* 620, 813–823 (2023).

Prior, H. M. (2022). How Can Music Help Us to Address the Climate Crisis? *Music & Science, 5*

Tsing, A. (2012). Unruly edges: mushrooms as companion species: for Donna Haraway. *Environmental humanities, 1*(1), 141-154.

Vervoort, J., Zamuruieva, I., Dolejšová, M., Smeenk, S., et. al. (2023). *Nine dimensions for evaluating creative practices: what they're for and how to use them. CreaTures.* Retrieved from *https://creaturesframework.org/funding/creatures-dimensions.html*

von Wirth, T., Fuenfschilling, L., Frantzeskaki, N., & Coenen, L. (2019). Impacts of urban living labs on sustainability transitions: Mechanisms and strategies for systemic change through experimentation. *European Planning Studies*, 27(2), 229–257.

Weibel, P. (ed) (2019). *Sound art: Sound as a Medium of Art.* MIT Press.

Woodruff, J. (2020). Composing Sociality: Towards an Aesthetics of Transition Design. Pp. 41-70 in Groth, S. K., & Schulze, H. (Eds.). *Handbook of Sound Art.* Bloomsbury.

Williams, S, McCrory, G., Holmberg, J., Slater, K., Simon, D., Beyers, F., Robinson, J. and Lebherz, A. (In review a). Evaluating evaluation: Problems and opportunities evaluating sustainability transitions.

Williams, S. (2023a). *Sound, music, and sustainability; We are but dust and shadows.* Lecture at Insitut für Elektronische Musik und Akustik, Kunst Uni Graz. November 24, 2023. Retrieved from *https://youtu.be/EMHHu3v6zlA?si=GfLegzaXPjQdr1xP*

Williams, S., Chambers, J. and Vervoort, J. (2023). The role of sound and music in reimagining sustainable futures. *International Sustainability Transitions Conference 2023*, Utrecht, NL (August, 2023).

Williams, S. and Doyon, A. (2020). The Energy Futures Lab: A case study of justice in energy transitions. *Environmental innovation and societal transitions* Vol. 37, 290-301 2020

Williams, S. and Robinson, J. (2020). Measuring sustainability: An evaluation framework for sustainability transition experiments. *Environmental Science and Policy*. Volume 103, January 2020, pp. 58-66.

Williams, S. and Doyon, A. (2019). Justice in Energy Transitions. *Environmental Innovation and Societal Transitions.* Vol 31, June 2019, pp. 144-153

L06

AWAKENING URBAN TERRAIN THROUGH TRANSLATIONS ACROSS SENSORY ATMOSPHERES

CHAIR Rennie Tang

Sensory atmospheres in cities, invisible yet deeply palpable, have the potential to awaken urban terrains that may appear dormant, uninhabitable or abandoned. Through this awakening, the potential of the terrain unfolds to enable its future to be reimagined. Sensory atmospheres can be generated through interdisciplinary methodologies which focus on the creation of ambiance through movement and/or sound practices. However, the core challenge is that these non-visual methodologies typically do not produce visual artifacts that can be understood and processed by the urban, landscape and architectural disciplines. Are there strategies for translating from the non-visual to the visual, or are such translations even necessary? Can the language of design be expanded to allow for new modes of expression and representation that connect more directly to sensory atmospheres? These questions prompt us to consider how translations across disciplinary languages might help to bridge the gap between the ephemerality of ambiance and the physicality of the visual world. Through these translations the task of awakening urban terrain may be more effective than relying only on the visually dominated tools of urban, landscape and architectural design. The question of visual or physical dominance is reinforced by ambiance scholars concerned with attending to affective, experienced or lived spaces. According to Thibaud, it is necessary to "question how the notion of ambiance can help us to move the focus from physical space and from the organisation of architectural and urban elements to what will be the affective or experienced space." (2015, p. ti0). The problem with the dominance of physical form in urban design is that it reduces the thickness of lived space to metrics (De Matteis, 2019, p. 2) devoid of sensory atmospheres. This issue is also brought forth in anthropologist Tim Ingold's rejection of assemblages which he sees as a way of forcing things together, as would be the case when architectural objects impose themselves on urban terrain. In contrast to assemblages of objects, his theory of lines envisions a world made up of common threads- word, speech, song, story, handwriting, breathing, walking – that move together along lines and get entangled and become knotted but never close in on themselves, as do physical forms. (Ingold, 2015, p.5ti) Ambiance arises out of this entanglement of lines that make up the sentient life of a particular place; it is not the physical objects themselves that generate ambiance but the lines which flow from them- not birds but their chirping sounds, not streets but the movement of vehicles, not high-rise buildings but their lines of authority, not flowers but their fragrance etc. Thus the creation of ambiance through sound and movement may operate as flowing lines along which identities and materialities move together in the co-creation of atmosphere. This session seeks to bring together interdisciplinary researchers working with urban terrains using methodologies that explore translations across sound, movement and design practices.

PERFORMING SPATIAL ATMOSPHERES TO AWAKEN PLACES: THE CASE OF THE PROJECT SULLA SOGLIA IN PALERMO

PERFORMAR ATMOSFERAS ESPACIAIS PARA DESPERTAR LUGARES: O CASO DO PROJETO SULLA SOGLIA EM PALERMO

Gloria Calderone
Research fellow
University of Palermo
gloria.calderone@gmail.com

Valentina Mandalari
PhD student
University of Palermo
valentina.mandalari@unipa.it

ABSTRACT

A well-established part of urban studies denounces the constraints of traditional urban design, linked to an almost exclusive focus on the technical, functional and material aspects of space, as well as to the disconnection from the embodied and embedded experience of places, capable of capturing the invisible. However, such research struggles to lead to experimentation with different approaches to design and space in professional design practice.

Starting from these considerations, the paper presents Sulla Soglia, a program of participatory design and construction, developed by the Mare Memoria Viva Ecomuseum of Palermo, Italy, in an urban area perceived as inaccessible and dormant. Creative and performative methods were experimented to analyse the spaces and express, perform and represent the project. The bodily experience of space was the common thread throughout the process, intended to explore both the visible and the invisible and to produce new atmospheres, related to the lived and affective experience of spaces.

KEYWORDS: Performative urbanism. Creative methods. Affective spaces. Designing bodies. Ephemerality.

RESUMO

Uma parte consolidada dos estudos urbanos denuncia os limites do urbanismo tradicional, associados a um enfoque quase exclusivo aos aspectos técnicos, funcionais e materiais do espaço, bem como à desconexão com a experiência incorporada dos lugares, capaz de captar o invisível. Porém, estes estudos dificilmente conduzem à experimentação de diferentes abordagens ao projeto e ao espaço na prática profissional do design urbano.

A partir destas considerações, o artigo apresenta Sulla Soglia, um programa de desenho e construção participativos, desenvolvido pelo Ecomuseu Mare Memoria Viva de Palermo, na Itália, numa área urbana considerada inacessível e adormecida. Foram experimentados métodos criativos e performáticos para analisar os espaços e expressar, realizar e representar o projeto. A experiência corporal do espaço foi o fio condutor de todo o processo, com o objetivo de explorar tanto o visível como o invisível e de produzir novas atmosferas, relacionadas com a experiência vivida e afetiva dos espaços.

PALAVRAS-CHAVE: Urbanismo performativo. Métodos criativos. Espaços afectivos. Corprojectar. Efémero.

1. INTRODUCTION

Informed by disciplines such as anthropology, urban sociology and environmental psychology, since the Sixties and Seventies much research in the field of urban and landscape design has delved into the perceptual aspects of the experience of the city (Lynch, 1960; Cullen, 1961; Norberg-Schulz, 1979; Thien, 1981), seeking to capture the invisible that constitutes the lived and perceived city (Lefebvre, 1974). Sharing the interest for phenomenology, scholars have focused on the relationships between space and society, paying attention to everyday rhythms and practices (Jacobs, 1961; de Certeau, 1980; Augoyard, 1989), and on the importance of aesthetic experience in urban life, including the sensitive and affective perception (Böhme, 2006; 2017; Augoyard, 2008; Thrift, 2008).

Such a phenomenological approach addresses part of the current academic research, focusing on the qualitative aspects of the city. From a methodological point of view, it leads to experiment with original research methods from sociology, anthropology and arts, which are varyingly defined as creative (Gauntlett, 2007), live, sensorial, embodied (Chadwick, 2017; Spatz, 2017), art-based (Leavy, 2015), mobile, walking (Macpherson, 2016; Springgay & Truman, 2018; O' Neill & Roberts, 2020), performative (Douglas & Carless, 2013). These methods underline alternative knowledge paradigms that interpret the body as a tool for understanding reality and open up new possibilities for urbanism: among these, a way toward a sensorial or performative urbanism seems to be paved (Zardini, 2005; Wolfrum & v. Brandis, 2015).

However, the relatively few scientific works empirically addressing the consideration of sensitive and corporeal methods in the design process have only limited implications in the professional design practice, particularly at the urban scale (Lazzarini & Marchionni 2020). This difficulty in transferring sensitive interest into the design practice can be referred to a reductionist and positivist epistemology that dominates the design profession as well as scientific research, implying a binary vision that undervalues the body in favour of the intellect.

Challenging this difficulty, this paper questions the possibility of applying creative and performative methods to the design process, to grasp the invisible potential of places and translate it into new atmospheres through sensitive and body-based approaches. We will discuss it by describing the experience of *Sulla Soglia*, a co-design program held in Palermo, Italy, by Mare Memoria Viva Ecomuseum to revitalise and activate an area considered marginal and dormant. We took part in the program, consisting of four workshops, in two different roles: Valentina Mandalari in the role of ecomuseum worker and program curator and Gloria Calderone as a workshop participant and researcher on these topics within her PhD.

Methods used stand in discontinuity with traditional techniques of design-making and represent an invitation to explore new languages through performative actions as a way for understanding space, expressing design and producing both space and design.

We refer to the term 'performativity' as "a form of both discursive and material enactments that construct subjects and objects" (Laketa, 2020, p. 65). We also adopt the distinction proposed by John L. Austin between performance and performative, understanding the former as the execution of an action, and the latter as a situation in which a new reality is created (Austin, 1979).

We will proceed by providing a description of the geographical context as a driver for methodological choices and performative approaches as alternatives to traditional design processes. Subsequently, we will outline the main features of *Sulla Soglia* to present in depth the purposes, methods and outcomes of two of the four workshops included in the program: *Attraversare* and *Abitare 0-99*. We will conclude by presenting the consequences of the program in the current transformation process of the Ecomuseum spaces.

2. CONTEXT

The Ecomuseum Mare Memoria Viva is located at the mouth of Oreto river, in Settecannoli neighbourhood, a marginal albeit rather geographically central area of the Eastern Coast of Palermo, Italy. This context represents both the Ecomuseum's object of investigation and the grounding terrain orienting its actions and its search for adequate and effective methodologies.

For the purposes of this dissertation, one of the main features distinguishing the area is in fact an overall condition of *latency*: in the past decades the traumatic changes of the coastal suburb morphology disrupted the secular landscape and the identitarian asset of the place, leaving it in a state of apparent suspension[1] and opening a phase of unregulated development.

This process contributed to connote the area with different forms of marginalisation, enhancing the perceived distance from the historical centre[2] and a diffuse sense of peripherality which needs to be interrogated.

Within the process described above the corporeal and affective dimension linked to lived spaces has been kept out, with an exclusively functional and technocratic approach.

---

1 Particularly, we are referring to the consequences of the violent and hectic urban expansion known as the "Sack of Palermo", which took place between the Fifties and the Sixties. Within a general lack of awareness about the collusion between Mafia and the politics and a compelling need for jobs and dwellings (Pedone, 2019), hundreds of historical buildings were substituted by modern multi-storey ones, while wreckages and excavated soils were dumped onto the coast. The debris submerged the former rocky platform, determining an average shifting of the shoreline of about 200 metres and triggering a simultaneous process of abandonment and illegal appropriation (Cannarozzo, 2000; Riggio, 2014). At the same time, a new residential area rapidly grew nextdoor to the seaside linear settlement, leaving few fragments of the former orchards and vegetable gardens and being highly lacking in public spaces, services, public transportation, facilities.

2 The renovation process of the historical centre started in the early '90s and is still in process. Several interventions have been announced since the early 2000s for the Eastern Coast. A new international call for ideas including the river mouth area should be announced by mid-July 2024 (see: *https://www.adsppalermo.it/news/palermo-il-lungomare-che-avanza*).

This suggests looking for experimental design postures connected to the embodied and embedded experience of the place and able to catch the invisible dimension that has been left aside so far.

2.1 Ecomuseo Urbano Mare Memoria Viva

Within this framework, Mare Memoria Viva (MMV, from now on) **has been operating** since 2014 both as an open museum space and a social process, experimenting with various forms of action and participation for the construction of a local community to face socio-spatial marginalisation (Crobe & Giubilaro, under publication).

Through a Special Public-Private Partnership with the municipality of Palermo, MMV has been co-managing a public property, a former locomotive shed dating back to 1886 abandoned since 1955 and renovated by the municipality in the late '90s, with the explicit idea of no intended use[3]. This has resulted in a totally open space, minimally designed for the pavilion interiors and, in contrast, in a garden marked by a strong segmentation of paths and sectors, a variety of materials and apparently casually placed plant species and a thick border alternatively made by a wall or an oleanders fence.

As the protocol agreement was impeding - at least to december 2022[4] - to intervene on the space even with ordinary maintenance actions, its uses were somehow crystallised on the habits hitherto practised by the public employees: a parking area right in front of the main access with a confusing path to the pavilion entrance facing an office space; a big container in which the museum equipment appeared as scattered objects; a huge neglected forecourt on what was considered to be the backside of the building, alongside the river.

3. SULLA SOGLIA: METHODS AND LANGUAGES TO FACE THE INVISIBLE

On these basis, *Sulla Soglia* (literally: *On the Threshold*) has been conceived as a co-design and re-equipment program for the Ecomuseum's outdoor spaces, starting from the body.

It was implemented between February and May 2022 as a part of *Il Trampolino (The Springboard),* a wider project addressed to teenagers and young adults with the aim of fostering the development of agency capacities and transformative thinking based on the resources of the context. *Sulla Soglia* involved 64 under-35 young adults through a public call. The participants' team was made up of students and professionals in the field of Architecture, Design and Natural Sciences.

3 Specifically, the renovation of the complex was meant to be "limited to a restoration of the structure [...] postponing the intended use to future cultural programs defined by the Municipality, taking into consideration prospective developments of the coastal strip and the Oreto river mouth" (Fundarò; Cottone, 1996).

4 In January 2023 a revised protocol entered into force, introducing for the association Mare Memoria VIva the licence to ordinary maintenance interventions and to extraordinary maintenance interventions to be approved by the Municipality and the local Cultural Heritage Agency.

The program included four workshops, coordinated by MMV and conducted by external professionals. The first workshop, *Attraversare*, was aimed at analysing the context and defining the general interventions to be implemented in subsequent workshops. The others, *Biocostruire, Rivegetare* and *Abitare 0-99*, were devoted respectively to the co-design and co-construction of a Mediterranean reed pavilion, a food forest and wooden furniture: all reversible transformations according to the mentioned protocol constraints.

The objective of the program was to rethink and collectively transform the physical and metaphorical threshold between the interior of the Ecomuseum and the city, working on its connective potential and reducing the thickness of the perimeter border, coherently with MMV's mission of inclusiveness. To do so, the program refused the common Euclidean and Cartesian rational approach dominated by technical and functional principles; rather a procedural and methodological change was clearly sought to awaken and activate the context through design actions beginning from the reading of existing atmospheres.

Sulla Soglia developed collective design practices with a strongly corporeal character, which fostered perception, movement and action. The basic idea was to use the body as an active designing subject: experiencing the space to design it, and not vice versa as spatial design normally does. The collaborative and hands-on dimension was required in this specific approach: overcoming the individual and intellectual posture of the traditional designer, the collective body of participants is precisely what activated and enacted the interventions.

Especially during the *Attraversare* (*Crossing*) and *Abitare 0-99* (*Inhabiting 0-99*) workshops, the design process combined methods of creative analysis and participatory design, constantly alternating action and reflection, using group discussions or produced artefacts as a stimulus for further reflection, in order to share both learning and design solutions.

3.1 Attraversare

Attraversare consisted in an extemporary design workshop to address performative interventions on the threshold between the Ecomuseum and the neighbourhood. Purpose of the workshop, led by Sergio Sanna, co-founder of Ground Action collective[5], was to set a design program built on the *analogical language* of performative actions.

The term *analogical* is here used in two nuances: first, the use of bodies and materials instead of technical representations and virtual models as design tools; second,

---

5 Ground Action is a collective active since 2013, founded by Matteo D'Ambros, Sergio Sanna, Roberto Zancan. It carries out site-specific projects and actions in the field of art, landscape and architecture. It is inspired by collective and participatory practices of space's modification and promotes maintenance as a form of design and reuse as an act of transformation. Its objective is the direct and concrete execution of installations, performative actions, virtuous behaviours.

the analogy[6] between materials and gestures from everyday life and architectural interventions proper, established by the purposeful enactment of performative actions.

According to Ground Action methodology, the "usual distinction between the initial idea, the representation and the implementation of a project" (Ludwig; Sanna, 2023, p. 93) is in fact blurred into "a process in which every single action is both part of a sequence and defined itself" (Zancan; Sanna, 2023, p. 95) and through which the intervention emerges in evolutive and choreographic terms, rather than in rigid preconceived passages. As stated by Zancan (2014, p. 147), "this method is not an *a priori*, rather it is a processual and collective game which exists in the experiences of the bodies while practising it"[7].

The starting point was a dialogue with the Ecomuseum curators (that led their needs concerning the site emerging) and a series of explorations and crossings of the Ecomuseum's outdoor spaces and the surrounding urban area. The guiding principle was that perception supports cognition. Consequently, the practice of walking was used as a performance to conduct a phenomenological analysis and an aesthetic form of spatial learning[8]. Through walking, we explored local atmospheres focusing on our sensations, emotions, psychic and bodily effects; parallelly, we gathered social and geographical information about the area.

A dormant and latent atmosphere with vivid potential emerged. Explorations uncovered feelings of bewilderment and disorientation, and sensations of acoustic, thermal and visual discomfort[9]. Also, when the wind blew the scent of the sea was perceivable, although the sea itself was not visible due to plant and architectural barriers.

The invisible and subjective perceptions of our bodies became information about the place and data useful for the project, which focused on accessibility (creating clearer and safer access routes) and activation of underused spaces through actions on thermal and visual conditions. The expression of the design ideas unfolded through direct *micro-actions*. In fact, after putting the information read by our bodies on paper (a hand-drawn map on a very long roll lying on the floor to get an overview of the project spaces and actions), the first act of the project composition was to directly use the spaces.

---

6 Analogy is "a comparison of two otherwise unlike things based on resemblance of a particular aspect" (see Merriam-Webster Dictionary: *https://www.merriam-webster.com/dictionary/analogy*).

7 Translation by the authors.
8 Sergio Sanna, landscape architect and professor for Urban and Territorial Interventions at the Academy of Fine Arts of Palermo, gave an informal lecture on the prodromes of these practices, with the main reference being the psychogeographical drifts of the Situationists, but also the *transurbances* in the 'empty spaces' of unstable and forgotten territories conducted by Stalker, and the *travesías* conducted within the Valparaiso School of Architecture.

9 Bewilderment and disorientation were related to the winding and unstable paths and not feeling welcome in an entrance area that is a car park. Discomfort was connected to the loud noises of outside car traffic, the impossibility of seeing the sea, and the sunny conditions that made some spaces unusable for many hours of the day due to the heat.

We tested and simulated possible transformations directly by acting on them. Unrolling a long roll of paper to simulate the outline of a new entrance path, spreading a large sheet overhead with our arms to simulate a shading canopy, moving hedges with our bodies to create a visual opening to the sea were only some of such *performative actions* (Figures 1-2). The actions of performing the project turned performative because, by being acted upon, they created new realities and produced transformations in space.

Thus, the tested design proposals evolved into a video-performance articulated into a sequence of *acts* that was delivered as a set of *design indications*, providing guidance for the subsequent workshops[10].

Figure 1. The performative action of unrolling paper to trace the new entrance path to the Ecomuseum.
Source: Sergio Sanna (2022).

Figure 2. The performative action of spreading a fabric to simulate a shading canopy.
Source: Paola D'Andrea (2022).

10 Link to the video: *https://youtu.be/a_WcqWTPm5U*.

3.2 Abitare 0-99

The process conducted through *Attraversare* identified among other things an under-utilised area to be valorised through mobile micro-interventions that would increase its possibilities for use and encounter. Those micro-interventions were designed and realised during the workshop *Abitare 0-99*, which was focused on the co-creation of movable wooden furniture.

Again, a body-driven design was practised, since the entire design process follows the sensitive information emerging from the relationship between body, movement and space. Marco Terranova[11] led the workshop according to a methodological process consisting of fairly codified phases: the encounter and the creation of relationships between the participants, the bodily exploration, the telling of it, the imagination and prototyping of the project, and finally its construction.

After an approach-phase aimed at creating a condition of ease and *encounter*[12] within the participants, we explored both the space and our bodies through sensory immersion exercises, such as: sensing with eyes closed while standing still, blindfolded walks in pairs, ludic explorations impersonating animals, etc[13]. We walked with our eyes closed and from different body heights, touched and smelled, recognised scents, sounds and textures. We sat and encountered, welcomed and listened to our bodies express simple drives or impulses, felt bewildered, satisfied, amazed, amused, confused.

These practices awakened awareness of perceptual capacities and provided tools for embodied exploration of the environment, involving the five senses and proprioception. An *amplified knowledge* about the space was achieved through an attentive attitude and the deactivation of the primacy of the sight and through the exploration of unusual point of view thanks to the simulation of animals' perspective.

Such dimensions linked to sensoriality and temporality that makes up the atmospheres of the place would not have emerged just from reading or writing a map. It is from this dimension that we have identified affordances, unexpressed uses, potentialities, and that our bodies got ready and warmed up to imagine and perform the project.

Thus, we imagined new atmospheres to be **enacted** through furniture, following the guidelines left by *Attraversare* to create situations that would foster sociality and conviviality in the area identified for this purpose. In particular, we imagined a large sectional and modular table on wheels (to be easily moved, together with seats,

---

11 Marco Teranova is an architect and wood craftsman, founder of Senzastudio. He develops urban regeneration and community building processes through collective construction sites, working with wood and natural materials, nurturing his practice with facilitation and proprioception techniques.

12 We borrow this expression directly from Marco Terranova's oral introduction to the workshop phases.

13 Some of these practices consisted in seeking havens, shelters, or lookout places. The underlying intention was to go beyond the immediately perceived and known, requiring a freer exploration than the traditional technical one, disengaged from the rational logic that operates at a distance and privileges the sense of sight. For example, they required contacting the body's sense of protection and envelopment, and relating to places by seeking levels of understanding not merely rational, discovering other points of view.

also movable) that could be composed into different shapes and sizes, adapting to needs. We also designed a large movable seat covered by a shading surface to shelter from the sun, and a fixed bench and table in correspondence with the gap created between the hedge, from which it was now possible to see the sea.

Their conception came up progressively by *soliciting the space*[14], i.e. by arranging and moving planks, manipulating strips, materials and objects in space, simulating seats, testing them with our bodies and then prototyping and building them.

4. CONCLUSIONS

Both *Attraversare* and *Abitare 0-99* used embodied and performative methods consisting in performative design *micro-actions* to creatively address space analysis and design expressions. These methods shared a similar approach to the body as an instrument for awakening and measuring space and time, and to the design as a process of knowledge and transformation through the direct experience of bodies in space: a sequential and open-ended process which incorporates the idea of evolution.

This experience demonstrates that spatial interventions are not only a matter of material transformation, but involve a dialectic between materials and bodies which is meant to expand spatial uses and meanings. These micro-practices produce micro-transformations that can lead to physical interventions, but are not reduced to these ones (Calderone, 2024). In this sense, the *micro* dimension is essential to ensure a gradual and adaptive development, both in the design phase and in the progressive materialisation of the space.

Such a perspective conceives the design process not as something given and defined once for all, but rather as a collective action which "is generated together with the gesture, is a result of the agent/acting body, is not an empty container for the action, is the process and the performance itself"[15] (Meschiari, 2018, p. 69).

Sulla Soglia provided an empirical test of the efficacy of embodied and performative methodologies. The results encourage the integration of such postures to traditional design approaches, as they do not diminish their technical accuracy but add elements of complexity to ambiances. Rather than laying down a project heading to permanent interventions, the program worked as a spore propagator. It triggered a process of progressive transformation which is still ongoing and is marked by adaptability, in accordance with the multiple uses and users of the space[16].

14 See note 11.

15 Translation by the authors. The English *agent/acting* corresponds to the Italian "agente" and encompasses both the active role in producing a specified effect and that of taking action.

16 The main access system has been flipped, nevertheless maintaining the possibility of a double entrance and activating a circulatory flux around the main building, fostering a stronger relationship with the Oreto river and its future redevelopment; the forecourt has been progressively tested and activated as space for events; sittings with different heights, movable shelters and sighting devices are inhabiting the external spaces, trying out the specificities of single portions of the space; a light canopy system marks the entrances to the museum space providing shadow in the most breezy yet sunny part. The process is rubbing off on the interior, where the whole museum equipment has been re-designed providing room for a flexible event space and a coworking area with movable furniture for temporary uses.

5. BIBLIOGRAPHY

Augoyard J. (1989). Passo passo: Il percorso quotidiano in ambiente urbano. Lavoro.

Austin, J. L. (1979) Philosophical Papers. Oxford University Press. Third ed.

Autorità di Sistema Portuale del Mare di Sicilia Occidentale. (2024). Comunicato stampa, Palermo, il lungomare che avanza. *https://www.adsppalermo.it/news/palermo-il-lungomare-che-avanza*

Böhme, G. (2006). Architektur und Atmosphäre. Wilhelm Fink.

Böhme, G. (2017). Atmospheric architectures. The aesthetics of felt spaces. Bloomsbury.

Calderone, G. (2024). Spazi umani e corpi urbani. Approcci artistico-performativi per una risignificazione dei luoghi dell'abitare (Doctoral dissertation). University of Florence, Florence.

Cannarozzo, T. (2000). Palermo le trasformazioni di mezzo secolo. Archivio di studi urbani e regionali. 67, 101-139

Chadwick, R. (2017). Embodied methodologies: Challenges, reflections and strategies. Qualitative Research, 17(1), 54–74.

Cullen, G. (1961). Townscape. The Architectural Press.

D'Ambros, M. & Sanna, S. (2022). Ground Action. Tre interventi su arenili italici. In Manigrasso M. (Ed.) Coste in movimento 2021. Atelier di ricerca (pp. 327-344). Aracne. de Certeau, M. (1980). L'invention du quotidien. Union générale d'éditions.

Douglas, K., & Carless, D. (2013). An Invitation to Performative Research. Methodological Innovations Online, 8(1), 53–64.

Fundarò A., & Cottone, A. (1996). L'ex deposito locomotive a Sant'Erasmo. Un restauro solo annunciato. Salvare Palermo, 6, 41-42

Gauntlett, D. (2007) Creative explorations: New approaches to identities and audiences. Routledge.

Jacobs, J. (1961). The death and life of great american cities. Vintage Books.

Laketa, S. (2020). Performativity. In A. Kobayashi (Ed.), International Encyclopedia of Human Geography (Second Edition) (pp. 65-70). Elsevier.

Lazzarini, L. & Marchionni, S. (Eds.) (2020). Spazi e corpi in movimento. Fare urbanistica in cammino. SdT edizioni.

Leavy, P. (2015). Methods meets art: arts-based research practice. Guilford.

Lefebvre, H. (1974). La Production de l'espace. Éditions Anthropos.

Ludwig, F. & Sanna, S. (2023). Tacit Concepts. In Bussiere S. (Ed.), Conceptual landscapes: fundamentals in the beginning design process (pp. 93-105). Routledge.

Lynch, K. (1960). The Image of the City. The MIT Press.

Macpherson, H. (2016). Walking methods in landscape research: moving bodies, spaces of disclosure and rapport. Landscape Research, 41(4), 425–432

Marememoriaviva. (2022, June 24). ATTRAVERSARE [Video]. YouTube. https://youtu.be/a_WcqWTPm5U

Meschiari, M. (2018). Disabitare. Antropologie dello spazio domestico. Meltemi.

Norberg-Schulz, C. (1979). Genius Loci: Towards a Phenomenology of Architecture. Rizzoli.

O' Neill, M., Roberts, B. (2020). Walking methods: Research on the move. Routledge.

Pedone, F. (2019). La città che non c'era: Lo sviluppo urbano di Palermo nel secondo dopoguerra. Istituto Poligrafico Europeo Casa Editrice.

Riggio, S. (2014). La fascia costiera palermitana: proposte sul suo risanamento. InTRAsformazione, 3(1), 101-131, https://doi.org/10.4474/DPS/03/01/MTR115/31

Spatz, B. (2017). Embodied Research: A Methodology. Liminalities: A Journal of Performance Studies, 13(2), 1–31.

Springgay, S. & Truman, S. E. (2018). Walking Methodologies in a More-than-Human World: WalkingLab. Routledge.

Thiel, P. (1981). Visual awareness and design: an introductory program in conceptual awareness, perceptual sensitivity, and basic design skills. University of Washington Press.

Thrift, N. (2008). Non Representational Theory: Space. Politics. Affect. Routledge.

Wolfrum, S. & v. Brandis, N. F. (Eds.). (2015). Performative Urbanism. Generating and Designing Urban Space. Jovis.

Zancan, R. & Sanna, S. (2023). Performing Landscape: Maintenance Is the Project. In Direzione Generale Creatività Contemporanea del Ministero della Cultura Fondazione Scuola dei beni e delle attività culturali (Ed.), Arte e spazio pubblico (pp. 90-95). SilvanaEditoriale.

Zardini, M. (2005). Toward a Sensorial Urbanism. In M. Zardini (Ed.), Sense of the City: An Alternative Approach to Urbanism. CCA/Lars Müller Publishers.

SONIC DRIFT CDA: PERFORMANCE OF AN AI-BASED SONIC GEOGRAPHIC DÉRIVE

SONIC DRIFT CDA: DESEMPENHO DE UM DÉRIVE SÓNIC GEOGRÁFICO BASEADO ÉM IA

Caroline Claus
ReSilence Artist in Residency
Independent researcher
contact@clauscaroline.be

Georgios Loupas
Research Associate
Information Technologies Institute - CERTH, Thessaloniki, Greece
loupgeor@iti.gr

Paraskevi Kritopoulou
Research Associate
Information Technologies Institute - CERTH, Thessaloniki, Greece
pakrito@iti.gr

Nefeli Georgakopoulou
Senior Research Associate
Information Technologies Institute - CERTH, Thessaloniki, Greece
nefeli.valeria@iti.gr

ABSTRACT

Our project, conceptualized as an Arts Driven Experiment (ADE), engages in a critical study of the complex relationship between sonic spatial shifts and the evolving configuration of an urban landscape and environment in transformation. By rethinking the acoustic horizon in terms of flatline constructs, we aim to address sonic spatial shifts by focusing on instances of disruption in the behavior of alluring sonic figurations as they traverse dynamic urban spaces. A sonic cartography is constructed through the performance of an AI-based sonic-geographic dérive. The project is situated in the northern part of Chaussée d'Anvers (CDA), Brussels, with the objective of providing information on the transformative potential of a sonic affective approach for the redevelopment of the Brussels Territory North.

KEYWORDS: urban regeneration. sonic space shift. dérive. artificial intelligence. sonic cartography. urban planning

RESUMO

O nosso projeto, conceptualizado como uma Experiência Conduzida pelas Artes (ADE), envolve-se num estudo crítico da relação complexa entre as mudanças espaciais sónicas e a configuração em evolução de uma paisagem urbana e ambiente em transformação. Ao repensar o horizonte acústico em termos de construções de linha plana, pretendemos abordar as mudanças espaciais sónicas, concentrando-nos em instâncias de perturbação no comportamento de figurações sónicas sedutoras à medida que atravessam espaços urbanos dinâmicos. Uma cartografia sónica é construída através da performance de um dérive sónico-geográfico baseado em IA. O projeto situa-se na parte norte da Chaussée d'Anvers (CDA), em Bruxelas, com o objetivo de fornecer informações sobre o potencial transformador de uma abordagem afectiva sónica para a requalificação do Território Norte de Bruxelas.

PALAVRAS-CHAVE: regeneração urbana. deslocamento espacial sónico. dérive. inteligência artificial. cartografia sónica. planeamento urbano

1. INTRODUCTION / INTRODUÇÃO

The following essay draws on an arts-driven experiment conducted by the artist-researcher and the interdisciplinary team of data researchers as part of a S+T+ARTS Horizon EU residency, ReSilence Grant Agreement No. 101070278. The project aims to revisit soundscape-based approaches by re-evaluating the acoustic horizon of an urban area undergoing rapid change in terms of flatline constructs. It adopts an AI-based sonic-geographic methodology to identify shifts in sonic space, with a particular emphasis on the disruption of emotional states in relation to urban re-development strategies. This results in the creation of a sonic cartography of the public space surrounding an urban block along the Brussels Chaussée d' Anvers (CDA).

2. SONIC SPACE SHIFTS
2.1 Compact City

In addition to the city's inherent compactness due to its geographic location, capital status, and the demographic trends that are driving up housing demand, Brussels Capital Region has adopted the compact city as a strategic urban planning approach (Mabilde, 2020). The compact city model is associated with urban planning strategies that emphasize proximity, the creation of vibrant neighborhoods that combine residential and commercial functions, and accessibility to green space and public services. A central objective is to create space for pedestrians, with a density that is high enough to allow for the efficient operation of public transport. From a design perspective, the compact city model aims for a diversity of urban form that allows different modes of urban life to coexist in different ways, ensuring that urban living is both feasible and attractive to the super-diversity that characterizes a city's population. The majority of compact city strategies that address sound in qualitative terms are based on the "soundscape" concept and have been designed to improve the perceived "acoustic comfort" of urban environments (Radicchi et al., 2018). The objective of this project is to engage in critical reflection on soundscape-based analysis by reconsidering the acoustic horizon of a rapidly changing urban area in terms of flatline constructs and sonic space shifts as emotional disruption .

2.2 Flatline Construct

Murray Schafer (1977) proposed an interpretive framework for the acoustic environment, conceptualizing it as a "soundscape." Schafer's approach aimed to foster a more nuanced appreciation of sound that extends beyond a mere perception of noise. To describe the expression of a sound's acoustic profile within a given geographical area, he proposes the notion of "acoustic space." Likewise, Blesser and Salter's (2009) use the concept of the "acoustic horizon" to delineate an anthropocentric experiential boundary of listening, based on the inclusion or exclusion of specific sonic events. These two perceptual concepts of sonic spatiality are inextricably linked to the idea of a community of listeners and their capacity to perceive and process aural stimuli. Shafer's argument for a "tuning the world" involves a critical reflection on the presence of "flatline constructs." According to Schafer, this phenomenon occurs when the sonic environment becomes homogeneous, lacking in diversity and vitality. He links the prevalence of flatlines to a number of anthropocentric factors, including noise pollution and the prevalence of mechanical sounds, as well as the suppression of natural sounds.

Mark Fisher (1999) uses the term "flatline construct" to reflect upon the convergence of the inorganic and organic realms onto a singular plane of immanence. In order to explore the experiences of lost futures in the present, he employs the concept of a "gothic flatline" to delineate the prevailing condition in contemporary society as one of pervasive stillness and decay, evoking the atmosphere of a gothic novel. His philosophical analysis of the impact of cybernetic elements in contemporary

society is informed by Derrida's concept of "hauntology". Compared to Schafer's critique, Fisher's conception is more intensively and affectively oriented. In their audio essay describing a walk along the Suffolk coast, Fisher and the narrator Justin Barton (2019) introduce the term "unplace" to signify an unknown spatiality that encompasses individuals and the surrounding environment. To facilitate the navigation of contemporary landscapes, which are characterized by latencies, losses, and new forms of sensitivity in relation to global urban dynamics and the ubiquity of new digital media, Shaviro (2010) proposes a framework for understanding the behavior of "alluring figurations". He describes alluring figurations as dense nodes of intensity and interaction, acting as anchor points and capable of being connected to the convergence of many feelings, which conduct multiplicities of affective flows. Fisher's analysis of flatline constructs and Shaviro's emphasis on alluring objects contributed to the formulation of a sonic affective spatial approach that engages with the boundaries of the perceptual concepts and metrics of soundscapes and acoustic horizons.

2.2 Sonic Space Shifts

In the context of this project, the concept of a "sonic space" is defined as a heterogeneous and intermittent spatial construction, characterized by a dynamic interplay between sonic affective flows and possible positions within it. Each position is associated with a slight variation in the degree of sonic-spatial intensity. A "sonic space shift" represents a critical transformation, which can be considered analogous to what architectural theorist Sanford Kwinter (2002) describes as a 'singularity.' This relational definition of sonic space, both in terms of expression and experience, is informed by research in the fields of sonic geography and sound art (Ganchrow, 2009; Gallagher, 2016). Despite their pervasiveness in urban environments, sonic affective flows are frequently overlooked as they traverse the materiality and bodies of an urban space. The notion of an unperceived sound space seems to align with the concept of "unplace," which denotes the existence of an unknown spatiality that encompasses both the individual and the surrounding environment. A defining feature of this affective conception of sonic spatiality is its capacity to consider the experience of urban space in a state of distraction. Intervening in physical space may have an impact on the behavior of such flows, as well as on the composition and form of a sound space. This conceptualization allows for the association of a sonic space shift with disruption, both in terms of experience and expression.

2.2 Research Questions

The redevelopment of an urban area into a more compact city is a complex undertaking. The process of urban densification and renewal requires a multifaceted approach, whereby a variety of considerations are employed to justify or refute the selection of specific urban sites, infrastructure, and forms. In urban planning and design research, the sonic environment is increasingly being assessed, predominantly in relation to noise pollution and acoustic comfort, as part of strategies formulated in response to other environmental, social, and economic challenges. The project explores the

boundaries of soundscape approaches by focusing on the city as a source of sonic affective flows that contribute to the formation of sonic space shifts. A series of urban planning and design strategies are reexamined using an AI-based sonic geographic dérive to create a sonic cartography of fast-changing urban landscape. Accordingly, the following research questions have been formulated:

- Do strategies for modeling compact cities involve sonic space shifts?
- In what ways might artificial intelligence be employed to assist in a sonic affective spatial approach?
- Is it possible to move beyond the analysis of perceptible acoustic horizons and the comfort of landscapes and environments in transformation through an AI powered analysis?

3. AI BASED SONIC GEOGRAPHIC DÉRIVE
3.1 Dérive

The International Situationist Movement's practice of "dérive" is interpreted as a sonic method for AI-powered listening to the sonic space shifts of a landscape and urban environment in transformation. It is situated in a complex and dynamic landscape, where a multitude of interacting factors and data points contribute to an unpredictable outcome. The movement's trajectory follows the paths of a series of disruptive or alluring sonic figurations that can be linked to prevailing urban strategies. By focusing on alluring sonic figurations as an analytical tool, it becomes possible to explore a de-centering of subjective evaluations unless it is clearly marked as such. In the context of this project, a series of sonic figurations are identified which serve as indicators of feelings of disruption in relation to the strategies employed in the city. The selected figurations delineate specific scales, forms, and positions corresponding to the urban sites and strategies of observation. The allure of each sonic figuration is explored as a portal to an unplace, an urban sonic spatiality that is not necessarily limited to the specific site of survey.

3.2 Observatory

The project employs two distinct methodologies for data collection. These are situated within the context of the project's observatory. Audio recordings were conducted in two distinct settings: on the rooftop and during a series of audio walks in the public space surrounding the urban block of survey. The schedule of recording was structured around sunrise, sunset, and midnight transitions. The particular configuration of listening positions and observation periods exemplify the spatial argument of investigating sonic spatial shifts in relation to prevailing and potential urban strategies. The project combines two types of audio recording: passive logging from a rooftop position or top level, and active field recording from a street-level position or ground level. Rooftop audio recording is conducted by four kits each of which combines low-cost, full-spectrum acoustic logger, used as a

USB microphone, connected to a single board computer with appropriate software installed to achieve GDPR compliance. The street-level recordings were conducted using a contact microphone with an XLR impedance adapter, a shotgun higher-order, frequency-dependent directive microphone, a stereo pair of omnidirectional microphones in combination with a 4-preamp, 8-track, 32-bit float audio recorder. The data was collected in the early spring of 2024, during the weekend, out of an interest in recording the sonic environment of residential living.

3.3 Cartography

An analysis of sonic space shifts within the urban sonic environment of a landscape in transformation is conducted through the creation of an AI-based sonic cartography of transformative urban spaces. The AI-based experiment is designed to articulate sonic spatial shifts as disturbances that have the potential to evoke either psychological distress or delight. A second goal of this AI-based endeavor is to provide a richer understanding of affective modes of transmission in relation to prevailing proximity-based approaches designed to promote well-being in public spaces. A third goal is to evaluate the use of AI-based models in urban sound planning and design research. A triangulation of methods and sources is employed to facilitate interdisciplinary understanding and synthesis. The specific arrangement of listening positions and observation periods exemplifies the spatial argument of investigating sonic spatial shifts in relation to prevailing and potential urban strategies. The alluring sonic figurations serve as structural markers for the sonic cartography, both in its visual and auditory formats. The allure of each sonic figuration is evaluated in terms of its sonic materiality and the emotional response it evokes, making use of AI-based models.

The sonic cartography pairs an urban analysis with an AI-based Audio Emotion Recognition (AER) analysis of the passive rooftop recordings and active street-level recordings. A transformer model pre-trained on the *AudioSet* dataset is trained on the *Emo-Soundscapes* dataset (Fan et al., 2017). This model processes the sound without considering its categorical information. Moreover, the Universal Source Separation (USS) algorithm (Kong et al., 2023) provides insight into the presence of sounds according to local figuration by use of soundscape ecology classifications (biophony and technophony). To represent the arousal and valence fluctuation of sound spaces, the AER algorithm is used (Figure 4). For active recordings, the *2D Arousal-Valence Chart* illustrates the stress/calming level of each recorded position. The frequency analysis aims to detect the presence of subsonic and supersonic noise in LAeq (equivalent continuous sound pressure level), which has been repeatedly indicated as a source of discomfort in existing research (Pawlaczyk-Łuszczyńska et al., 2005; Araújo et al., 2020; Fletcher et al., 2018). These indices of subsonic (lfn) and ultrasonic (hfn) frequencies, are interpreted as sonic affective expressions in terms of additional sonic materiality. The intensity presence of each observed figuration is calibrated on a scale ranging from 0 to 1,414 and represents the average duration for which it may appear acoustically. The predicted stress level of each figuration is calibrated on a scale of 0 to 1, from the respective values of arousal and valence.

4. BRUSSELS NORTH – CDA
4.1 CDA North

The area of CDA North is situated along the northern section of Chaussée d' Anvers, a historic main road in the Brussels North District. The surrounding landscape and urban environment of the Brussels North district is characterized by a juxtaposition of urban forms, scales, and temporalities. This apparent incompatibility is compensated by the presence of extensive open spaces, which contribute to the character of CDA North's perceivable acoustic horizon (Figures 1 –4). The old neighborhood of CDA North has a high population density of 20,808 people per square kilometer (CityTools et al., 2021). The population density is anticipated to increase in the future. The area has a relatively higher population of young adults and has a multicultural profile. Currently, this area of Brussels serves as an entry point for newcomers. With Brussels Territory North, the Brussels Region has put forth a unified vision for the redevelopment of an area extending beyond the North district, with the aim of fostering renewed interest and aligning it with the objectives of the Brussels Region. For the area of CDA North, pertinent planning tools are the *Draft of the Master Plan (RPA) MAX, Green -Bleu Network, Plan Bruit, the Urban Renewal Contract Citroën-Vergote and the Sustainable Neighborhood Contract Helihaven-Antwerp (Perspective, n.d.*; CityTools et al., 2021).
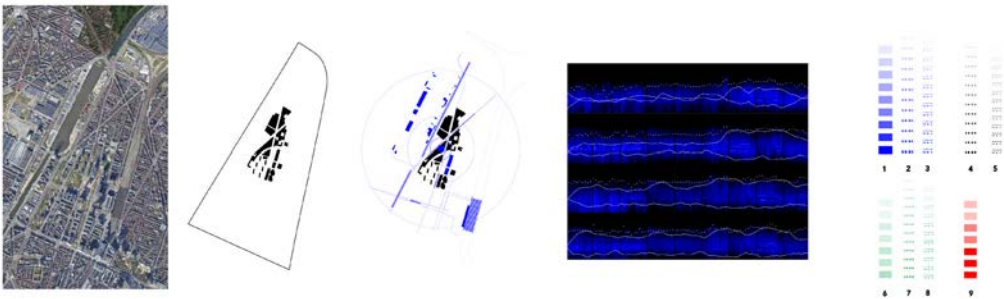
Figures 1 – 5. Google Earth Satellite View of Brussels North District in 2021. CDA North Urban Block in Brussels North District in 2024. Acoustic Horizon CDA North in 2024. Spectrogram analysis of frequency, intensity, arousal and valence (upper and lower white lines respectively), presence of technophony (dots) using passive logging of the CDA North Acoustic Horizon in 2024. Legend explaining the indices levels from low (faint colored) to high (vivid colored) [bleu indices of technophony presence, lfn and hfn; green indices of biophony presence, lfn and hfn; red indices of stress; black indices of lfn and hfn exclusive figuration of analysis]

The project concentrates on the scale of a mixed-use urban block located at the intersection of Chaussée D' Anvers (CDA), Helihaven Avenue and Masui Street. Its primary focus is a sequence of three transformative urban spaces: the President's Garden, a privatized public green space located at the corner of CDA and Helihaven Avenue; an industrial infrastructure site in the northern Helihaven area undergoing regeneration; and the junction square connecting CDA with Masui Street.

4.2 Sonic Affective Cartography

The AI-driven analysis of the alluring behavior of sonic figurations at sites observed along the Chaussée d'Anvers indicates both affective and experiential connections between compact city strategies and sonic spatial shifts. To be more precise, it indicates that sonic space shifts can be indexed in terms of sonic materiality and emotions extending beyond the experience of acoustic loudness.

4.2.1 President Garden

The *Draft Master Plan RPA MAX* (2023) proposes the removal of the hotel function and presents three possible scenarios for the future development of this urban space. It provides the opportunity for the construction of eight-story high buildings along the streetside, this in accordance with the directive for the development of a park and climate, biodiversity, and landscape axis. However, the draft of the master plan fails to address the capacity of the existing forest parcel with a tall tree canopy to transmit sonic affects in the surrounding public space of Chaussée d'Anvers and Helihavenlaan.

The inaccessibility of the private garden and its uncertain future public status render the urban sound space an unfulfilled urban spatiality, awaiting the involvement of its future public. The garden's dense vegetation adds a distinctive sonic figuration to CDA North's urban landscape. In addition to the fencing, the contouring of motorized traffic flows obstructs public access to the urban sound space of President Garden. In the absence of motorized traffic and activity on nearby construction sites, this sonic figuration occupies a greater volume of urban space. In the AI-based tracing of the sonic figuration of the President Garden, the allure of this sonic figuration becomes articulated in the synthesis cartography of the spatial distribution of its presence in relation to building layout scenarios and building implantation scenarios, as well as AI-based predictions of corresponding stress experiences. The analysis (Figures 6 – 10, legend Figure 5) indicates the presence of its allure in the surrounding public space. Indicators of stress level for the surrounding public space are lower in the presence of figuration (compare Figures 8 and 10, and Figures 7 and 9). The results of the experimental AI based analysis indicate that an inclusion of the green space and its accompanying sonic figuration could potentially lead to a sonic space shift associated with an increased experience of stress in the surrounding space and adjacent buildings.

Figures 6 –10. Google Earth Satellite View of plot with garden in 2021. Presence of the sonic figuration in the public space surrounding the private plot (% / audible / non audible). Stress Level in the presence of the figuration. Presence of non-audible frequencies in the absence of the figuration. Stress Level in the absence of the figuration.

4.2.2 Helihaven Avenue

Helihaven Avenue is an old industrial 20th century urban fabric that has survived the modernist period of this area. It follows an old railway line that connected the northern part of Brussels with the Groendreef station and includes some old industrial complexes. Over the last two years, it has undergone a qualitative redevelopment, both in its northern part and in the section opposite the *Klavertjevier* primary school, as part of urban renewal programs, the implementation of a green network and private development. The transformation of this old industrial infrastructure site can be can be experienced both visually and aurally.

Figures 11 –15. Google Earth Satellite View of the northern part of Helihaven Avenue in 2021. Presence of the sonic figuration in the public space of Helihaven Avenue (% / audible / non audible). Stress Level in the presence of the figuration. Presence of non-audible frequencies in the absence of the figuration. Stress Level in the absence of the figuration

The sonic materiality generated by the contact of moving vehicles with the cobblestones, combined with the presence of echoes in empty warehouses and vast open spaces, articulates the industrial character of this sonic space and provides a resonant sense of place. The uncertain future of this materiality reflects the presence of an ongoing sonic space shift. As in other places in Brussels, the cobblestones face a number of challenges, including gradual replacement by other materials such as asphalt (Deferm et al., 2015). Deformations in the sound space could result from rezoning, densification, replacement of the industrial fabric, and redesign of the avenue for soft mobility. In the AI-based tracing (Figures 12 - 15) of the sonic figuration linked to the industrial complex of Helihaven Avenue, the allure is reflected in a relatively high stress level ladditionally augmented the presence of its audible and inaudible sonic materiality, in particular at those locations where impact sounds are enclosed by adjacent industrial buildings. However, the absence of this figuration does not seem to exclude a relatively high level of stress for this site (compare Figures 13 and 15) as in President Garden case.

4.2.3 Masui Street

In the evening and at night, street racers circulate endlessly in Brussels Territory North, appearing to be everywhere and nowhere at once. Their performance is affectively charged and ironically distant. Racing car vibrations are strikingly present on the acoustic horizon of CDA North. The allure of a racing car exerts a profound effect on those who are exposed to its sonorous vibrations. Racers exploit the inherent sonic-vibrational elements and qualities of engine mechanics exploring the perceived limits of auditory perception and experience. This sonic figuration is indicative of complex social realities and demonstrate a fundamental drive for expression. The sonic figuration of a car speeding through Masui Street also affects and allures other

people living in the area. The extended linearity and high facades of both Masui and the Antwerp stone road frame a sound space taking shape through reflection and sound amplification. The dominance of this figuration fades on Sundays and holidays. Low activity creates a mix of human voices and alternating blasts of mechanical sounds. Environmental sounds are underrepresented here.

Figures 16 –20. Google Earth Satellite View of Masui Street in 2021. Presence of the sonic figuration in the public space of Masui Street (% / audible / non audible). Stress Level in the presence of the figuration. Presence of non-audible frequencies in the absence of the figuration. Stress Level in the absence of the figuration.

Strategies and programs for urban renewal express the ambition to improve the quality of urban life at Junction CDA Masui, including improving the public space experience for soft mobility and offering quality commercial services and local shops. The program proposes a comprehensive redesign of the intersection between Masui Street and Chaussee d'Anvers. In the AI-based tracing of the sonic figuration associated with street racing in Masuistreet, the allure is reflected in a relatively increased level of stress associated with the presence of its audible and inaudible sonic materiality (Figures 16 – 20, legend Figure 5), particularly in those locations where cars can accelerate and motorized sound and vibration are enclosed by the tall and mineral surrounding building. The analysis seems to indicate a decrease in stress levels in the absence of these sources (compare Figures 18 and 20). A focus on affect in terms of stress level analysis therefore seems to support a rationale for a reduction of motorized traffic in this part of CDA North.

5. CONCLUSION

The outcome of the AI-based dérive suggests that strategies for modeling compact cities that involve processes of densification and regeneration can be linked to sonic space shifts resulting from changes in physical infrastructure and land use. Processes of urban densification and redevelopment, such as those proposed for President's Garden and Heli Haven, may involve the introduction of disruptions that create new, often uncertain sonic realities that defy conventional spatial delineations. The analysis demonstrates that these shifts can be addressed by relating critical urban strategies to the alluring behavior of sonic figurations through an analysis of variations in stress levels. The study explores outside the conventional scope of acoustic analysis by integrating AI to investigate the affective and more nuanced emotional impacts of urban strategies. The AI-driven insights into how the sounds of street racing or natural environments affect emotional well-being suggest the presence of unplace spaces that are emotionally resonant yet disconnected from conventional spatial

anchors. AI-based tools and existing research suggest that both inaudible and audible sounds have an impact on stress levels, highlighting the importance of considering both perceptible and imperceptible sonic dimensions in the process of urban planning and design. This artistic exploration of an AI-driven methodology promises a more nuanced understanding of how contemporary urban contexts challenge conventional notions of space and place. It encourages a comprehensive approach that incorporates emotional and affective sonic dimensions into urban planning and design.

A final challenge that we seek to address is to ensure that the complex data and insights that we have accumulated are readily accessible and impactful in both written and auditory formats. In order to address this issue, a series of interdisciplinary strategies is proposed, targeting both urban planners and a larger audience of people living and working in the area:

- Audio essay: The audio format employs a combination of field recordings and AI-based data, relying on sensory, experiential narratives to evoke the emotional impact of urban sonic strategies, with a de-emphasis on conventional conversational formats.
- Installations and exhibits: The implementation of sound installations in the public space of Chaussée d'Anvers and museums, accompanied by visual aids and workshops, is intended to engage visitors with the sonic environment.
- As a long-term strategy, we propose the creation of interactive sound maps that present sonic space shifts in a hyper-audible manner. These maps could be used by professionals and a wider audience to experiment with the implementation of urban strategies. The cartography presents a synthesis of analytical and aesthetic elements, rendering it accessible to both experts and the general public.

ACKNOWLEDGEMENT

6. BIBLIOGRAPHY

Araújo Alves, J., Neto Paiva, F., Torres Silva, L., & Remoaldo, P. (2020). Low-Frequency Noise and Its Main Effects on Human Health—A Review of the Literature between 2016 and 2019. Applied Sciences, 10(15), 5205. *https://doi.org/10.3390/app10155205*

Blesser, B., & Salter, L.-R. (with Massachusetts Institute of Technology). (2009). Spaces speak, are you listening? Experiencing aural architecture. MIT Press.

CityTools, Grounded Urbanism, & PlusOfficeArchitects. (2021). Duurzaam wijkcontract Helihaven-Antwerpen: Diagnose.

Deferm, H., Pauthier, I., Alecian, M., & Atelier de recherche et d'action urbaines (Eds.). (2015). Pavés de Bruxelles. AAM.

Fan, J., Thorogood, M., & Pasquier, P. (2017). Emo-soundscapes: A dataset for soundscape emotion recognition. 2017 Seventh International Conference on Affective Computing and Intelligent Interaction (ACII), 196–201. *https://doi.org/10.1109/ACII.2017.8273600*

Fisher, M. (1999). Flatline constructs: Gothic materialism and cybernetic theory-fiction [PhD thesis, University of Warwick]. *http://webcat.warwick.ac.uk/record=b3252748~S15*

Fisher, M., & Barton, J. (2019, July 26). On Vanishing Land [Digital Album]. Flatlines. *https://flatlines-hyperdub.bandcamp.com/album/on-vanishing-land*

Fletcher, M. D., Lloyd Jones, S., White, P. R., Dolder, C. N., Leighton, T. G., & Lineton, B. (2018). Effects of very high-frequency sound and ultrasound on humans. Part I: Adverse symptoms after exposure to audible very-high frequency sound. The Journal of the Acoustical Society of America, 144(4), 2511–2520. *https://doi.org/10.1121/1.5063819*

Gallagher, M. (2016). Sound as affect: Difference, power and spatiality. Emotion, Space and Society, 20, 42–48. *https://doi.org/10.1016/j.emospa.2016.02.004*

Ganchrow, R. (2009). Hear and There: Notes on the Materiality of Sound. Immersed. Sound and Architecture, OASE, 78, 70–75.

Kong, Q., Chen, K., Liu, H., Du, X., Berg-Kirkpatrick, T., Dubnov, S., & Plumbley, M. D. (2023). Universal Source Separation with Weakly Labelled Data (Version 1). arXiv. *https://doi.org/10.48550/ARXIV.2305.07447*

Kwinter, S. (2003). Architectures of time: Toward a theory of the event in modernist culture (1. paperback ed). MIT Press.

Mabilde, J. (2020, 05). Brussels, compact city. A+278 Brussels, A+278. *https://a-plus.be/nl/brussels-compact-city/*

Pawlaczyk-Łuszczyńska, M., Dudarewicz, A., Waszkowska, M., Szymczak, W., & Śliwińska-Kowalska, M. (2005). The impact of low frequency noise on human mental performance. International Journal of Occupational Medicine & Environmental Health, 18(2).

Perspective. (n.d.). Territorium Noord. Perspective.Brussels. Retrieved July 1, 2024, from *https://perspective.brussels/nl/stadsprojecten/strategische-polen/territorium-noord*

Radicchi, A., Henckel, D., & Memmel, M. (2018). Citizens as smart, active sensors for a quiet and just city. The case of the "open source soundscapes" approach to identify, assess and plan "everyday quiet areas" in cities. Noise Mapping, 5(1), 1–20. *https://doi.org/10.1515/noise-2018-0001*

Schafer, R. M. (1977). The tuning of the world (1st ed). A. A. Knopf.

Shaviro, S. (2010). Post-cinematic affect. 0 [zero] Books.

FILM ANIMATION AS HAPTIC LANGUAGE OF THE ATMOSPHERIC CITY: MORE THAN FLOWING LINES

Aristofanis Soulikias
PhD candidate
Université de Montréal
aristofanis.soulikias@umontreal.ca

ABSTRACT

Atmosphere, being essential, in what makes a space a place, yet elusive in its translation into graphic form, has been the object of conquest for architects in their effort to convey it and produce it. New visualization technologies have allowed for a detachment from the mere physical by communicating dematerialized sensory experiences that approximate the idea of atmosphere, presumably more accurately than ever before, including its all-important non-visual aspects. The paper proposes that atmosphere may not be the sum of ideated concepts and aesthetics that are merely non-visual, but something directly emanating from the physical, as that is experienced (even touched) and remembered individually and collectively. Handmade film animation, straddling between the physical and the virtual, tampering with materiality through the body, while still producing sensations of movement, narratives, and a multitude of optical illusions, becomes a leading translator of atmosphere into image, accessible to the human consciousness and imagination.

KEYWORDS: film animation. haptic. handmade design. city atmosphere. translating atmosphere.

1. INTRODUCTION

If atmosphere is a material substance, the "atmos", the "steam" and air one feels and breathes in the built spaces of cities, it is the mixture of all that emanating from building materials, soil and living beings: the light and its reflections, the textures of surfaces, their smell, the temperature and moisture, the sounds, the particles of dust. If atmosphere is also a matter of a qualitative interaction between subject and environment, then it is contingent on one's position in that environment, one's perceiving faculties, mental and emotional, and, importantly, one's mental associations that may span in space and time, often too visceral to identify. In many of today's modern languages, "creating atmosphere", means an act of human intervention, sometimes anticipatory, as in preparing a certain built space, and, more commonly, a collective act, where individuals merge into space, become part of a larger sensorium, in spontaneity or/and in ritual. While buildings may satisfy one's practical requirements, the largely invisible and intangible "soul" of any given built space occupies a significant part of one's aesthetic needs and even sense of meaning. Yet while buildings and spaces can nearly always be reproduced or represented, their atmosphere cannot.

2. CAPTURING THE CITY
2.1 The filmic legacy

When photography and cinema were invented, the capture of light and movement promised faithful representations of the world, and a particular interest lay in the capture and expression of spatial atmosphere, an interest already evident in the silent era, in documentary-style city symphonies or elaborate settings that conveyed mood[1].

The camera also sought to capture a rapidly changing urban landscape. The dematerialization of the city as a phenomenon put starkly into question the direct relationship between humans and their built surroundings. The overwhelming manifestations of the Second Industrial Revolution brought to life a city more mechanized and instantaneous than ever before. This world of flickering lights could now be captured by photography and cinema (Gunning, 2015, p. 662; Mennel, 2008, p. 5), the latter registering all the movements that had become too many and too fast for the naked eye to comprehend. Film's ability to capture the fast-paced city and its technological wonders made it the medium *par excellence* in recording but also expressing urban space and urbanity (Koeck, 2013, p.8; Uricchio, 1988, p. 17).

The affinity between modern city and film was theorized by Walter Benjamin, who wrote that the elements of the modern city, tangible and intangible, could all be encapsulated in the film medium: "Couldn't an exciting film be made from the map of Paris? […] From the compression of a century long movement of streets, boulevards, arcades, and squares into the space of half an hour?" (1999, p.83). More recently, architecture theorist and film scholar, Juhani Pallasmaa, posited that the lived experience and feeling of space could best be created and mediated by architecture and film (2001, p. 13).

2.2 The lesser sibling that does more

While live action film captured the fleeting lights of the city, its movement and – with or without carefully staged sets – an autonomous aggregate which one could define as atmosphere, its quieter sibling, film animation, was establishing a far more direct relationship with the imagined urban space, the kind achieved previously in painting and sculpture, but with the added advantage of movement, and, in most cases, narrative.

Indeed, the "step-child of cinema", to use an expression coined by Alan Cholodenko (1991, p. 9), tampered with physical space not only as subject matter but in its very creative process. Traditional animation involved the capturing of spaces that had to be imagined and created physically. The results were a sensorial experience of both a depicted atmosphere but also of an indexical one, stemming from the artwork itself[2].

---

1 During the silent era, capturing the living, moving city at various instances during day and night was a fascination, expressed in the so-called "city symphonies" of the 1920s, including Walter Ruttman's *Berlin: Symphony of a Great City* and Dziga Vertov's *Man with a Movie Camera*. Conversely, imagined urban environments and evocative atmospheres were part of the expressionists, Fritz Lang's and Robert Wiene's *Metropolis* and *The Cabinet of Dr Caligari* respectively.

2 For the re-use of everyday recognizable objects in stop-motion animation as to create an alternative version of material existence, see Wells, P. (1998). Understanding Animation. London, UK: Routledge. p. 90.

Such are the atmospheres created by Lotte Reininger's silhouettes in her interwar stop-motion animated films, in Jiří Trnka's elaborate three-dimensional sets, or in those of the more minimal hand drawn backgrounds of the UPA studios of the 1950s, equally if not more evocative than those of the larger studios (Figure 1).

Figure 1. The Tell-Tale Heart (1953).
Source: the-haunted-closet.blogspot.com (2024)

3. SPACE FOR THE BODY
3.1 Studies of the haptic

Despite the occasional bare-bones approach, epitomized by experimental animation, or even camera-less animation, as in the case of Norman McLaren in Canada and some national film institutes of socialist Europe, the introduction of more sophisticated equipment and processes meant a greater ambition in representing reality, or a certain reality, convincingly, atmosphere not being an exception. However, there is a paradox throughout the evolution of film and other means of space-visualization in that the more "perfect" the representation, the less visceral are its effects; more precision does not necessarily mean more accuracy.

The latter is an observation made by architecture scholars such as Pallasmaa and Stan Allen. Pallasmaa in particular, in response to the growing dependency of architects on computer aided drawing, has written about the merits of hand drawing and handmaking in the creative process but also in the medium's honesty in conveying spatial qualities (2009). He places understanding and expressing atmosphere in the realm of the unconscious: "Atmospheric characteristics of spaces, places, and settings are grasped before any conscious observation of details is made" (2009, p. 15). In film animation, that sensitive moment is the preproduction stage of the storyboard, which also seems to be resisting the switch to the digital in small animation studios, mostly due to "the document's ability to prompt and focus cognition" (Pallant & Price, 2015).

This criticism highlights the parallel crises in various media, as they try to grasp an increasingly deterritorialized and dematerialized built environment, a "disappearance of any kind of materiality", as Paul Virilio once warned (1998, p. 186), with tools that are ever more virtual and ideated. Thus, while the brave new world of CGI and 3D projections brings the viewer closer to a photorealistic environment, at times imitative of reality and at times original, to the extent that it is purely and recognizably artificial, there has been a persistent quest by filmmakers to seek the intangible through the tangible in the spirit of Pallasmaa.

Such are those studied by Laura Marks in her seminal book, *The skin of the film*, in which she established the term *haptic visuality*. Marks surveys non-commercial films that arguably find a place for the body and the non-visual senses, either through the content of their image or through the emphasis on sound or even experimentations with celluloid itself. These examples may not point directly at the act of crafting each frame individually, but they do underline the importance of tactility, hapticity and the body in the images that communicate place, by either tampering with old technology or subverting the new. Even more atmospheric in this haptic sense are the films featured in Giuliana Bruno's writings, such as Wong Kar-Wai's romantic drama, *In the Mood for Love* (2000). There, the sensual cinematography matches the depicted walls and fabrics that are part of the narrative and are all artful works of suture, overlaid and saturated with colors and textures that suggest distinct atmospheric urban environments and interiors (2014, p. 13).

Figure 2. The Street of Crocodiles (1986).
Source: ipinimg.com (2024)

Toward the end of the last century, as a precursor of what was to be a renaissance in stopmotion animation, the Quay Brothers would produce the eerie and very enigmatic puppet animation, *The Street of Crocodiles* (1986) (Figure 2). Atmosphere here is the protagonist, as the pains of constructing and managing a set with recognizable, everyday materials are discernable while the rustic and worn spaces seem to bear

the weight of time and lived history. The specs of dust are everywhere, thickening the air and adding to the viscosity of this dark and labyrinthian underworld. Tyrus Miller writes: "an immersion in an urbanity of mouldering decay felt through the close-up depictions of dust on windows and threads that run throughout the film" (2003, p. 93).

3.2 Last Dance on the Main

These techniques involve tools that cut, shape, glue, sculpt, and join tactile materials. The advent of digital photography and computer software instead of replacing the stop-motion processing of the physical material has facilitated it greatly, hence the renewed interest in producing films with images of handmade objects (Parks, 2016, p. 2). My own work, which consists mostly of paper-cut silhouettes, is a constant preoccupation of building atmospheres out of various paper surfaces, cutting building forms in different scales and hence at different levels of "perfection", revealing thus, each time, how I intend to see and show a particular built space.

The thickness of the paper surfaces, their opacity, but also the sense of depth conveyed by their distance relative to camera and light table are all considerations that are evaluated by seeing, but more precisely, by sensing, a process in which a personal and lived idea of the city emerges.

Ten years ago, incidental strolls in and around Montreal's former Red-Light district brought to my attention the transformation of the neighborhood from a marginal and relatively unregulated urban space to a highly commercialized and surveilled part of the city, as municipal officials and developers sought to tame it within the broader "cultural" downtown core. The price for such development, among other things, was the dismantling of a century old row of stone buildings, whose functions had been continuous over time, and their replacement with glass towers. The process would evict the people who had organically made the boulevard into what it was, cleanse it from what was perceived as distasteful, and eliminate all the small businesses up to the last family grocery store. More tellingly, much of the history of the district would be celebrated either by replacing some of the building facades with their materials rearranged or replaced or by making references to it on large screens or performances. The irony of a burlesque venue resisting this expropriation and succeeding was the inspiration for my film *Last Dance on the Main* (2014), in which I chronicled the history of the boulevard and the eventual triumph of the burlesque dancers over the bulldozers.

To prepare for such endeavor, I mainly spent time absorbing the street, interacting and exchanging with the locals. I collected sounds and images and assembled interviews of people who had some direct involvement in preserving this corner of Montreal. One interview took place at a historic hot dog restaurant, the other at the back room of a striptease joint. This immersion yielded my preliminary sketches and nurtured both my knowledge and imagination, which soon began to materialize in the form of paper silhouettes. The creation of mood through hues of color brought forth by an incandescent light bulb under a light table was the response in defense of a threatened atmosphere.

Figure 3. Drawing for animatic for Last Dance on the Main (2014).
Source: Aristofanis Soulikias (2014)

Insofar this atmosphere was a commonly appreciated quantity, it related to the dimmed lights of street signs, the texture of the grey stones and concrete sidewalks, the anarchic sounds of the burlesque venue, the pedestrians, the cars and even the grilling of the hot dogs. Insofar this atmosphere was an idea and sense of my own, it was a bundle of memories which filtered or layered what was actually there; it was the sense of proximity and distance to a place which I would visit but not live in, which leads to the equally important point that my representation was also about that which could not be appropriated and had to be abstracted or obscured.

Figure 4. Paper cuts and collage during production of Last Dance on the Main (2014).
Source: Aristofanis Soulikias (2014)

As the three-minute film travelled to many festivals and won awards, what began to emerge through the various reactions from the audience was the extent to which the artisanal feel of the film boded with the truth it told, and how, in its modest technological sophistication, it recreated an atmosphere of urban place that was appreciated by nonMontrealers in many ways which were tacitly all too familiar

to me, a Montrealer. The transfer of sense of place from what I had experienced on the boulevard to what viewers saw and heard in the cinema did not take place via a rationalization and reduction of the living sensorium into ideated lines that represented fragmented components to be merged, but rather, through the touching, breathing, listening, seeing, moving and interacting within that space came a physical response by drawing, cutting, and moving pieces of paper and other objects against a light source. The output was the result of an assimilated experience, a whole that is integral, or that which "speaks to all the senses at once", in the words of Maurice Merleau-Ponty (Pallasmaa, 2019, p. 24). This translation between atmospheres, lived and re-lived, is one of many possible others. Yet if the bodily presence in what constitutes atmosphere is felt through cinematic vision and sound, then an important and often lost value in today's architectural design could be re-acknowledged.

Figure 5. Still from Last Dance on the Main (2014).
Source: Aristofanis Soulikias (2014)

4. CONCLUSION

Handmade film animation, especially its stop-motion variety, has made its way into certain architectural studios (Zarin et al., 2012). My PhD research aims at revealing the ways in which built space could be represented in film animation with a strong handmade component, in conjunction with or in contrast to computer-based technologies, architectural and urban design being the main field of application. Appropriately, I have been part of Dr. David Howes's research project, *Exploration in Sensory Design*, at Concordia University, Montreal, in which my task was to explore the sensorium of various urban space types through my animation techniques. My physical presence, observations and daily practices in an urban park took the form of in situ sketches, which in turn prompted the moving sketches under my camera. This two-step translation consisted of movements in space that became associated to my memory of a place and its nature, real and perceived.

In planning to develop methodologies for my research, a series of experimentations with handmade animation techniques has become possible within the architecture school of the University of Montreal. What possibilities are there for students to use physical models in stop-motion animation? Could hand drawing be incorporated into a cinematic visualization and to what extent? Is there still a place for the conceptual sketch and could an animatic made by sketches chart narratives and meaning? What will be the students' experience in making the imagined and remembered place into a handmade film as opposed to one generated by CGI? What will the students' experience be in seeing their films, in which their bodies had a direct input? Do simulations of drawing on paper developed in new animation software compare favorably? Can the digital drawing tablet respond to the persistent interest in maintaining a hand drawing practice in architectural drawing and animation adequately?

Questions that seek to reveal the precarious yet longstanding relationship between the human body and its material surroundings, how it uniquely perceives and reproduces them as architecture and moving image, and how atmosphere is the moving force and connecting thread throughout this regenerative cycle.

5. BIBLIOGRAPHY

Benjamin, W. (1999). The arcades project / Walter Benjamin; translated by Howard Eiland and Kevin McLaughlin; prepared on the basis of the German volume edited by Rolf Tiedemann. Belknap Press of Harvard University Press.

Bruno, G. (2014). *Surface: matters of aesthetics, materiality, and media*. University of Chicago Press.

Cholodenko, A. (1991). *The illusion of life: essays on animation*. Power Publications.

Gunning, T. (2015). The cinema. In M.T. Saler (Ed.), *The fin-de-siecle world*. Routledge.

Howes, D., & Classen, C. (2014). *Ways of sensing: understanding the senses in society*. Routledge.

Koeck, R. (2013). *Cine-scapes: cinematic spaces in architecture and cities*. Routledge.

Marks, L. U. (2000). *The skin of the film: intercultural cinema, embodiment, and the senses.* Duke University Press.

Mennel, B. C. (2008). *Cities and cinema*. Routledge.

Pallant, C., & Price, S. (2015). *Storyboarding: a critical history*. Palgrave Macmillan.

Pallasmaa, J. (2001). *The architecture of image: existential space in cinema*. Rakennustieto.

Pallasmaa, J. (2009). *The thinking hand: existential and embodied wisdom in architecture*. Wiley.

Pallasmaa, J. (2019). Design for Sensory Reality: From Visuality to Existential Experience. *Architectural Design, 89*(6), 22-27.

Parks, C. F. (2016). *Fluid frames: experimental animation with sand, clay, paint, and pixels*. CRC Press Taylor & Francis Group.

Soulikias, A. (2021). Building the animated frame: narrating architecture through handmade animation. In D. Di Mascio (Ed.), *Envisioning Architectural Narratives* (pp. 536-545). University of Huddersfield.

Uricchio, W. (1988). The City Reviewed: Berlin's Film Image on the Occasion of its 750th Anniversary. *Film & History: An Interdisciplinary Journal of Film and Television Studies, 18*(1), 16-24.

Virilio, P. (1998). Architecture in the age of its virtual disappearance: Paul Virilio interviewed by Andreas Ruby. In J. Beckmann (Ed.), *The virtual dimension architecture, representation, and crash culture.* Princeton Architectural Press.

Wells, P. (1998). *Understanding animation*. Routledge.

Zarin, R., Lindbergh, K., & Fallman, D. (2012). Using Stop Motion Animation to Sketch in Architecture: A Practical Approach. *Design and Technology Education, 17*(3), 78-86.

L07

ECOLOGICAL MICRO-URBANITIES

CHAIR **Isabel Barbas**

"A reading capable of transgressing the barriers of disciplines is essential to open the city to plural visions and capture the complexity of its continuous reconstitution and the permanent flow of its change."
(Cities and Urbanities, Fortuna, 2020: 143)

Since the 60s of the 20th century, ecological values and the relationship with the environment have become a topic of debate in the public space of cities. The society mediated by the spectacle (Society of the Spectacle, Debord, 1972) and the consumer culture and global market associated with new technologies contributed to the development of a state of alienation of individuals (Liquid Modernity, Bauman, 2000; Burnout Society, Byung-Chul Han, 2010) that compromises a healthy and creative — ecological — interaction with 'others' and the space they inhabit.

Since the modern project, the city has been subjugated to the rules of capital, stratification, zoning, and road circulation, becoming polluted, inflexible, lacking in convivial and 'mixing' spaces. The contemporary city is a city of 'limits'; 'unequal', "closed" and "secure" (The open city, Sennett, 2006; Trust and fear in the city, Bauman, 2005) in which it is difficult to interact, explore, 'play', walk, or simply be/contemplate.

The impoverishment of the socio-spatial potential of the urban environment has been contested and criticized by practices and theories from different disciplinary fields, namely the arts (situationism, architecture, documentary art, environmental art, land art and installation), architecture and urbanism (Team X; radical architecture; (...) flexible and action architecture, J. Maria Montaner, 2017; Integral Urbanism, Nan Elin, 2006) and urban sociology (The Right to the City, Lefebvre, 1968); and currently through the intersections that these areas establish among themselves in order to construct interdisciplinary narratives that are expressed through interventions in public space. Installations, objects, actions, atmospheres, performances, etc., that promote a broader and shared reflection with "urbanites" (Sennett), the inhabitants who construct urbanity through the (inter) actions they establish daily in, and with, the space of the polis. Therefore, we seek, in this session, to find and stimulate reflections on how architects, artists, sociologists and others can intervene in the public space of the contemporary city in order to counteract cultural accelerationism that alienates the individual in the space of the global city and digital society. How can we contribute to give back the city to its inhabitants by stimulating critical interactions, awakening the creative and collaborative potential of individuals? How can certain actions, installations or interventions in public space contribute to creating "(micro)territorialities" that connect spaces, discourses, and social uses (Cities and Urbanities, Fortuna, 2020), that encourage the (re)construction of ecological micro-urbanities, that is, that reinvent or recover, in the light of new environmental and socio-spatial problems, balances between "urbanites" and the urban environment they inhabit.

NEGOTIATING SENSE OF DOMESTICITY IN HYPER-TOURISTY VERNACULAR URBANITIES: EXTROVERTING DOMESTIC INTERVENTIONS AS TACTICAL ECOLOGY IN CANTON SHOPHOUSE HABITATIONS

NEGOCIANDO O SENTIDO DE DOMESTICIDADE EM URBANIDADES VERNACULARES HIPER-TURÍSTICAS: EXTROVERTENDO INTERVENÇÕES DOMÉSTICAS COMO ECOLOGIA TÁTICA EM HABITAÇÕES DE SHOPHOUSES EM CANTÃO

Veronica Ching Lee
PhD Candidate, Part-Time Visiting Lecturer
School of Design, The Hong Kong Polytechnic University
veronica-ching.lee@connect.polyu.hk
Dr. ir. Gerhard Bruyns
Associate Professor
School of Design, The Hong Kong Polytechnic University
gerhard.bruyns@polyu.edu.hk

ABSTRACT

Shophouses, originating in Canton (Guangdong) since 960 AD, constitute intensifying urban hybridity that integrates commerce-domestic experiences. Employing empirical findings (photography, videos, and ambiance narratives) in Chaozhou, an eastern Canton province in China, vernacular shophouse neighbourhoods undergo hyper-touristy invasion. This necessitates tactical responses by inhabitants to (re) negotiate sense of domesticity as temporal experiences of urban life, results in ceaseless liminal conditions of externalising domestic habits that (re)scripts urban-domestic experiences between the residents and tourists. To unfold the multi-layered habitual negotiations as an emergence of tactical ecology that (re)scripts new modes of hyper-touristy vernacular urbanities, this studies first explicates how residents tactically (re)invent shophouse interior-exterior limits. Termed as an act of extroverting domestic interventions, this paper highlights creative tactics as (re) cultivating force that challenges the modernist confined and introverted domestic norms. Ultimately, discussing the potential artistic and spatial values of transcend and install a sense of domesticity in Canton shophouse habitations.

KEYWORDS: Public Private Negotiation. Domestic Tactics. Shophouse Hybridity. Vernacular Urbanities. Hyper-touristy

RESUMO

As shophouses, originárias de Cantão (Guangdong) desde 960 d.C., constituem uma intensificação da hibridez urbana que integra experiências comerciais e domésticas. Empregando descobertas empíricas (fotografia, vídeos e narrativas de ambiente) em Chaozhou, uma província oriental de Cantão na China, os bairros de shophouses vernaculares sofrem invasões hiper-turísticas. Isso exige respostas táticas dos habitantes para (re)negociar o sentido de domesticidade como experiências temporais da vida urbana, resultando em condições liminares incessantes de externalização de hábitos domésticos que (re)escrevem as experiências urbano-domésticas entre os residentes e os turistas. Para desvendar as negociações habituais multilayered como uma emergência de ecologia tática que (re)escreve novos modos de urbanidades vernaculares hiper-turísticas, este estudo primeiro explica como os residentes taticamente (re)inventam os limites interior-exterior das shophouses. Denominado como um ato de extroversão das intervenções domésticas, este artigo destaca táticas criativas como uma força (re)cultivadora que desafia as normas domésticas modernistas confinadas e introvertidas. Em última análise, discute os potenciais valores artísticos e espaciais de transcender e instalar um sentido de domesticidade nas habitações de shophouses em Cantão.

PALAVRAS-CHAVE: Negociação Público-Privada. Táticas Domésticas. Hibridismo de Shophouses. Urbanidades Vernaculares. Hiper-Turístico.

1. CANTON SHOPHOUSE (QILOU) HABITATIONS
1.1 The origin convergence of 'shop' and 'house' for family-run business
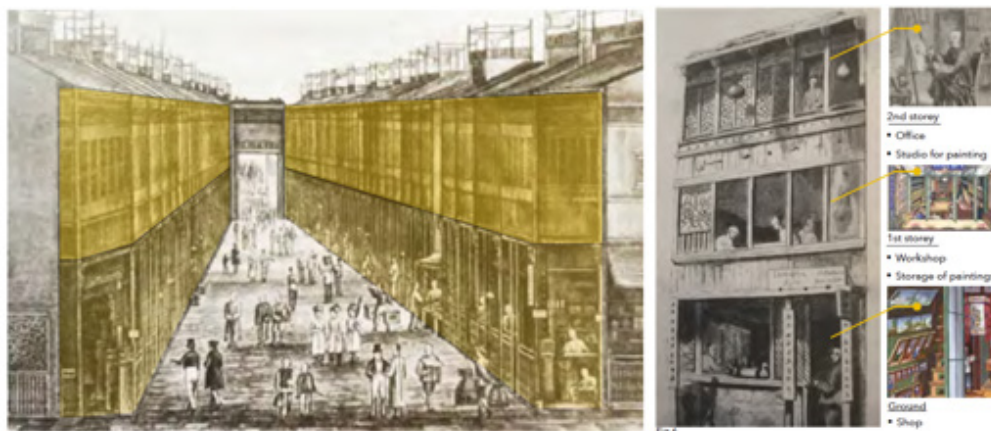
Figure 1. Spatial functions and configuration of shophouses.
Source: Diagram created by Author (2016). Images from Corner (2009).

Canton Shophouses are a vernacular mixed-use urban building type that originated in the Canton (Guangdong) region of China during the Song Dynasty (960–1279) (Vizal, 2021). These structures integrate commercial activities (retail and production) at street level, with the floors above serving as residential areas. They extend over a pedestrian pathway and are upheld by columns situated at the edges for merchants (Lee & DiStefano, 2015). Their vernacular value lies in their multi-dimensional manifestation of urbanities – a vernacular 'mixed-use' type that fuses the expanding commercial and domestic demands to accommodate merchants or residents operating their family-run businesses. Figure 1 shows the spatial functions of each floor of a shophouse, and an overview configuration of how the shophouses densely conglomerated as a city streetscape.

Since early 18th Century, such building type spread across Southern China and Southeast Asia by migrated Chinese merchants, profoundly evolved into diverse forms and expressions that accommodate the living and societal modalities of the inhabitants and the cities. Later, Canton shophouse also named as Qilou in Guangdong areas, remains as arcaded residential-commercial building type with western influenced façade while accommodating local needs with Chinese interior spatial arrangements. Zhang (2015) outlined the evolving significances and meanings of Qilou across different historical periods. Initially, in the early 20th century, Qilou were viewed as essential for developing a new street system. During the Maoist era of the 1950s to 1970s, they were criticized for their bourgeois associations and underwent socialist transformation. However, in the early 21st century, Qilou have re-emerged as symbolic manifestation of evolving Cantonese living modalities.

1.2 Conglomeration of Shophouse as Canton Vernacular Urbanities
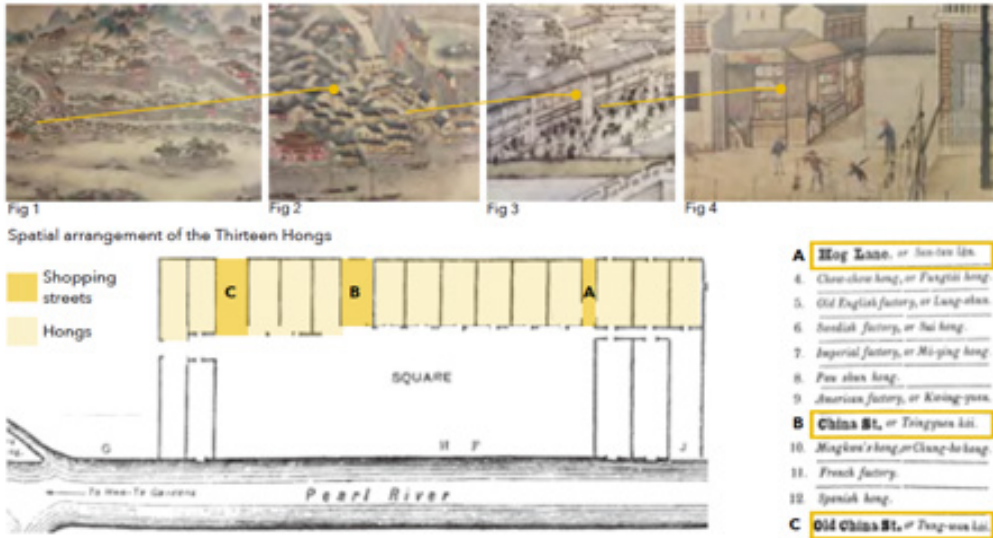
Figure 2. Spatial arrangements and interior-urban configuration of the Thirteen Hongs.
Source: Diagram created by Author (2016). Images from Corner (2009).

The conglomeration of shophouses, known as Qilou, shapes diverse Cantonese vernacular neighborhoods and urban landscapes. These densely clustered structures reflect pragmatic responses to urban population growth and evolving dynamics. They intricately blend and contest hybrid living modalities within Canton's urban milieu, bridging housing with complex urban conceptions (Ward, 1976). Negotiations occur between domestic living and the commercial activities of merchants and workers, illustrating resilience and continuity in local habits (Smith, 2007). Shophouses facilitate easy access to daily necessities, fostering strong community ties and global connections (Tsin, 2005), and hold historical and economic significance, reflecting broader narratives of economic influence from overseas Chinese merchants.

By the eighteenth century, Canton had already seen the emergence of shophouse complexes, such as the Thirteen Hongs constructed by Chinese merchants as both residences and trading hubs for their foreign business ventures. The term 'Hongs' refers to commercial spaces (production or retail). These merchants, congregating in Canton districts, were integral to extensive trading and social networks that reached to foreign countries, such as Southeast Asia and Europe (Corner, 2009).

The Thirteen Hongs renowned as a historical trading hub in Canton, exemplify the intersection of commerce and residence as a broader urban condition. Figure 2 shows the spatial arrangements and interior-urban configuration of the Thirteen Hongs. Established during the Qing dynasty, these factories housed Western

traders and contributed to the cosmopolitan nature of Cantonese urban life. They facilitated global trade connections, underscoring Canton's role as a vibrant center of commerce and cultural exchange during that era. Figure 3 shows a variety of the streetscapes and experiences in the Thirteen Hongs. The corresponding architectural expressions and configurations were greatly influenced by Western design elements, as described by Walter Benjamin (1839) in his concept of the arcade.

Figure 3. Variety of the streetscapes and experiences in the Thirteen Hongs
Source: Diagram created by Author (2016). Images from Corner (2009).

Acknowledging the background of Canton shophouses, the intricate amalgamation of contemporary Canton shophouses and their relationship to the urban landscape merit further study. Examining these structures can provide deeper insights into the multi-layering of habitual negotiations in vernacular shophouse habitations. For instance, the integration of commercial and residential spaces and the dynamic interactions between public and private spheres in the urban landscape of both contemporary and historical Canton. These complex, multi-liminal conditions foster distinct negotiations between public and domestic life and the experiences of inhabitants, showcasing a dynamic interplay within Cantonese urban spaces. Historical precedents in Canton illustrate how urban environments can blend public and private realms, setting the stage for a deeper understanding of domesticity. This leads us to consider how contemporary senses of domesticity and urbanity have evolved, a topic we explore in the following section.

2. NEGOTIATING SENSES OF DOMESTICITY AND URBANITY

2.1 The Conventional Cult of Domesticity: Introversive Sense of Domesticity

Domesticity historically upheld the home as a sanctuary, emphasizing order, familial roles, and societal norms (Boydston, 1983; Smith, 1998). This ideology often confined individuals to prescribed roles within private spaces, reinforcing the sanctity and stability of domestic life (Boydston, 1983). The conventional cult of domesticity, often rooted in modernist principles, emphasizes an introversive sense of domesticity. This traditional view of domesticity focuses on the home as a private, family-centered sanctuary, isolated from the public sphere. The architecture and design of homes under this paradigm often prioritize secluded, enclosed spaces that enhance privacy and foster a sense of retreat from the outside world. Living environments within this framework are typically inward-focused, emphasizing personal space, comfort, and security (Dolores, 1981).

Thus, this conventional approach fosters a definitive separation between the domestic sphere and the bustling urban landscape, resulting in a confined and introspective atmosphere within homes. The introversive sense of domesticity has historically influenced residential architecture, creating a distinct boundary between the home and the city. Such separation reinforces the notion of the home as a retreat, a place of solitude and personal refuge. It underscores the importance of private family life, often relegating social and communal interactions to outside the domestic realm.

2.2 Fragmented Urban Domesticity: Extroversive Sense of Domesticity
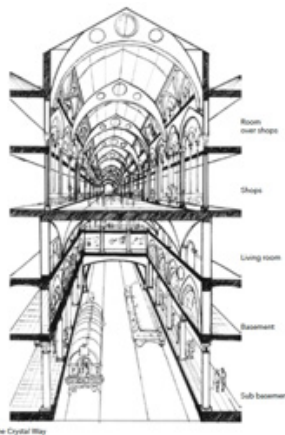
Figure 4. Sectional drawing of the interiorised urbanity of Crystal Way
Source: Author (2015).

Urban domesticity, as explored in this study (Smith, 2007), challenges traditional norms by integrating domestic experiences with the urban environment. This contemporary approach recognizes the fluidity between home and city, breaking down rigid boundaries. Walter Benjamin's analysis of urban life, particularly in The Arcades Project, critiques how urban environments blur traditional distinctions between private and public realms (Benjamin, 1939). Figure 4 shows a sectional drawing of the interiorized urbanity of Crystal Way. Benjamin's perspective prompts a re-evaluation of everyday experiences, suggesting that privatization integrates public displays into dynamic sites of personal expression and social negotiation (Braidotti, 2006; Sheller and Urry, 2003).

Extending and inverting Benjamin's conception to contemporary domestic settings, it urges us to challenge static notions of domesticity as purely private and enclosed, highlighting its dynamic relationship with broader urban dynamics. Therefore, next section of this paper focuses on the question of how urban values of exhibitionism and public engagement reshape the sense of domesticity and the private sphere of the home. This interplay underscores how urban environments influence domestic life, blurring distinctions between private rituals and public performances (Braidotti, 2006; Sheller and Urry, 2003). Additionally, Pierre Bourdieu's analysis of cultural capital within domestic spaces illuminates how social practices intersect with urban values, influencing behaviors and habits (Bourdieu, 1984). These perspectives collectively enrich our understanding of domesticity as a negotiated concept within urban contexts, where traditional boundaries are increasingly porous and subject to reinterpretation (Williams, 1991; Bourdieu, 1984).

3. HYPER-TOURISTY SHOPHOUSE NEIGHBORHOODS IN CHAOZHOU
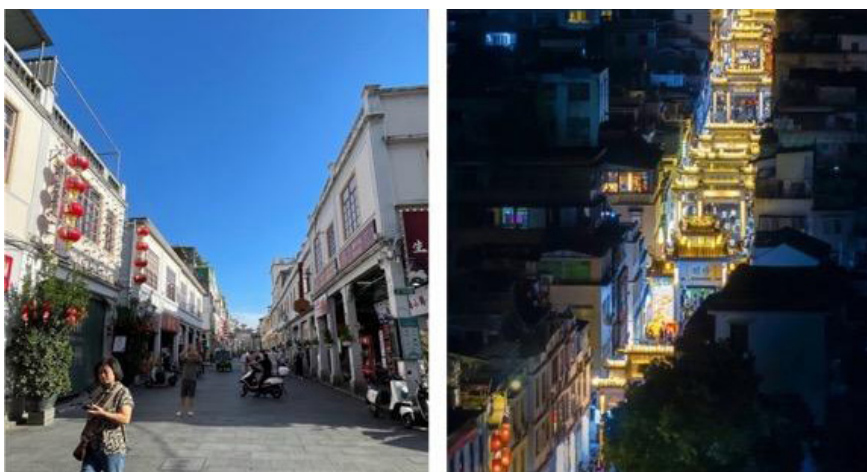
Figure 5. Paifang Street as a Shophouses neighbourhood.
Source: Left image by Author (2024); right image by Wang Wan Wan (2024).

Within the scope of empirical research, the study centers on Paifang Street (figure 5), located in the ancient city area of Chaozhou, renowned for its preserved shophouses (Qilou) lining both sides of the street. Residents predominantly inhabit the upper floors, while the lower levels have undergone transformation into tourist-oriented shops. These establishments specialize in the sale and production of Chaozhou's local specialties, culinary offerings, and handicrafts.

The street's focal point comprises numerous archways (Paifang), each commemorating the historical achievements of prominent Chaozhou figures, each with its unique narrative. Architecturally, the integration of arcade buildings and monumental archways serves as a poignant illustration of the negotiated spatial dynamics between residents and tourists. Meanwhile, a distinct sense of domesticity permeates and intertwines with the area's bustling commercial activities.

4. TACTICAL ECOLOGY OF EXTROVERTING DOMESTIC INTERVENTIONS

In exploring the fusion between tourism development and residential neighborhoods, ceaseless liminal conditions are observed, in which the externalization of domestic habits blurs the limits of private and public spheres. This reflects a dynamic interplay of traditional living and tourist-driven commerce. As Mould (2014) has theorized, the increase in small-scale, community-focused initiatives, often conducted independently of city authorities, has led to the emergence of Tactical Urbanism. This movement has gained popularity among individuals eager to transform and redesign their urban environments without government involvement.

4.1 In-between Two Shophouses: Gardening – Living Room Installation

Figure 6. Gardening living room in-between two shophouses.
Source: Author (2024).

Figure 6 depicts a narrow alley transformed into a lush, sensory-rich environment blending domestic and public experiences. This gardening-living room installation showcases tactical urban ecology by maximizing limited space with vertical gardens installed with seating areas. Vibrant colors, traditional elements like red lanterns, and aromatic plants create a festive, culturally resonant atmosphere. Soundscapes of installed water features and devices enhance tranquillity and bird feedings, while tactile interactions with plants engage visitors. This approach blurs private and public territories, fostering community interaction and engagement between tourists and residents. Overall, it exemplifies how small interventions can significantly enhance urban ambiance, creating inclusive space that enriches community life with extroverting domestic interventions.

4.2 Tailor Work and Domestic Oriented Space as Shopfront

Figure 7. Tailor work and household-oriented spaces seamlessly integrate as shopfronts and home entrance.
Source: Author (2024).

Figure 7 illustrates a seamless integration of domestic life and commerce, where homes serve as both living spaces and business premises. Tailor work and household-oriented activities are prominently featured in shopfronts and home entrances, showcasing how spaces can creatively serve dual purposes. This setup provide tailor and retail services for the publics while maintaining a home-like atmosphere, fostering community engagement. The design balances aesthetic appeal with functional needs, facilitating interaction between business owners and customers while ensuring economic sustainability for families. Strategic use of space maximizes efficiency and accessibility, creating inviting environments that support both domestic comfort

and commercial viability. Overall, this multifunctional approach demonstrates how domestic spaces can adapt to meet diverse needs, contributing to vibrant, socially cohesive urban environments enriched by cultural heritage and economic activity.

4.3 Exhibiting Craftmanship of Domestic Production

Figure 8. Extroverted traditional craft and domestic production.
Source: Author (2024).

Figure 8 exemplifies how traditional craft can enhance urban spaces by bringing the production process into public view, blending private and public realms. This practice preserves cultural traditions, enriches the urban environment, and fosters community interaction. Old craftsmans set up workstations outside their own shophouses, inviting public engagement and turning streets into dynamic workshops. By showcasing traditional crafts, artisans promote cultural continuity and educate the community, strengthening social bonds across diverse backgrounds. The aesthetic appeal of crafted items enhances urban landscapes, attracting customers and supporting local businesses. Strategic placement of workstations maximizes visibility and encourages spontaneous interactions, transforming public spaces into vibrant social hubs. This tactical approach illustrates how integrating domestic practices into public life can enrich urban spaces, promoting cultural heritage, social cohesion, and economic vitality, while making cultural traditions accessible and engaging for all.

4.4 Chaozhou Tea Ritual: Daily Gong Fu Cha Habit

Figure 9. Domestic tea-drinking habits transform the streets and shophouse fronts of Chaozhou into vibrant social spaces. Source: Author (2024).

The Chaozhou tea ritual, especially the daily practice of Gong Fu Cha, seamlessly merges domesticity with urbanity. This practice extends from private spaces into public areas, creating a tactical ecology that enhances community interaction and cultural continuity. Figure 9 illustrate how domestic tea-drinking habits transform the streets and shophouse fronts of Chaozhou into vibrant social spaces. By strategically placing furniture and tea sets outside shophouses, these rituals create inviting environments that foster social interaction and aesthetic appeal. Socially, public tea rituals promote inclusivity and community bonding, breaking down social barriers through shared experiences. Economically, these practices stimulate local businesses and attract visitors, enriching the city's commercial landscape. This tactical approach transforms mundane public spaces into vibrant domestic social hubs, demonstrating how everyday domestic activities can enhance urban life by promoting cultural heritage, social cohesion, and economic vitality.

5. TACTICAL ECOLOGY FOR EVOLVING SHOPHOUSE NEIGHBOURHOODS
5.1 Creative Tactics as (Re)cultivating force of Transcending Sense of Domesticity

Based on the empirical findings, creative tactics arise as responses to the influx of tourist pressures on Paifang Street, innovating fragmented moments of collective urban experiences with various domestic interventions. Conditions showed above exemplified new territorial expressions, as spatial installations that (re)invent artistic integrity and functional efficiency in contemporary vernacular shophouse habitations. The area thus showcases unique experiences of blending domestic experiences

for tactical urban uses, challenging traditional urban and domestic separations through what this paper terms 'extroverting domestic interventions.' Creative tactics employed by residents highlight the dynamic interplay between the need to maintain a sense of domesticity and the pressure to adapt to the changing urban environment.

Moreover, these tactics transcend traditional notions of domesticity and embedding it within the urban fabric. The (re)negotiating sense of domesticity as temporal experiences of urban life, (re)scripts urban-domestic experiences between the residents and tourists. They illuminate how these spaces not only sustain spatial and artistic values but also serve as societal crucibles of multi-layered habitual negotiations as an emergence of tactical ecology. Residents engage in a continuous process of re-negotiating and re-inventing the boundaries of their domestic and commercial spaces for new modes of interaction and urban experiences, collective (re)scripts new modes of hyper-touristy vernacular urbanities within a rapidly evolving urban context. This approach not only preserves the historical and vernacular essence of shophouses but also propels them into the future, blending past traditions with contemporary innovations.

5.2 Negotiating the Cult Values and Exhibitionist Values

Last but not least, the negotiation between the cult values traditionally associated with domestic spaces and the exhibitionist values imposed by urban tourism and extroverted domestic interventions, residents create a hybrid environment where residents meet tourists, the private meets the public, static buildings meet tactical installations, and homes meet shops, all coexisting in a state of perpetual contemporary vernacular flux. This tactical ecology is not merely reactive but proactive, as it redefines the (inter)personal and societal landscapes of shophouse neighbourhoods. The dual pressures of preserving vernacular values and accommodating contemporary urban demands are met with innovative solutions that enhance the spatial and artistic significance of these areas.

7. BIBLIOGRAPHY / BIBLIOGRAFIA

Benjamin, W. (1939). The Arcades Project. Harvard University Press.

Boydston, J. A. (1983). The Origins of the "Cult of True Womanhood": The Early 19th Century. Journal of American Culture, 6 (4), 12-19.

Bourdieu, P. (1984). Distinction: A Social Critique of the Judgment of Taste. Harvard University Press.

Braidotti, R. (2006). Transpositions: On Nomadic Ethics. Polity Press.

Corner, (2009). The Hongs of Canton. English Art Books: London.

Hayden, D. (1981). The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods, and Cities. MIT Press.

Lee, H. Y., & DiStefano, L. (2015). Heritage Assessment Report for Conservation Approach to a Shophouse Cluster (rep.). Hong Kong, HKSAR: Urban Renewal Authority (URA).

Shiach, M. (2005). Modernism, the City and the "Domestic Interior." Home Cultures, 2(3), 251–267. https://doi.org/10.2752/174063105778053300

Sheller, M., & Urry, J. (2003). Mobile Technologies of the City. Routledge.

Smith, J. (1998). Domestic Ideals: Nostalgia and Criticism. Routledge.

Smith, M. P. (2007). Transnational Urbanism Revisited. Journal of Ethnic and Migration Studies, 33(2), 189-206.

Tsin, M. (1999). Nation, Governance, and Modernity in China: Canton, 1900–1927. Stanford, CA: Stanford University Press.

NEGOCIANDO O SENTIDO DE DOMESTICIDADE EM URBANIDADES VERNACULARES HIPER-TURÍSTICAS: EXTROVERTENDO INTERVENÇÕES DOMÉSTICAS COMO ECOLOGIA TÁTICA EM HABITAÇÕES DE SHOPHOUSES EM CANTÃO

L07
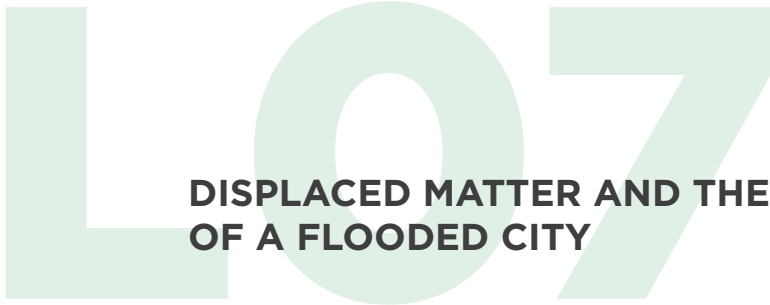
DISPLACED MATTER AND THE AMBIANCE OF A FLOODED CITY

MATÉRIA DESLOCADA E O AMBIENTE DE OMA CICADE UNADANDA

Kostas Manolidis
Professor
Department of Architecture, University of Thessaly
kostman@uth.gr

Faye Tzanetoulakou
Postdoctoral Researcher
Department of Architecture, University of Thessaly
faye.tzanetoulakou@gmail.com

ABSTRACT

Sensory atmospheres in cities have sometimes the potential to stimulate an attunement with the dynamic processes of natural systems. That was the case with the aftermath of the tropical storm that hit the city of Volos in Greece in September 2023. What was left after the waters receded was an extensive layer of debris and mud, bringing about a visual disorder along with a disruption of movement and accessibility. Streets covered with the nature's sediment was not simply something discomforting or nasty. Mud was also perceived as an 'abject' substance, with a repellent materiality attracting all the subliminal anxieties connected with the earth substratum. To better grasp the significance of the flood's ephemeral transformations we correlate them with large indoor art interventions characterized by the invasion of the «dirty» matter of the earth in closed exhibition spaces. Works of various artists perform a transgressing displacement to the concealed territory of the earth and its chthonic materiality.

KEYWORDS: urban ambiance. flood. mud. art installation. materiality

RESUMO

As atmosferas sensoriais nas cidades têm, por vezes, o potencial de estimular uma sintonia com os processos dinâmicos dos sistemas naturais. Foi o caso das consequências da tempestade tropical que atingiu a cidade de Volos, na Grécia, em setembro de 2023. O que restou depois que as águas baixaram foi uma extensa camada de detritos e lama, provocando um distúrbio visual juntamente com uma interrupção de movimento e acessibilidade. Ruas cobertas com sedimentos da natureza não era simplesmente algo desconfortável ou desagradável. A lama também era percebida como uma substância «abjeta», com uma materialidade repelente atraindo todas as ansiedades subliminares ligadas ao substrato terrestre. Para melhor compreender o significado das transformações efêmeras do dilúvio, correlacionamo-las com grandes intervenções internas caracterizadas pela invasão da matéria «suja» da terra em espaços fechados de exposição. Obras de vários artistas realizam um deslocamento transgressor para o território oculto da terra e sua materialidade ctônica.

PALAVRAS CHAVE: ambiente urbano. inundação. lama. instalação artística. materialidade

1. INTRODUCTION

There comes a time when you find yourself unexpectedly immersed in the transformative action of the forces of nature. Forces that are incubated and released in a constant movement that sometimes intersects catastrophically with our everyday lives. That was the case with the aftermath of the subtropical storm that hit the city of Volos in Greece in September 2023. Notably, Storm Daniel precipitated an extraordinary meteorological occurrence in Greece on September 5 and 6, 2023 during which an astounding degree of rainfall was documented at Volos and the adjacent Mount Pelion.

As a result, the two streams crossing the city of Volos overflowed damaging infrastructure and ground floor facilities at the nearby residential areas (BBC, 2023). Along the ferocity of the rainfall, the destructive impact was also caused by the lack of flood defense mechanisms, the outdated and neglected drainage systems, and the poorly designed low bridges over the streams that didn't allow the unobstructed runoff of the storm water and floating debris. The rather wide artificial channels accommodating the streams proved insufficient confirming the need for a more flexible, natural and vegetated setup of the banks that could decelerate and absorb the force of the water.

What was left after the waters receded was an extensive layer of debris. The mountain torrents deposited at the city countless broken branches and considerable amounts of mud (Figure 1). Streets and sidewalks were covered with masses of nature's sediment bringing about a messy and distorted urbanscape along with a disruption of movement and accessibility. As in other similar cases, the fail of the poorly maintained public infrastructure (drainage, water supply, electricity) triggered strong emotional reactions like surprise, disappointment and anger (Tuitjer, 2023).

Though, the visceral responses generated by the disordered condition of Volos were connected not only with actual damages and losses but also with the uncanny materiality of the mud. An apparently distressing ambiance emanated from the post-flood urban landscape. The temporary subversion of normality activated multisensory stimuli, feelings and mood with an overall negative character. According to J.-P. Thibaud (2014) "far from being a strictly personal experience or limited to a purely subjective mood, ambiances never cease to make affective tonalities public. They display affective tonalities as a common sensory domain to be seen, heard, smelled, touched and sensed."

Our goal in this article is to outline how this shared post-flood ambiance exposed inherent difficulties to a desired empathetic relationship with the world. And furthermore, how a psychological reorientation can be triggered off in order to embrace Nature's otherness.

Figure 1. Natural debris and mud at Volos. Photos by the authors (2023).

2. THE UNDISCIPLINED MUD

The experience and ambiance of the post-flood city can be approached better through a more embodied perspective of human-nature relations, by weaving together materiality, affect and emotions that are engaged in this interaction (Tuitjer, 2023). According to

Deleuze, materiality is not primarily an issue of formal and functional properties of matter, but rather of forces and intensities that act as catalyst capturing and amplifying the affective flow of life (Liebst, 2012). As such, materiality is animated and emergent and is defined ultimately in terms of movement and processes rather than stasis (Bennett, 2010).

The violent displacement of matter from the mountain to the city of Volos brought about a visual twist whose shock bordered on the activity of a bleeding. Flood debris unveiled a disturbing but genuine osmosis between the elements. Trees, earth and water merged and exchanged positions in a stimulating upset of the order by which things are arranged within our typical worldview.

The storm and its turmoil allowed a peek into the magical economy of energy and matter exchange. It reminded us that the actual borders of land and water are always vulnerable to rupture and renegotiation (Giblett, 2016). And even more, it allowed us to acknowledge that our surrounding material realities are not fixed and motionless but undisciplined, pervasive and messy. In spite of all the hardship and the problems

of the flood, the collective experience of these days unconsciously assumed the overwhelming edge of witnessing the world's ongoing dynamic refiguring.

For weeks after the flood, the mud and its withdrawal was a recurring theme in the media and in everyday conversations. For the citizens of Volos the ambiguous state of the urban terrain contaminated with the telluric substance of mud was not simply uncomfortable and dysfunctional. It unsettlingly reflected the complex character of the natural matter we are regularly trying to control and purge. And consequently resurfaced a perception of nature as something "threatening," "primitive" and "filthy."

Mud is primeval, indeterminate and shapeless. It is the very material of creation and a symbol of neglect and underdevelopment as well. When it dries it is rising into dust bringing memories of unpaved roads and backwards rural poverty (Blavascunas, 2017). It's slow fluidity is slippery, smelly and alarming for real or assumed infections. In the collective unconscious, mud represents an almost animated substance attracting all the subliminal anxieties connected with the earth substratum. People are repelled by its uncontrollable sprawling potential and its amorphous materiality that possibly hides unknown bacteria and other hostile agents.

Moreover, mud's ambiguous consistency close to the state of viscosity is perceived as an aberration and a threat for the modern city dweller, who is used to a more ordered and inactive material domain. J.P. Sartre expressed very clearly the revulsion for that kind of substances. "The viscous is like a liquid seen in a nightmare, where all its properties are animated by a sort of life and turn back against me ... In the very apprehension of the viscous there is a gluey substance, compromising and without equilibrium, like the haunting memory of a *metamorphosis*. To touch the viscous is to risk been dissolved in sliminess." (Sartre, 1956)

3. REPRESSED WETLANDS AND ABJECT GROUND

The entangled materialities of the city commodities and the invading raw natural elements undermine the normality build upon a rigid dominance over nature. Our expectations for a equilibrium between the artificial systems and the living natural entities and forces are destined to frustration. That equilibrium is inevitably traversed by unforeseen flows of matter-energy that provoke the overturn of the short-sighted quest for nature's subordination (Giblett, 2016).

For instance, the repressed and banished hydrological particularities of a place will sooner or later assert their presence at the modern urban setting. The displaced water and runny ground of drained wetlands and streams eventually reemerge like the repressed traumatic incident in psychoanalytical dynamics (Giblett, 2016). This pattern was confirmed at the case of the preexisting suppressed flood zone and wetlands of Volos. During the storm the flood water and the organic matter from the surrounding hills reclaimed their territory at the coastal flatland.

Such an outcome is not only a question of poor choices over the positioning and development of the city. It is also a question of establishing fixed borders between city and nature, between dry land and water, between stability and flux. These borders should be means of interaction, adaptability and merging rather than rigid systems of separation. However, a prevailing demand for purity along with a technological arrogance are responsible for the routinely drawing of clear, defined boundaries. Thus, urban space is purposed as a purified domain holding away (in vein) the potentially dangerous along with the symbolic alterity of nature (Hoeller, 2023).

Flood mud can also be perceived in terms of a deviation from the established social and material order registered on the urban ground. It is a natural condition of the ground largely unsuitable for the routines of urban life. Most importantly though, mud represents the chthonic power of the ground and thus invites the atavistic aversion of modern civilization towards the unmanageable subterranean forces. In this sense mud is a typical "abject" thing. "'Abject' here implies a strong aversion to, a separation, distancing, or rejecting of something as 'other', a banishment of it to the periphery of consciousness in an attempt to keep it at arm's length, and, importantly, to attain a sense of self-with-borders or boundaries." (Olivier, 2017). Julia Kristeva (1982), who introduced the concept, argued that "it is thus not lack of cleanliness or health that causes abjection but what disturbs identity, system, order. What does not respect borders, positions, rules. The in-between, the ambiguous, the composite."

Any natural ground with its rough and changing materiality is in fact considered as an anomaly that disturbs the identity, functionality and symbolic structure of the city. Mud and all the flood detritus simply offer a climax to this anxiety and the irrational abjection of the ground materiality.

Interestingly enough, these long-established aversive perceptions of the natural ground materiality are subjected to various critical endeavors, in theory, urban design, and in art.

4. WHEN ART CHALLENGES URBAN PRECONCEPTIONS

In contemporary art, artists are increasingly exploring the use of natural materials for different reasons such as their aesthetic appeal, sustainability, connection to the environment, and cultural significance. Natural materials can encompass a wide range of substances derived from the Earth. They are often used in large-scale installations that transform gallery spaces. Artists may use materials such as soil, water, plants and rocks to create immersive experiences that explore themes of identity, memory, and the environment and engage the viewer's senses by evoking the multiplicity, the fragility and the relevance of the natural world.

In times of environmental crises, resulting in chaotic situations such as the flooding of Volos, the most receptive of humanistic disciplines, art, strives to grasp the meaning of this looming chaos, of the very notion of the Uncontrollable. Not of the mud. But of a senselessly gargantuan in its needs, modern world. Which repels mud and death to assert its anthropocentric rule and then builds an equally uncontrollable deadly dystopia. Which despises the chthonian and destroys it (but ultimately remaining precarious in front of it).

In this chapter we explore the works of artists who choose to use ground materials in their raw and unaltered state, showcasing the inherent beauty, textures, and properties of the earth, reevaluating our relationship with nature. This approach provokes the direct and unmediated material presence of the ground to activate a kind of intrusion in the formal gallery/museum spaces, causing the shifting of our expectations of order and discipline when encountering the entropic possibilities of nature. These ephemeral works invite viewers to experience a heightened sense of place, fostering a deep appreciation for the vitality, the complexity and the fragility of the environment, enabling artists to communicate complex ideas and emotions through tactile, sensory experiences.

4.1 Environmental Entropy

Olafur Eliasson's work often blurs the boundaries between art, architecture, and the natural world. His installations, which combine elements of light, water, and organic materials, challenge conventional ideas of what constitutes art and where it should be located, inviting viewers to engage with the environment as an integral part of the artistic experience. (Vic, 2016). Eliasson's art often prioritizes sensory engagement, appealing to viewers' sense of touch, sight, sound, and even taste. By creating multisensory experiences that immerse viewers in environments inspired by nature, he challenges the primacy of visual perception in traditional art forms, emphasizing a more holistic and embodied experience of art and the environment.

In a site-specific installation *"Riverbed"* at Louisiana Museum of Modern Art in Denmark in 2014, the Danish-Icelandic artist transformed the museum's gallery space into a rocky landscape with a meandering river flowing through it, meant to emulate the stony shores of a river (Figure 2). Visitors were invited to walk barefoot on the stones and wade through the water, immersing themselves in a naturalistic locality before the man-made modernist institution was built there.

In 2021, in the midst of the pandemic, Olafur Eliasson created "*LIFE*" at the Fondation Beyeler in Riehen, Basel, Switzerland. There the artist was not interested to blur the line between inside/outside but he literally perform an act of metamorhosis by turning the museum's interior into the actual natural landscape. With the aid of the landscape architect Günther Vogt, Eliasson removed the glass façade and flooded the interior with water of a nearby pond, which he then infused with a natural fluorescent dye Uranine to make the presence of water more visible, like a flowing canvas filled with

painterly details provided by several water plants that he let them roam across the watery surface. Thus Eliasson challenged once again our stabilized notions of, not only the solid presence of art institutions, but of our lives in general, when we lose control easily in the face of the force of nature, making us ponder on our coexistence with her, reassessing, through a multisensory experience, our relationship with what we consider "natural" via an act of displaced expectations and surprise. In LIFE everyone and everything is welcomed, without placing the human presence on top of any hierarchical position, similar to real life evolving naturally, where nature and culture are an integrated manifestation of being.

Figure 2. 'Riverbed' by Olafur Eliasson. © Louisiana Museum of Modern Art (2014).

Similarly, in his ongoing work "*Moss Wall*» (1994-present) Eliasson has created an everevolving series of installations featuring walls covered in living Icelandic moss. The walls bring the experience of nature within interior spaces, inviting viewers to employ all their senses in a deeply experienced reverie of the harmony and the resilience of flora.

In 2007 Urs Fischer dug for ten days creating "*You*", a 38 by 30 foot crater, eight feet deep, across the walls of the ground floor of Gavin Brown's Enterprise Gallery in New York (Figure 3). This subversive act within the pristine gallery environment explored notions of the non-permanent, the chaotic, the unheroic, the chthonic, but also the laborious and the deeply humane. A sign at the door cautions: "THE INSTALLATION IS PHYSICALLY DANGEROUS AND INHERENTLY INVOLVES THE RISK OF SERIOUS INJURY OR DEATH". The visitors had to crouch and duck through

a low and narrow entrance to enter this earthy working site that seemed to be born of years of land art history, involving themes of land transformation as artists went out of their physical spaces to endeavour an immersion into the landscape. However, this unsettling piece of actual physical disruption into the bowels of a building, take the viewer even before Richard Long or Robert Smithson's first environmental pieces. Sitting on the top (or even in between or below as the viewpoint has been disrupted) of the rubble, of what was before an aestheticized art cult temple, the viewer experiences a seminal, almost religious feeling similar maybe with "The Wondered over a Sea of Fog" (1818), by David Caspar Friedrich, where the sitter experiences the Sublime in front of an unruly natural force, and at the same time the Profane of a pile of plain dust, stripping down and deconstructing, in a palpable way, all the riches of the fetishized high-end art market. At the same time the excavated earth can be experienced as the ideal topos of Psyche, where Eros and Thanatos converge, an erotic chasm, a womb, a cradle of life, a grave.

Figure 3. 'You' by Urs Fischer, excavation in gallery space (2007). Source: ursfischer.com, Photos: Ellen Page Wilson

Norwegian artist Per Kristian Nygård challenges our perceptions of what exists outside and what we allow inside our architecturally organised space, in the installation *"Not Red But Green"* that was presented at Oslo's No Place Gallery in 2014. His practice involved placing a undulating constellation of mounds of damp turf on a wooden frame over a plastic sheet, as if creating a miniature landscape, which gradually sprouted inside the gallery, in an attempt to explore the dynamics of the physically and mentally confined built space when nature takes over (Figure 4).

Figure 4. Per Kristian Nygård, Not Red But Green, (2014). Foto: Jason Havneraas

The artist stressed that "the work was seemingly meaningless and confusing – as a contrast to the all-encompassing meaningful and personalised space we surround ourselves with, for example the programmed urban environment, the functional objects and architecture. (…) Visitors are confronted with their own intuitive and physical response to the experience of entering a space where everything's wrong but feels right,» (Mairs, 2014). The artist by using earthy materials that city dwellers have long forgotten, leads the viewers to follow an unbeaten curvilinear track of decisions not based in linear and meaningful societal modes of conduct but to try to find a meaning amongst an open-ended unsettling wilderness.

4.2 The Unspeakable Truth

In a profoundly poetic way the French artist Laure Prouvost presented "Deep See Blue Surrounding You" at the national pavillion of France during the Venice Biennale of 2019. For her project she created a liquid environment of resin and clay, flooded with detritus from our fragmented and polluted contemporary life, a space to stop and ponder on who we are, where we come from and where we are going, and most poignantly why we are doing such damage to mother Earth. The sense of liquification, within the flowing lagoonscape of Venice, is strong, as humans are invited to melt their current selfish nature and merge their shared experiences with all the other beings in the planet. Infused with utopian melancholy, the whole installation, the sculptures and the film projection that constituted the exhibition talked about a journey, escaping reality, into an unspoilt neverland of a fluid, connective world without boundaries and seclusions.

During the next Venice Biennale of 2022, the nomadic indigenous Sami community presented the teamwork of 3 native artists, Pauliina Feodoroff, Maret Anne Sara, Anders Sunna in the Nordic Pavillion. There, their holistic practices around the management of natural resources, the tradition of grazing the precious reindeer, but also the restrictions they face from the institutionalized governments of the states that «host» them, dramatically unfolded, as they are not allowed to use the natural resources that are accustomed to use with knowledge and respect for the environment from their centuriesold tradition. The installation consisted of floating sculptures of natural, visceral objects such as reindeer stomachs, cured red reindeer calves, cotton grass, birch branches, shoegrass, reindeer sinews, wax, plus a molecular smelling concoction causing two opposite sentimental secretions in both raindeer and the Sami peoples: fear (reindeer tissue under stress, reindeer stools, diesel motors), and hope (maternal breast milk, reindeer milk, newborn reindeers, tundra) (Figure 5). Every natural item shown in this multi-sensory installation came from the open earth, that poor in nutrients ground of the Artic, yet every little piece of moss and flesh, is imbued with spiritual, metaphysical qualities, a rare mix of crude and refined intelligence, connecting humans with the universe.

This stunningly sensitive work is at the same time shockingly challenging for a Western mindset that is used to face the corpse as "the most sickening of wastes, a border that has encroached upon everything" (Kristeva, 1982). However, their affective power, evocative of trauma and hope, makes these somber and unpleasant objects to appear as consecrations of life. They "constitute several layers of strangeness in strange ecological loops; the dichotomy between birth and death, between comfort and fear, between Sami and the city, and between the abstract and the physical. It is strange when the uncanny realization of our own coexistence in this world creeps up on us" (Kinn, 2022)

Figure 5. Reindeer stomach and cured reindeer calves surrounded with dry grass, by Maret Anne Sara, Venice Biennale 2022. Photos by the authors, 2022.

5. CONCLUSION

To grasp the significance of the flood's ephemeral transformations, we focused on the nature of mud and natural debris and their negative connotations. The invasion of the "dirty" materiality of the earth into the cityscape revealed the fixed separative logic between the urban realm and the undisciplined natural processes. Nevertheless, these violent and disruptive material and sensory juxtapositions stimulate an intense urban ambiance that can disclose the hidden entropic order that regulates the flow of life.

The work of many contemporary artists resonates exactly with this pursuit. Embracing the nature of raw, physical materials born from the concealed and chthonic territory of the ground, these artists explore themes of transgression, regeneration and transformation in their practice. Encouraging natural processes of flux, decay or decomposition, divert their viewers towards the grotesque and erratic lower stratum of the earth, inviting us to rethink our dependence and lost affiliation with the elemental operations of the natural world.

So, art, by masterly employing multisensorial atmospheric environments, challenges traditional boundaries, conventions and hierarchies and highlights the dynamic relationship between our man-made environment and the natural processes. Reconnecting, in this way, us with the primeval vibrant materiality of the ground that we usually disdain.

6. BIBLIOGRAPHY

BBC News (2023) Greece: Skiathos and Volos hit by flash floods. *https://www.bbc.com/news/av/worldeurope-66721381*

Bennett, J. (2010). Vibrant Matter: A Political Ecology of Things. Duke University Press.

Blavascunas, E. (2017). In the Mud and of the Mud. New Materialities for Eastern European Rural Societies. Historische Anthropologie 25(2). *https://doi.org/10.7788/ha-2017-0207*

Giblett, R. (2016). Cities and Wetlands: The Return of the Repressed in Nature and Culture. Bloomsbury Academic.

Hoeller, L. (2023). Troubling the Waters: Porous Materiality, Contaminated Environments, and Female Bodies of Water in Ingeborg Bachmann's "Undine geht," Yoko Tawada's Das Bad, and Katharina Köller's Was ich im Wasser sah. (Doctoral dissertation). University of Oregon.

Hook, D. (2004). Racism as abjection: A psychoanalytic conceptualisation for a post apartheid South Africa. South African Journal of Psychology, 34 (4), 672-703.

Kinn, M.H. (2022). Where the Boazu goes. Moving with representations of reindeer in Sámi contemporary aesthetics. (Master Thesis). University of Oslo.

Kristeva, J. (1982). Approaching Abjection, Powers of Horror. Columbia University Press.

Liebst, L. S. (2012). Intensifying the atmospheric: a post- phenomenological reappraisal of the ambiance of urban space. In M. Greene, J. Reyes and A. Castro (Eds), Proceedings: Eighth International Space Syntax Symposium. Santiago de Chile: PUC, *http://sss8.cl/proceedings.html*

Mairs, J. (2014). Per Kristian Nygård crams a grassy valley into an Oslo gallery. Dezeen. *https://www.dezeen.com/2014/11/28/not-red-but-green-per-kristian-nygard-grass-installation-oslo/*

Olivier, B. (2007). Nature as 'abject', critical psychology, and 'revolt': The pertinence of Kristeva. South African Journal of Psychology, 37 (3), 443-469.

Sartre, J. P. (1956). Being and Nothingness: an essay on Phenomenological Ontology. (Translated by Hazel E. Barnes). New York: Philosophical Library.

Thibaud, J.P. (2014). Urban ambiances as common ground? Lebenswelt Aesthetics and Philosophy of Experience, no 4. *https://doi.org/10.13130/2240-9599/4205*

Tuitjer, L. (2023). Unruly waters: exploring the embodied dimension of an urban flood in Bangkok through materiality, affect and emotions. Geographica Helvetica, 78, 281-290. *https://doi.org/10.5194/gh-78-2812023*

Vic, S.M. (2016). Nature as image in Olafur Eliasson's art: a media ecological perspective. In M. Ledbetter and A. Grønstad (Eds), Seeing Whole: Toward an Ethics and Ecology of Sight, Cambridge Scholars Publishing.

LEARNING FROM THE PRESENCE OF YOUNG CHILDREN IN URBAN PUBLIC SPACES

APRENDENDO COM A PRESENÇA DE CRIANÇAS PEQUENAS NOS ESPAÇOS PUBLICOS URBANOS

Schumacher noa
schumacher.n@grenoble.archi.fr (1) (2)
1 - Centre de recherche sur l'espace sonore
et l'environnement urbain (France),
2 - Pacte (France)

ABSTRACT

In recent times, several studies have been conducted on children's urban experiences. These studies predominantly reveal a decline of their presence in public spaces, alongside with a rise in the adoption of 'child-friendly' design. In this article, I focus on the presence of children within everyday public spaces. I interrogate what insights young children can offer urban designers. Through immersive filming methods with children aged 2 to 6, I outline a repertoire of presence. In this text, I delineate the concept of "opportunistic presence." This prompts reflection on children's ability to thrive independently of designers, thereby contributing to the (re)enchantment of the cityscape.

KEYWORDS: children's studies. public spaces. ambiances. urban planner. subversion.

RESUMO

Em tempos recentes, várias pesquisas têm sido realizados sobre as experiências urbanas das crianças. Esta pesquisa revelam predominantemente uma diminuição de sua presença em espaços públicos urbanos, ao lado de um aumento na adoção de design 'amigo da criança'. Neste artigo, foco na presença de crianças dentro de espaços públicos cotidianos. Pergunto-me o que é que as crianças pequenas podem trazer aos designers urbanos. Através de métodos de filmagem imersiva com crianças de 2 a 6 anos, esboço um repertório de presença. Neste artigo, delineio o conceito de "presença oportunística". Isso provoca reflexão sobre a capacidade das crianças de prosperar independentemente dos designers, contribuindo assim para o (re)encantamento da paisagem urbana.

PALAVRAS CHAVE: pesquisa sobre crianças. espaços públicos. ambientes. planejador urbano. subversão.

1. HOW CHILDREN ARE CONSIDERED?

While research on childhood has often focused on children's absence from urban public spaces, the approach I propose emphasizes studying their presence in the spaces of their daily lives. Children represent a significant portion of the urban population globally (UNICEF, 2012). However, they are often neglected in social science research on contemporary societal and urban challenges. Nevertheless, it is crucial to acknowledge that children are active participants in social dynamics (Chombart de Lauwe, 1990), who share the same daily experiences and physical spaces as adults within society. Following Breviglieri (2015), I argue that studying children's everyday experiences in the city can provide valuable information for urban planners. He raises the following question: "What insights does a child's journey through the streets offer us?". Through this inquiry, he investigates the architect's role and responsibility in shaping, and potentially impoverishing, the urban experience for our youngest citizens.

Today, children's experiences are generally addressed in terms of absence. While in the past children used to play outdoors freely, they now undergo a "long process of containment" (Ariès, 1960) in dedicated, domestic or private spaces. Fear and risk management play a significant role in shaping the experiences of youngsters. They limit their outdoor activities, at least in terms of autonomy (Rivière, 2016). This decline in outdoor activities is accompanied by an increase in time spent on indoor activities such as digital entertainment (Loebach & Gilliliand, 2016), and by the development of private, commercialized recreational spaces (Sullu, 2018).

However, the city is considered a learning and recreative environment (Noschis, 2006) where children experience social interactions and "tinker" with their everyday spatialities (AbuGhazzeh, 2002). Moreover, in recent years, an increasing number of cities, primarily in the global North, have been working towards the inclusion of children through "child-friendly cities" initiatives (Cordero-Vinueza et al., 2023). It seems necessary to question these new forms of development and to critique the standardization of so-called child-friendly spaces.

2. HOW TO CAPT CHILDREN'S DAILY PRESENCE IN PUBLIC SPACES?

 These thoughts are based on my doctoral research into the ways in which young children are present in the public space. A field study was carried out with six children (aged 2 to 6) in Sfax (Tunisia) and Grenoble (France). This work involved an immersive in their daily lives, managed with filming material. Special attention was given to the perceptible effects of urban ambiances on children's bodies. Through, repeated viewings of the footage, I outlined a repertoire of forms of presence. Particular attention has been given to naming the different forms: "orchestrated", "shared", "corporeal", "opportunistic", "displaced", "rhythmic", and "contained". The restitution employs various channels: text, sound fragments, videographic compositions and photograms intermingle to finely describe how children's presences are.

Each of these forms of presence could provide with useful information for urban planner. However, in this proposal, we focus on one aspect of our results, the form of "opportunistic presence". I've chosen to describe this form in detail because it seems to be the form that best illustrates children's capacity for subversion. In fact, children encourage us to question the role of urban designers. Moreover, I consider that giving a detailed account of one form in particular helps most to understand the degree of finesse required to comprehend the sensitive and bodily dimensions of urban's presences.

3. OPPORTUNISTIC PRESENCES

I define opportunistic presence as the presence that takes full advantage of urban spaces. While the chosen term is open to debate, it conveys the idea that children know how to find hidden spots and transform the conventional uses of spaces and objects. There are various types of opportunistic presence, and they are each presented as a sub-category in the following sections.

3.1 Edge presences

Film observations revealed that children use the edges of spaces, corners, and nooks that adults often overlook. Just a few centimeters of flat edge are enough to create a racetrack for a rhinoceros. Upon seeing the curb, Hector (2, Grenoble) starts running, stops, and places the two toy animals he holds in each hand on the wall. With an outstretched arm and a firm grip on the plastic object, the child quickens his pace to launch the rhinoceros at full speed along the track. He is focused on his hand movements, which occasionally mimic the animal's steps, or react to obstacles, like a gutter, that appear on the racetrack. Hector is guided along the edge by his hand.

Figure 1. Urban racetrack for rhinoceros
Source: Produced by the author (2023).

In other situations, it is the whole body that occupies the edge by balancing on the pavement or an access ramp. Adèle (5, Grenoble) concentrates hard to avoid falling off the wooden curb, her body curled up. With one hand, she holds on to the rope that marks the boundary of the planted area, and with the other, she holds her bag to prevent it from hindering her progress.

Similarly, Nicola (5, Grenoble) uses a low metal barrier separating the sidewalk from the flowerbed to speed up on his scooter.

Figure 2. Micro adventure
Source: Send by a parent (2023).

Figure 3. Propulsion ramp
Source: Produced by the author (2023).

3.2 Steep presences

In the cities of Grenoble and Sfax, characterized by flat topography, slopes serve a practical function: allowing vehicles to pass or enabling wheelchairs or strollers to ascend a sidewalk. Children know how to use these slopes for other purposes, such as testing their balance. For example, Nicola (5, Grenoble) walks along the slope of a dropped curb.

Figure 4. Slope balance
Source: Produced by the author (2023).

Urban slopes are summits to be climbed. Malek (5, Sfax) walks up to a pile of gravel with one hand on his hip. As he takes his first step, he loses his balance and spreads his arms to steady himself. His whole body is engaged in the climb. At the top, he tries to grab the edge of a wall twice. The height gives him a sense of confidence and freedom; he looks down and indulges in a few dance moves.

Figure 5. Urban summits
Source: Produced by the author (2022).

Gaining a bit of height, even just a few centimeters, seems to give children a sense of strength.

From the top of his promontory —a pavement that towers 20 centimeters above the road— Gaspard (3, from Grenoble) shouts at cars and pretends to stop them with his hands. His strength seems to be multiplied by the height he has reached. From up there, he uses his fingers as binoculars to peer into the distance.
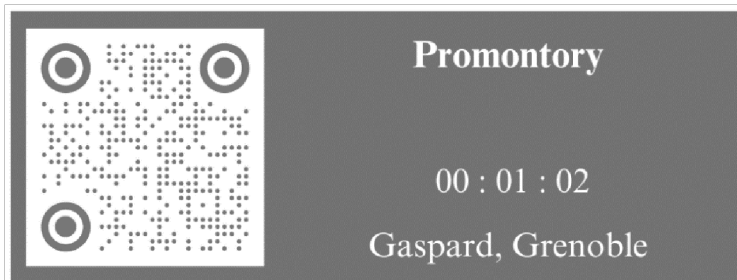
Figure 6. Promontory
Source: Produced by the author (2023).

3.3 Textured presences

Children exploit the city's potential, particularly its diverse textures. Interruptions in movements and special attentions highlight the variety of urban textures. The frictions between a child's body and urban surfaces can generate new sounds. In a downtown park in Grenoble, Adèle (5) runs on the asphalt, veers off then jumps to straddle a gutter. On the other side of the gutter the ground is covered in gravel. Adèle lands and walks, rubbing her feet on the surface for about ten meters, arms outstretched. Re-centering herself, she resumes her normal stride and runs through the grass.
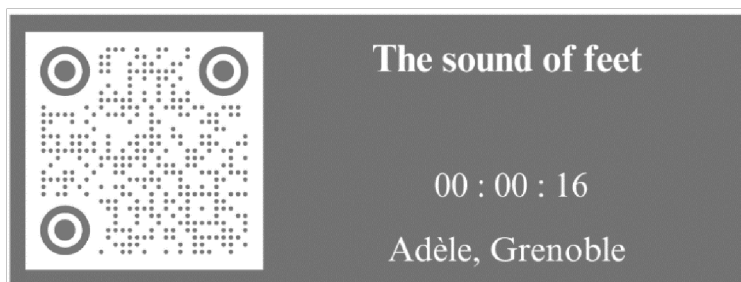
Figure 7. The sound of feet Source: Send by the parent (2023).

Malleable textures are also favored. In an alley specially designed for children in front of the school, children the gather around a strip of gravel in the center. This strip is the last unfinished part of the «Children's Street» project in Grenoble, which includes pedestrianization and the installation of child-friendly urban furniture. The children are watching the ground. They crouch down, pick up the stones, kick them with their feet, and observe how other children handle them.

Figure 8. The wonderful construction site area
Source: Produced by the author (2023).

This unplanned space creates excitement among the children. On the other side of the Mediterranean, in the sandy alleys of Sfax, Malek (4) walks leisurely with his arms hanging by his sides. He slows down, his gaze fixed on the ground. He takes a step back and presses his foot into the sand, staring at the imprint left by his sandal. Taking off his shoe, he bends down and presses it into the ground with his hand. He examines the mark, stands up, and slips his foot back into the sandal.

Figure 9. Footprint
Source: Produced by the author (2022).

3.4 Musical presences

Musical presences refer to children's ability to transform the city into a musical instrument, revealing its sonic potential. Through their movements and use of alternative pathways, children create news sounds and contribute to shaping urban ambiances. Nicola (5, from Grenoble) is walking with his mother and older brother along a pedestrian path in a park. He deviates from the concrete path to walk on metal grilles laying on pebbles. His steps are insistent and produce a vibrant metallic sound in the gap between the vegetation and the concrete.
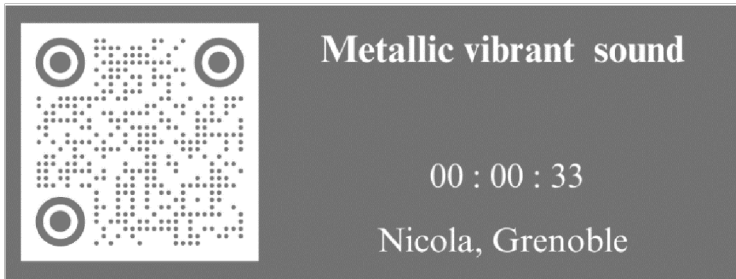
Figure 10. Metallic vibrant sound
Source: Produced by the author (2023).

Gaspard (3, from Grenoble) is walking down a quiet street late in the day. He is holding a wooden stick in his hand. Before crossing the street, he taps the stick against a pole, creating a metallic sound. The stick falls, he picks it up. He crosses the street and strikes the next pole, which creates a ring. He walks towards the other side of the sidewalk to get closer to the row of poles that delineates it. The poles are spaced about 3 meters apart, and Gaspard taps each one once or more. Different metallic notes emerge from his interactions with the poles, creating a somewhat dissonant melody.
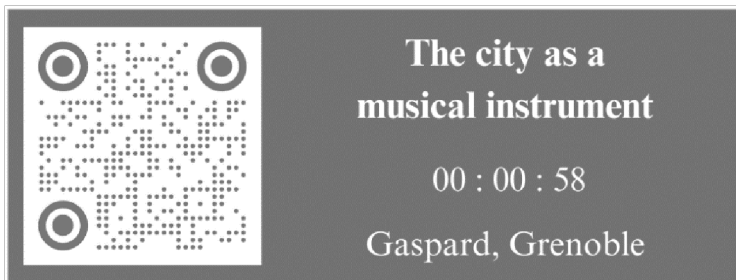
Figure 11. The city as a musical instrument
Source: Produced by the author (2023).

3.5 Archaelogical presences

This subcategory refers to the way children, like archaeologists on an excavation site, have the ability to find things hidden in the city ground that arouse their curiosity. Malek (5, from Sfax), is standing in front of his house with older children. While the

older kids relax together, he takes the time to explore this familiar space which is always full of surprises. Today, a can catches his eye. With one hand on his hip, he bends down to pick it up, turning it over in his hands and observing it with acute attention. An older child urges him to put the can down. After avoiding the old child's hand to keep the can, Malek resumes his exploration. He taps his fingertip on the metal, creating a light splashing sound. After a brief pause, he looks into the hole of the can and puts his finger inside. His mother quickly tells him to stop. Frustrated, Malek raises his voice then throws the can with an arm movement that starts from his back. It clatters to the ground, and Malek runs off in the opposite direction.

Figure 12. Can
Source: Produced by the author (2022).

Hector (2, from Grenoble) is walking to the nursery with his hands in his pockets. Accompanied by music playing from a mobile phone and the bustle of the market, he makes his way along a footpath. Walking straight ahead, he steps on a branch. An «oh, oh, oh» escapes from his mouth as he bends down and he picks up the twisted stick. An unkown adult walks by and says, «Great find.» Quickly, the stick transforms into a dragon and starts to chase Hector's father.
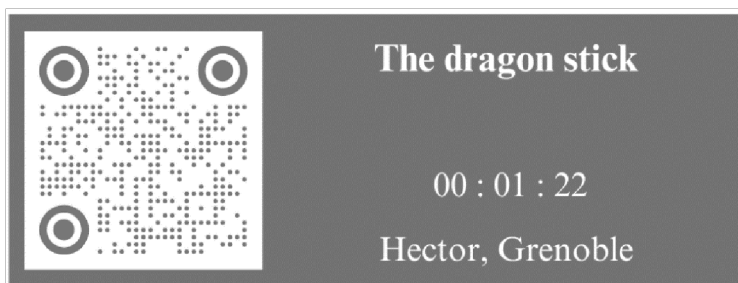
Figure 13. The dragon stick
Source: Produced by the author (2023).

3.6 Imaginative presences

This second example of this last category contributes to defining a final subcategory: imaginary stories triggered by everyday events. If a stick can be transformed into a dragon, it can also become a fishing rod. On his way home from school, Gaspard (4,

from Grenoble) inserts a stick into various holes in the pavement, hoping to catch fish or tree leaves.

For a group of three little girls, aged 5, from Grenoble, taking the tram becomes the boarding a «plane» flying to Tunisia, or the unveiling of a «third heaven.» Their entire bodies engage in mimicking the process of strapping themselves in, driving, and gazing out at the sky.

A plane on a rail

00 : 01 : 42

Adèle, Grenoble
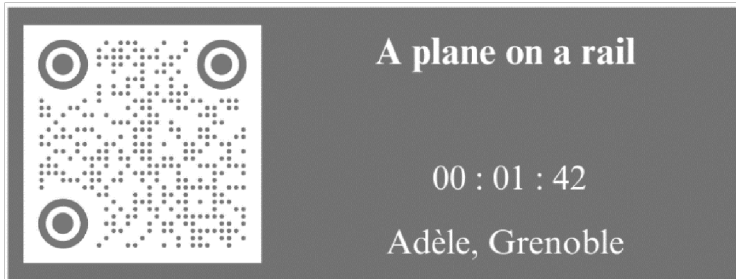
Figure 14. A plane on a rail Source: Send by the parent (2023).

Malek is walking home from his grandparents' house. His is chatting with both of his parents, his «Spider-Man» school bag snug on his back. As he reaches a bend in the quiet street, he leaps over a gully. Lifting a leg and an arm on one side, he struggles to maintain his balance. His mother cheers him on with a «Well done!» and then adds, «He's doing what Spider-Man does, he loves it.»

Figure 15. Spiderman pose
Source: Send by the parent (2023).

4. CONCLUSION

This research addresses the need to find ways to capture and describe a central aspect of urban experiences that is diffuse and difficult to verbalize. In fact, putting into words and naming forms of presence is delicate. Words sometimes fall short in fully capturing the essence of children's experiences and could benefit from greater precision. Striking the right balance between clarity and finesse in expression is essential to faithfully convey the diverse situations encountered by children.

This focus on understanding the sensitive forms of everyday urban presence is essential for work on ambiances, as it aids in grasping the diversity of perceptions of urban environments. Additionally, exploring their representations and translations serves as a valuable tool for dialogue and debate with city planners.

In an era where architects and urban planners are urged to «re-enchant the city» (Hurstel, 2006), exploring the form of opportunistic presences could be enlightening. Although the definition of re-enchantment remains vague, the term is widely used by designers to refer to approaches aimed at rehabilitating public spaces for purposes of conviviality, vegetation, aesthetic enhancement, and gamification.

It can be interesting to examine how children seize upon edges, textures, and urban treasures to create the unexpected and the enchanted in overlooked corners in which older city dwellers rarely linger. Do we truly need to re-enchant the city when children effortlessly bring enchantment to it? How can we draw inspiration from children to infuse the city with enchantment without succumbing to standardized recommendations?

5. BIBLIOGRAPHY

Abu-Ghazzeh,T. M. (2002). Children's Spatial Behavior in AL-Rawdah Housing Development in Amman, Jordan. Architectural Science Review, 45(2), 97-115. *https://doi.org/10.1080/00038628.2002.9697498*.

Ariès, P. (1960). L'enfant et la vie familiale sous l'Ancien Régime. Plon.

Breviglieri, M. (2015). L'enfant des villes. Considérations sur la place du jeu et la créativité de l'architecte face à l'émergence de la ville garantie. Ambiances. Environnement sensible, architecture et espace urbain. *https://doi.org/10.4000/ambiances.509*.

Chombart de Lauwe, M.-J. (1990). L'enfant acteur social et partenaire des adultes. Nouvelles conceptions aboutissant à une transformation de son statut ». Enfance, 43(1), 35-40. *https://doi.org/10.3406/enfan.1990.1927*.

Cordero-Vinueza, V. A., Niekerk, N., & van Dijk, T. (2023). Making Child-Friendly Cities: A SocioSpatial Literature Review. Cities, 137. *https://doi.org/10.1016/j.cities.2023.104248*.

Koschis, K. (2006). La ville un terrain de jeu pour l'enfant. Enfances & Psy, 4(33), 33-47.

Loebach, J., & Gilliland, J. (2016). Neighbourhood play on the endangered list: examining patterns in children's local activity and mobility using GPS monitoring and qualitative GIS. Children's Geographies, 14(5), 573–589. *https://doi.org/10.1080/14733285.2016.1140126*

Rivière, C. (2016). « Les temps ont changé ». Le déclin de la présence des enfants dans les espaces publics au prisme des souvenirs des parents d'aujourd'hui. Les Annales de la Recherche Urbaine, 111(1), 6-17. *https://doi.org/10.3406/aru.2016.3219*.

UNICEF. (2012). Rapport, Les enfants dans un monde urbain.

https://www.unicef.fr/article/la-situation-des-enfants-dans-le-monde/

I, CATALPA BIGNONIOIDES NARRATIVES OF THE NON-HUMAN AS AMBIENT PLACEMAKING TOOLS FOR A BIODIVERSE URBAN HABITAT

EU, CATALPA BIGNONIOIDES NARRATIVAS DO NÃO-HUMANO COMO FERRAMENTAS AMBIENTAIS DE CRIAÇÃO DE LUGARES PARA UM HABITAT URBANO BIODIVERSO

Sophia Vyzoviti
Professor
Department of Architecture, School of Engineering, University of Thessaly
svizovit@uth.gr

ABSTRACT

Focusing upon the city's leafy infrastructure, this paper investigates the civic acknowledgement of non-human agency in urban ecosystems. Caring for city trees is discussed as an ambient placemaking tool for biodiverse urban habitats. The concept of urban komorebi is introduced to describe the ambiance of urban foliage. The paper exemplifies cases of performative urban actions at the threshold of art, urban acupuncture and political ecology as demonstrations of activating citizen awareness for the non-human and cultivating the empathetic inter-species symbiosis as new civic ethos.

KEYWORDS: leafy infrastructure. parliament of things. performative urban actions. citizen participation. tree hugging.

RESUMO

Centrando-se na infra-estrutura frondosa da cidade, este artigo investiga o reconhecimento cívico da agência não-humana nos ecossistemas urbanos. O conceito de Komorebi urbano é introduzido para descrever o ambiente das ruelas arborizadas da cidade. Cuidar das árvores da cidade é discutido como uma ferramenta de criação de lugares ambientais e como uma condição necessária para habitats urbanos biodiversos. O artigo exemplifica casos de ações urbanas performativas no limiar da arte, da acupuntura urbana e da ecologia política como demonstrações de ativação da consciência cidadã para o não-humano e do cultivo da simbiose empática interespécies como novo ethos cívico.

PALAVRAS-CHAVE: infraestrutura frondosa. parlamento das coisas. ações urbanas performativas. participação dos cidadãos. abraço de árvore.

1. INTRODUCTION

The planetary stand still of the COVID-19 pandemic coined as the Pandemic 'Anthropause' (Anthes, 2022) was an opportunity for humanity to reconsider its relationship with nature. As research proves (Vardi, Berger-Tal, and Roll, 2021; Baier, 2021) the changes in human activity due to lockdowns, travel bans, and border closures had many significant environmental benefits, among which was the recovery of human disturbed habitats and wildlife reclaiming urban areas. In the seminal book 'We Have Never Been Modern' philosopher Bruno Latour (1991) argues that natural disasters are man-made, politically manageable, social phenomena: hybrids of nature and society, such as the much-discussed 'ozone hole' and AIDS. In this context we can understand the coronavirus as a hybrid of nature and society. A non-human species becoming a social and economic restructuring force. By Latourean thinking we can conceive our changing world of man-made natural disasters as a political realm, as a parliament of things, of non-human and more than human entities.

How can we identify with the non-human? How to attune this world, understand and empathize with non-human symbiotes of our cities? The empirical basis of this research hypothesis originates in this author's experience of the healing powers of nature during the COVID-19 pandemic era. Departing from empirical observations, the author's engagement with the non-human lies in the city's leafy infrastructure, the tree alleys and the urban forests. As schemata of embodied research two case studies conducted as pilot urban actions at the threshold of art, urban acupuncture and political ecology are presented. These actions explored the placemaking potential of cultivating empathy to the non-human and activating citizens to care for neighborhood trees. Both projects reflected upon environmental conflicts concerning urban deforestation under the guise of sanitation, safety, and beautification in Greece during 2023 which stirred the public and led to the formulation of grassroots activist groups like Cut it Right (2023) and SAVE TREES! - SOSε τα ΔΕΝΔΡΑ! (2023).

2. WHAT IF TREES CLAIMED CITIZENSHIP?

"Trees are like human beings. They have feelings, they have intelligence, and they are perfect silent listeners" - states conceptual artist Marina Abramović whose performative act of tree hugging titled 'Complain To The Tree' (The Art Newspaper, 2020) was created as an exercise for the public to heal and feel better in the non-contact world of COVID-19 pandemic. Abramović urged people to select a tree they like, hug its bark tightly for no less than 15 minutes and pour out their problems. By bonding with a tree, as if a human being with intelligence and feelings, the artist promises one feels relieved and rejuvenated. This paradigmatic public action follows the artist's method (Marina Abramović Institute, 2024) to relate to the present moment, take the time to connect to oneself and others in rituals of healing. Bruno Latour's (1993) Parliament Of Things unpins a further dualism, the distinction between the object and the subject. For example, is the city tree an object or a subject? What if we recognized the rights of a citizen to a tree? What if trees claimed a better management of urban green and blue infrastructures?

Figure 1/Figura 1. Still from the environmental art workshop 'I Like Catalpa and Catalpa Likes Me' as part of the exhibition
'We Can't Do It Without Roses- 100 Years Since The Birth Of Joseph Beuys'
by MOMus Experimental Center for the Arts and Goethe Institute in Thessaloniki
Source: Stefanos Tsakiris (2021). / Fonte: Stefanos Tsakiris (2021)

2.1 The City Tree As A Wild Companion

During the performance 'Coyote I / I Like America And America Likes Me' at Rene Block gallery New York, conceptual artist and pioneer of environmental art Joseph Beuys (1974) cohabitates with a coyote for one week inside a cage. Caped and wrapped as a shaman, with his back bent, holding out a stick, gradually unfolding as the animal's behavior also changes, from a wild garment ripping inquirer to a friendly companion. Joseph Beys paradigm of coyote domestication is par exemplar a case of familiarizing with, and in empathy with the non-human. Environmental art workshop 'I Like Catalpa And Catalpa Likes Me' (Figure 1) draws its title from Beuys's emblematic work. The connection with the wild is understood here by analogy to human and coyote, as empathy between citizen and city tree. Joseph Beuys persona is a behavior paradigm for a new civic ethos. The workshop was structured in the

tradition of free flux tours where a group was guided through a directed sequence of situated experiences (Maciunas, 1973). Wearing black hats, they walked along tree alleys, parks and torrents carrying urban gardening tools. Invited speakers discussed in situ the history, and qualities of existing flora, methods to care for trees through pruning and composting, and concluding with a performative exercise in silent bonding with a tree (Figure 1). The goal of this pilot urban action was to activate citizen awareness towards the city's leafy infrastructure and to cultivate the empathetic inter-species symbiosis between humans and trees as a new civic ethos.

Figure 2/Figura 2. Caduceus of Catalpa Bignonioides made of severed branches during the 2023 municipal tree pruning.
Source: Author (2023). / Fonte: Autor (2023)

2.2 The City Tree As Non-human Agent Of Citizenship

Set up in attunement with Bruno Latour (1991) concept of the parliament of things. The representation of the tree Catalpa in the public performance 'Climate Parliament. Stories Of The Non-Human' a workshop based performative project organized in the context of GEOCULTURA - 8th Thessaloniki Biennale of Contemporary Art (MOMus, 2023). Adopting fiction narrative techniques and theatrical costumes, workshop participants represented non-human agents of the local urban ecosystem who exposed environmental problems and proposed solutions submitted as a public vote for action. Catalpa Bignonioides appears here as representative of her genus and its urban habitat. She is impersonated by the author, as an archaic messenger who holds a staff (Figure 2) - a prop in reference to the caduceus of Hermes, made of severed branches collected by the author as material evidence of the brutal, municipal tree pruning of 2023. By addressing the public with a plan for action, Catalpa claims citizenship as non-human agent in the local micro ecology. The tree requests

acknowledgment for its environmental contribution and contends the right to be grounded in connection with the city soil, for which it proposes to be uncovered by and large.

3. TOWARDS AMBIENT PLACEMAKING

In Catalpa Bignonioides's speech at the Climate Parliament, the tree pronounces its environmental benefits. Tree foliage has been scientifically proved (Fadhil & Hamoodi & Ziboon, 2023) to reduce the urban heat island effect, through shadow, that results the absorption and reflection of solar radiation by the leaves; and through evapotranspiration, a vital function of the tree releasing moisture into the atmosphere. During the summer we all have experienced how leafy canopies produce a well-tempered street microclimate. City alleys, in addition to the lowering of temperature, air purifying and cooling, also possess a distinct ambiance. Their foliage produces an immaterial space made of light and shadow - what the author here would like to introduce as Urban Komorebi. The Japanese word Komorebi 木漏れ日 (pronounced kō-mō-leh-bē) and literally meaning "sunlight leaking through trees" (Tincher, 2021) expresses the enchanting sensory experience of rays of light filtering through leafy branches, which cast intricate, wind animated shadows on the ground.

As J.P. Thibault (2020) claims, the way of ambiances today starts with becoming sensible and attentive to the lifeworlds we inhabit, by developing new relationships with the more-than-human world and appraising our everyday environments. We are acknowledging the environmental qualities of urban canopies. City tree alleys (Figure 3, for example) ought to be included in the city's agenda of preserving and promoting natural and cultural identity. Care for trees ought to be considered as a nature-based approach to placemaking, providing a necessary condition for ambient and climate resistant city walk-scapes. With community-based participation at its core the notion of placemaking emphasizes creative patterns of use, "paying particular attention to the physical, cultural, and social identities that define a place and support its ongoing evolution" (Project for Public Spaces, 2020). Citizens caring for city trees has also been coined as 'green placemaking' (Gulsrud, Hertzog, and Shears, 2018) a tool which aims to reassess urban environmental governance towards biodiversity and socio-ecological resilience. Finally, urban foliage ought to be appreciated for its ambient effects, as multisensorial stimulus that transforms the everyday pedestrian experience into an enchanting wonder (Thibault, 2020).

Figure 3/Figura 3. Urban Komorebi of a Catalpa Tree Alley
Source: Author (2020). / Fonte: Autor (2020)

4. CONCLUSION

This paper contributed to the dialogue on ambiances as catalyst for the green transition, introducing nature-based, placemaking tools for sustaining the ambiance of leafy urban habitats. More than a creator of a well-tempered micro ecology, the urban tree – and tree alley- was conceptualized as a hybrid between nature and society, and as a non-human citizen. The pilot urban actions presented investigated ways of activating and cultivating empathy between human and tree, intending to promote a civic ethos of tree caretaking as an ambient, climate mitigating placemaking tool.

5. BIBLIOGRAPHY

Abramovic, M. (2020). Complain To The Tree. [Video]. The Art Newspaper. YouTube. *https://youtu.be/bQmAHmLy5DA?si=Gy0V0qqXWWQ7Rkrx*

Anthes, E. (2022). Did Nature Heal During the Pandemic 'Anthropause'? The New York Times.

https://www.nytimes.com/2022/07/16/science/pandemic-nature-anthropause.html?smid=url-share

Baier, J. (2021). Studies debunk 'nature is healing' narrative from 2020 lockdowns. Mongabay. https://news.mongabay.com/2021/09/studies-debunk-nature-is-healing-narrative-from-2020-lockdowns/

Beuys, J. (1974) I Like America And America Likes Me. [Video]. FONDAZIONE BONOTTO https://www.fondazionebonotto.org/en/collection/poetry/beuysjoseph/video/7881.html

Fadhil, M. Hamoodi, M.N. Ziboon, A. (2023). Mitigating urban heat island effects in urban environments: strategies and tools. IOP Conference Series: Earth and Environmental Science. Volume 1129. https://dx.doi.org/10.1088/1755-1315/1129/1/012025

Gaia discovery. (2020). Talk to a Tree. https://www.gaiadiscovery.com/planet/talk-to-a-tree

Gulsrud, N.M. Hertzog, K. Shears,I. (2018) Innovative urban forestry governance in Melbourne?: Investigating "green placemaking" as a nature-based solution. Environmental Research. Volume 161. Pages 158-167. https://doi.org/10.1016/j.envres.2017.11.005

Latour, B. (1993). We Have Never Been Modern. Harvard University Press.

Maciunas, G. (1976) Flyer for Free Flux Tours, May 1, 3-16, 1976. MOMA. https://www.moma.org/collection/works/127693

Marina Abramović Institute. (2024). The Abramovic Method. https://www.mai.art/

MOMus - Macedonian Museum of Contemporary Art. (2023). Climate Parliament. Stories of the Non-Human. https://biennale8.gr/en/climate-parliament-stories-of-the-non-human/

Project for Public Spaces (2022) Placemaking: What If We Built Our Cities Around Places? https://www.pps.org/article/what-is-placemaking

Radboud Reflects (2021). The Parliament of Things | Philosopher Bruno Latour, lecture

[Video]. YouTube. https://youtu.be/zZF9gbQ7iCs?si=1f7s89giMPpTYRd9

SAVE TREES! - SOS ε τ α Δ Ε Ν Δ Ρ Α! (2023) https://www.facebook.com/groups/savetrees.gr/

Thibaud, J.P. (2020) Sensibilities to Lifeworlds. Proceedings of the 4th International Congress on Ambiances. Alloaesthesia: Senses, Inventions, Worlds. Réseau International Ambiances, e-conference, France. pp. 80-85, https://hal.science/hal-03220248/document

Tincher, D.N. (2021) Komorebi—Another Japanese Word that English Needs. Medium. https://diane-japan.medium.com/komorebi-another-japanese-word-that-english-needs-e0bab1ccbfac

Vardi, R. Berger-Tal, O. Roll,U. (2021) iNaturalist insights illuminate COVID-19 effects on large mammals in urban centers. Biological Conservation. Volume 25.

https://doi.org/10.1016/j.biocon.2021.108953

LO9

FICTION AS RESEARCH

CHAIRS Laurent Devisme
Laurent Matthey
Nicolas Tixier

The interest in using narrative to fabricate space has given rise to a number of works, but the question of fictional narrative in this context has been addressed less frequently. Undoubtedly this is because narrative has been used to collect information about a given place, to translate planning issues into a language comprehensible to all, and to democratise debates by opening them up to non-technical rhetorical styles. Narrative is, first and foremost, a testimony, an explanation by other means, the true word.

And yet, the places where we live, the urban materialities we experience, the ambiances that emerge at any given place and time, and the urban realities that generate our practices are both products and producers of fiction. In the wake of works on biographical illusion and critical thinking on literary or autobiographical auto-fiction, an emerging series of presumptions could lead us to think that we too are characters or fictional beings, whether as users of space, experts in urban design, or scholars of ambiances and urban situations.

Based on this premise, this session of the 5th International Congress on Ambiances wishes to address the research conducted on ambiances and urban situations through the prism of fiction in the following three ways:

Fiction as a means of inquiry. This involves cultural and artistic productions that can be used in research on ambiances. Literature, film, graphic novels, video games are specific vectors that have also become trusted sources for urban research. What do these fictions tell us about ambiances?

How does their status differ from other sources that scholars use? Are fictions testimonies like any other? Do they provide access to some sort of archive of representations of urban ambiances? At another level, are they a way of approaching the dimensions of the urban experience that exceed the situations we usually enunciate, like the perfumer in Patrick Süskind's Perfume, whose sensitive nose grants us access to urban ambiances that we do not detect in our ordinary practices?

Fiction as an analytical matrix. From the counterfactual narratives used in the new economic history to the methodological fictions set forth by Jablonka, fiction has been deployed to test hypothetical interpretations and subject analyses to verification. But these methodological fictions can also serve to explore possible worlds that could come about if the data were this or that. In such cases, fiction helps "model" reality to envision futures, thereby contributing to renewed exercises in entertaining prospects and thinking seriously about history as a field of possibilities. Will such efforts reflect how these analytical modes can be activated in research into ambiances or design practices?

Fiction as a mode of existence. Fiction also allows research to exist in a different way from the canonical regimes of scholarly writing. This is less a question of dwelling on the similarities between research and fiction, a comparative poetics of scholarly and fictional writing, than of looking at experiments in fictionalizing the products of research that have sought to make us experience the sensorial aspects of their investigations, to translate the ambiances of situations that have been studied and designed, and to feed our urban and geographical imaginations.

Whatever the path taken, we are looking for contributions that consider ambiances and urban situations on the basis of explicit disciplines while nevertheless remaining open to others, whether in the humanities (e.g. the subgenre of climate fiction), the arts, or the social sciences (such as the history of possibilities or retro-prospective studies, among others).

OBSESSION FOR INTIMACY, AVERSION TO PROMISCUITY: AN INVESTIGATION OF THE VISUAL REPRESENTATION OF PRIVACY IN "THE KISS" (1980)

OBSESSÃO PELA INTIMIDADE, AVERSÃO À PROMISCUIDADE: UMA INVESTIGAÇÃO DA REPRESENTAÇÃO VISUAL DE PRIVACIDADE EM "O BEIJO NO ASFALTO" (1980)

Carlos Eduardo Queiroz
carloseduardoqueiroz@id.uff.br
Universidade Federal Fluminense [Rio de Janeiro]

ABSTRACT

Within the vast panorama of Brazilian theater, few names resonate as powerfully as that of Nelson Rodrigues. This paper proposes to delve into "O beijo no asfalto" (1960), a play by Nelson Rodrigues later adapted into the homonymous film by Bruno Barreto (1980) – specifically the difference in spatial setting of the final scene in the two works. The research aims to understand the spatial micropolitics of promiscuity and its relationship to the organization of the intimate family territory based on Rolnik's theoretical framework. In contrast to Rolnik, the bibliographic review proposed here elucidates the methodological exercise of analyzing Rodrigues' characters based on Richard Sennet's notions of "public man" and "private man" in his seminal work "The Decline of the Public Man: The Tyrannies of Intimacy" (1977). The intersection of fictional narrative studies with environmental studies brings to light the conclusion that fiction is a broad field for understanding the public-private sphere of urban existence.

KEYWORDS: Public space; Family territory; Privacy; Promiscuity; Brazilian theater

RESUMO

No vasto panorama do teatro brasileiro, poucos nomes ressoam tão vigorosamente quanto o de Nelson Rodrigues. O presente trabalho propõe se debruçar sobre "O beijo no asfalto" (1960), dramaturgia de Nelson Rodrigues posteriormente adaptada para o cinema de forma homônima por Bruno Barreto (1980) – em especial a diferença de ambientação espacial da cena final nas duas obras. O objetivo da pesquisa é compreender a micropolítica espacial da promiscuidade e sua relação com a organização do território familiar íntimo a partir do referencial teórico de Rolnik. Em constraste à Rolnik, a revisão bibliográfica aqui proposta elucida o exercício metodológico de analisar os personagens de Rodrigues às noções de "homem público" e "homem privado" de Richard Sennet em sua obra seminal "O declínio do homem público: as tiranias da intimidade" (1977). O entrecruzamento dos estudos de narrativas ficcionais com os estudos de ambiência traz à evidência a conclusão de que a ficção é campo largo para uma compreensão da esfera público-privada do existir urbano.

PALAVRAS-CHAVE: Espaço público; Território familiar; Privacidade; Promiscuidade; Teatro brasileiro

1. INTRODUÇÃO

No vasto panorama do teatro brasileiro, poucos nomes ressoam tão vigorosamente quanto o de Nelson Rodrigues. Seus textos ficcionais narrativos, sempre localizados e tão intrinsecamente ligados ao espaço suburbano do Rio de Janeiro de meados do século XX, são campo fértil para um estudo que pretende compreender a materialidade urbana que experienciamos, as ambiências que dela emergem e a

realidade urbana de nossa práxis. O pesquisador de cinema brasileiro João Luiz Vieira, abordando Nelson Rodrigues, diz:

> Considerado um dos mais originais autores da moderna dramaturgia brasileira [...]. No texto, por exemplo, substituiu uma pesada sintaxe clássica portuguesa pela linguagem mais ágil de um cotidiano (sub)urbano carioca. Na temática, usualmente explorou situações consideradas escandalosas, como incesto e o homossexualismo (*sic*). (VIEIRA, J. L., 2000)

O presente trabalho propõe se debruçar sobre "O beijo no asfalto" (1960), dramaturgia de Nelson Rodrigues posteriormente adaptada para o cinema de forma homônima por Bruno Barreto (1980) – em especial a diferença de ambientação da cena final nas duas obras. Analisaremos em detalhes as implicações sociais da espacialidade que recebe o clímax da história no Item 2 do artigo aqui em questão.

O objetivo da pesquisa é compreender a micropolítica espacial da promiscuidade e sua relação com a organização do território familiar íntimo, conforme postulado pela pesquisadora de arquitetura e urbanismo Raquel Rolnik (1985). Rolnik nos servirá de arcabouço teórico para melhor compreender as decisões criativas de Barreto no Item 3 do documento.

Em constraste à Rolnik, a revisão bibliográfica aqui proposta elucida o exercício metodológico de analisar os personagens de Rodrigues às noções de "homem público" de Richard Sennett em sua obra seminal "O declínio do homem público: as tiranias da intimidade" (1977) no Item 4, continuação da pesquisa.

No entrecruzamento dos estudos de narrativas ficcionais com o campo da arquitetura e urbanismo e as ciências sociais, a análise proposta ao longo do texto presente da adaptação de "Beijo No Asfalto" pretende trazer à evidência a conclusão de que a ficção é campo largo para uma maior compreensão da esfera público-privada do existir urbano.

2. UM MERGULHO NO PROMÍSCUO E TRÁGICO TEATRO RODRIGUIANO[1]

O texto original dramatúrgico de "O beijo no asfalto" (1960) carrega o subtítulo descritivo "Tragédia carioca em três atos". Tal descrição vai de encontro à teoria da pesquisadora Elen de Medeiros, que investiga a formalidade da tragédia enquanto gênero e classifica toda a produção do dramaturgo entre a "tragédia rodriguiana", dada como clássica, a "comédia trágica" e a "tragédia urbana" (MEDEIROS, 2010). A peça aqui em análise é, segundo Medeiros (2010) em resposta a Magaldi (2010), tanto uma "comédia trágica" quanto uma "tragédia urbana".

---

1 Grafia à forma "rodriguiana" e não "rodrigueana" para empregá-la conforme Magaldi (2010).

"O beijo no asfalto" é também uma das obras – acompanhada das posteriores "Toda nudez será castigada" (1965) e "O casamento" (1966), o único romance do autor – que apresenta um Rodrigues completamente à vontade para expor seus pensamentos acerca da humanidade, das relações humanas (ARGOLO, 2007), da moralidade, dos comportamentos sexuais da classe média carioca e das instituições sociais de casamento e família. A narrativa da peça é resumida por Cardoso (2010) da forma que se segue:

> Versa sobre, um homem, – atropelado e agonizante – que pede um beijo a um transeunte ocasional. Arandir é esse transeunte que passa, acidentalmente, pelo local do atropelamento, e é abordado pelo moribundo. Ao atender o último desejo desse desconhecido, jamais poderia imaginar que um simples beijo se transformaria em tamanho escândalo, tornando-se manchete de um jornal sensacionalista. Desse acontecimento, aparentemente irrelevante, Amado Ribeiro, jornalista sem escrúpulos, e um delegado desonesto, o Cunha, subvertendo os fatos, tiram proveito, conferindo-lhes uma nova e preconceituosa versão, corroborada por testemunhas forjadas. A opinião pública acaba, como não poderia deixar de ser, por se voltar contra Arandir. Desacreditado, ele, um pacato bancário, vê seu mundo literalmente desmoronar, mergulhando em um inferno de calúnia e destruição. (CARDOSO, 2010)

"O beijo no asfalto", portanto, acompanha a jornada de Arandir para se defender das acusações de promiscuidade em praça pública feitas por Ribeiro e Cunha. Entrelaça também a esfera pública do ato misericordioso de Arandir com o caráter privado de sua relação com Selminha, esposa que se vê questionando a sexualidade – à época, diretamente atrelada à moralidade – de seu marido. Aprígio, pai de Selminha, estava presente no momento do beijo e enfrenta grande turbulência emocional para fazer as pazes com o ato público do genro.

O clímax da trama é quando o protagonista Arandir é assassinado por seu sogro Aprígio, que revela em cólera sua paixão secreta pelo genro, dispara uma arma de fogo em sua direção e em seguida beija seu cadáver. Na montagem teatral original, a tragédia ocorre dentro da intimidade de um quarto de um "hotel ordinário", segundo Rodrigues, perto do Largo de São Francisco da Prainha, zona portuária do Rio de Janeiro.

Na adaptação cinematográfica[2] da peça realizada por Bruno Barreto, no entanto, é tomada a decisão narrativa de arrancar os personagens da segurança e da privacidade do espaço reservado e deslocar toda a então-percebida promiscuidade do amor entre homens para o céu aberto e o titular "asfalto" da Rua do Riachuelo, na Lapa – movimentado bairro da Zona Central da cidade.

---

2 "O beijo no asfalto" (dir. Bruno Barreto, Brasil, 1980, 80 min.).

Imagem 1 – Plano final da adaptação cinematográfica de "O beijo no asfalto" (1980).

O titular "beijo no asfalto" que Rodrigues descreve, sendo assim, ganha dupla conotação na película adaptada por Barreto – representa o beijo que Arandir concede ao desconhecido que, em seu leito de morte, implora por um sopro de vida e, em concomitância, o beijo que Aprígio, em sua primeira e última demonstração do tórrido, proibido, promíscuo, homossexual e *quasi*-incestuoso amor que o consome, rouba do cadáver de Arandir (ver Imagem 1, acima).

Cabe aqui ressaltar que o filme de Bruno Barreto é uma de três adaptações cinematográficas da reverenciada peça de Rodrigues. "O beijo no asfalto" foi adaptada pela primeira vez por Flávio Tambellini[3] poucos anos após a primeira montagem da peça. Tambellini também alterou o icônico desfecho narrativo, porém de forma consideravelmente mais conservadora – após o disparo fatal de Aprígio, Arandir implora por um beijo francês, repetindo assim a súplica da vítima desconhecida que dá início à trama, e sua cunhada Selminha lhe concede o desejo final. A cena, no entanto, se passa dentro do "hotel ordinário" (1960) original. O teor homossexual, portanto, é diluído, afastando a película de Tambellini do recorte promíscuo[4] e público-privado que aqui nos interessa.

---

3 "O beijo" (dir. Flávio Tambellini, Brasil, 1965, 83 min.).

4 O termo "promíscuo" aqui em uso se refere à homofóbica e desatualizada compreensão moralista que permeia a contemporaneidade da peça num Rio de Janeiro do começo dos anos 1960.

Já no século XXI, o ator Murilo Benício faz sua estreia na direção cinematográfica com um longa-metragem docu-dramático[5] adaptado da peça. As manipulações de Benício para com o texto de Rodrigues não são de cunho narrativo e sim performático. O filme entremeia encenações do texto original em palcos de teatros e estúdios de cinema filmados com imagens documentais do processo de realização do filme. O final, no entanto, segue intacto.

Em se tratando de um recorte temporal, ficam claros os paralelos entre a abordagem de cada adaptação e o período de sua realização. A escandalizante peça de Rodrigues é atenuada para o público da sala de cinema de meados dos anos 1960 e respeitada, reverenciada, homenageada por um realizador nos anos 2010.

Barreto, em 1980, caminha na direção contrária, acrescentando uma camada de significação com seu protesto visual. A obra, que sempre tratou de promiscuidade e sua concepção pública – cabe recapitular o fio narrativo que Cardoso (2010) puxa ao ressaltar que o incidente incitante da peça não é o beijo e sim a exploração sensacionalista do jornalista Amado Ribeiro e do policial Cunha, forjando uma opinião popular sobre a suposta libertinagem de um homem casado que beija outro homem – abandona o caráter privado de tal promiscuidade (ROLNIK, 1985) e assume a fusão do "homem privado" com o "homem público" (Sennett, 1977).

No próximo item do presente artigo, traremos à cena a teoria de Raquel Rolnik , acima citada, para compreender o conceito de "promiscuidade privada" (1985) pelo prisma da investigação do espaço ficcional.

3. OBSESSÃO PELA INTIMIDADE E AVERSÃO À PROMISCUIDADE

A pesquisadora de arquitetura e urbanismo Raquel Rolnik, em seu artigo "Lar, doce lar (a história de uma formula arquitetônica)" (1985), postula a existência de "uma nova micropolítica familiar calcada na segregação e na obsessão pela intimidade", micropolítica esta onde "nenhuma promiscuidade é permitida" (ROLNIK, 1985).

A dramaturgia rodriguiana e as liberdades tomadas em sua transferência de suporte nos serão extremamente caras neste momento para melhor compreender a aplicação dos conceitos de Rolnik quando aplicadas à ambientação da rua.

Rolnik estuda o caminho da sociedade em direção ao modelo burguês de habitação que invalida a rua como espaço de convivência. A casa, ambiente isolado e privado, se distancia de um território de trocas cotidianas e espaço de socialização e se torna um ambiente organizado como território, recheado de micropolíticas espaciais (1985). À rua, portanto, fica relegada toda a dissidência social, toda a anormalidade. Rolnik diz:

---

5 "O beijo no asfalto" (dir. Murilo Benício, 2018, Brasil, 98 min.).

> No centro desta reformulação programática do território familiar está a questão da promiscuidade. A rua é o lugar da mistura por excelência: a burguesia dela se retira e a máquina infernal da indústria a converte em via de circulação. A sala de visitas recebe um público não promíscuo. Na região íntima, os dormitórios e suítes resguardam intimidades individuais ou do casal – nenhuma promiscuidade é permitida. (ROLNIK, 1985)

É, portanto, dentro de um espaço isolado, trancado e inacessível que a emoção carnal humana tem direito de existir na sociedade burguesa. A rua, polimorfa (ROLNIK, 1985) e heterogênea, definha como ambiente de convivência e passa a representar somente o interesse do capital e todo tipo de assalto moral.

É neste ponto que a ficção aparece, com sua exuberante forma de representar o real a partir do que é inventado, e nos proporciona mais profunda compreensão da ambiência do espaço público. Rodrigues, em seu texto original, ironiza a classe média que se escandaliza com a promiscuidade pública e se esconde entre quatro paredes para realizar seus desejos carnais, seja dentro ou fora do núcleo familiar. A peça, que precede a teoria de Rolnik em mais de duas décadas, mostra a partir do ácido comentário rodriguiano o que Rolnik viria a descrever posteriormente como "obsessão pela intimidade" (1985) e o comportamento pequeno-burguês de ser totalmente avesso à promiscuidade vista, sabida, declarada.

O cineasta Bruno Barreto, ao acrescentar mais um beijo homossexual à esfera pública, traz à tona toda a carga política da ambiência da rua. Ao transformar a existência de Arandir enquanto homem público, Amado Ribeiro e Cunha capitalizam em cima dos medos da sociedade que se subscreve ao modelo que Rolnik explicita. No entanto, nos interessa aqui compreender a jornada de Aprígio de homem privado a homem público na ambientação de Barreto. Para tal, nos apoiaremos nos conceitos de Richard Sennett no próximo item da pesquisa.

4. ARANDIR E APRÍGIO COMO HOMENS PÚBLICOS

A ficção rodriguiana é um retrato da privacidade humana e de suas mudanças com o desenvolvimento do século XX. Para fomentar teoricamente a discussão aqui em cena, importaremos o "homem público" de Richard Sennett, renomado sociólogo estadunidense que em "O declínio do homem público: as tiranias da intimidade" (1977) investigou o ser e existir sociopolítico do homem social.

O livro examina como a cultura contemporânea promove uma obsessão pela intimidade, levando à falta de fronteiras entre o público e o privado e à perda da noção de discrição e discute como a erosão do espaço público, onde as pessoas de diferentes origens interagem, pode levar ao enfraquecimento da democracia e à fragmentação da sociedade.

O textual de Sennett é amigável à Rolnik por suas visões socioeconômicas coligadas. Rolnik, como vimos no item anterior, critica a reformulação burguesa do espaço públicoprivado e as interações sociais mediadas pela segmentação de classes. Sennett, como diz o texto, se declara politicamente alinhado à esquerda – "tanto eu, como muitos outros da Nova Esquerda" (SENNETT, 1977). A visão de *new left review* dá a Sennett uma interpretação de classe, cultural e econômica (BOTTON, 2010). Botton, sobre o livro de Sennett, diz:

> Sennett tem um objetivo muito claro e declarado ao levantar suas teses: apontar contra a personalização da política, a intimidade enquanto mestra da vida e o retraimento de uma cultura cosmopolita em micro-comunidades bairristas. Com tal objetivo, o autor critica e propõe alternativas a muitas das relações sociais humanas adotadas em nosso século. (BOTTON, 2010).

> Sennett afirma que a morte do espaço público se dá pelo avanço da cultura do narcisismo, da hipervalorização da intimidade, da privacidade, do retraimento e do silêncio. O "homem público", portanto, é um agente ator. A recuperação do *theatrum mundi* alinhado à Rousseau se dá na relação teatro-sociedade ou palco-rua (DOS SANTOS, 1994).

É possível, partindo do arcabouço teórico acima descrito, analisar a materialidade urbana e a ambientação da rua na ficção fílmico-rodriguiana frente a Sennett. Se o espaço público, esvaziado pela tirania da intimidade, torna-se palco-rua para o homem-ator, a performática de Arandir como "homem público" sennettiano ao beijar o atropelado na movimentada Praça da Bandeira é perfeitamente dotada de choque, escândalo, sensacionalismo e abertura para repercussão nas veias da sociedade burguesa.

O contrário poderia ser dito de Aprígio quando, protegido pela tirania da intimidade e longe da recriminação pública de sua violência libidinosa, assassina e subsequentemente declara seu amor por Arandir – na peça de Rodrigues. Barreto, no entanto, questiona o homem-ator de Sennett ao transferir a cólera, a impulsividade, a homossexualidade, o tesão e o crime passional de Aprígio para o asfalto da Lapa. É Aprígio um "homem público" em um cenário onde assassina seu amado em praça pública? E quando beija o flácido cadáver de Arandir?

A afirmação aqui defendida é de que Barreto se vale da ambientação e ambiência da rua para questionar seu papel de palco. A criação de Barreto acrescenta ao amargurado comentário social de Rodrigues uma camada que se posiciona além do performático e que, acima de tudo, retoma a rua como um espaço social. Aprígio vive sua verdade ao aberto, ao vento, e é capaz de repetir inúmeras vezes o nome de seu amado até que a sociedade burguesa veja e ouça seu clamor.

Arandir é, ao longo da trama, exposto e questionado por sua atuação na esfera pública. Em suma, o "homem público" de Arandir encontra no beijo de Barreto protagonizado por Aprígio um contraponto. É na dissidência sexual de Aprígio que Barreto toma de assalto o existir em público, anteriormente decretado morto por Sennett e Rolnik.

5. CONCLUSÃO

Primeiramente, a análise aprofundada de "O beijo no asfalto" em suas quatro versões – peça original e três películas adaptadas – nos permitiu compreender as contradições sociais burguesas do existir urbano que Nelson Rodrigues, em seu sarcasmo, pretendeu expor e ironizar.

Em segundo lugar, Raquel Rolnik, quando sobreposta à ficção, é capaz de engrandecer o comentário rodriguiano ao elucidar o público acerca das origens da obsessão pela privacidade e aversão à promiscuidade da classe média carioca que Rodrigues tanto despreza.

Por fim, o existir enquanto performance postulado por Richard Sennett nos permitiu estimar o tamanho do impacto da alteração narrativa de Bruno Barreto quando substitui a ambiência de um "quarto de hotel ordinário" (1960) por uma das principais ruas do Rio de Janeiro dos anos 1960.

Torna-se possível, portanto, concluir que a aversão à promiscuidade – e a própria noção de promiscuidade – se transformou desde a escrita da peça e da publicação dos textos originais de Rolnik e Sennett. Ao utilizar a narrativa ficcional como uma lente para investigar o espaço urbano e as relações sociais que o permeiam, podemos desvelar as complexas interações entre indivíduos e ambiente, revelando tanto os conflitos internos dos personagens quanto as dinâmicas sociais mais amplas que moldam suas vidas.

6. REFERÊNCIAS BIBLIOGRÁFICAS

ARGOLO, L. de T. O teatro de Nelson Rodrigues: Itinerários de uma comunicação artística. Dissertação apresentada ao Departamento de Sociologia da Universidade de Brasília/UnB como parte dos requisitos para a obtenção do título de Mestre. Brasília, março de 2007

BEIJO no asfalto, O. 1980. Direção de Bruno Barreto. Brasil. 80 minutos. BEIJO, O. 1960. Direção de Flávio Tambellini. Brasil. 90 minutos.

BEIJO no asfalto, O. 2018. Direção de Murilo Benício. Brasil. 98 minutos

BOTTON, F. B. Antíteses, vol. 3, n. 5, jan.-jun. de 2010, pp. 623-633

CARDOSO, J. Nelson Rodrigues: da palavra à imagem. INTERCOM, 2010. São Paulo. R.

História, São Paulo, D. 129-131, p. 271-321, ago.-dez./93 a ago.-dez./94.

CASAMENTO, O. 1976. Direção de Arnaldo Jabor. 110 minutos.

DE MEDEIROS, E. A concepção do trágico na obra de Nelson Rodrigues. Tese apresentada ao Departamento de Teoria e História Literária do Instituto de Estudos da Linguagem – UNICAMP – como requisito parcial para obtenção do título de doutor em Letras. Orientadora: Vilma Sant'Anna Arêas, Unicamp, Instituto de Estudos da Linguagem 2010

MAGALDI, S. Nelson Rodrigues: dramaturgia e encenaçõe. São Paulo: Perspectiva, 2010.

RODRIGUES, N. Beijo no asfalto. Editora Nova Fronteira, 1960.

ROLNIK. R.. Lar, doce Lar (a história de uma formula arquitetônica). AU. Arquitetura e Urbanismo. São Paulo, v. ano 1. n. 3. 1985.

SENNETT, R. O Declínio do Homem Público: as tiranias da intimidade. Tradução: Lygia Araújo Watanabe. São Paulo: Companhia das Letras, 1999.

TODA nudez será castigada. 1973. Direção de Arnaldo Jabor. 103 minutos.

VIEIRA, J. L. "RODRIGUES, Nelson" in "Enciclopédia do cinema brasileiro". Org. RAMOS, F. P., MIRANDA, L. F. Editora Senac SP, 2000.

L09

DESCRIBING A WORLD THROUGH A ROOM – UTOPIAN VISIONS ON THE SMALL SCALE

DESCREVER UM MUNDO ATRAVÉS DE UMA SALA – VISÕES UTÓPICAS EM PEQUENA ESCALA

Jana Culek, PhD
Independent researcher
Studio Fabula (Zagreb, HR) / Urban Studies, University of Rijeka (Rijeka, HR)
janaculek@studiofabula.eu

ABSTRACT

Utopian works mostly aim to depict entire new worlds and societies, often gearing their descriptions on the more functional and programmatic aspects of space. However, with the changes which occur in the utopian genre in the 20th century, a more narrative and character-based approach is developed which also begins to consider and expand upon the daily lives of specific utopian individuals. This change has allowed the readers to immerse themselves deeper into the utopian imaginaries, by providing a more relatable lived experience through the depictions on the small scale. This paper examines three pairs of case studies, namely Ebenezer Howard's *To-Morrow: A Peaceful Path to Real Reform*, H.G. Wells' *The Time Machine,* Ludwig Hilberseimer's *Metropolisarchitecture*, Yevgeny Zamyatin's *We*, Superstudio's *12 Ideal Cities* and Ursula K. Le Guin's *The Dispossessed*. But instead of focusing on the totality of the imagined worlds – the large scale - it will focus on the small scale, showing how the rooms and homes of the various utopian inhabitants were imagined and depicted, and consequently, how these depictions helped build up more immersive and vibrant utopian narratives.

KEYWORDS: utopian fiction. Describing ambients. Architectural imagination. Comparative analysis.

RESUMO

As obras utópicas visam principalmente retratar mundos e sociedades totalmente novos, orientando muitas vezes as suas descrições para os aspetos mais funcionais e programáticos do espaço. No entanto, com as mudanças que ocorrem no género utópico no século XX, desenvolve-se uma abordagem mais narrativa e baseada em personagens, que também começa a considerar e a expandir a vida quotidiana de indivíduos utópicos específicos. Esta mudança permitiu aos leitores mergulhar mais profundamente nos imaginários utópicos, proporcionando uma experiência vivida mais relacionável através das representações em pequena escala. Este artigo examina três pares de estudos de caso, nomeadamente To-Morrow: A Peaceful Path to Real Reform de Ebenezer Howard, The Time Machine de H.G. Wells, Metropolisarchitecture de Ludwig Hilberseimer, We, de Yevgeny Zamyatin, 12 Ideal Cities de Superstudio e The Dispossessed de Ursula K. Le Guin. Mas em vez de se focar na totalidade dos mundos imaginados – a grande escala – irá focar-se na pequena escala, mostrando como os quartos e as casas dos vários habitantes utópicos foram imaginados e representados e, consequentemente, como estas representações ajudaram a construir narrativas utópicas mais imersivas e vibrantes.

PALAVRAS-CHAVE: ficção utópica. Descrever ambientes. Imaginação arquitectónica. Análise comparativa.

1. INTRODUCTION – OBSERVING ARCHITECTURAL AND LITERARY UTOPIAS

Visions of alternative futures have been a topic of numerous artistic fields and disciplines. Often more produced in periods of crisis or change, they have provided us with both critical reflections on the specific periods from which they emerged, as well as either an alleviating vision of a better future, or a warning of what could come to pass if things were allowed to escalate. The main aim of these visions, however, especially those created within the architectural field up until the mid-20th century, is mostly geared towards constructing entire new worlds, cities, and ways of life by focusing mostly on the large scale – on proportions of volumes, functions, on routes and connections, on the plan. And while these visions – most notably in the form of utopias – aim to depict fictional worlds which are different and/or better than our own, they tend to lack detailed (or sometimes any) depictions of how they are actually lived by their imagined inhabitants. The narrative often rests on the large scale, most commonly providing merely a depiction of the society *in toto*, and rarely venturing into the narratives and lived spaces of the utopian individuals. Literary utopias on the other hand, have done the exact opposite – they slowly built up the scaffolding of fictional worlds specifically through the eyes and experiences of its inhabitants. Often vividly describing lived spaces, most notably the various rooms and homes inhabited by their protagonists, they go into great architectural and ambient detail, touching upon not only the physical surroundings but also the tactile, visual, and olfactory experiences of the characters occupying these spaces.

Drawing from a larger comparative research (Culek, 2023) which delved into the topic of architectural and literary utopias this paper will provide insight through examples into the methods used by a selection of 20th century architects and literary writers to depict their fictional utopian works. By exploring through text and recreating through drawing locations such as the home of Wells' Time Traveler or the Eloi palaces, Hilberseimer's metropolitan apartment, the glass rooms of Zamyatin's Numbers, the numerous cells and caskets of Superstudio, or the radically opposite depictions of Le Guin's Urras and Anarres, the paper will focus specifically on the small scale, examining how the authors developed the lived spaces - the various rooms and homes of the utopian inhabitants – and how, in turn, these depictions helped to create more immersive and vibrant utopian narratives. It will also elaborate on some of the main methodological differences observed between the architectural and literary example – specifically focusing on the different textual and visual narrative methods used - and how these differences effect the potential of imagining the lived experience of the various fictional worlds. The paper will also show how the fictional aspect of the utopian narratives allowed for a critical and speculative reflection on the authors' respective historical contexts by imagining, testing, and evoking ambiances different to their lived ones – from the perspective of a room.

2. JUXTAPOSING REALITIES
2.1 The Slums and The Palaces

At the turn of the 20th century two English authors – stenographer-turned-urban-planner Ebenezer Howard, and writer and social critic Herbert Georg Wells write stories about two different futures, creating what are to become two canonical works of each respective field. Both reflecting on the societal and spatial impacts of industrialization and the growing divide between the working class and the bourgeoise the authors create comprehensive alternative worlds: Howard's *To-Morrow: A Peaceful Path to Real Reform* (1898) proposing the Garden City as a replicable and repetitive spatial model which is to replace or restructure all existing urban forms, and Wells' *The Time Machine* (1895) depicting a distant future in which the social and spatial gaps of the time have been exacerbated to the level of producing two distinct species of Eloi and Morlocks, each living in their own, seemingly isolated environment. Both Howard and Wells use the socio-spatial dichotomies of their time as a way of structuring their narratives and imagined worlds. While these are most prominently used on the large one where they describe the differences between the authors' own respective presents and their envisioned alternatives, the use of dichotomies also becomes a tool for depicting the smaller scale spaces within the narratives. However, the ways in which dichotomies are employed by the two authors varies.

Howard's work begins with "The Three Magnets" diagram which in one image sums up both his proposal and his grievances toward the urban and rural conditions of his time. He builds his narrative through a constant juxtaposition of the current condition with his own alternative, copiously using existing text by his contemporary authors, and through them painting a vivid image of the social and spatial issues of the working class. Howard never directly describes the spatial ambiances he envisions for the new dwellers of the Garden City, but he is very specific throughout his work of what they are not to be. By using both his own words, and borrowing those of others[1], he paints a vivid image of the late 19th century "fearful" (Howard 2003, 8), "old, crowded, chaotic"(Howard 2003, 89), "wretched" (Howard 2003, 147), "squalid" (Howard 2003, 151), slums and tenement buildings, calling for the "destruction of their virus, [which is] as feasible as the drainage of a swamp, and the total dissipation of its miasmas"(Howard 2003, 63, citing Albert Shaw). Through consistently referring to the negative aspects of slum housing, he creates an imaginable yet off-putting scene which he then counters with his proposed Garden City model, providing the reader only with the sizes of the plots stating that they average at "20 feet by 130 feet, and accommodating, on average, 5 ½ persons to each lot" (Howard 2003, 56).

---

1 Howard continuously refers to different texts, beginning each chapter with a quote – sometimes from literary works such as Victor Hugo's Le Miserables – works which have inspired him like B. W. Richardson's Hygeia; or, a City of Health (Howard, 2003, 42), or with segments of politically geared texts such as Marshall's "The Housing of the London Poor" (Howard, 2003, 54).

Figure 1. 19th Century slum vs Garden City street, interpretative drawings
Source: Created by author (2022)

Wells uses a similar approach to Howards, but rather than drawing direct correlations to his historical context, he embeds them in the narrative itself through the character of the Time Traveler, and spatially through the descriptions of his house. Describing it as being located in Richmond, London (Wells, 2018, 11), he provides us with much more performative detail portraying the ambiance of the house. Noting the various objects of everyday use such as the "small octagonal tables scattered about the room"(Wells, 2018, 8), the chairs which "embraced and caressed [the visitors] rather than submitted to be sat upon"(Wells, 2018, 5), as well as depicting the atmosphere through the lighting which was emitted from "perhaps a dozen candles about, two in brass candlesticks upon the mantel and several in sconces, so that the room was brilliantly illuminated"(Wells, 2018, 8).

Figure 2. Depiction of the Time Traveler's house reconstructed from Wells' descriptions
Source: Created by author (2023)

Juxtaposed to the depictions of the Time Traveler's house, Wells describes the palaces inhabited by the Eloi – a docile and childlike descendant of the bourgeois class. They are imagined as a "vast grey edifice", "of colossal dimensions", but also

"badly broken and weather worn" (Wells, 2018, 29). Here again Wells continues to provide a more atmospheric description of the space, noting that the roof of the hall "was in shadow, and the windows, partially glazed with colored glass and partially unglazed, admitted a tempered light"(Wells, 2018, 20). He continues to write that the floor, which was "made up of huge blocks of some very hard white metal" was "so much worn […] by the going to and fro of past generations, as to be deeply channeled along the more frequented ways" (Wells, 2018, 20). He describes the Eloi within this space as being seated upon cushions scattered at the "innumerable tables made of slabs of polished stone", eating "the fruit with their hands, flinging peel and stalks […] into the round openings in the sides of the tables"(Wells, 2018, 21).
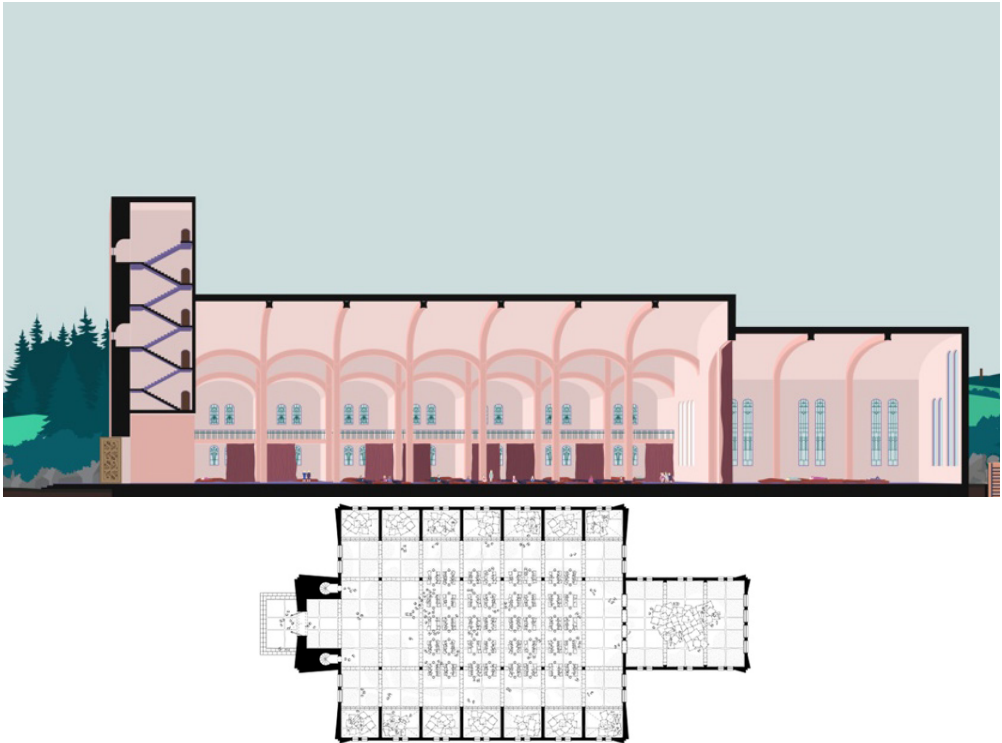
Figure 3. Depiction of the Eloi palaces reconstructed from Wells' descriptions
Source: Created by author (2023)

What is curious however, is that although Wells envisions an entire additional group of beings inhabiting the future world, namely the Morlocks which are described as the descendants of the working class, the depictions of the spaces they inhabit are much more scarce, less vivid, and more related to the large scale. Introduced as tunnel system which were "the habitat of the new race", these spaces are mostly described only through "the presence of ventilating-shafts and wells along the hill slopes – everywhere" (Wells, 2018, 36) which serve as a contact zone to the outside world.

2.2 The Cell and the Organism

With the development of industrialized and globalized mass production and the capitalist economy the first part of the 20th century witnesses large numbers of people relocating from rural to urban areas in order to find work. Leaving their small village communities, they encountered the vast scale of the metropolis where the feeling of belonging and purpose was replaced with the feeling of isolation and alienation from both their fellow citizens and the products of their labour. German urbanist Ludwig Hilberseimer's and Russian writer Yevgeny Zamyatin's both respond to this newly created urban condition by creating works which examine the implications of industrial mass production, the use of new materials and structural systems, and the development of modern urban planning.

Both Hilberseimer's *Metropolisarchitecture* (1927) and Zamyatin's *We* (1921) structure their imagined worlds in a similar way – through a mereological system (Köhler, 2016) which takes the living unit as a base for constructing the entire city. In Hilberseimer's case, this unit is the urban apartment. While unlike Howard, Hilberseimer does indeed provide specific plans for the apartments he envisions, they are described within the text not through their specific spatial characteristics, but rather with what they afford. He notes that "a comfortable and practical dwelling should meet all of its inhabitant's needs while utilizing the minimum amount of space", with "the size and number of rooms [dependent] on which demands must absolutely be met". However, "rooms for living, eating, sleeping, washing and cooking" (Hilberseimer, 2012, 142) were considered necessary.

Following the logic of standardization and mass production, he places a particular importance on the functionality of the interior finishings of the apartments, arguing that, in order to make the best possible use of space within the apartment, as much furniture as possible should be designed as fixed furniture. Noting that "the best apartment is without a doubt one that contains all that is necessary, fulfils all needs, and at the same time requires the least amount of labour", he believed that "the comfort of living [...] depend[ed] less on the size than on the functionality of the rooms in an apartment" (Hilberseimer, 2012, 144).

Figure 4. Depiction of Hilberseimer's metropolitan apartment, reconstructed from text and drawings
Source: Created by author (2022)

Although Hilberseimer does provide a detailed depiction of his envisioned small-scale units, as well as some of the main ideas driving the designs, he does not engage in imagining the day-to-day use of his units and the lives of the inhabitants in them. Akin to Howard, he relies on a series of real-world references against which he contrasts his own proposal, allowing the reader to create a more elaborate imagining of the spaces.

Zamyatin, on the other hand, even more so than Wells, develops the events and atmospheres occurring within the living units of his imagined world. Through the journal entries of his protagonist D-503, a "number" inhabiting the totalitarian One State, Zamyatin describes his repetitive yet intriguing daily life. While the dimensions of the room itself are not provided within the book's narrative, it can be approximated from the descriptions of the objects which are found within it and their spatial relationship. Bounded with glass walls, floors and ceilings, each room "is exactly the same […]: the Tablet, the glass of the chairs, the desk, the cupboard, the bed." (Zamyatin, 2009, 42). It is entered from a joined corridor, through a glass door with the inhabitant's number stated on a plate. As all other elements of the One State's built environment, the housing units are constructed out of transparent glass. While the use of glass has a strong ideological reasoning, it also creates unique spatial atmospheres which are described throughout the book, especially in how they are changed with the weather conditions – "between our walls, transparent, as though woven out of sparkling air, we live always in view, eternally washed in light" (Zamyatin, 2009, 33); "Sunshine coming through the ceiling, the walls; sunshine from above, from the sides, reflected – from below." (Zamyatin, 2009, 52).
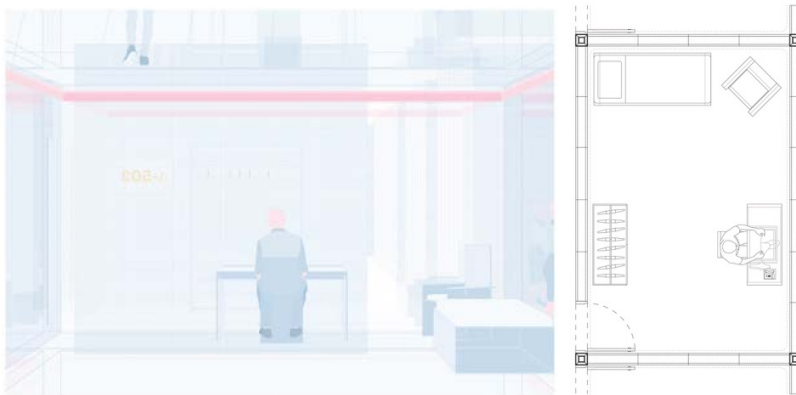
Figure 5. Depiction of a room inhabited by Numbers, reconstructed from Zamyatin's descriptions
Source: Created by author (2022)

To create a juxtaposition of his imagined world to his historical reality, Zamyatin – as Wells, uses another small-scale element which he ingrains within the plot itself. The Ancient House, located at the very edge of the dome-enclosed city state is described as a "strange, fragile, blind structure [which] is completely enclosed in a glass shell" to preserve it from falling "apart a long time ago" (Zamyatin, 2009, 25). It is employed

as both a spatial and ideological opposite of all other structures found within the narrative, evoking with its descriptions a completely different set of ambiances through its "gloomy, disorderly" apartments, its "jumble of colors and forms", "dark blue walls; red, green, and orange bindings of ancient books; yellow bronze chandeliers, a statue of Buddha; furniture built along lines convulsed in epilepsy; incapable of being fitted into an equation"(Zamyatin, 2009, 26).

Comparing the structure and materiality of the Ancient House Δ-503 notes: "Our present-day glass – beautiful, transparent, eternal – was there only in the form of pitiful, fragile little square windows" (Zamyatin, 2009, 28). By introducing the Ancient House into the narrative, Zamyatin ties human characteristics and behaviour directly to the architectural forms they inhabit, and the affordances of the building materials used. While surrounded with transparent boundaries, the Numbers are not only complacent, but also feel themselves to be a part of the larger whole. They are in line with the doctrines of the One State. Enclosure and lack of transparency, however, changes their outlook and behaviour completely. Confronted with the possibility of privacy, the Numbers develop their individuality. Starting to think for themselves and evaluating the logic which they were brought into believing, they rebel.
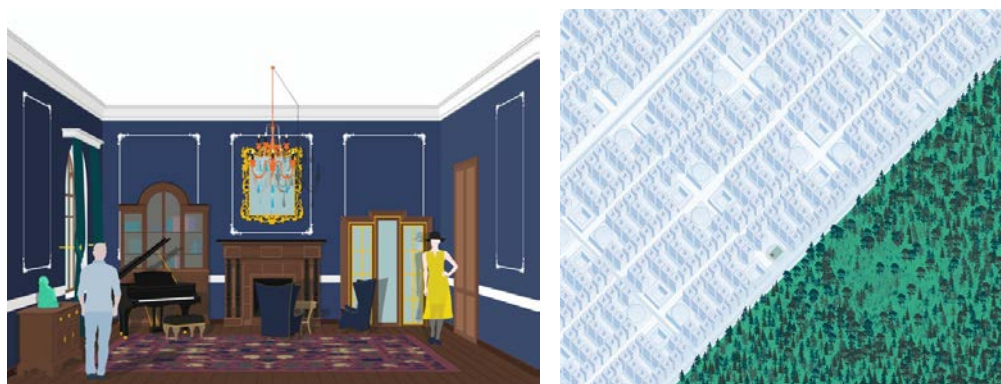
Figure 6. Depiction of the interior of the Ancient House and its location at the border of the One State, reconstructed from Zamyatin's descriptions;
Source: Created by author (2022)

2.3 Parallel Realities

Following the period directly after the Second World War, in which most of the focus and energy was spent on rebuilding and reconstructing on both the social and spatial level, the works of the sixties and seventies begin to develop a new rigour and excitement, as well as scepticism for their place and time. The architecture of the sixties can therefore be seen as a transitional step between modernism –signified by its grand narratives, universal truths, functionalist planning, and an overall top-down, large scale approach to society as well as the built environment; and postmodernism – which was marked by "fragmentation, disorientation, historical citation, [and] signification without end" (Martin, 2010, xviii).

These societal changes also made way for changes within the utopian genre itself, specifically in the ways in which the narratives were structured. Moving away from totalizing and all-encompassing worlds to a series of parallel and sometimes interconnected narratives, the utopias of the second half of the 20th century begin to develop a different relationship to their historical realities. Both the works of Superstudio and Ursula Le Guin are indicative of these changes. Neither the *12 Ideal Cities* (1971) nor *The Dispossessed* (1972) provide a direct opposition to the "real world" in their narratives, only the depictions of various utopian conditions which are structured through mirroring, dissecting, reducing, assembling, and reassembling existing historical forms and conditions.

One of the main topics which Superstudio addresses throughout the majority of their *12 Ideal Cities* is the oversaturation with commodities and their influence on the human subject. They oppose this condition through completely removing any objects of daily use from their envisioned environments. They use several methods to achieve this within their small scale units. In the first group of rooms, the individual habitats sustain the lives of their humans through means of technology. The cells are equipped with computer systems, located either in the ceilings, the walls, furniture, or the humans themselves, supporting their every need, but also controlling their actions. This is done through seats which are "capable of moulding perfectly to the human body, even enclosing it completely", while having "incorporated in [it] an apparatus for satisfying all physiological needs" (Superstudio, 1972, 737), or by numerous other machines which sustain suspended human lives such as "spherical cavit[ies] filled with liquid which supports a brain[s]" Superstudio, 1972, 738), or spaceship caskets in which the crew "sleep from birth to death, enclosed in their cabins and enveloped in the cables and pipelines which regulate their existence" (Superstudio, 1972, 738).
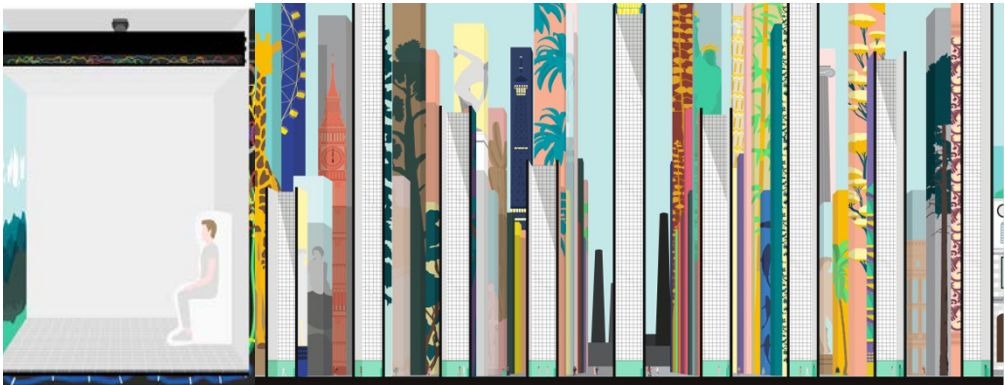
Figure 7. Depiction of the cells and houses of Superstudio's 12 Ideal Cities, reconstructed based on drawings and text
Source: Created by author (2022)

The second group of rooms, however, use an opposite approach where the inhabitants are controlled by the multitude of consumer goods located in their surroundings, by creating a continuous impetus to either possess more or possess better than those

around them. For instance, the houses of the "Eleventh City", all situated on identical plots of six by six meters, occupying a ground surface of five by five meters are described as being constructed of reinforced concrete upon which "metal frames bearing silk-screened panels depicting any subject in bright colours" (Superstudio, 1972, 742) are projected upwards *ad infinitum*. Described to work in factories located on the rim of the city, which produce the embellishment materials, the inhabitants – being fed and watered through taps in their interior - spend all of their remuneration on continuously buying more materials with the aim of "possessing the most beautiful house" (Superstudio, 1972, 742), which is defined as the sole goal of their existence.

This condition of excess is also visible in the Urrasti spaces described in *The Dispossessed*, drawing a direct parallel with the authors' historical contexts of a developed capitalist society, and as a critical reflection to the dependence we have towards our objects and possessions. Following the life of the protagonist Shevek, the novel depicts two main and opposing worlds – that of the plentiful, green and "propertarian" Urras, and the scarce, barren, and "anarcho-syndicalist" Anarres. Originating from the latter, the main character is used to a life without personal property, which is vividly brought forth through the descriptions of the rooms he inhabits on his home planet. Room 46 is described as "a small single, empty, dimly illuminated by the light of the corridor". It is equipped with "two chairs, a desk, a well-used side rule, a few books, and, folded neatly on the bed platform, a hand-woven orange blanket" (Le Guin, 2011, 102). The only items which the character surrounds himself with are those with a practical and productive purpose.

However, the spaces on the planet of Urras, which he inhabits during his visit, are in stark opposition to this. Unlike the rooms he inhabited on Anarres, the suite on Urras consisted of more than one room. Aside from his bedroom, he had a private bathroom, as well as a common room in which he could receive guests and work and which was "...a very beautiful common room, with one whole wall a series of windows, each divided by a slender column that rose treelike to form a double arch at the top. The floor was carpeted with crimson, and at the far end of the room a fire burned in an open hearth" (Le Guin, 2011, 23). The bedroom contained "a massive bed on four legs, with a mattress far softer than that of the bunk on the Mindful" on top of which "complex bedclothes, some silky and some warm and thick" were placed along with "a lot of pillows like cumulus clouds" (Le Guin, 2011, 64). Aside from the bed, it contained "a chest of drawers of beautifully carved and polished wood, and a closet big enough to hold the clothing of a ten-man dormitory", and its floor was finished with "springy carpeting" (Le Guin, 2011, 64).
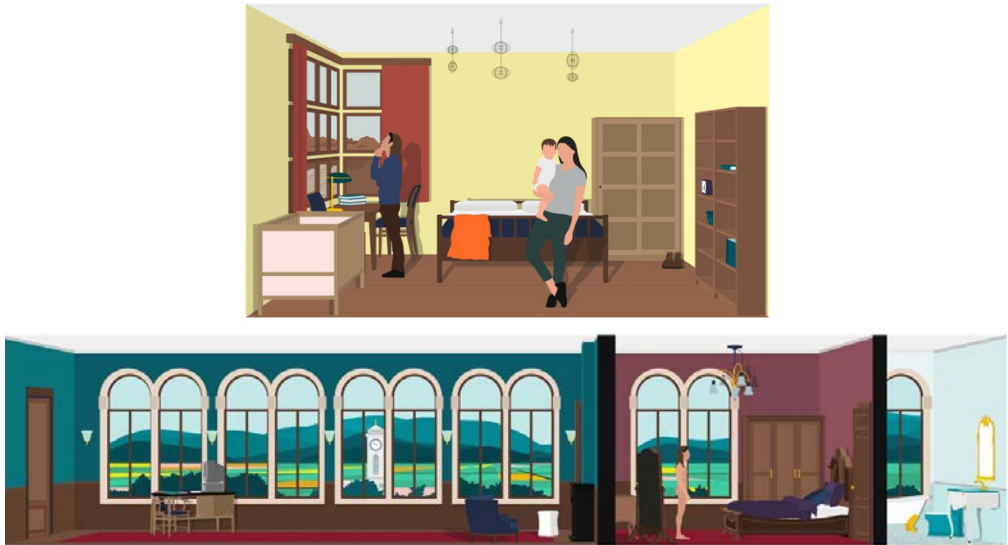
Figure 8. Depiction of the Anarresti and Urrasti rooms, reconstructed based on Le Guin's descriptions
Source: Created by author (2022)

The radical differences presented in the spaces of the two worlds Le Guin envisions, and which also exist to some extent in the cities of Superstudio, serve as a continuous critique of the authors' context. While in the previous examples discussed in this paper the dichotomies were created through a continuous reference to the authors' reality, here the context becomes an element of the fictional narrative which is in some respects both exaggerated and reduced. But while in the first group of interiors project either physical or psychological control over their inhabitants through their asceticism, with the presence of objects reduced only to those which are of outmost importance for the survival of their human inhabitants, in the second group, it is the objects themselves whose amounts and beauty direct the lives of their inhabitants. Although this condition is perhaps much more evident in the example of Superstudio than that of Le Guin, it is nevertheless present in both.

3. CONCLUSION – BUILDING A WORLD THROUGH A ROOM

Utopia, as a method of envisioning possible futures, is seen as a specific form of fiction due to its continuous and strong correlation to the reality from which it emerges. Regardless of the period in which it was created or the field from which it has emerged, the narrative of utopia is always a balance between what is and what could be. This relationship that utopian nurtures with its historical present is what aids the readers in envisioning the imagined spaces. The continuous juxtaposition and addition or removal of elements from our reality to construct the utopia allows us more easily submerge our imagination into the fictional worlds portrayed by the

utopian authors. While the systemic and functional changes brought forth by utopian authors are indeed imagined mostly on the large scale, as seen from the examples presented in this paper, their implication on the everyday lives of the utopian inhabitants are perhaps most visible and imaginable on the small scale. However, when observing the similarities and differences between the two creative fields, it is visible that architecture does not employ the imagination of everyday life as successfully as its literary counterparts. Focusing mostly on the large-scale aspects of the imagined worlds, and describing mostly the functionalities, geometries, and programming of the spaces, the architectural utopian narratives do not delve deeper into the spatial experiences of the characters inhabiting these spaces. Literature, on the other hand, addressing aspects such as time, weather, color, the use of personal objects, the performative aspect of space, the inner thoughts of the characters – allows it to paint a much more vivid and imaginable picture of the spaces which the authors have envisioned, especially in relation to the small scale. Through helping the reader imagine the small-scale spaces in more vivid detail, literary utopias also allow for a better understanding of the entirety of the devised systems, showcasing through the lives of the characters the direct implications on their daily lives. It is no wonder then that in recent years a more narrative based approach has been adopted by many architectural practices, taking specifically the point of view of the individual occupant as a way of constructing architectural narratives. These types of approaches allow us to see and understand different ways of experiencing and inhabiting spaces, which in turn allows for more adaptable and inclusive designs which can be easily inhabited with different voices, rituals, and ways of life.

4. BIBLIOGRAPHY

Culek, J. (2023). Utopia as Critical Method: A Comparative Analysis of Six Architectural and Literary Utopias (Doctoral dissertation), TU Delft, Netherlands

Hall, Peter, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century* (Oxford: Basil Blackwell, 1988)

Hilberseimer, Ludwig, "Metropolisarchitecture" (1927), in *Metropolisarchitecture and Selected Essays*, ed. Richard Anderson (New York: GSAPP Books, 2012), 84-281

Howard, Ebenezer, *To-Morrow: A Peaceful Path to Real Reform,* (1898), facsimile of original edition with commentary by Peter Hall, Dennis Hardy and Colin Ward reprint. (Oxford: Routledge, 2003)

James, Edward, Farah Mendelson, ed. *The Cambridge Companion to Science Fiction* (. Cambridge: Cambridge University Press, Cambridge Companions to Literature, 2003)

Jameson, Fredric, *Archaeologies of the Future – The Desire Called Utopia and Other Science Fictions* (London: Verso, 2005)

Köhler, Daniel, *The Mereological City: A Reading of the Works of Ludwig Hilberseimer*

(Bielefeld: Transcript Verlag, 2016)

Le Guin, Ursula K., *The Dispossessed* (1974), reprint (New York: Harper Collins, 2011)

Martin, Reinhold, *Utopia's Ghost – Architecture and Postmodernism, Again* (Minneapolis, London: University Minnesota Press, 2010)

Superstudio, "Twelve Cautionary Tales for Christmas", *Architectural Design* 12 (1971) 737 – 742, accessed online through *https://socks-studio.com/2011/09/17/twelve-cautionary-tales-for-christmas-12-ideal-cities-by-superstudio-1971/*

Superstudio, "Le dodici Città Ideali" (1971), in *Casabella*, n.361 (1972), 45-55, reproduced in *Superstudio – La vie apres l'architecture*, Abdelkader Damani, ed. (Paris: Lienart, 2019)

Suvin, Darko, *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre* (New Haven and London: Yale University Press, 1979)

Wells, H.G, *The Time Machine*, (London: Penguin Random House, 2018)

Zamyatin, Yevgeny, *We*, transl., Hugh Aplin (Richmond: Alma Books Ltd, 2009)

MULTIMODAL STORYTELLING AS KNOWLEDGE-MAKING IN A MUSEUM ENVIRONMENT

NARRAÇÃO MULTIMODAL DE HISTÓRIAS COMO PRODUÇÃO DE CONHECIMENTO NUM AMBIENTE DE MUSEU

Virpi Kaukio
PhD, Senior Researcher
University of Eastern Finland
virpi.kaukio@uef.fi

ABSTRACT

Museums have a way of telling a story that appeals to all the senses. This makes their practices processual, and sensitive to living cultural heritage. In this presentation, fiction is understood as storytelling through artistic and imaginative methods, and is linked to the premise of fiction as a way of being. The presentation is part of a wider study of experiential or so-called tacit knowledge, which is difficult to verbalize and conceptualize from the perspective of aesthetics and sensory research. Multimodal storytelling as a method can test different hypotheses and raise questions about the nature of knowledge making, activating the analytical possibilities of fictional and imaginative thinking. The research question posed is: How can ambient and affective experiences influence and contribute to an understanding of cultural change in a temporally diverse urban environment? This question will be explored through a case study of the artwork «A Knot in Time».

KEYWORDS: experience. affective knowledge. experiential publishing. intangible cultural heritage. museum.

RESUMO

Os museus têm uma forma de contar uma história que apela a todos os sentidos. Isto torna a sua abordagem sensível ao património cultural vivo. Nesta apresentação, a ficção é entendida como a narração de histórias através de métodos artísticos e imaginativos, e está ligada à premissa da ficção como uma forma de estar. O estudo faz parte de uma exploração do chamado conhecimento tácito, que é difícil de verbalizar e conceptualizar, na perspetiva da estética e da investigação sensorial. A narração multimodal de histórias como método pode testar diferentes hipóteses e levantar questões sobre a natureza da produção de conhecimento, activando as possibilidades analíticas do pensamento ficcional e imaginativo. A questão de investigação é: como podem as experiências ambientais e afectivas influenciar e contribuir para a compreensão da mudança cultural num ambiente urbano temporalmente diverso? Esta questão será explorada através de um estudo de caso de uma obra de arte.

PALAVRAS-CHAVE: experiência estética. conhecimento afetivo. publicação experiencial. património cultural imaterial. museu.

1. INTRODUCTION

Museums are characterized by a three-dimensional and temporal way of telling a story to appeal to all the senses. Multimodal aesthetic communication practices are an integral part of a museum's experiential publishing activities. In this presentation, fiction is understood as storytelling through artistic and imaginative methods, and is connected to the premise of fiction as a mode of existence.

This presentation is part of a project focusing on how museums can serve as a platform for the experiential publication of research. The study explores ways to make visible information or research processes that are challenging or impossible to publish through traditional scientific publishing channels. Particularly, it examines experiential or so-called tacit knowledge, which is difficult to verbalize and conceptualize, from the perspective of aesthetics and sensory research. I present my ideas through a case study of the interdisciplinary art exhibition called *Solmu ajassa* («A Knot in Time») displayed from September 5, 2023, to April 14, 2024, at the Savonlinna City Museum in Finland (Figure1), and its accompanying program for school children. My analysis is based on ethnographic interviews with artists and museum operators, together with participatory observations in the exhibition and its drama pedagogical program.

Figure 1: The Solmu ajassa "Knot in Time" exhibition at Riihisaari – Savonlinna Museum Sep 5, 2023-Apr 14, 2024.
Source: Photo by Virpi Kaukio (2024).

2. THEORETICAL BACKGROUND

The central idea behind alternative publishing is to make information more equally accessible and pluralistic. For a museum, new ways provide a means to contribute to the social debate, and for researchers, a museum can offer new channels for publishing research. My premise is that multimodal museum practices are more responsive to individual and community experiences, and living cultural heritage as a process. In this way, museums can play a role not only in preserving cultural heritage, but also in actively shaping the living cultural heritage. Here I focus on the aesthetic, affective and functional meanings that museums' own publishing practices particularly enable. My research question is how ambient and affective experiences can influence and contribute to our understanding of cultural transformation in a temporally diverse urban environment.

A museum's multimodal storytelling practices can test different hypotheses and raise questions about the real nature of knowledge making, and so activate the analytical possibilities of fictitious and imaginative thinking. In particular, intangible cultural heritage includes experiential and tacit knowledge, also including ambience experiences which are fruitful to consider from the perspective of aesthetics and sensory research. As an aesthetic experience, experienced ambience is the result of a combination of sensory (material, embodied) and conceptual (interpretive, contextualizing, imaginative) perception. In this creative and interpretative process, fiction can act as a kind of knowledge maker in its own right.

My theoretical approach is based on a new understanding of the cultural heritage process, and on a grasp of fiction as a way of being and as a structure of understanding. According to the intangible cultural heritage turn, institutional heritage actors are no longer considered as authorities on cultural heritage, but rather all individuals and heritage communities define and produce cultural heritage on their own terms (Paaskoski et al. 2022, 12). In museums this can be seen as an opportunity, and the active societal role of today's museums creates a connection to various stakeholders, actors, and communities. Museums' assets are their reliability, empathy and long timespan, all of which are needed for mutual understanding and the co-creation of transformative processes (Paaskoski et al. 2022, 5). In this context, museums have taken up the idea of co-researching with the different users of museums (Rättilä et al. 2023). However, individual experiences also matter, in that «Knowledge production and knowing are not just rational 'things of the mind', but experiences shaped in social action and interaction that are (bodily) experienced somewhere and like something» (Rättilä et al. 2023, 48).

Individual bodily experiences are also essential from my point of view of environmental aesthetics. In my previous research on the significance of imagined and narrated environments for people's relationship with the environment, I highlighted the value of non-scientific narratives and how they enrich our aesthetic experience of the environment in which we live (Kaukio 2013). Some environmental aesthetics scholars

have asked whether any relevant background knowledge is needed for an aesthetic experience of the environment (Carlson 2000, 12, 66–68, 146–148). In the debate which developed on the ecologically-oriented environmental aesthetics for the purposes of applied aesthetics; imaginary, artistic and fictional knowledge has been neglected, and in some cases, they have even been seen as harmful to the aesthetic appreciation of the environment (Eaton 1998). I have disagreed with that, and even if we have scientific knowledge of the environment, we are still free to encourage more emotional and imaginative ways of encountering it (Hepburn 2002, 30). Experiencing the environment involves multiple levels of background knowledge and different types of values. Thus, their relevance is contextual. Moreover, the debate on appropriate background narratives should not obscure the fact that the senses provide the initial access to the environment, and therefore the ultimate contextual knowledge. When sensing with the body, human beings give measure and proportion to experiencing the material world (von Bonsdorff 2000, 169), and the senses also provide a basis for any kind of imagination (Brady 1998). For its own part, imagination then completes the senses by giving metaphorical, poetic and symbolic images and associations to perception (Berleant 1992, 23). In this way, the perceiver becomes an active participant in the aesthetic experience of the environment, and continues to create environmental narratives. However, a narrative of environmental experiences is seen as a «weak narrative» (Tammi 2009, 140–153), in that it does not meet the expectations of an intact and coherent narrative – a human strategy that organizes and manages time, processes and change. Instead, narratives of the environment manifest themselves in a rather fragmented and controversial way, but still represent meaningful and important images of our relationship to the environment. The 'reader' of a story of ambient experience as multimodal storytelling must be active, deductive and imaginative by oneself. It also characterizes the narrative produced by tacit and situated knowledge: it is experiential and personal. Meanings are not permanent, nor are they always mutual within communities. Nevertheless, by verbalizing and discussing these meanings, it is possible to discover a shareability that is embedded in the human experience.

Silent or tacit knowledge which museum presentations and actions are good at offering include all of the genetic, embodied, intuitive, mythical, archetypal and experiential knowledge that cannot be expressed in words alone, or even at all (Rönkkö 2009, 71). Linked to these is the idea of the museum as slow media, where its methods consider the different users of museums and foster different ways of learning (Newell et al. 2017, 5).

3. CASE STUDY: "A KNOT IN TIME"

I look at multimodal storytelling, which challenges the understanding of the nature of knowledge making through a case study, using the example of a *Knot in Time* – a complex of works on show at the museum.

The multidisciplinary *Knot in Time* exhibition was inspired by an urban archaeological discovery made by four artists Lauri Ainiala, Sini Kosonen, Ville Erkki Tarke, and Juho

Liukkonen. They found hundreds of old, more or less destroyed glass negatives in the basement of a house called Solmu ("Knot") owned by the city of Savonlinna, which had been condemned for demolition. The building had been a photographic studio until 1975, and the works in the *Knot in Time* exhibition are based on these glass negatives and on the house as the place where they were found.

The artists describe their material in the exhibition that "erosion had already taken its toll on many of the glass negatives, completely obliterating the images. In some cases, time had painted eerie and ragged shadows of figures, while in others, the images remained perfectly preserved. These images provided glimpses into the lives of both the young and old, as well as families." (Poster in the exhibition, 2023.) Combining sound, photography, video and installations, the works bring together the past and present in the stories of the people captured by the photographer at the photographic moment, and also the new visions created by the works of the artists who made the discoveries.

The collaborative work contains a fascinating paradox: while starting from visual elements and photographs that produce visually impressive art to experience, the meanings of the work are strongly linked to conceptual and ambient elements. In the exhibition space, the parts of the works interact with each other, and in some works, the viewer's actions influence the work itself. For example, in Lauri Ainala's real-time spectrogram, the image and sound change when the viewer picks up an old telephone in an object installation. The exhibition space also contains a surrounding soundscape in the form of a collective sound work, complemented by the separate sounds of other parts of the exhibition.

The research material for my case study consists of notes taken through participant observation in the exhibition and a drama pedagogical program for schoolchildren accompanying it, and interviews with artists and museum actors involved in the exhibition. The *Knot in Time* exhibition was quite extensive and therefore took a long time to absorb. In keeping with the nature of slow media, its layered content provides elements for a range of themes and debates. I will highlight some themes that shed light on how artistic and imaginative work can provide and catalyze different kinds of knowledge, and thus contribute to and help understand cultural transformation in a temporally diverse urban environment.

3.1 Urban exploring as artistic research

The fact that the exhibition was inspired by a discovery in the basement of a condemned house owned by the city linked the artwork to a long-running public debate about whether the house should be preserved or demolished (Figure 2). Media and public comments praised the artists for their work in capturing material that is perceived to be of cultural and historical significance. For the artists themselves, the discovery was also likened to an urban archaeological rescue excavation, although recording the building's history was carried out by chance, and not by premeditation.

Figure 2. The case of the Solmu house raises several questions about whose
cultural heritage the urban environment represents. Source: Photo by Virpi Kaukio (2024).

The artists' work has parallels with urban exploration, where deserted houses, abandoned factories, tunnels and sewers can be explored, and experiences are shared through images on online platforms. The mapping of marginal places has also long been done with artistic intentions, both in Finland and internationally (see e.g., Braine 2000; Kivi 2015). The meaning of urban exploration emphasizes the theme of the passage of time (both human and natural), which is also a feature of the *Knot in Time* exhibition. There is also an element of danger in exploring marginal places, and there are structures in the Solmu house that cannot be walked on. The possibility of collapse produces ambivalent feelings, and for example, the deterioration of the man-made environment leaves space for nature to reclaim the place.

Through places that are perceived as marginal, urban exploration highlights the autonomous action of different actors in defining the history and cultural heritage of a place. As works of art, the *Knot in Time* exhibition is not marginal, but in terms of their subject matter, they represent a very different layer of the city's culture than, for example, the Olavinlinna in Savonlinna which is known for its opera festivals. The element of marginality in *Knot in Time* is also related to the use of urban space, where habits and practices dictate where and how one moves around the city, and where one does not go. The City of Savonlinna did not officially comment on the artists'

project, and in this sense, the artists were acting, if not illegally, at least with their own permission. But at the same time, their actions raised an important question as to who or what determines the cultural history of a city.

3.2 Photographic History

The artwork offered an interesting insight into the changing role of the museum as a cultural heritage actor. As an expert authority on the built environment and archaeological heritage of the City of Savonlinna, the Riihisaari Museum had knowledge of the official history of the Solmu House and the fact that it contained the remains of a photographic studio. But the museum already had a large collection of photographs in good condition from the photographer who had worked on the premises, and the damaged glass negatives were not, as such, cultural history of interest to the museum. However, in the *Knot in Time* exhibition, the context of the glass negatives changed, and they were transformed from cultural-historical documents into components of a work of art. Thus, the role of the museum as an actor also changed, and by collaborating with the artists and providing space for the exhibition, the museum became an enabler of a different cultural and historical perspective.

For her part, the artist Sini Kosonen answered the question of the ownership of cultural history by making a selection of the images she digitized available to visitors to the exhibition (Figure 3). Along with the two photo albums, Kosonen promises to send a photo file free of charge if a visitor finds friends, relatives or other persons of interest in the photos. In an interview with the news service *Yle uutiset*, she said, «I don't feel I own these, neither the glass negatives nor the digital versions. Even though I have digitized them, they are photos taken by another person» (Kokkonen 2023). Thus, the artist gives her work to the community in a very practical way.

Figure 3. Photographic prints by Sini Kosonen of glass negative portraits for public identification or commissioning. Source: Original photographer unknown. Photo from the album in the exhibition by Virpi Kaukio (2024).

3.3 Retelling stories of forgotten citizens

The elements in the exhibition show the scale of the technical development of photography, and teach the public the history of photography in a tangible way. In many of the works, you could see and peek at images through a variety of media that showcased the technologies of the time, such as negative viewers, lenses, various types of prints, tube TV, data projection and screens. This kind of information is one of the museum's traditional assets. However, for children of the digital age, even the concept of a photographic negative is alien.

A very different kind of insight was provided by the drama-pedagogic session produced for the exhibition, where schoolchildren in small groups were able to invent stories about the people captured by the photographer, and tell them with «photos « presented with their own bodies. In coming up with stories for the anonymous, partly damaged portraits of people, the children had to think of a common emotion and an everyday activity, and connect them to a story before and after the moment the person had gone to the photographer to have their photo taken. In playing photographs with the body, it became apparent that still images were also becoming a forgotten technique, and as the focus of photography has shifted from the single image to the moving image, the experience of being photographed as a serious and even solemn situation has also vanished.

Most influential, however, was the fact that the pupils were challenged to use their own senses and actions in the stories they created. The pedagogical objective of the exercise was to help pupils learn about themselves, their own emotions and how to work together, among other things. But as a not insignificant by-product, they gained an experience how history is made up of ordinary, everyday things and actions. Thus, through their own lives, they themselves are involved in the production of a living cultural heritage.

4. EPILOGUE: HERITAGE OF THE FUTURE
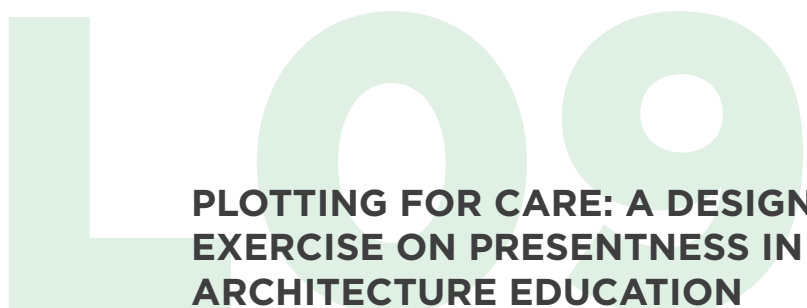
The intertwined themes of past and present and the passage of time are strongly present in the *Knot in Time* exhibition. But the idea of cultural heritage also includes a vision of the future. In particular, Ville Erkki Tarke's photographic works succeed in bringing the ideas of history into the future. His works show the Solmu house as a stripped-down, moving structure that transforms and disintegrates in a kind of dystopian void. If the old photographs made viewers equate themselves with people who had lived in the past and wonder who we are and where we have come from, Tarke's works made us wonder where we are going. They underline the human capacity to imagine and tell stories, which complements our limited senses and is also at the heart of aesthetic experience. I see this kind of storytelling imagining possible futures as a new but powerful way for the museum to produce a wide range of knowledge and broaden its scope of research.

Understanding cultural heritage as the creation of people's everyday lives and interactions allows us to think about knowledge and understanding in a wider sense. Perspectives from different approaches enrich our understanding of the historical and environmental context. Moreover, knowledge provided through fiction, artistic presentations and narratives that engage the senses creates an experience of participation. Sensory involvement can also increase participation and sense of community, making ambient and affective experiences more influential. This kind of knowledge is accessible to a variety of different people and is therefore significant.

5. BIBLIOGRAPHY

Berleant, A. (1992). The Aesthetics of Environment. Temple University Press.

Brady, E. (1998). Imagination and the Aesthetic Appreciation of Nature. The Journal of Aesthetics and Art Criticism, 56:2 (1998), 139–147.

Braine, B. (2000). Two Waters. Museum Ferner Gegenden & Galerie für Landschaftskunst. Salon Verlag.

Carlson, A. (2000). Aesthetics and the Environment. The Appreciation of Nature, Art and Architecture. Routledge.

Eaton, M. M. (1998). Fact and Fiction in the Aesthetic Appreciation of Nature. The Journal of Aesthetics and Art Criticism, (56:2), 149–156. *https://doi.org/10.2307/432253*

Hepburn, R. W. (2002). Data and Theory in Aesthetics: Philosophical Understanding and Misunderstanding. In A. Berleant (Ed.), Environment and the Arts. Perspectives on Environmental Aesthetics. (pp. 23–38). Ashgate.

Kaukio, V. (2013). Sateenkaari lätäkössä. Kuvitellun ja kerrotun ympäristöestetiikka. Rainbow in the puddle. Aesthetics of lived, imagined and narrated environments. (Doctoral dissertation). Joensuu: University of Eastern Finland. *https://erepo.uef.fi/handle/123456789/12719*

Kivi, J. (2015). Hämäräperäisiä tutkimusmatkoja. Into Kustannus.

Kokkonen S.-M. (2023). Hylätystä talosta löytyi tuhansia vanhoja lasinegatiiveja – niistä tehtiin yli 500 valokuvaa, joissa esiintyy tuntemattomia ihmisiä. Yle uutiset 30.9.2023. *https://yle.fi/a/74-20052656*

Newell, J. & Robin, L. & Wehner, K. (2017). Introduction. Curating connections in a climate-changed world. In J. Newell & L. Robin & K. Wehner (Eds.), Curating the Future. Museums, communities, and climate change. Routledge.

Paaskoski, L., Siivonen, K., Vähäkari, N., Latvala-Harvilahti, P. & Pelli, P., Granlund, M. & Hujala, T. (Eds.). (2022). Dynaaminen museo ja tulevaisuusperintöverstas. Käsikirja museoiden ekososiaaliseen sivistystyöhön. Dynamic Museum and Heritage Futures Workshop. A Handbook for the Work on Eco-social Bildung in Museums. Suomen Metsämuseo Lusto. *https://urn.fi/URN:ISBN:978-952-69018-8-6*

Rättilä, T., Eriksson, P., Bettin, C. & Honkatukia, P. (2023). Kanssatutkimus demokraattisena osallistumisena ja osallisuuden kokemuksena. In M. Kulmala & S. Spišák & S. Venäläinen (Eds.) Kanssatutkimus. Ihanteet ja käytännöt. (pp. 47–69). Tampere University Press. *https://trepo.tuni.fi/handle/10024/146428*

Rönkkö, M.-L. (2009). Museon idea ja sen historia. In P. Kinanen (Ed.) Museologia tänään. (pp. 72–92). Suomen museoliitto.

Tammi, P. (2009). Kertomusta vastaan ("Ikävä tarina"). In S. Hägg, M. Lehtimäki & L. Steinby (Eds.), Näkökulmia kertomuksen tutkimukseen. (pp. 140–166). Suomalaisen Kirjallisuuden Seura.

von Bonsdorff, P. (2000). Ruumiin paikka estetiikassa. In A. Haapala & J. Nummi (Eds.), Aisthesis ja Poiesis.

Kirjoituksia estetiikasta ja kirjallisuudesta. (pp. 159–172). Helsingin yliopisto.

L09

PLOTTING FOR CARE: A DESIGN EXERCISE ON PRESENTNESS IN ARCHITECTURE EDUCATION

TRAMANDO PARA O CUIDADO: UM EXERCÍCIO DE DESIGN SOBRE PRESENÇA NA EDUCAÇÃO DE ARQUITETURA

Sonat Özcivanoğlu
Research Assistant
TED University, Department of Architecture
sonat.ozcivanoglu@tedu.edu.tr

ABSTRACT

This paper inherits a Ricœurian conceptualization of narratives as a matter of crossing space and time and narration as a configurative process. This study proposes examining narrative as a tool for exploring existence and experience across space and time. To this end, it presents Plotting Presentness as a design exercise to explore how the act of narration can be effectively employed within architecture education. The exercise revolves around two concepts: presentness and muthos (plotting). The sense of presentness is an impulse to focus on the immediate moment, recognizing its inherent potential. Muthos is referred to as an operation, the organization of events. The study seeks to understand the implications of conceiving architectural research as a re-configuration of events in space-time. To do that, this paper discusses an assignment given to a graduate design studio, Plotting for Care, as an application of the mentioned design exercise in architecture education.

KEYWORDS: muthos. plotting. narration. presentness. architecture education.

RESUMO

Este artigo herda uma conceitualização ricœuriana das narrativas como uma questão de cruzar espaço e tempo e a narração como um processo configurativo. Este estudo propõe examinar a narrativa como uma ferramenta para explorar a existência e a experiência através do espaço e do tempo. Para tanto, apresenta Plotting Presentness como um exercício de design para explorar como o ato de narração pode ser efetivamente empregado na educação arquitetônica. O exercício gira em torno de dois conceitos: presentness e muthos (trama). O senso de presentness é um impulso para focar no momento imediato, reconhecendo seu potencial inerente. Muthos é referido como uma operação, a organização de eventos. O estudo busca entender as implicações de conceber a pesquisa arquitetônica como uma reconfiguração de eventos no espaço-tempo. Para isso, este artigo discute uma tarefa dada a um estúdio de design de pósgraduação, Plotting for Care, como uma aplicação do exercício de design mencionado na educação arquitetônica.

PALAVRAS-CHAVE: muthos. trama. narração. presença. cuidado. educação arquitetônica

1. INTRODUCTION

Narratives are accounts of events unfolding across time; they serve as a tool to explore and establish meaning. The act of narration involves weaving together elements from spatial and temporal contexts. Certain conditions necessitate a narrative to convey what is essential, while in other cases, a narrative can be partially or completely replaced by theory. To illustrate, a physics experiment involving subatomic particles lacks the elements of intention, desire, and imagination and, therefore, has little need

for a narrative account. In contrast, the decision of a physicist to pursue physics instead of mathematics cannot be expressed in a mathematical equation but can be narrated. Similarly, Morson (2003) gives an example of conditions in which one could construct a narrative, but it would be pointless. Describing the orbit of a planet around the sun as a story adds nothing to the astronomical equations; "One already knows where Mars is at any moment without the story" (Morson, 2003, p. 61). Worth noting, Ranciére (2019) stated on the rationality of fiction, "What distinguishes fiction from ordinary experience is not a lack of reality but a surfeit of rationality" (p. 10). The idea Ranciére (2019) put is that "appearances are inverted" and:

> Fiction overturns the ordinary course of events that occur one after the other, aiming to show how the unexpected arises, happiness transforms into unhappiness and ignorance into knowledge. (p. 1)

Within the scope of this study, we utilize a Ricœurian (1984) approach to narrative, which underlines the process of emplotment (muthos) as a means of bridging the unpredictable and contingent nature of existence into a meaningful whole and as an organization of events in time.

Narratives become essential when dealing with complex situations characterized by uncertainty, multiple possibilities, and the influence of various actors with their motivations. In such scenarios, free will, projections, and unpredictable outcomes create a messy reality where choices have a significant impact. To make sense of this complexity and understand the relationships between actors and events, a narrative approach is necessary. The act of narration allows us to (re)configure connections, identify issues, and navigate the weight of choices in these situations. We can consider a city as an example that encompasses the aforementioned complex situations. It is a multifaceted environment characterized by the interplay of various stakeholders with different interests. A narrator seeking to comprehend the potential trajectories within the city or the influence of diverse actors with varying motivations possesses various possibilities. The endeavor to reconfigure reality transforms the encounters of everyday life into a narrative matter. By positioning bodies in different temporal and spatial dimensions, the narrator can conceive of the city as a series of temporary microclimates. A shift in her narrative voice can guide the reader through a passage of varied atmospheres.

This study states that architectural practice, encompassing design, criticism, and education, necessitates a narrative approach. Cultivating a sense of narrativeness situates the architect within a realm of interconnectedness, heightened awareness, and the capacity for both resilience and adaptation. This paper examines narrative as a tool for exploring existence and experience across space and time. It proposes Plotting Presentness as a design exercise to explore how the act of narration can be effectively employed in architecture education. The exercise revolves around two concepts: presentness and plotting (muthos).

The sense of presentness is an impulse to focus on the immediate moment, recognizing its inherent potential for shaping our experience and understanding of the world. The term refers to a mode of being in the present and "how the present is always a phenomenon of perception and consciousness" (Genge et al., 2020, p. 12). As Morson (2003) suggests, it is a kind of present moment that matters, an open time characterized by the excess of possibilities and unpredictability. To grasp the concept of presentness, we can turn to Arendt's seminal text, "The Gap Between Past and Future" (1961), where she introduces the notion of an in-between period. Arendt draws inspiration from a parable by Kafka (1946), where the forces of the past and future engage in a battle: "He has two antagonists: the first presses him from behind, from the origin. The second blocks the road ahead. He gives battle to both" (p. 141). Kafka's protagonist, "he," struggles to maintain a balance amidst the opposing forces of past and future. His struggle leads Arendt (1961) to posit an "interval in time" uniquely defined by "things that are no longer and by things that are not yet" (p. 9). While Morson puts emphasis on the future's uncertainty as the source of presentness' potency, Arendt locates the power of the present as an in-between period in a parallel interplay of past and future influences. The action of two forces, Arendt (1961) states, creates a "parallelogram of forces," a new force, a resultant "diagonal force" with a "known point of departure" and a "direction determined by the past and future" (p. 12), but differ from the forces whose result it is. This interaction between the forces of the past and the future at an oblique angle, resulting in a deflection, is enabled by the human's existence in time, which disrupts its continuity.

In her introduction to *Six Exercises in Political Thought*, Arendt introduces the concept of the diagonal force, which, in her own words, serves as a metaphor for thought. The completion of this thought, Arendt (1961) argues, occurs when "the course of action has run its course" and "when the story which was the outcome waits to be completed in the minds that inherit and question it" (p. 8). Arendt advocates for moving in the direction of this resultant diagonal force generated by the interplay of past and future on the individual rather than seeking to escape this battle line. She asserts that if Kafka's protagonist had traversed this diagonal line:

> He would have found the place in time which is sufficiently removed from past and future to offer 'the umpire' a position from which to judge the forces fighting with each other with an impartial eye. (Arendt, 1961, p. 12)

In this research, we shall refer to the state of feeling the need for such a position as the sense of presentness. As Morson (2003) suggests, "It is not necessary that all moments have presentness, but some must, and it is from them that narrativeness derives" (p. 61). We propose to define the act of narration as a means of inhabiting the state Arendt foreseen: Narration constructs the place in time that is sufficiently removed from past and future to offer the umpire a position.

Muthos (Greek Qῦθος) is referred to in this paper as an operation, the organization of the events in reference to Aristotle's *Poetics* (50a15). Noting that the etymology of

the word is obscure (Fowler, 2011; Edmunds, 2021) and Aristotle's concept of muthos does not fully align with the modern understanding of plot (Belfiore, 1997; Marsh, 2021), we can state that Aristotelian notion of muthos underlines the importance of the arrangement and structure of events and the role that the act of plotting plays in creating meaning. In the chapter "The Circle of Narrative and Temporality," Ricœur (1984) emphasizes that Aristotle's concept of muthos, as discussed in *Poetics*, is linked to the definition of tragedy. From this standpoint, the notion of tragic muthos emerges as "the poetic solution to the speculative paradox of time" (Ricœur, 1984, p. 38). The connection established between events through this process of emplotment (the operation of muthos) is not chronological; rather, it is grounded in a comprehension of necessity and probability. This definition of muthos, as the organization of events, emphasizes concordance, which is characterized by completeness, wholeness, and an appropriate magnitude. Acknowledging the completeness of the plot as only one of the instance(s) of the narrative(s)' existence, narrative, Ricœur (1984) argues in "Time and Narrative: Threefold *Mimesis*," mediates the aporia of change and permanence through a process of muthos that organizes the contingencies of existence into a coherent whole. In that sense, we can conceptualize narration as an arrangement of events, changes, and deviations in the temporal unity of an action, an emplotment in time.

The study seeks to understand the implications of conceiving architectural research as an emplotment, and re-configuration of events in space-time. This paper discusses an assignment, Plotting for Care, as an application of the mentioned design exercise in architecture education. The assignment Plotting for Care was developed within the scope and theme of the graduate Design and Research Studio II (ARCH502) in TEDU which studies "care" with a focus on post-conflict and post-disaster zones.[1] The Plotting for Care assignment aimed to clarify the need to care, for whom, and what for, and to propose a ground for counter-intervention.

2. PLOTTING FOR CARE
2.1 Care as a Conceptual Scaffolding

The assignment Plotting for Care was structured to be part of the graduate Design and Research Studio II, ARCH502, participants of which had already been examining the issue of care as a continuation of ARCH501. As stated in the course syllabus, promoting situational, relational, and systemic design approaches, the studio ARCH501 explored how the ethics of care, a position cultivated by social justice activists and eco-feminists, can inspire alternative social, spatial, and environmental futures.

---

1 The assignment was prepared by the author as the core of a three-week lecture + workshop process conducted within the scope of ARCH502 Design and Research Studio II (Spring 2024) in the MArch program of TED University. The studio was conducted by Prof. Dr. Berin Gür and Alper Al (PhD student in the TEDU Architecture Program). As a continuation of the Fall semester (ARCH 501), *the Graduate Design and Research Studio II calls for a critical examination of existing architectural paradigms and strategies for fostering knowledge societies that prioritize equity, justice, creativity, and interdependency* (the italics were taken from the course syllabus). Further information on the studio and the student projects is available at: *https://www.architecturesofcare.com*

Architectures of care are expected to be searched for from various perspectives by considering the term's political, social, and historical implications. Each participant was expected to focus on a unique context of post-disaster and post-conflict zones within the scope of the ARCH501. As a continuation of the fall semester, ARCH 502, the graduate Design and Research studio II, raises the question, "How can thinking architecture with care shape alternative social, spatial, and environmental futures, employing situational, relational, and systemic design approaches?" This question calls for defining a critical position in dealing with post-disaster and post-conflict zones by developing a strategic design approach.

The assignment, Plotting for Care, was shaped with respect to the call for a critical position concerning post-disaster and post-conflict zones raised in the above-mentioned ARCH502 studio. The assignment objectives are: (1) clarify the need to care, for whom, and what for, (2) narrate the problem, struggle, or conflict that affects all living and non-living systems, (3) configuration of the links between event(s), actors (human and non-human), and research field, and (4) emplotment of the present: identification of the matter and (re)configuration of relations to propose a ground for counter intervention.

2.2 Plotting for Care as a Design Exercise

The participants were tasked with structuring the data they have already extracted within the scope of ARCH501 into a narrative (in any medium) by bringing together the events + change, shift, and deviations of the post-disaster and post-conflict zones in a temporal unity of an action (narration). They were instructed to incorporate a diverse array of characters (human + nonhuman) and change in narrative voice. The participants were free to select any medium, but they were asked to keep in mind that narratives are medium-dependent.

2.3 Workshop Setting

The Plotting for Care exercise was conducted over three weeks with eight students participating in the ARCH502 studio. The assignment itself does not require new research but instead aims to help to formation of narration from the existing studies. In the workshop, the participants were using the outcomes of the first semester of the studio. The first meeting of the workshop served as an introduction to key narrative concepts, including narrativeness, narrativity of architecture, presentness, distinction between plot and story, and narrative structures. Following the introductory presentation, participants were assigned the design exercise Plotting for Care. On the same day, participants' initial ideas (concerning the identification of the series of events, characters, and configuration of the types of relations between them) were critiqued in a panel discussion. Prior to the next meeting a week later, participants were asked to define the medium for their narratives, and the second meeting involved individual critiques. While the workshop concluded with a panel discussion in the third week, participants continued to work on their workshop outputs, which were presented in the end-of-semester exhibition.

3. OUTCOMES

3.1 [Un-]registered Ege: Ship as an Agency of Care

Participant #1 investigated the theme of forced displacement within the context of the Aegean dispute / Greco-Turkish population exchange in the first semester of the studio. She investigated not only human displacement but also the change in biological diaspora and the circulation of non-human agencies. Proposing ships as an agency for invasive species, her research centered on the conflict on the continental shelf with a particular focus on bodies in motion and on waters of the international corridor (Figure 1), such as immigrants and the vessels transporting them and the forces acting upon them (e.g., interventions and operations).
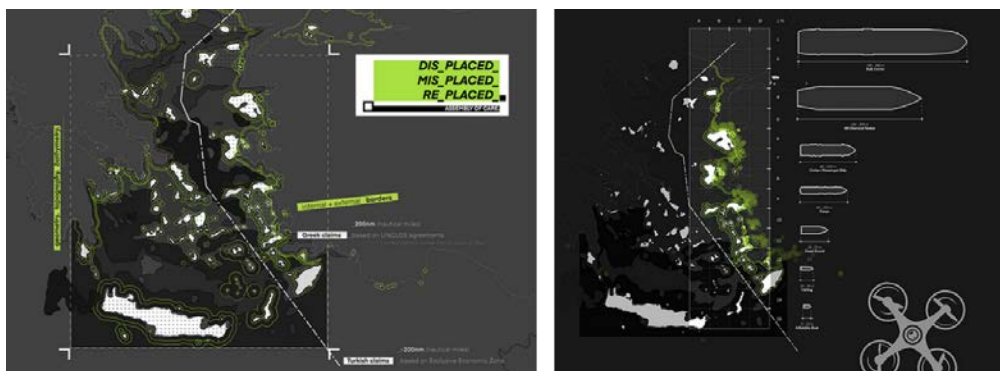
Figure 1. The matrix of vessel movement in Aegean Sea.
Source: Produced by Deniz Yeni (2024).

Within the workshop process, participant #1 constructed a movement matrix of the vessels (Figure 1). Through this matrix, the participant seeks to reveal how attitudes towards the bodies transform at the borders. The chosen medium for this narrative was a matrix composed of frames depicting various encounters between bodies, land, and power alongside the maps. Together, they narrate the nuanced differences in movement, ranging from voyages to escapes, and the corresponding variation in means of transport, from luxurious cruise ships to precarious inflatable boats or overcrowded immigrant vessels (Figure 2).
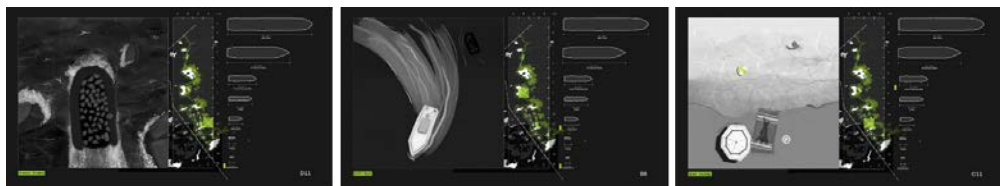
Figure 2. Three instances of encounters and matrix.
Source: Produced by Deniz Yeni (2024).

Through the lens of displaced, misplaced, and replaced bodies, participant #1's narration brings our attention to the existence of a "critical cut": an ambiguous zone whose nature and experience are constantly in flux depending on the

identities of the bodies encountering it. Operating within a zone characterized by undefined boundaries and constant flux, the participant's narrative departs from the conventional linear structure of a story and instead employs an analytical matrix embracing an interactive engagement. The matrix reconstructs the gathered data as a field of possibilities, while the frames convey potential encounters.

3.2 Generational Trauma: Right to Remember

Participant #2 directed her focus toward the enduring remnants of war in Sarajevo in the ARCH501 studio. Her objective was to shed light on the memories harbored by the city's inhabitants and the diverse range of attitudes they hold towards these lingering traces. Focusing on the marks left by heavy weaponry on building facades, participant #2 explored whether these scars should be preserved as a form of remembrance. By incorporating a diverse range of sources, including academic studies, reports, news articles, books, and interviews, the participant's research during the initial phase of the course yielded a rich tapestry of narratives reflecting diverse viewpoints on memory and the commemoration of Sarajevo's wartime experience. Within the workshop, participant #2 channeled her research into constructing a semi-fictional building façade for narrating those stories. The façade was constructed from photographs of various city fragments. Openings within the facade – a hole or a window – serve as a portal to each story (Figure 3).
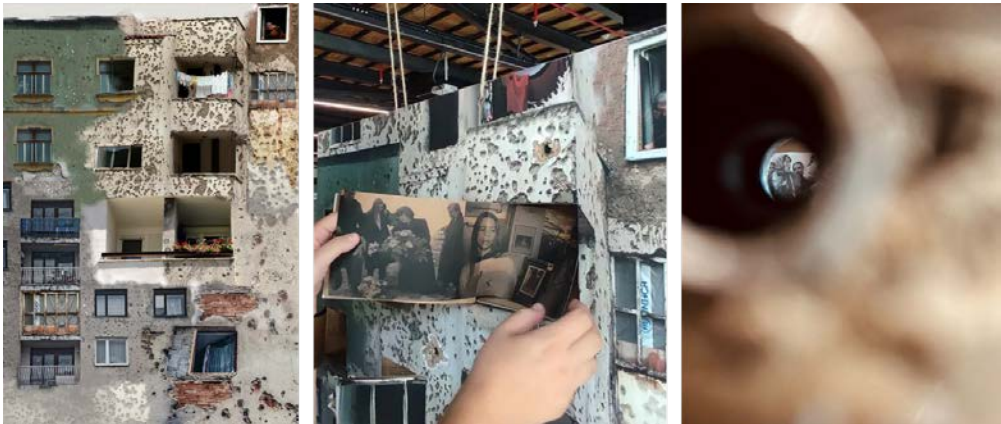
Figure 3. The semi-fictional façade and openings.
Source: Produced by Belkıs Sena Top (2024).

Participant #2 had already been using fiction as a means of inquiry to be able to grasp the urban experience of war. Her response to the assignment transformed the use of fiction; the façade functioned as both a collage of stories displaying the diverse experiences within these urban conditions and an archive of those experiences. Narration through this semifictional façade invites the viewer to see the inhabitants and read their memories rather than a narrator simply describing and reading their stories. It is possible to argue that for this participant, the façade construction acts as the mechanism of emplotment. The stories standing side by side host inhabitants with different perspectives on remembrance.

3.3 Control Over Body in Prison Architecture: Spatial Extremities

Instead of focusing on a territory, participant #3 directed his attention to the institutions of control over body in the first semester of the studio. This investigation encompassed four distinct institutions: prisons, zoos, refugee camps, and police stations. He classified these institutions' methods of body control in terms of spatial arrangements and access to essential rights and "profiled" those institutions. He prepared a "file/dossier" of profiles (Figure 4) for the final jury of the ARCH501 studio. Within the workshop's scope, the participant narrowed his focus to prisons and started to produce a graphic novel exploring the "extremities" of spatial arrangements employed for body control (Figure 4). The narrative, framed as an escape story, utilizes pre-existing documented spatial configurations to narrate the experience of these arrangements.

Figure 4. Profile of the institutions of control and the first page of the graphic novel.
Source: Produced by Ekin Meşe (2024).

The participant's shift from an archival system to fictional storytelling can be attributed to the limitations of "profiling" regarding the engagement with the experience of spatial and temporal limits enforced by control mechanisms. His profiling of the institutions exhibits a meta-spatial nature, while the comic book he created during the workshop encompasses bodies and their motivation, expectations, and experiences.

3.4 Error: Displacement and Loss of Heritage

Participant #4's ARCH501 study centered on Hasankeyf, an ancient town situated along the Tigris River in southeastern Turkey. Declared a natural conservation area in 1981, Hasankeyf presents archaeological significance. However, despite local and international objections, the town and its sites were submerged due to a dam project. By 2020, rising water levels completely engulfed Hasankeyf.
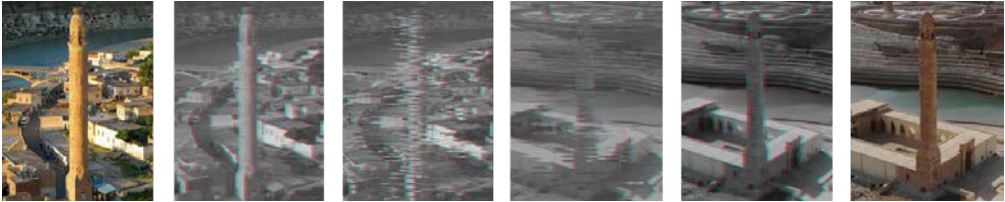
Figure 5. Stills from the animation by the participant.
Source: Produced by Esra Durmaz (2024).

The relocated historical structures, investigated by participant #4, became a central element in her response to the Plotting for Care assignment. She created an animation (Figure 5) depicting the spatiotemporal transformations from the perspective of these structures, offering a unique frame of displacement. Participant's animated narration emphasized the deviations regarding the immediate relations of the structures within a temporal unity of the glitch, establishing it as a central conceptual framework. Through this project, we gained a novel perspective: From the viewpoint of the relocated structures, such as a minaret, these displacements are glitches (errors) within the space-time matrix – instead of being events of a coherent narrative. The pursuit of a cohesive narrative with a beginning and end does not apply to all urban narratives.

4. CONCLUSION

This study explores the potential of narrative as a tool for investigating human experience across spatial and temporal dimensions and for revealing new layers of meaning regarding human-nonhuman coexistence. It proposes the design exercise of Plotting Presentness as a means of integrating the act of narration into architecture education and research. The assignment, Plotting for Care, can be considered an experiment in narrating the data extracted for research regarding care. It provokes researchers to re-configure the situations that have been studied to reveal the changes and deviations in the field of study.

Considering the objectives of the assignment Plotting for Care, we can state that the act of narration enabled participants to critically reframe the problems, struggles, and conflicts that impact all living and non-living systems. While studying human-geography conflicts, they were encouraged to move beyond simplistic cause-and-effect relationships and embrace the complexities of real-world situations, including contingencies, errors, unexpected outcomes, and the emergence of new conflicts over time. This focus on complexity regarding the configuration of links was reflected in the workshop discussions, where students unpacked the meaning of these conflict zones for all involved parties, and those caught in between. Furthermore, the narrative format keeps participants away from binary judgments (e.g., guilty-innocent) and encourages them to engage with the tapestry of experiences inherent in such conflicts. When considering the aim of clarifying the need for care, it would

be more accurate to say that the assignment multiplied their perspectives regarding the practices of care. To construct a plot, one must examine the field as a sequence of events, the bodies situated at or around these events, and the spatiotemporal units in which they are situated. Narrative construction requires a reconfiguration of the relationship between them, an act that operates beyond Cartesian conceptions of space. By transcending the time-space units indicated by clocks and maps, a narrator introduces new atmospheric units. Each body, affected by the events situated in a place that is subject to their moment-to-moment experiences, becomes a new atmospheric unit within the narrative.

Participants were instructed to incorporate a diverse array of characters (human + nonhuman) and to change the narrative voice. The practice of situating the human and nonhuman bodies to reconfigure the atmospheres they inhabit enables narrators to develop new interpretive frameworks for the post-conflict territories under examination. In participant #1's narrative, the ship emerges as a body, and its agency becomes a key variable in the matrix of encounters. Participant #4's focus on the displacement of structures of Hasankeyf provided a critical perspective on the different conceptualization of time for humans and non-humans. In participant #2's work, the semi-fiction apartment façade narrates the stories of inhabitants. The surveillance cameras in participant #3's graphic novel shape the narrative's perspective and scene decisions. When narratives are not bound by the limitations of a specific medium, participants tend to move away from conventional narrative structures that have a clear beginning and an end. The medium dependency of narratives is evident in the outcomes; the animation of participant #4, for example, inevitably progresses linearly in time, while comic books offer the possibility of viewing different frames simultaneously. The matrix and narrative façade, on the other hand, lack any stable departure and ending point. Instead, the extracted data have been transformed into a field of possibilities, presenting a fluid and multifaceted experience. One can enter these narratives at any point of the events. Participants' narratives have replaced the notion of the reader with the visitor, inviting them to engage with the series of events. As studied by ARCH502, the graduate research and design studio II, the issue of care worked as a scaffolding for the Plotting Presentness exercise. The assignment developed as a response to the design studio, constructed upon the theme of care, yet the theme of care can be removed or replaced by another theme, notion, or issue to repeat this exercise Plotting Presentness as a part of architecture education.

5. ACKNOWLEDGEMENTS

6. BIBLIOGRAPHY

Arendt, H. (1961). *Between Past and Future: Six Exercises in Political Thought.* The Viking Press.

Belfiore, E. (1997). Aristotle's Muthos and Narratological Plots. *Classical Bulletin, 73*(2), 141–147.

Edmunds, L. (2021). *Greek Myth.* De Gruyter.

Fowler, R. L. (2011). Mythos and Logos. *The Journal of Hellenic Studies, 131*, 45–66. *https://doi.org/10.1017/S0075426911000048*

Genge, G., Schwarte, L., & Stercken, A. (Eds.). (2020). Aesthetic Temporalities Today: Present, Presentness, Re-Presentation. In *Aesthetic Temporalities Today: Present, Presentness, Re-Presentation* (pp. 11–14). Transcript Verlag.

Golden, L., & Hardison, O. B. (1968). *Aristotle's Poetics: A Translation and Commentary for Students of Literature*. Prentice-Hall.

Kafka, F. (1946). He (Willa & Edwin Muir, Trans.). In *The Great Wall of China and Other Pieces*. Secker & Warburg. (Original work published 1931)

Marsh, L. D. (2021). *Muthos: Aristotle's Concept of Narrative and the Fragments of Old Comedy*. Verlag Antike.

Morson, G. S. (2003). Narrativeness. *New Literary History, 34*(1), 59–73.

Ranciére, J. (2019). *The Edges of Fiction* (S. Corcoran, Trans.). Polity. (Original work published 2016)

Ricœur, P. (1984). *Time and Narrative, Volume 1* (K. McLaughlin, & D. Pellauer, Trans.). University of Chicago Press. (Original work published 1983)

JUNGLE IMAGINARIES: ATMOSPHERIC ENCOUNTERS BETWEEN MAGICAL REALISM AND OTHER PLURIVERSAL FABULATIONS

IMAGINÁRIO DA SELVA: ENCONTROS ATMOSFÉRICOS ENTRE O REALISMO MÁGICO E OUTRAS FABULAÇÕES PLURIVERSAIS

Heidi Sohn
Associate Professor Architecture Philosophy and Theory
Faculty of Architecture and the Built Environment, TU-Delft
h.sohn@tudelft.nl

ABSTRACT

The 'jungle imaginary >*real*' is a fictional form of decolonial writing milieus and ambiences that emerges from immersive and submersive readings of (postcolonial) Latin American literary production from the second half of the twentieth century onwards, spanning together 'lo real maravilloso' and magical realism. It experiments with narrative modes and storytelling techniques that decenter epistemes and academicist gestures, exploring the affective potentials of worldly description and bodily somaesthetic transmission of an atmospheric attunement that opens up towards an 'extraordinary real': the transition to pluriversal chronicles, perspectivisms, and accounts of a world of many worlds.

KEYWORDS: magical realism. 'lo real maravilloso'. speculative fiction. fabulation. atmospherics. ambiances.

RESUMO

O 'real imaginário da selva' é uma forma ficcional de ambientes e ambientes de escrita decolonial que emerge de leituras imersivas e submersas da produção literária (pós-colonial) latino-americana da segunda metade do século XX em diante, abrangendo "lo real maravilloso" e mágico realismo. Experimenta modos narrativos e técnicas de contar histórias que descentralizam epistemes e gestos academicistas, explorando os potenciais afetivos da descrição mundana e da transmissão somaestética corporal de uma sintonia atmosférica que se abre para um 'real extraordinário': a transição para crônicas e relatos pluriversais de um mundo de muitos mundos.

PALAVRAS-CHAVE: realismo mágico. isso é realmente maravilhoso. ficção especulativa. fabulação. atmosféricos. ambientes.

1. THE JUNGLE IMAGINARY > *REAL*

"¿Qué es la historia de América Latina sino una crónica
de lo maravilloso en lo real?"
("What is the history of Latin America but an account of marvel in the real?")
[Alejo Carpentier, *El reino de este mundo,* 1949]

There is something unreal, ghostlike, about the way that steam rises slowly from the thick, lush undergrowth foliage that covers the dew-drenched rainforest. If we look carefully, we will see it is not steam or fog that is rising, but instead the contours of a delicate virgin cloaked in sky-blue levitating overhead, surrounded by the swirling cloud of baby-blue butterflies fluttering in the golden dawn. Around her halo, intensely green ferns, purple bromeliads, orange lianas, and antediluvian philodendrons stretch out from below the canopies, their branches and exposed roots reaching fore like tentacles, jelly-like fingers sucking their way towards a clearing in the forest. On the rim of the clearing a couple of adobe structures pop up from the

ground like little brown mushrooms in the morning light. From there, a human town takes shape, with its cobblestone streets winding up and down the pathways taken by centuries of loneliness, lovestruck choleras, old patriarchs and forgotten generals waiting patiently for letters delivered by doves. In the central square under the shade of a gigantic ceiba tree, a well full of memories fills buckets of thirst. It begins to rain. Thick drops fall from the sky splattering around like overripe passion fruit, breaking the rhythm of ancient, invisible silences heavier than a thousand slabs of silver tin. The drops multiply, rapidly collecting into a myriad rivers gaining speed, running down the sidewalks, licking the walls of houses and churches, lining the insides of stories, sighs, and lullabies. On each corner thick cushions of dark green moss and algae inhabited by minuscule red crabs slow down the stream, transforming it into bad omens and a continuous wetness that cannot be described, only experienced, sensed, as it encroaches inside the nostrils, deep inside the lungs. The jungle rains, and it rains in the jungle. Dreams melt away like clay under this constant wetness. An old woman with parchment-like skin and more wrinkles than stars in the milky way rocks back and forth on a wooden porch, breathing in the baby-blue butterfly halo of the levitating virgin. In the gloom behind the porch, in a room filled with sweat and smoke, a woman with a head of black waves is in labor, her fingers clenched around her ankles, her buttocks firmly anchored on the dirt floor. Her screaming is inaudible to the human ear, only the midwife can hear the frequency. A baby boy with a pigtail emerges from the dark oily slime. Although he was just born, nobody remembers him anymore.

His story is as old and problematic as that of countless sleepy towns tucked away in the recesses of what I will refer to here as the 'jungle imaginary', a quintessentially postcolonial atmospheric region where reality and fiction not only intersect, but factually blur into indistinguishability. Like words uttered into a milky cloud or sounds whispered into a muddy puddle, the topologies of the 'jungle imaginary' are engaged in the continuous production of atmospheres and ambiences whose sole purpose is to simultaneously occlude and illuminate the complex postcolonial sites and realities from where they emerge. Said perhaps more accurately, the 'jungle imaginary', as a modality of atmospheric effects (or ambience) in literature and other forms of aesthetic and artistic production, shares its genealogy with diverse postcolonial realisms that emerged and flourished during the second half of the past century. It taps into baroque and mannerist aesthetic stylistic gestures that produce very particular somaesthetic reactions, that is, the production of sensations of embodiment and effects that are vividly processed as real sensorial inputs of touch, pressure, cold, heat, pain, and pleasure.

Undoing centuries of colonialist architectures with the bat of their wings, legions of chubby gold-leaf cherubs carrying the garlands of infinite columns that hold together the chimeras of cloying baroque altarpieces and Catholic patriarchal domination everywhere in Latin America, fleeing into the 'jungle imaginary', releasing their affective and aesthetic potential into the milieu. In their flight they escape their

godless colonial masters and reencounter the deities of their own cosmopolitics: the rivers, the forests, the insects, the storm, the rain, the fog, the frog. In the rainforests of Central and South America, angels become bats, and golden cherubs take the shape of brown skinned human babies who drink maternal milk from juicy coconuts while they converse with insects in the night. It is not only a matter of the imagination or occurrences that take place in the sticky stupor of our dreams. In the jungle imaginary, which is as real as anything in *this* world, immersing oneself in the foliage is as important a strategy as knowing how to submerge oneself in murky piranha-infested waters, looking at the surface in reverse, from below, like a fish. The world upside-down, a world that speaks the language of critters. (Huichaqueo, 2020)

Here, the melodic work of Cuban musicologist and novelist Alejo Carpentier resounds like trumpets in its attempt to extract the marvelous and the extraordinary from the Latin-American and Caribbean cultural reality in beautifully rendered accounts of "lo real maravilloso" (the marvelous real), (1949) that challenge the boundaries of what, in other corners of this Western "one-world world model" (Law, 2015) – a world that reduces life to its shell, and that "has granted itself the right to assimilate all other worlds" –, (Blaser & de la Cadena, 2018, 5) would seem not only implausible, but entirely *impossible*. A baroque concerto (Carpentier, 1974) encounters the dry, thirsty labyrinths of solitude of Mexican essayist and poet Octavio Paz. (1950) Labyrinths that are momentarily quenched by the heart-quenching accounts of Laura Esquivel's love stories threatening to boil over, like 'water for chocolate.' (1989) Further south, encroached in amazonian rainforests of impenetrable thickness the characters of Gabriel García Márquez' trace centuries worth of genealogical lines that run threads of knots and banana leaves across a tumultuous past reigned by army ants and generals from foreign lands, through presents of coca leaves and mutilated bodies, towards a future that is as uncertain, precious and rare as is ice in the desert. (1982) In these, and countless other storytelling practices that emerge during the onset of the imposition, adoption and adaptation of the alienating processes of modernization, urban industrialization and cultural westernization of global capitalism upon the heartland of the so-called "new world", we can see sites of resistance against the (postcolonial) discourse that claims that the invasion and imperialist logics of the colonial project are finally completed, (Mignolo & Tlostanova, 2016) albeit unevenly, challenging the perspective that claims the guaranteed permanence and predominance of Western thought on the world. (Montouni & Mattos Nicoletti, 2022)

In its attempt to craft worlds (ontologies), without reinforcing forms of knowing (epistemology), the 'jungle imaginary > *real'* serves as a hideout, a refuge, for all that, which roams in dimensions and realms that are removed from the modern centre and its idealism disguised as naïve realisms, the invasive imperialist logics of the colonial project, or, which has found ways to resist them and their stifling, disqualifying representations. In the potential of fiction and fabulation of writing and storytelling as modes of not only bringing to the fore existing realities and subjectivities, but of crafting other ones, the 'jungle imaginary > *real'* turns to writing as a practice

of mediation, and as a collective creative act, that approaches architectures of care, refuge and shelter, through affective atmospheres and ambiences. The 'jungle imaginary > *real'* becomes then a life tool, a vital instrument in bringing forth and animating the possibilities of a pluriverse, as I will elaborate further on.

The stories that emerge from the 'jungle imaginary > *real'* reveal something else. Or rather, they contain a latency that pulsates and, quite literally, demands to be sensed *otherwise*. In the longing for indeterminate bodies in which and from where to overcome the solitude of colonialism and postcolonialism, the 'jungle imaginary > *real'* provides fertile grounds for latent seeds that hold the memories of the past, as well as the epigenetic hope for a future, which we can afford to forget, and think anew. Archiving takes a new meaning. In the embryos and seeds we can already sense or perceive a microscopic but atmospheric change underway, the news of an approaching transition, that arrives with the scent of electric activity of thunder and lightning in dark lead clouds, and which always heralds the arrival of a deadly cyclone. In the profuse and prolific magical realisms proposed by Latin American writers, painters and artists, we already see the contours of this latent transition: the baby boy figuring out his own pigtail is always more than just an infant born with a physical abnormality under conditions of rural poverty, alcoholism, ignorance or interbreeding. He is also always more than a figment of our (pornographic) imagination, an aesthetic recourse to shock, or an opportunistic narrative strategy. Pigtails attached to people are just one real and amazing aberration among so many others that populate the spacetimes of the 'jungle imaginary > *real'*: a radical form of expression of otherness that is entirely factitious and that can only be captured momentarily in ambience and atmospheric accounts, in environmental storytelling and other material-discursive entanglements. As such, chronicles of the 'jungle imaginary > *real'*, function as 'parteras' – or midwives –, in the transition and mediation from postcolonial logics to decolonial practices. And as midwives, they are prepared to encounter all sorts of expected or 'normal abnormalities', like vestigial tails and other bearings as seeds of change.

BIRTHING ATMOSPHERIC CAUDATES AND OTHER NORMAL ABNORMALITIES

In fiction, the abnormal always bespeaks the imagination. It triggers affective and somatic discomfort that arouses the senses and the mind and forces them to reorient, to adapt back to a forgotten ortho-abnormality. Fear, disgust, horror, wonder, curiosity: there is no way to remain indifferent to the image of a baby boy with a pigtail, a creature of monstrous potential, a wonderfully vibrant and vivid image that demands attention and elicits reaction. However, – in reality –, vestigial remainders are in fact quite common 'abnormalities' in human populations in general: exposed tailbone extensions of the spine, also known also as caudates in medical jargon; nonsyndromic polydactility, or the presence of additional fingers and toes at birth; supranominal nipples, or polythelia; among other supplementary teeth, limbs, tissues, and in rare occasions even extra organs. Pigtails or other 'abnormalities' are congenital or familial-genetic, that means that they run in families (transgenerational).

While usually not dangerous or threatening at all for the continuation of life, the presence and ubiquity at birth of these 'unsightly' physiological phenomena, are a reminder (and stigma) of the precarity and imperfection of being human. Sometimes they are not epigenetic, but instead contextual, that is, as the result of environmental and material factors, such as the proximity or contact of the fetus or the mother (or both) to toxic substances, but also of systemic material marginalization and poverty. (Rogers, 2014) As such they are more prevalent in regions where healthcare and material resources are scarce or lacking, as I mentioned already. In industrialized societies, where overweight cherubs have been long exiled to oblivion, these caudates and other congenital 'abnormalities' are simply eliminated as part of the process of being *born* human. Unsightly tails, extra fingers, more than two nipples, are amputated, chopped off, burnt away with laser beams, frozen into dust, or surgically removed. All there is left is an imperceptible scar, a blue tattoo, or ideally, nothing. Extracted, but for the sole profit of defying the flows of chaos, disorder, evolutionary ab/normality. Abnormality and otherness bring to the fore the problem of Western claims to universality and the utter inability to deal with difference. But how do we jump, like chimpanzees using their tail for balance and mobility, from the branch of genetic and environmental abnormalities to the 'jungle imaginary > *real'*, to decolonial logics, and back again to an atmospherics of the pluriverse?

The vestigial, which is a remnant, a sort of minimal remainder, reminds of structures, systems and behaviors that are deemed no longer useful or that have lost their purpose (in human bodies: wisdom teeth, tails, piloerection, the appendix, i.e.). But the vestigial is also more than just anatomical and evolutionary leftovers; it extends to the realms of the socius, to culture, to the environment, enacting analogically to the ways in which indigenous and local forms of knowledge, traditions, rituals and practices are erased for being considered useless to the colonial machinery, and thus inferior, expendable, dispensable, removable. But there exist other ways of understanding and approaching the vestigial, not as a substandard remnant, but as something surreal (*more* than real), extra, exterior, extemporal, extraordinary, extraterrestrial, which is to say, cosmic. The cosmic is a dimension that cannot be accessed exclusively through rationality and other processes of cognitive, intelligible forms of thinking and consciousness, but is instead open to other forms of nonconscious cognition (Hayles, 2017) and noetics that require and proceed through atmospheric attunement. This form of attention, which is arguably partly what lends the 'jungle imaginary > *real'* its somaesthetic power, is extra sensitive to the moments when zoë (bare life) and geos (the earth) (Braidotti, 2019) encounter each other through the technique of writing worlds: to capture the essence of the instant when the light at dawn is diffracted by a million dew drops on a fern; the moment that bubbles on the boiling surface of a lava eruption burst and coagulate into black brittle basalt; the breaking through of a milk tooth. But it also allows the cosmic to dictate the ruptures through which virgins descend from the heavens with golden lianas, and the cracks through which spirits move through a house in the pampa, as easily as through a coup d'état in the city, (Allende, 1982) giving consistency to life and to the living.

These encounters become atmospheric when their affective potential is transmitted to and through a body (transmission). The body, with its vestiges of the past and *a* future, with its tails, its skin crawling with goosebumps, knows that the spirits are present, and that they are as *real* as flesh and blood. This body is then not a colonized, gridded and 'positioned' modern body. It is not only capable of high-definition affective attunement to atmospheres, but it is also a sophisticated machine of 'feeling-thinking'. (Escobar, 2016) Hence, it is a body capable of channeling affective potentials and translating these into specific forms of embodied and embedded practice that ultimately will transform environments, and world new worlds. We have departed, leaving behind the postcolonial lands of magical realisms and the marvelous real. A cycle of affective atmospheric attunement where life encounters the earth and the cosmos begins anew is the site of experimentation where the 'normal abnormal' becomes the paranormal, the 'extraordinary real'.

The extraordinary real : worlding the pluriverse

The 'extraordinary real' owes to the 'jungle imaginary > *real*' that has animated these lines so far, its inherently contradictory nature, a thing that is always ambivalent, not just ambiguous. It is fictional, yet theoretically and factually possible, and also always more than simply real. In its cities and villages and settlements that sprinkle the drying landscapes like empty acorns, there is spacetime for not just capitalist rhetoric of extraction, plundering and violent erasure. Parallel to the mass extinctions and loss of bio/cultural diversity that accompanies the age of human disturbance and its atmospheric dissolution, there are always acts of creation and creativity in the form of "contaminated diversity", namely cultural and biological ways of life that have evolved next to the destruction of colonial and imperial conquest. (Tsing, 2012, 95) In addition to the extractive zones of late global capitalism (Gómez-Barris, 2017) and its ordinary and obstinate rapacity, other locales know how to integrate indigenous forms of non-centric knowing and doing (indigenous artivism, i.e.) into technicities, methods and practices, including the creation of atmospheric settings and counter-perspectives that exceed, escape, mediate and invert the extractive view. The view from nowhere is countered by a specifically Amerindian perspectivism (Viveiros de Castro, 1998) that gives consistency to the thick surfaces that, like beds of moss and subterranean mycelium rhizomes, lie beneath the visible world, seeking out minor and smaller and less perceivable worlds, life forms and the organization of relations and their tracking. (Gómez-Barris, 2017, xiv)

This perspectivism doesn't have a particular origin; it is both cosmic and mundane, terrestrial, but its emergence and consolidation invite ontic settings and atmospheres upon which unending and real fictions, speculations and fabulations intertwine with cosmological, folkloric, mythical and magical elements. In their swirling encounters they produce, they create, they disturb, slowly. They martialize perhaps not (only) in the jungle, but as stories that take place next to a busy road where dust-covered poppies are visited by pollinators, where the interaction of atmospheres incite and excite more than humans alone. Bacteria enjoying detergent tasting petroleum

dinners in the shallow slicks created next to a punctured pipeline in the desert. In telling the stories of how diversity is created, fables of sympoeisis are told : tales of collective generation and organization based on kinship (Haraway, 2016) between humans and more than human others are spun and held together by highly affective atmospheres and relational landscapes. These landscapes pertain not only to a plurality of simultaneously occurring stories and versions of a particular reality, but they conform pluriversal accounts of complex, and mutually constituted, albeit competing, worlds. Here, the understanding of 'worlds' as much more than corporeal sites, or physical spaces of material inhabitation is key to unlocking their inherent incorporeal, immaterial, and animistic powers of ambience. These worlds, and their atmospheres, convey realities where time is not linear, where movement is arrested, where causality is subjective, where magic is a mundane, everyday life occurrence, and where the quotidian is a miracle. A world where spacetime is a snail, a world we walk on in search of other worlds, (EZLN, 1994) profound ones, imaginary ones, real ones. (Bonfil Batalla, 1987) This atmospheric world is vibrational, full to the brim with surprising wonders; a world full of design, creativity, intuition, and purpose. But it is also a world of contrasts, of ambiguity and dissociations.

CONCLUSIONS

In the specifically Latin American pedigree of magical realism and the marvelous real with which I began this account, writing and reading are seen as potent postcolonial mechanisms and worlding practices capable of a deep engagement with the reality of *a* world within which a multitude of modes of existence interact, compete and negotiate at least two realities and worldviews: an endemic, or indigenous, and a modern. A world experienced in ambiguity is a reality experienced *otherwise.* While magical realism and 'lo real maravilloso' are traditionally not speculative forms of writing, in this paper I argued that they nevertheless contain and present vestiges (remnants) of a form of thinking and doing, modes of being in the world, that are non-centric, non-western and thus, non-extractivist. They embody an aesthetic sensibility, or attunement, to the expressions of the rainforest and other environments, of geographies and calendars that today have been swallowed up in the reductive 'one-world world model', but which nonetheless lay latent, like seeds awaiting fire, or rain, to propel their resurfacing. As such they constitute perspectives of 'the jungle imaginary >real', a precursor to the 'extraordinary real'. The 'extraordinary real' can be seen, heard, felt, tasted, touched, sensed in many complex and vibrant 'contextual realities' that promise to decentre the human, flatten the webs of domination, and foster the healthy coexistence of multiple ecologies of practices, traditions, and knowledges. In short, the jungle imaginary is not fantasy, hallucination or oneiric slumber, but fully real, *extra* real, providing subsistence to subjectivities that are situated or embedded in contextual grounds, embodied, extensive, enacted, empowered. In this experiment the extra-ordinary-real offers alternatives for other narrative-investigative lines and genres of 'serious fiction', including science-fiction, speculative realisms and (feminist) fabulations. In this sense, these modalities of Amerindian and Latin American realisms graft together the complex cosmologies,

geo-histories and ethno-ecologies of not only Latin America, but of the lands and territories of our 'pueblos originarios' adding to the repertoire of creative ecologies. Ultimately, these chronicles function as a hermeneutic method, and a heuristic vehicle to navigate the astounding atmospheric corners and ambiences of the pluriverse.

5. BIBLIOGRAPHY

Allende, I. (1982). La casa de los espíritus. Plaza & Janés.

Blaser, M. & de la Cadena, M. (Eds.) (2018). A World of Many Worlds. Duke University Press.

Bonfil Batalla, G. (1987). México profundo: una civilización negada.Grijalbo.

Braidotti, R. (2019). Posthuman Knowledge. Polity Press.

Carpentier, A. (1949). El reino de este mundo. Austral.

Carpentier, A. (1974). Concierto barroco. Alianza Editorial.

EZLN (Ejército Zapatista de Liberación Nacional). (1994). Primera declaración de la selva lacandona. >>*www.radiozapatista.org*<<

Escobar, A. (2016). Thinking-feeling with the Earth: Territorial Struggles and the Ontological Dimension of the Epistemologies of the South. AIBR, Revista de Antropología Iberoamericana, vol. 11, (Jan-April 2016,) 11-3 >>*www.aibr.org*<<

Escobar, A. (2018). Designs for the Pluriverse. Duke University Press.

Esquivel, L. (1989). Como agua para chocolate. Suma.

García Márquez, G. (1982) Cien años de soledad. Debolsillo.

Gómez-Barris, M. (2017). The Extractive Zone: Social Ecologies and Decolonial Perspectives. Duke University Press.

Haraway, D. J. (2016). Staying with the Trouble: Making Kin in the Chthulucene. Duke University Press.

Hayles, N. K. (2017). Unthought. The Power of the Cognitive Nonconscious. The University of Chicago Press.

Huicacheo Pérez, F. (2020). Kuifi ül. Film: B&W/Color, digital, 10 mins.

Law, J. (2015). What's wrong with a one-world world?. Distinktion: Journal of Social Theory, 16 (1), 126-139. *https://doi.org/10.1080/1600910X.2015.1020066*

Mattos Nicoletti, N. & Montouni, V. (2022). Decolonial perspectives for a Pluriversal Design. Pos FAUUSP, Sao Paulo, 28(52).

Mignolo, W. (2007). Delinking: The rhetoric of modernity, the logic of coloniality and the grammar of de-coloniality. Cultural Studies, 21(2–3), 449–514. >> *https://doi.org/10.1080/09502380601162647*<<

Mignolo, W. & Tlostanova, M. (2016). Género y descolonialidad. Praxis Educativa. 14(1), 73-77.

Mignolo, W. & Walsh, C. (2019). On decoloniality: Concepts analytics and praxis. Duke University Press.

Miraval, F. & Quintana, H. (2023). Adaptative Humanism: Moving from limiting to quantum narratives to connect with the emerging future. Journal of Awareness-Based Systems Change, 3(2).

Paz, O. (1950). El laberinto de la soledad. Fondo de Cultura Económica.

Rogers, K. (2014). 7 Vestigial Features of the Human Body. Encyclopedia Britannica. >>*https://www.britannica.com/list/7-vestigial-features-of-the-human-body*<<

Thibaud, J-P. (2019) A Brief Archaeology of the Notion of Ambiance. Journal for Creative Arts, Unlikely >>*https://unlikely.net.au/issue-06/notion-of-ambiance#fnref19*<<

Tsing, A. (2012). Contaminated Diversity in 'Slow Disturbance': Potential Collaborators for a Liveable Earth. In: Why Do We Value Diversity? Biocultural Diversity in a Global Context. Gary Martin, Diana Mincyte, and Ursula Münster (Eds.) RCC Perspectives, no. 9, 95-97.

Viveiros de Castro, E. (1998). Cosmological deixis and Amerindian perspectivism. Journal of the Royal Anthropological Institute 4.3: 469–488. >>*https://doi.org/10.2307/3034157*<<

WRITING AS ARCHITECTURAL REPRESENTATION: A FICTIONAL ESSAY OF THE WORK LA TALLERA

ESCRITA COMO REPRESENTAÇÃO ARQUITETÔNICA: UM ENSAIO FICCIONAL DA OBRA LA TALLERA

Camila B. Andrade
Arquiteta e Urbanista (UFPB, 2023)
Mestranda do PPGAU/UFPB
cbandradez@gmail.com

Carolina Silva Oukawa
Arquiteta e Urbanista (FAUUSP, 2005). Doutora (FAUUSP, 2019)
Professora Colaboradora do PPGAU/UFPB
carolina.oukawa@academico.ufpb.br

ABSTRACT

This article derives from ongoing master's research that investigates writing as representation in architectural analysis. With a methodological basis in musical analysis (Oukawa, 2019), the analytical practice of architecture results in an illustrated text, in the form of an essay (Larrosa, 2003). The reconstitution of the experience of the analyzed work occurs through direct experience or through representations. The present study proposes to expand the possibilities of writing in architectural analysis through fiction (Saer, 2022), based on an analytical journey of *La Tallera*, an intervention project by Frida Escobedo in Cuernavaca, Mexico, carried out in 2010. Fiction acts as an artifice for deepening a writing that, ultimately, attempts to make aspects not reached by (another) analysis evident. Thus, it operates by enabling a detachment from the concreteness of a physical and temporal distance from the work, mediated by walks through Google Maps, on different dates.

KEYWORDS: essay. fiction. architectural analysis. *La Tallera.*

RESUMO

Este artigo deriva de uma pesquisa de mestrado em andamento que investiga a escrita como representação na análise arquitetônica. Com base metodológica na análise musical (Oukawa, 2019), a prática analítica de arquitetura resulta num texto ilustrado, na forma de ensaio (Larrosa, 2003). A reconstituição da experiência da obra analisada dá-se pela experiência direta ou por meio de representações. O presente estudo propõe expandir as possibilidades da escrita na análise arquitetônica por meio da ficção (Saer, 2022), a partir de um percurso analítico de *La Tallera,* projeto de intervenção de Frida Escobedo em Cuernavaca, México, realizado em 2010. A ficção atua como um artifício de aprofundamento de uma escrita que, no limite, intenta tornar evidentes aspectos não alcançados por uma (outra) análise. Assim, opera viabilizando um desprendimento em relação à concretude de uma distância física e temporal da obra, mediada por passeios através do Google Maps, em datas diversas.

PALAVRAS-CHAVE: ensaio. ficção. análise arquitetônica. *La Tallera*.

1. INTRODUÇÃO

A pesquisa em análise arquitetônica que origina este artigo extrai sua base metodológica da análise musical, disciplina consolidada no estudo de música, percebendo que essa aproximação abre, entre outros fatores, possibilidades de ampliação do que se entende como *representação de arquitetura e urbanismo.* A recorrência da expressão "análise gráfica" como equivalente a uma análise arquitetônica evidencia a predominância das representações gráficas para a compreensão da arquitetura. Isso porque a arquitetura, ou sua transportação para a linguagem, é feita por meio de plantas, cortes, elevações, fotografias — elementos não textuais. Em contraponto, a fim de estabelecer uma comunicação clara com áreas do conhecimento que não necessariamente dialogam com os desenhos arquitetônicos,

Zein (2018) defende o uso híbrido de ferramentas (gráficas e textuais). Lina Bo Bardi, desenhista habilidosa, atribui ainda mais destaque à ideia de uma potencial *escrita arquitetônica*, ao declarar que "(o) arquiteto não precisa desenhar. Ele pode escrever (*apud* Perrotta-Bosch, 2021)."

A transposição metodológica (não literal) da música para a arquitetura (Oukawa, 2010) reforça a pertinência da linguagem textual em percursos analíticos. Em música, por meio da execução de obras, da escuta e também da leitura de representações (a partitura), um vocabulário de parâmetros definidos (*harmonia, contraponto, textura* etc.), guia as rodadas de análise, avançando da descrição à produção de sínteses, de modo que o percurso analítico de música resulta num texto ilustrado. A análise arquitetônica, ao produzir também um texto ilustrado, tem-se deparado com uma problematização em torno do vocabulário que orienta as rodadas de análise: a prática tem mostrado que, diferente do que ocorre em música, os possíveis *parâmetros* variam de objeto para objeto, requerendo, muitas vezes, a criação de novos vocábulos (Oukawa, 2019).

É nesse contexto, de reconhecimento da palavra e da escrita como meio legítimo de expressão no campo da arquitetura, que se coloca a questão investigativa da pesquisa de mestrado da qual este artigo é fruto: *de que maneiras e em que medida podemos potencializar a escrita como representação arquitetônica em percursos analíticos de arquitetura?* Um passo tem sido admitir a escrita na forma do ensaio (Larrosa, 2003), que busca ultrapassar o sentido habitual que é dado ao texto, de um mero sucessor da análise "de fato", reduzido à função restritiva de tão somente comunicar as descobertas já tidas anteriormente. Da maneira como temos pensado, escrever pode constituir, em si, uma operação analítica, que permite descobertas e que está suscetível a surpresas, havendo, portanto, um perpassamento do objeto através de palavras que tentam tateá-lo e vislumbram esgotá-lo, como em Perec (2016).

O percurso analítico trazido a esse artigo debruça-se sobre a obra *La Tallera,* intervenção da arquiteta mexicana Frida Escobedo (2010) no antigo ateliê-casa do artista David Siqueiros em Cuernavaca, México. Ele foi provocado na disciplina Leituras Contemporâneas de Projeto e Historiografia, ofertada pelo Programa de Pós-Graduação em Arquitetura e Urbanismo — PPGAU da UFPB em que foram analisados alguns projetos que concorreram ao Prêmio Latino-americano de Arquitetura Rogelio Salmona. Aqui, a partir do recurso do ensaio, recorremos à *ficção* como artifício de aprofundamento e expansão das possibilidades da escrita analítica. Na compreensão do ensaísta Juan Saer (2022), a ficção possibilita um desprendimento em relação àquilo que é "ocorrido" e "verificável", viabilizando uma aposta na "busca por uma verdade menos rudimentar", conforme tradução livre de Fontenele (2021).[1] A ficção

---

1 Em razão da fluência do texto, consideramos a tradução livre feita por Fontenele (2021), que parece optar pela simplificação da construção em favor de seu sentido. Na tradução de Lucas Lazzaretti, o trecho consta como "[...] Não é uma claudicação ante tal ou qual ética da verdade, mas busca de uma ética um pouco menos rudimentar" (Saer, 2022). No original: "No es una claudicación ante tal o cual ética de la verdad, sino la búsqueda de una un poco menos rudimentaria." (Saer, 2014).

não se situa, assim, em contraponto à verdade, mas numa posição que permite o questionamento a uma realidade pretensamente assimilada como "verdade" e, nesse sentido, amplia as possibilidades de tratamento e interpretação do "real", pois incentiva a construção de narrativas que tenham liberdade para pensar as complexidades envolvidas nos objetos. Ainda segundo o autor,

> **(a) ficção não é, portanto, uma reivindicação do falso.** Mesmo aquelas ficções que incorporam o falso de um modo deliberado — fontes falsas, atribuições falsas, confusão de dados históricos com dados imaginários, etc. — o fazem não para confundir o leitor, mas para assinalar o caráter duplo da ficção, que mistura de um modo inevitável, o empírico e o imaginário. (...) **O paradoxo próprio da ficção reside em que, se esta recorre ao falso, ela o faz para aumentar sua credibilidade.** (Saer, 2022, p. 11; grifos nossos)

Num primeiro momento, sob influência de Jonas Malaco (2015), vimos na ficcionalização da escrita um meio de forjar percursos reconstituidores de experiência de uma obra geograficamente distante — o autor parte de apenas três desenhos para analisar o Casario de Atenas, num processo de escrita que acolhe e usufrui do ir e vir de ideias sobre um objeto não apenas geograficamente, mas temporalmente afastado. Para a análise de La Tallera, a complementação das representações gráficas disponíveis foi feita através do Google Maps. Na construção do texto, optamos por prescindir de figuras, a fim de explorar a capacidade representativa elementar das palavras. A seção 2 do artigo apresenta o resultado dessa experiência. Durante a escrita, houve desdobramentos das questões e possibilidades colocadas inicialmente. A esse respeito, trataremos na seção 3, que buscou sistematizar as reflexões ocorridas no e a partir do transcurso do trabalho.

2. ENSAIO

Este caderno é para ser um diário de campo, por isso escrevo sem filtrar. Nesse trajeto, é a primeira vez que avisto pessoas na rua. Por esse motivo, não esqueço: rua Sol. Paro para anotar. Devo estar chegando numa praça ou parque. De longe, enxergo um piquenique acontecendo, e decido que é o momento da pausa. Eu poderia aproveitar a oportunidade de encontro para me aproximar do grupo, comentando qualquer coisa sobre o tempo ou sobre o bairro, mas escolho observá-los um pouco mais antes disso, não quero chamar atenção. Como em muitas praças, há algumas árvores. Como nem em toda praça, não há bancos. Não faz mal, acho mesmo melhor sentar numa escadaria, e posso até escolher entre duas. Sento na escadaria mais distante do grupo, assim posso observá-los sem criar constrangimentos, para mim ou para eles. Não consigo saber o que comem, mas vejo um isopor, trouxeram bebidas também. Derivar por lugares desconhecidos tem dessas: pode acontecer qualquer coisa, como desvendar as comidas de um piquenique. Até aqui, passei por uma infinidade de casas. Em comum entre elas, os muros. Uns não tão altos, outros opressores.

Em alguns pontos, placas informando a vigilância da zona; o monitoramento assinado em nome dos "*vecinos unidos*".[2] Tenho dúvidas se deveria caminhar por aqui. Até a rua parece privada. Me levanto e olho para trás na tentativa de me ofertar uma visão mais fresca do todo, inteirando-me dele: há, logo à frente, dois grandes murais de metal, bastante enferrujados, que parecem encobrir um extenso terreno. Um deles, de tão desbotado, está quase branco, talvez algum dia tenha havido uma pintura nele, que já não é possível distinguir. Eu diria que estão ali exercendo apenas uma função extra de segurança ao terreno, como um obstáculo maior sobreposto às paredes dos muros. Devem ter seus dez ou doze metros. E é, talvez, a conjuntura de fachada mais destoante do entorno. No meio dos painéis, em tamanho bem menor, uma pequena placa, também em ferro. Nela está escrito à mão em letras pretas: *Taller Siqueiros*. A placa não indica uma porta ou qualquer sinal de acesso. Decido passar pelo piquenique para perguntar o que acontece ali. Volto-me para frente e vejo que deveria ter ido antes, porque agora não há mais ninguém.

Já faz alguns anos desde a última e primeira vez que estive aqui. O encontro com a pequena placa *Taller Siqueiros*, à época, me fez entrar numa busca mais imersiva sobre o lugar. Soube depois: casa e ateliê de David Siqueiros, foi a primeira oficina de muralismo do mundo, construída em 1965, embora imaginada e idealizada desde 1920, sendo um sonho antigo. Hoje retorno à Cuernavaca para (re)conhecer La Tallera — agora com pronome feminino por desejo do artista, à revelia da placa anterior — transformado em museu-oficina por projeto da arquiteta Frida Escobedo.

Desta vez, pego o caminho pela rua Luna, e é só quando estou descendo a rua Venus que percebo que os astros dão nome às ruas daqui. Noto que as paredes da oficina estão bem mais altas do que quando vim da outra vez, quase duplicaram de tamanho. Por mais intimidante à escala humana que uma constatação como essa possa soar, não é exatamente dessa forma que se dá a impressão que tenho. As paredes agora são feitas de blocos de concreto vazados. De perto, observo sua individualidade e quero tocá-los: são simples triângulos justapostos, apoiados uns nos outros e interdependentes, de modo que cada bloco tem suas laterais incompletas, precisando de outros blocos, um em cada lado, para formar três triângulos. De tentar olhar cada um isoladamente, me prendo na sua infinita necessidade do anterior ao próximo e do próximo ao próximo...

Dou alguns passos largos para trás, alcançando a outra calçada, do lado oposto da rua. Fico algum tempo e agora enxergo melhor a sua inteireza sóbria; uma malha crua e uniforme. Logo lembro da visão de David Siqueiros acerca dos problemas ópticos próprios dos murais: não poderiam ser apreciados de uma vez, como um todo, justamente por sua escala não o permitir. Imaginava-os, por isso mesmo, como *una pintura activa para un espectador activo*, que convoca o movimento do

---

2 Em português: "vizinhos unidos".

espectador para a visualização de suas partes, em seus vários ângulos. Escuto alguns passos se aproximando: estão vindo uma mulher e uma criança, de mãos dadas, e aguardo que passem à minha frente. A menina, em torno dos cinco ou seis anos, e, com o braço direito aberto, os dedos da mão soltos, sem rigidez, toca a parede contínua de triângulos. Tento ouvir o que estão conversando, mas o som de suas vozes é quase indistinto, só o sei porque vejo o movimento das bocas; nem mesmo o silêncio quase absoluto da rua é suficiente para amplificá-lo. Me esforço na escuta e concluo que a menina cantarola algo, e, quando ela para, a mãe dá continuidade à canção. Elas viram à direita e não as vejo mais. Imagino que estejam indo ao mesmo destino que eu. Decido alcançá-las, e apresso o passo.

É uma tarde de terça-feira, o céu está nublado. Embora sem o caráter plano que lhe conferiria o nome, a praça em frente a La Tallera dispõe da amplitude de uma esplanada. As suas suaves escadarias abrem diálogo às diferenças de níveis criada na oficina-museu, entre rampas e escadas. Três viaturas policiais estão estacionadas entre a rua e a oficina, mas não parece haver ninguém dentro ou em volta delas. Senão por mim e pela mãe e filha, a praça está quase esvaziada. Vejo apenas um grupo de três pessoas que estavam sentadas, subindo a escadaria mais alta. Escolhemos, sem diálogo que ateste o acordo, aguardar as pessoas que aparentam estar se encaminhando em nossa direção. É como se eles atendessem ao convite expressado pelos murais, posicionados em abertura e acolhida em relação à praça. Os murais, agora em vívidas cores, avolumaram sua presença também por meio da estrutura, que os inclina sobre quem entra ou sai do espaço.

Sento-me em uma das escadas enquanto os garotos se aproximam, e estou pensando em me levantar quando um vozerio de vozes graves, possivelmente masculinas, começa a crescer ao nosso redor. Não são, no entanto, dos garotos que estão chegando do parque. A menina, imersa nas pirâmides coloridas dos murais, de repente se dispersa, passando a destinar toda sua atenção às vozes que disputam a narrativa de alguma piada. Duas delas se sobrepõem à discussão competindo pela versão oficial da história, enquanto outra ri alto, restando à mais firme, embora não tão alta, a tarefa de repreender a gritaria. Até que o som se materializa em quatro corpos, fardados e equipados. As viaturas não estavam desacompanhadas. As vozes vão se arrefecendo gradativamente, na medida em que seus locutores sobem a escada.

Não explicam a presença, apenas chegam. Ao que parece, eles vão acompanhar a nossa visita. A porta que estava encostada é finalmente aberta por completo, e dela sai um rapaz que se apresenta e nos dá as boas-vindas: Eduardo, guia de La Tallera, historiador. Ele vai nos conduzir pelos espaços. Passamos por um corredor em meia luz com alguns quadros pela parede. Num desses, Siqueiros está vestido de preto, em pé, à frente de um mural pintado por ele; em contraste ao vermelho, uma forma piramidal branca e perpassada por vários traços pretos se tensiona radicalmente, inclinando-se numa diagonal afiada. Ele explica algo, e a foto é apenas uma captura

desse momento em que gesticula, movimentando-se, não há pose ou cerimônia. Suas mãos, erguidas pelos braços esticados na altura dos ombros, formam uma espécie de concha com os dedos entreabertos, quase como se criassem um campo magnético de propulsão à pirâmide branca que irrompe para além do que a câmera consegue abarcar. Não é culpa do enquadramento, nem mesmo o mural abrange a inteireza da pirâmide, despontada na direção designada pelo gesto.

Os policiais, de tão aproximados que estão, poderiam compor o grupo visitante. Suas posturas variam apenas na posição dos braços — cruzados na frente ou para trás do corpo —, o peito cheio e o conforto no andar são comuns ao quarteto. Observo o semblante do homem com a voz mais firme, e minhas pernas logo entendem o sinal dito pelo seu olhar. Imagino que um dos adolescentes tenha captado uma mensagem parecida, pois também ele acelera o passo. Percebo que estou caminhando num ritmo pouco familiar, que não atende ao meu desejo de conhecer a oficina, respondendo antes ao impulso de estabelecer distância dos quatro que estão atrás de mim. A mãe da menina observa as obras por tempo padrão, há uma cadência constante na maneira que percorre o espaço, a qual a filha se esforça para captar; a exposição quase não influencia no tempo que se demora em seus elementos.

Primeira porta à direita, e chegamos a uma mostra temporária de arte contemporânea. Do espaço só consigo perceber que quase todos os elementos arquitetônicos estão em branco: paredes, treliças e coberta. Rasgos na coberta se alinham aos rasgos nas paredes, agregando luz natural ao ambiente. Não demora e não dá tempo de perceber as obras, rapidamente somos levados à sala de documentação. *Eles* aguardam repousando os olhos em nós, e ninguém parece querer fazê-los esperar demais. Sala poliangular, o guia apresenta, entramos, interessante, saímos, *eles* seguem colados, com esforço consigo me colocar à frente, espaço para oficinas, o banheiro fica ali caso alguém precise, mas ninguém precisa, seguimos, agora já estamos do lado de fora, antiga casa do artista, atualmente funciona como residência artística, capto algumas palavras de Eduardo: lugar, experimentação, diálogo, prática, David Siqueiros, diversos temas, relação arte-política, caráter público, arte, função, museu, oficina — é a isso que se propõe; há uma piscina, olha o jardim, querem tirar fotos?, apenas a mãe quer, e registra a filha próxima ao jardim, temos uma livraria também e ainda um café, vocês podem conhecer ao sair, agradecemos a visita, obrigada, que nada, nós que agradecemos, e o guia faz menção de nos levar até a porta, mas seu movimento é interrompido, um barulho estrondoso. Metálico. Não entendemos de onde vem, e a tensão mobilizada pelo controle da visita, de repente, ganha sentido.

Por trás da porta, a iluminação está diferente, escura. Mas ainda é dia, e faz pouco tempo que vimos o céu claro. Olhando para trás, Eduardo pergunta a ninguém em específico, ainda que, pela expressão, os policiais intencionem responder: "Será que estava marcada alguma restauração para hoje? Não fui avisado". Ele tenta forçar a porta metálica, mas parece haver algo por trás que pesa contra os seus esforços.

Os policiais se encarregam de abrir espaço entre as outras pessoas para entender o que está acontecendo. O primeiro a chegar então diz: "O mural vermelho despencou!" O mais baixo deles responde: "Impossível! A estrutura é extremamente segura! Alguém fez isso!", e então se põe à frente do outro. Os dois se esforçam em empurrar a porta. O outro, mais alto, se esgueira tentando enxergar algo por cima, e o último coça a cabeça. O Eduardo tenta falar com a administração. A criança está séria, olhos fixos no chão. A mãe passa a mão nos seus cabelos repetidamente, e olha para mim quase impaciente com a demora, a aglomeração que formamos no corredor começa a gerar calor. Ela decide perguntar em alto e bom som: "Vai demorar muito? Está quente, o museu é enorme, não precisamos ficar aqui". Agora eles discutem entre si. Disputam a narrativa do fato, mais do que se ocupam da obstrução. Visitantes se olham, e parece ocorrer a nós, quase que simultaneamente, a possibilidade de voltar, fazer o caminho reverso, aproveitar o momento para experienciar o museu-oficina sem a vigilância asfixiante. Aos poucos vamos deixando o corredor, primeiro a menina e a mãe, depois um dos adolescentes, depois eu, depois os outros dois restantes, e os policiais nem percebem. O guia nos acompanha. Burburinhos por parte do grupo de adolescentes misturam medo e satisfação, riem entre si com a possibilidade de o mural ter ganhado vida, movendo-se sozinho. "É ridículo demais imaginar que Siqueiros deu um jeito de movimentar os murais?". Lembro da imagem. O gesto de propulsão em suas mãos. As pirâmides agudas, irrompendo no quadro. Não acho ridículo.

3. PROCESSO

No decorrer da escrita, a dimensão ficcional do ensaio começou a ser trabalhada de um modo excessivamente contido, quase tímido, seguindo estritamente as datas de observação pela ferramenta street view do Google Maps: 2009, o primeiro registro; e 2023, o último. No intento de escrever para "destravar" a escrita, o texto foi ganhando corpo a partir de um tom majoritariamente documental dessas duas *visitas*. Em dado momento, percebemos que o exercício de ficcionalização avançava apenas até a imaginação de uma personagem que fruía da possibilidade de experiência direta com La Tallera, estando lá presencialmente, mas que sua atitude se mantinha restrita à descrição do lugar. Foi preciso focalizar alguns esforços no sentido de elaborar melhor as dificuldades de entrosamento com a ficção, tentando construir perguntas que nos possibilitasse movimentar e, com sorte, transformar a "resistência" com a qual estávamos lidando. O reconhecimento desse entrave foi traduzido pela *sensação de estar impermeável ao potencial da ficção,* tamanho o impasse.

Ainda que a intenção, aqui, não fosse constituir uma obra literária como um fim em si mesmo, as infinitas possibilidades para um texto ficcional embaçavam os contornos norteadores dos objetivos centrais. Como distinguir o que vale a pena *inventar*? O que vale a pena ficcionalizar a partir do que foi visto a fim de aprofundar o que se viu? A intenção metodológica de expansão das possibilidades da escrita como ferramenta de análise de arquitetura por meio da ficção precisou ser recuperada e

relembrada algumas vezes, pois frequentemente o universo imenso e possível gerava tanto uma paralisia quanto um aprisionamento ao "real" como "bote seguro". Essas perguntas, aliadas à consequente percepção de que havia se sedimentado —ainda que fortemente evitada — uma atenção maior ao texto do que à experiência de escrita foram o suficiente para conferir fluidez ao processo, conforme nos liberamos, em certa medida, do texto como "um produto"; servindo para recapitular o ensaio como ferramenta de experimentação e a ficção como um aprofundamento da escrita mobilizada pelo anterior.

A essa altura, a dimensão do tempo continuava cravada em um *antes* e *depois* da intervenção. Em literatura, diferentes explorações do tempo permitem tripudiar de qualquer cronologia ou ideia de linearidade; é possível ir e voltar na história, acelerar um acontecimento ou fazê-lo durar uma eternidade, revisitar através de sonhos ou fluxos de consciência o que na vida real já não poderia ser visitado etc. Um dos princípios do fazer literário colocado pela escritora Noemi Jaffe (2023) é a consciência narrativa, que deve perpassar todo o processo de escrita, sobretudo os momentos de reescrita do texto, em que pode-se, novamente, verificar a necessidade dos recursos adotados. Segundo a autora, é preciso que o autor esteja consciente do que está usando para alcançar suas intenções narrativas; o leitor não se deterá nisso, mas certamente conseguirá captar a necessidade dos recursos utilizados — condição para a consistência literária.

Notamos, nesse momento, que a decisão por um *antes* e *depois* não dispunha de tanta intencionalidade, tendo sido mais uma maneira de abarcar dois momentos da obra. A partir dessa percepção, experimentamos fazer digressões no espaço-tempo, fazendo com que *antes* e *depois* se atravessassem e fossem narrados como que "simultaneamente". No entanto, o depois — ou o agora — foi se tornando proporcionalmente muito maior, dificultando a execução dessa ideia. Por outro lado, também, já não havia tanta relevância que o texto retornasse ao precedente *antes* e *depois*, como uma possível incursão que se limitava à ideia de reforma, estabelecida meramente pelas datas de disponibilizadas pelo street view. Isso porque a ideia de La Tallera existia, no imaginário do artista, desde muito antes disso, já em 1920. A solução adotada foi, então, a assunção da "assimetria" substancial dos momentos da obra; optando-se por incorporar o *antes* à narrativa como um tempo sem nome, existente nas folhas de um caderno antigo ou nos rastros de uma memória acessada.

Dentro da alçada de decisões narrativas, discutiu-se, também, sobre um possível destaque dado ao desenrolar sobre a vigilância existente no espaço, em detrimento da discussão em torno da arquitetura "propriamente" dita do projeto de intervenção de Frida Escobedo. Nos questionamos se o valor descritivo e arquitetonicamente representacional estaria ficando, do modo escolhido, em segundo plano, em comparação com o que costumávamos fazer a partir de uma transposição mais direta da metodologia analítica de música: rodadas de análise guiadas por vocabulário arquitetônico e produzindo reflexão a partir de uma escrita predominantemente

descritiva visando a esgotar esse mesmo vocabulário, migrando gradativamente para o ensaio analítico da obra a partir de algum fio condutor que se destacasse. Percebemos que a escrita ficcional pode acabar atuando como um instrumento de descontrole, afastando o texto analítico de uma junção mais racional das partes analisadas em separado.

Também em contraste com o que estávamos habituadas a fazer a partir da música, de sistematicamente ilustrar o texto analítico, ao experimentar produzir um texto que prescindisse de imagens, entendemos que as representações gráficas inicialmente utilizadas poderiam ser acrescidas do que chamamos de representações textuais, como relatos de visita, tanto em sites de revistas de arquitetura, como a Arquine,[3] quanto em avaliações deixadas na página do local no Google.[4] Na consulta a esse material, comentários sobre uma vigilância excessiva chamaram a atenção. A partir desse dado, notamos que mesmo o street view continha registros dessa presença institucional e controladora em La Tallera. A trajetória artística e revolucionária de David Siqueiros não deixa dúvidas: um aspecto como esse não teria como ser ignorado. Ganhou, dessa forma, uma dimensão considerável no ensaio.

Assim, foi-se constituindo um texto que transitava mais livremente pela ficção, pois já estava mais nítido o que caberia ficcionalizar; o que, nesse sentido, *valeria a pena ser aprofundado* por meio da ficção, e indo além do que estava posto. Aos poucos, o ensaio foi podendo usufruir de uma "verdade própria" capaz de orientar as lapidações necessárias: ações de adicionar, cortar, reordenar ou reforçar aspectos do texto. Desse modo, no percurso analítico de La Tallera, entendemos que a ficção não substitui uma análise mais sistemática de arquitetura, mas pode complementá-la, à medida que se solta do "verificável" e possibilita o alcance de elementos compositivos da experiência arquitetônica que poderiam não ser considerados na primeira abordagem.

4. CONSIDERAÇÕES FINAIS

O artifício da ficcionalização tem sido explorado como uma possibilidade de ampliar as possibilidades analíticas do objeto, permitindo-se, para além da formulação de hipóteses, o tensionamento de aspectos fictícios que atuam com intuitos metodológicos em prol de aprofundar a análise. De modo algum significa virar as costas àquilo que é "real", ou aos fatos arquitetônicos (ou de representação) do objeto que se analisa. O próprio termo *análise* é problematizado por Zein (2018), na

---

3 Coluna escrita em julho de 2018 por Alfonso Fierro, disponível em <*https://arquine.com/movimientos-en-el-espacio-la-tallera-de-siqueiros*>.

4 Um desses comentários foi escrito seis anos atrás, pela usuária Malena: "No exterior, nas paredes, pode ver-se a obra do Mestre Siqueiros. Lá dentro eles cobram e não é possível ver nada além de corredores fortemente vigiados." Um outro comentário, deixado quatro anos atrás pelo usuário Rod Ziq, ponderava sobre um possível desapontamento de Siqueiros: "É vigiado por inúmeros guardas. Siqueiros ficaria bastante desapontado ao ver no que transformaram o lugar". Os comentários foram originalmente escritos em espanhol; a tradução livre é nossa. Disponível em: <*https://maps.app.goo.gl/nsixt3VaD6iADov16*>.

medida em que a ideia de se *analisar* uma obra pode resvalar na suposição equívoca de que seria possível separar as partes de uma obra e compreendê-las isoladamente para, ao final, na soma das partes, se ter uma análise do todo. Assim como poderia conduzir a uma expectativa purista de "conhecer a obra em si mesma", apartada dos saberes preexistentes e da subjetividade de quem analisa. Desviando dessas imprecisões semânticas, a autora sugere *reconhecimento crítico referenciado* como expressão possivelmente menos ambígua para comunicar o fazer analítico em obras de arquitetura, tanto porque o conhecimento que será produzido referencia quem escolheu analisar a obra, quanto porque as referências dessa pessoa também o buscam.

É nesse sentido que o ensaio, forma de escrita por meio da qual a subjetividade é legitimamente expressa (Larrosa, 2003), tem sido explorado em percursos analíticos. A ficção é um recurso que adiciona mais uma camada à subjetividade no trânsito da análise. E aqui vale uma menção ao que Fontenelle (2021) definiu como o caráter de fabulação, elemento também presente nas narrativas dos discursos ditos oficiais — e socialmente assimilados como verdade. O reconhecimento dessa qualidade ficcional como inerente a toda narrativa, inclusive as "oficiais", poderia ser articulado com a assunção da subjetividade em processos de escrita, naquilo que ambos os entendimentos podem ajudar a prevenir posturas pretensiosas de objetividade que buscam ocultar (ou tornar supostamente neutra) a presença de pessoas naquela produção. Essa assunção permitiria questionar o que assimilamos por verdade e, partindo disso, pensar a ficção enquanto ferramenta para a pesquisa sócio-espacial e para a produção de outras fabulações possíveis.

No ensaio empreendido a partir de La Tallera, a ficção pôde ser trabalhada e entendida como um recurso da escrita que, ao permitir a construção narrativa não limitada pelo "verificável" ou entendido como "verdade", ajudou a constituir uma experiência de relacionamento com a obra, com ganhos metodológicos para a análise de arquitetura e de construção de uma representação — escrita e ficcional — da obra.

5. BIBLIOGRAFIA

Escobedo, F. (2010). Desenhos do projeto arquitetônico de La Tallera. *https://www.archdaily.com.br/br/01-94430/la-tallera-slash-frida-escobedo*.

Fierro, A. (2018). Arquine, Movimientos en el espacio: la Tallera de Siqueiros. *https://arquine.com/movimientos-en-el-espacio-la-tallera-de-siqueiros*.

Fontenele, C. M. (2021). Narrar a cidade: fabulação do espaço e espaços de fabulação na pesquisa sócio-espacial (tese de doutorado). Universidade Federal de Minas Gerais, Belo Horizonte.

Google Maps (s. d.). Avaliações de La Tallera. *https://maps.app.goo.gl/nsixt3VaD6iADov16*

Jaffe, N. (2023). Escrita em movimento: Sete princípios do fazer literário. Companhia das Letras.

Larrosa, J. (2003). O Ensaio e a Escrita Acadêmica. Educação & Realidade, 28(2), 102-115. *https://seer.ufrgs.br/index.php/educacaoerealidade/article/view/25643*

Oukawa, C. S. (2019). Análise arquitetônica e o fio do sentido: apontamentos para uma prática pedagógica (tese de doutorado). Universidade de São Paulo, São Paulo.

Perec, G. (2016). Tentativa de esgotamento de um lugar parisiense. Gustavo Gili.

Perrotta-Bosch, F. (2021). Lina: uma biografia. Todavia.

Saer, J. J. (2022). O conceito de ficção; tradução Lucas Lazzaretti. 7Letras.

_____ (2014). El concepto de ficción. Seix Barral.

Zein, R. V. (2018). Há que se ir às coisas. In Zein, R. V. Leituras Críticas. Coleção Pensamento da América Latina, volume 5 (pp. 12-67). Romano Guerra.

FROZEN DREAMS: LUMINOUS VOICES IN THE NIGHT

SONHOS GELADOS: VOZES LUZENTES NA NOITE

Guiseppe Gavazza

ABSTRACT

Frozen Dreams, Luminous Voices in the Night is the first chapter of a work-in-progress, ambience-specific, audio-visual installation. In a dark and silent space, voices, diffused by portable loudspeakers anchored to colourful flashing balloons, narrate their dreams: inner memories reactivated when heard. The project is inspired by *Les Paroles Gelées* (The Frozen Words), a section of the fourth book (1552) of François Rabelais's *Gargantua et Pantagruel*, which narrates that at the edge of the frozen sea, in winter, there was a great and bloody battle. The shouts, the cries, the slashing, the clashing, the neighing and all the other frightful noises became frozen in the air. When the rigours of winter have passed, the serenity and temper of the good old days come to the fore, and so they melt and are heard. *Thawing Dreams* is the second chapter within which the voices counterpoint the sounds of water and thawing ice.

KEYWORDS: Fragility. Art. Resonance. Aura. Reactivation.

RESUMO

Frozen Dreams, Luminous Voices in the Night é o primeiro capítulo de uma instalação audio-visual (ambiance-specific) de work-in-progress. Num espaço escuro e silêncioso, várias vozes, difundidas por altifalantes portáteis que ancoram balões luminosos coloridos, narram os seus sonhos. Sonhos estes de memórias interiores reativadas pela escuta. O projeto é inspirado por *Les Paroles Gelées* (As Palavras Congeladas), uma secção do quarto livro (1552) de *Gargantua et Pantagruel,* de François Rabelais, que narra que à beira do mar gelado, no inverno, houve uma grande e sangrenta batalha. Os gritos, os berros, os golpes, os choques, os relinchos e todos os outros ruídos assustadores ficaram congelados no ar. Quando o rigor do inverno passa, a serenidade e o temperamento dos "bons velhos tempos" vêm ao de cima, derretendo-se e fazendo-se ouvir.

Thawing Dreams é o segundo capítulo em que as vozes fazem contraponto com os sons da água e do gelo descongelado.

PALAVRAS CHAVE: Fragilidade. Arte. Ressonância. Aura. Reativação

1. FRAGILITY

… of the fragility of voices narrating their dreams, hanging from fragile, coloured balloons in fragile environments and contexts.

Figure 1. Set up of the installation of *Frozen Dreams: Luminous Voices in the Night.*

Frozen Dreams is a work-in-progress, ambiance-specific, audio-visual, artistic installation.

In a dark and silent space, several voices, diffused by portable loudspeakers anchored to colourful flashing balloons, narrate their dreams: inner memories reactivated when heard.

During my music studies, I discovered an episode known as *Les Paroles Gelées* (The Frozen Words), a part of François Rabelais's fourth book of *Gargantua et Pantagruel* (1552), a five-book romance that narrates the fantastical adventures of the giants Gargantua and Pantagruel, following the "heroic deeds and sayings of the noble Pantagruel" as he travelled the world in search of the oracle of the "Dive Bouteille". The composer Azio Corghi, who was my teacher at the time, was working on his opera *Gargantua* that was staged from May 1984, in several opera theatres around the world. This is narrated in Les Paroles Gelées as they sail in the Arctic Circle, near the North Pole:

Icy est le confin de la mer glaciale, sus laquelle feut au commencement de l'hyver dernier passé grosse & felonne bataille, entre les Arismapiens, & les Nephelibates. Lors gelerent en l'air les parolles & crys des homes & femmes, les chaplis des masses, les hurtys des harnoys, des bardes, les hannissemens des chevaulx, et tout aultre effroy de combat. A ceste heure la rigueur de l'hyver passée, advenente la serenité et temperie du bon temps, elles fondent et sont ouyes.

This is the edge of the frozen sea, and at the beginning of last winter there was a great and bloody battle here between the Arimaspians and the Cloud Riders. The shouts of the men, the cries of the women, the slashing of the battle-axes, the clashing of the armour and harnesses, the neighing of the horses and all the other frightful noises of battle became frozen on the air. At this hour, when the rigours of winter have passed, the serenity and temper of the good old days come to the fore, they melt and are heard.

Les quelles ensemblement fondues ouysmes, hin, hin, hin, hin, his, ticque torche, lorgne, brededin, brededac, frr, frrr, frrr, bou, bou, bou, bou, bou, bou, bou, bou, traccc, trac, trr, trr, trr, trrr, trrrrrr, on, on, on, on, ouououon […]

When they had all melted together, we heard, "Hin, hin, hin, hin, his, tick, tock, crack, brededin, brededac, frr, frrr, frrrr, bou, bou, bou, bou, bou, bou, bou, bou, tracc, tracc, trr, trrr, trrrr, trrrrr, trrrrrr, on, on, on, on, on, ouououon […]

Upon reading this episode, I inferred that the frozen words had been the first audio recorder in history. The memory remained dormant for many years, but the frozen words were etched deeply in my mind.
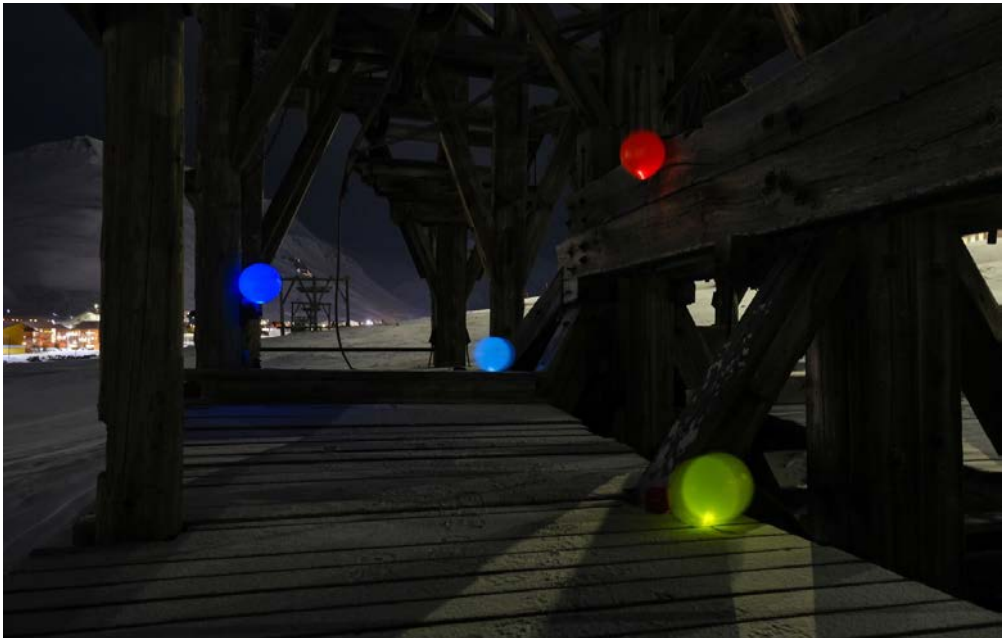
Figure 2. *Frozen Dreams: Luminous Voices in the Night.* Outdoor installation.

2. ART

In the summer of 2021, I received an invitation to create a participatory musical installation for the symposium, *L'enchantement qui revient* (The Enchantment that Returns) to be held in the ancient and charming castle of Cerisy in Normandy. The installation, named *Dream Clouds*, consisted of a dozen small loudspeakers hanging from clusters of luminous balloons, which were scattered around the castle's beautiful park. The installation created an alluring spread of voices into the night, as the frozen words awoke. But what could these voices say? Certainly not accounts of battle. "Make dreams, not war!", I thought, and I launched an appeal and collected about 80 dreams told in different languages.

In the Spring 2023, attracted by the call for artist's residencies at the Spitsbergen Kunstnersenter, the most northern Artist in Residence centre in the world, the connection with Rabelais's frozen words was immediate, and equally immediate was the request for a double residency, including both the winter and summer solstices. However, beneath the dormant project, which had not yet come to the surface, there was a spontaneous and immediate suggestion of dyads: night/day, winter/summer, black/white, dreaming/waking. Suggestions proposing possible links with: the long night and the long day, the white of snow and ice and the black of local coal mines that were for more than a century the essence and life of this place, now largely closed and destined to cease all operations within two years in respect of the environment of these islands. A carbon footprint that marks not only these territories, among the most fragile on the planet, but also the wider world.

The response was positive, the double residency period was envisaged and I went to the Arctic with a primary question in mind: how could I execute this ephemeral art installation in such a fragile and challenging environment? In collaboration with a photographer and videographer friend who shared the residency with me, we decided to treat the winter residency as an exploratory phase: the frozen dreams – we thought – would take shape in the documentation of the difficulty of the project being realised. Although fragmented in reality, not perceivable in the world they would be reactivated in, they would be given meaning through narrative when shaped through the documentary. We recorded sounds, photos and videos to continue the initial project of a documentary on the design and realisation of the project.

In January 2024, in the Spitsbergen Art Gallery, we presented our installation, *Frozen Dreams: Luminous Voices in the Night.*

Figure 3. *Frozen Dreams: Luminous Voices in the Night.* Winter 2023-2024, Gallery Exhibition.

3. RESONANCE

Is there a connection between sounds and dreams? I spontaneously answer: yes. The connection lies within the phonetics of the words that describe these concepts, particularly in Latin-based languages (som/sonho, suono/sogno, son/songe, sonido/sueño). There is a depth in both topics: that of deep listening, related to practices like soundwalk, soundscape, and acoustic ecology, and that of the sleep where our dreams reside. Music has the power to make us dream, just as dreams have the power to bridge the gap between sleep and reality.

Has not dream interpretation always been an attempt to reconcile the world of sleep, night, darkness, and the moon with wakefulness, day, light, and the sun?

And what about the great day of the Earth with its four phases: dawn/spring, day/summer, dusk/autumn, night/winter? That, at the planet's opposite poles, there is a unique year/day, where winter/night and summer/day are the two grand seasons?

In these reflections, John Cage with his *Silence* (1961) re-emerges: an artist who has made the liberation of sounds and listening ("allowing the sounds to be themselves") his own poetic and artistic style. One of the most revealing books of our time in which knowledge, otherwise fragmented into isolated branches, is interwoven into a

new polyphony and a new humanism harvested in porous pockets. As I was leafing through the book, I read:

But then a few days later, while rambling in the woods, I got to thinking. I recalled the Indian concept of the relation of life and the seasons. Spring is Creation. Summer is Preservation. Fall is Destruction. Winter is Quiescence. Mushrooms grow most vigorously in the fall, the period of destruction, and the function of many of them is to bring about the final decay of rotting material.

This raises a question: perhaps dreams, like mushrooms and like music, but perhaps like all art, have ecological filtering, a purification function?

4. AURA

The shortest path from one point to another is not the straight line, it's the dream.
Malian proverb

Ecology has become a mesmerising word, which has lost its meaning in the trivialisation of advertising. Everything has been switched into a 'green' product to be sold, from insurance policies to snacks. There is nothing more polluting than an incitement to indiscriminate consumption.

The ecological vision that underpins our project resonates deeply with us. We believe that ecology is fundamentally about "taking care" – what else should it be? This begins with becoming aware of the immense beauty and richness of the world that still surrounds us, as well as the sensory and aesthetic perceptions that our bodies have had since the beginning of life, and our minds' ability to understand ourselves, others, and the world. Nothing more is needed than to be present in the moment, simply because we exist. Dreams, art, and music allow us to communicate and create new worlds. By empathising with others and with the world, immersing ourselves in their emotional narratives, we expand our experiences and sense of connection.

A place where we live, whether settled or nomadic, with our work, but above all with the ability to perceive it, becomes landscape and soundscape. And through imagination, memory and dream, it becomes an emotional landscape.

You do not need anything other than to take care of what we have and what we are: to walk, dream, imagine, we do not need anything, and we only generate the entropy necessary for life, we use and take care of everything that is the environment inside and outside of us.

We didn't know, and still don't know, how paying attention to sounds can impact our dreams. We understand that dreams condense our experiences - affective, sensory and real - into narratives that we experience with the same emotional intensity as

when we are awake. We know that the dreams are coalescent by the representation of the world in which we live. We understand that dreams have always been considered to be the keepers of knowledge that transcends rationality. When we give attention to their emotional content, they reveal to us the knowledge of unexplored inner landscapes.

Figure 4. Set up of the installation of *Thawing Dreams.*

5. REACTIVATION

At this hour, when the rigours of winter have passed, the serenity and temper of the good old days come to the fore, they melt and are heard.

I wrote at the beginning of this text: "*Frozen Dreams* is a work-in-progress, ambiance-specific, audio-visual, artistic installation. In a dark and silent space, several voices, diffused by portable loudspeakers anchored to colourful flashing balloons, narrate their dreams: inner memories reactivated when heard."

After the long night of the winter solstice, the second chapter of the Arctic adventure took place, as planned, on the long day of the summer solstice. How to give body and meaning to our idea in such a radically different ambience? The fascination of the first installation was in the dark space of a 'luminous' art gallery with large windows open to the night. To recreate now an artificial night by darkening them would have been, literally, unnatural.

Summer is here, and the icy landscape melts into sonorous rivulets of water dripping from the mountains and glaciers in a multitude of trickling, fragile streams, burrowing twisted canyons in the ice; flowing between coal-black, iron-red and multi coloured boulders immersed in the innumerable shades of green and brown of the musks dotted with the bright colours of minute flowers; roaring in the constant flush of the muddy Longyearelva, which rises from the ice of the Longyearbreen to flow into the Adventfjiorden and Adventdalen at Longyerbyen, the northernmost city in the world.

Water, sun, and wind have spent millions of years shaping these mountains that collapse into counterforts of boulders, stones, and pebbles.

At this hour, when the rigours of winter have passed, the serenity and temper of the good old days come to the fore. Dreams thaw and are heard like voices rising from shallow piles of stones resting on the floor of a different room in the same art gallery that had hosted the frozen voices falling from the roof, just one night ago.

Figure 5. *Thawing Dreams*. Summer 2024, Gallery Exhibition.

6. BIBLIOGRAPHY

Rabelais, F. Gargantua et Pantagruel, 1552

Corghi, A. (1984). Gargantua, Lyric opera in 2 acts, libretto by A. Frassineti. Ricordi, Milano.

Artemidoro, (1975). Il Libro dei Sogni, Adelphi, Milano.

Augoyard, J.F & Torgue, H. (1995). Répertoire des effets sonores, Editions Parenthèse.

Beradt, C. (1991), Il Terzo Reich dei sogni, Einaudi, Torino.

Cage, J. (2019), Silenzio, Il Saggiatore, Milano.

Auslander, P. (2019). Reactivations. Essays on Performance and Its Documentation, Ann Arbor, University of Michigan Press.

Benjamin, W. (1991). L'opera d'arte nell'epoca della sua riproducibilità tecnica. Einaudi, Torino.

THE PASSION ACCORDING TO G.H.: THE NECESSARY ABJECT

A PAIXÃO SEGUNDO G.H.: O ABJETO NECESSÁRIO

Silvana Castro Nicolli
PhD in History
Pontifical Catholic Univesity of Rio de Janeiro
silvana.nicolli@gmail.com

ABSTRACT

This work examines how the novel, "The Passion According to G.H." (1964) by the writer Clarice Lispector instigates us to experience a reversal of pre-established social positions. The book is structured from the monologue that ends in the maid's room, where the narrator confronts a cockroach. The estrangement of space and the confrontation of fear are shared with the spectator who is called to participate. The fictional narrative becomes a means of investigating this domestic space, which remains in Brazilian modern architecture as a remnant, as an unconscious social dimension. By placing the maid's room in a prominent position, Lispector's text subverts the circumstantial unimportance given by the modern narrative still reproduced and implicates the social structure as a whole, revealing sensitive and environmental aspects of Brazilian women's lives.

KEYWORDS: modern architecture. novel. patriarchal. enslavement. female. environmental art

RESUMO

Este trabalho examina como o romance, "A paixão segundo G.H." (1964) da escritora de Clarice Lispector nos instiga a experimentar uma reversão de posições sociais pré-estabelecidas. O livro se estrutura a partir do monólogo que se encerra no quarto da empregada, onde a narradora confronta-se com uma barata. O estranhamento do espaço e o enfrentamento do medo são compartilhados com o espectador que é chamado a participar. A narrativa ficcional se torna um meio de investigação desse espaço doméstico, que permanece na arquitetura moderna brasileira na condição de resto, como uma dimensão social inconsciente. Ao colocar o quarto de empregada em posição de destaque, o texto de Lispector subverte a desimportância circunstancial dada pela narrativa moderna ainda reproduzida e implica a estrutura social como um todo, revelando aspectos sensíveis e ambientais da vida das mulheres brasileiras.

PALAVRAS-CHAVE: arquitetura moderna. romance. patriarcal. escravagista. feminino. arte ambiental.

1. INTRODUCTION

The maid's room is on the verge of extinction in contemporary Brazilian middle-class apartments, although the presence of the domestic servant remains. Domestic work, shared equally among family members, is not a reality. The various Brazilian artistic and architectural movements that, in the 1960s, questioned the current institutions of power, did not highlight gender inequality or the presence of the maid's room. The layout of the colonial house continued to be used in early apartment buildings, even with the advent of modern architecture. This work examines how the novel, "The Passion According to G.H." (1964) by the writer Clarice Lispector, allows to review such contradictions through the fictional narrative that engages the reader

in suspense. It becomes a means of investigating this part of domestic space that has remained in the condition of remnant, as an unconscious social dimension. The maid's room is presented in the novel as the space of social segregation, which throughout the book metamorphoses into an open space and, finally, a sacred space for the realization of the sacrifice that turns the passage through the room a cosmic experience, above any gender distinction. We propose the reading of "The Passion According to G.H." as the passage through a *"Penetrável"* by Oiticica, as a *"vivência",* where the reader is called to participate in the process of questioning relationships with others and with life.

2. THE EXTINCTION OF THE MAID'S ROOM AND THE BLIND SPOT

For architect Lucio Costa, the maintenance of the maid's room was due to the social and economic backwardness associated with the slavery and patriarchal heritage. For Costa, collective housing would have imposed itself as a solution to economic demands and logistics of use, given the reduction in domestic employees at the beginning of the 20th century. For Costa, the maid's room was kept in modern projects out of habit. Modern architecture anticipated environmental cultural development and was initially rejected, having to be adapted. The flourishing of modern Brazilian architecture constituted a "miracle" for having established itself and excel in a country with socio-cultural backwardness (Costa, 2018/1951). The modern apartments thus maintained the layout of colonial architecture, having a social sector at the front and a back sector, which was restricted to female presence and where the service area and the maid's room were located. Female social interaction in these spaces is associated by Costa with the degeneration of customs. For him, this interaction was marked by the "transmission of vulgar mannerisms" on the part of "black and mixed-race servants", considered by the "forerunner of the Americanization of the customs of today's girls"[1]. Although Costa was initially criticizing the patriarchal structure of slavery, his narrative implied a naturalization of the division of spaces between men and women and a repressive discourse regarding the freedom of female behavior.

3. PASSION ACCORDING TO G.H.
3.1 Clarice and "Environmental Art"

Clarice Lispector (1920-1977) was born to a Jewish family in Ukraine that took refuge in northeastern Brazil in 1922. She married a Brazilian diplomat, a colleague at the law school in Rio de Janeiro. After traveling to accompany her husband, she returned to Brazil in 1959, separated and with two children, and went to live in the Leme neighborhood, where she wrote "The passion according to G.H." (1964). This is the moment of resumption of her literary career. The beginning of the 1960s in

---

[1] Lucio Costa, *"Muita construção, alguma arquitetura e um milagre"*, first published in 1951. In *Registro de uma vivência*, 1995/2018.

Brazil corresponded to the years of optimism, left by the government of Juscelino Kubitschek. It is the time of the inauguration of Brasilia; Bossa Nova; from the Neo-concrete Movement (1959) towards the experimentalism of the environmental and performing arts of artists such as Hélio Oiticica and Lygia Clark. These artists were critical of the aestheticism of the works produced to be appreciated in museums. They defended the end of the contemplative-aesthetic approach and the change to participatory "Environmental Art" (Pedrosa, Arantes (org.), 2004, p. 355) and believed in the transformative value of artistic "experience", as a liberating agent from the social conditioning imposed by bourgeois society. The active participation of the spectator is demanded through their works which require manipulation, movement, sensory activation. In Oiticica's *"Penetráveis"* (1961-1980), everyday materials and objects are used for sensual enjoyment that involves the entire body (Pedrosa, Arantes (org.), 2004, p. 357). The experience of the work does not imply an alienation from the world of life, but its continuity in the thickness of the present. In the series, *"Bicho"* (1960), by Lygia Clark, void is activated as an element of the work composed of articulated metallic planes. There is no delimitation between the inside and the outside of the work. The experience of the work depends, therefore, on manipulation and time. The themes of participation, absolute space, emptiness, criticism of the aestheticism of art, and the valorization of the lived instant also appear in Clarice's book. We propose the reading of "The Passion According to G.H." as the passage through a *"Penetrável"* by Oiticica, as an experience; where the reading of each chapter provokes the feeling of dissonance, despite the existence of the narrative axis. Lispector's novel, which is difficult to read, also allows us to share the narrator's experience of estrangement from domestic human relationships, through the inclusion of the reader-interlocutor, who is called to the scene: "Hold my hand, because I'm going" (Lispector, 1964, p. 59).

3.1.1 Segregated Spaces: Penthouse Apartment and the Bas-fond

Clarice Lispector's book is structured around the monologue set in the maid's room of a modern penthouse apartment on the 13th floor. The woman, who is the main character, introduced by her initials "G.H.", comes across the empty apartment after the maid's dismissal and decides to clean it up. She begins with the maid's room, which she presumes to be disordered and dirty: it was "The bas-fond of my house" (Lispector, 1964, p.36). The place functioned as a dormitory and "a deposit of rags, old suitcases, old newspapers, wrapping paper and useless strings." (p.33). The passage to this room occurs through a transgression, when G.H. throws the lit cigarette out of the window of the service area and hides herself (figure 1). The rich inhabitant she was thus strips herself of civilized ways and announces her battle to eliminate anything that was not a mirror of the spirited elegance of an artistic creation, such as the social part of his apartment:

> The apartment reflects me. It is on the top floor, which is considered an elegance. People from my environment seek to live in the so-called "penthouse". It is much more than an elegance. It is a real pleasure: from there you dominate a city. (...) Like me, the apartment has shadows and damp lights, nothing here is

abrupt: one room precedes the other. From my dining room I saw the mixtures of shadows that preluded the living room. Everything here is an elegant, ironic, witty replica of a life that never existed anywhere: my house is a purely artistic creation. (Lispector, 1964, p.29)

3.1.2 Amazement: Egyptian Ruins and Fragmentation of Space

The fluid spaces of the social space converge in a series of spaces fragmented by doors, windows and equipment of the back spaces. There are the kitchen, the area and the maid's room. The fragmentation extends from the interior space to the outside view of the internal area of the ventilation shaft and implies a shuffling of the images of the figure and background of the building (figure 2). The ventilation shaft displays from the top of the 13th floor a complex mechanical apparatus, built according to material and practical reality.

I looked at the internal area, the back of the apartments for which my apartment also saw itself as back. On the outside my building was white, with marble smoothness and surface smoothness. But inside the internal area was an oblique jumble of frames, windows, cordage and blackening of rains, window opened against window, mouths looking at mouths. The bulge of my building was a power plant. (Lispector, 1964, p.34)

As will be verified, the associations between the spaces of domestic daily life and major events of the past will evolve in a crescendo until reaching time immemorial. The spaces of the house become characters in the epic of *"de-heroicization"* (p.175) and estrangement from everyday life (p.16).

3.1.3 The Space Inhabited by Invisible Women

She is shocked by the luminosity, cleanliness and dryness of the maid's room. The elements that compose it are the crooked walls; the closet door is sun-dried, the fiber bed and mattress pierced and stained with watery blood, and the empty suitcases with their initials G.H. engraved. On the wall adjacent to the entrance, G.H. is surprised by a crude charcoal drawing made by the maid: it presented the outlines of the naked bodies of a man, a woman and a dog in life-size. (Lispector, 1964, p.38). She feels affronted by what she understands to be a portrait of herself looking like a mummy. It remembers hers that the former maid is called Janair and the relationship of undeclared hatred that permeated their relationship.

For years I had only been judged by my peers and by my own environment that were, in short, made of myself and for myself. Janair was the first really external person of whose gaze I became aware". (p. 40)

The absent maid becomes present through the marks left in the space. These marks in space return the maid's look of contempt, placing the narrator in the position of object. If the house was a mirror of hers, something unknown to her was being

revealed. The encounter allows us to make a correlation between the two: G.H. had a contour of form but was empty of life. The maid, on the other hand, made herself invisible through the dark clothes that blended with the color of her skin, making her "queen traits" disappear within the general flattened outline. "It was not surprising that I had used her as if she had no presence". Then, she recognizes herself in the image returned by the maid and gets angry. "And fatally, just as she was, so should she have seen me?" (Lispector, 1964, p.40)

3.1.4 My Inhuman Form

Accustomed to the calm life without unforeseen events, the narrator begins to feel strange. G. H. feels her body expand to the point that she does not fit in the room. Overcome with anger, she decides to flood the room: "it would finally muddy the dust until moisture was born in that desert, destroying the minaret that towered over a horizon of rooftops" (p.43). G.H. retraces her cleaning plan. She pushes the bed and tries to open the closet door, in which she sticks her face and is faced with the darkness inside, which exudes "live chicken". A thick cockroach appears that walks towards the crack. The narrator gives up cleaning the room, but trips and falls. Immobilized by fear and trapped between the foot of the bed and the open closet door, G.H. realizes that, for the first time in years, she is aware of place and time. G.H. realizes that she is in the same situation as the cockroach: waiting for the appropriate moment to escape and survive.

> The cockroach also: what is the only feeling of a cockroach? The attention of living, inextricable from its body. In me, everything that I had superimposed on the inextricable of me, had probably never managed to stifle the attention that, more than attention to life, was the very process of life in me. (Lispector, 1964, p. 50)

The desire to kill the cockroach that threatens her becomes greater than fear and disgust:

> Without any shame, moved by my surrender to what is evil, without any shame, moved, grateful, for the first time I was being the unknown that I was – only that not knowing myself would no longer stop me, the truth had already surpassed me: I raised my hand as if for an oath, and in a single blow I closed the door on the half-emerged body of the cockroach
> (Lispector, 1964, p.52)

The cockroach still alive is trapped in the half-open door. G. H. feels herself expanding again in space. The narrator realizes that she has no one to ask for help and prepares herself for the final blow that is postponed in the face of the pleasure of self-discovery. G.H. found that she had never seen a cockroach, she was only repulsed by its existence. The narrator identifies herself with the cockroach and addresses to it "she".

The cockroach has no nose. I looked at her mouth and her eyes: she looked like a mulatta to death. But the eyes were radiant and black. Bridal eyes. Each eye itself looked like a cockroach. The fringed eye, dark, lively and dusty. And the other eye is the same. Two cockroaches embedded in the cockroach, and each eye reproduced the entire cockroach. (Lispector, 1964, p. 55)

3.1.5 Open and Sacred Spaces

The narrator feels the coming to the core of life, which is given from such an approximate view of the matter of nature that one loses sight of its form. The cockroach begins to expel white matter from its back. Now it's the room that changes size.

Then I opened my eyes at once and saw in full the boundless vastness of the room, that room, that room that vibrated in silence, a laboratory of hell.

The fourth, the unknown room. My entrance into it had finally been made. (Lispector, 1964, p.58)

The lived space undergoes another transformation that accompanies the deviation of the narrative to a confessional tone, now directed to the person she loved. The narrator reports moments of life in common in which she did not know to leave herself to chance. G.H. announces the sacrifice to be done to reconnect with life, which she has learned is the stuff of all things. She intersperses a tone of prayer and the amorous speech. The ceiling becomes vaulted as in a religious space:

My sweat relieved me. I looked up at the ceiling. With the play of light beams, the ceiling had rounded and turned into what reminded me of a vault. The vibration of the heat was like the vibration of a sung oratorio. Only my ear part felt it. Singing with my mouth closed, sound vibrating deaf like that which is trapped and contained, amen, amen. Song of Thanksgiving for the murder of one being by another being. (Lispector, 1964, p. 81)

G.H. recognizes herself as metamorphosed into something that is no longer her previous "I", but that really is a living thing. She feels connected with space, with the cockroach and with God on the same immanent plane of life materiality. The tragedy of beings is to fulfill the material law: "The renewably original sin is this: I have to fulfill my law that I ignore, and if I do not fulfill my ignorance, I will be sinning against life originally." (Lispector, 1964, p. 96). The room is the scenario of Heaven and Hell, where she tastes the forbidden fruit and feels the pain of becoming what one is.

3.1.6 The Passion

In her eagerness to face the taste of the living reality, G.H. could not postpone what she had already done: "eating the white matter would be anti-sin" (Lispector, 1964, p. 164). Sweating a lot, she ate the matter and vomited. It tasted bad like potatoes with soil, but it had an inexplicable grace. She ate some more of the cockroach's matter

and had a vertigo that made her unconscious. G.H. no longer remembered the act, but only the horror and disgust. She asks: "Was transcendence in me the only way I could achieve the thing?" (p. 166) She wanted to get closer to the divine which is the real. She needn't have eaten from the cockroach, but thus performed an act of "tiny heroism". G.H. lived the moment and had the grace of passion. The narrator trusted that now she could lead her life at the height of life, having the courage to surrender to the unknown. It was necessary to break her own envelope to know that life does not have the meaning programmed by the human. Being alive is inhuman: "I feel that 'non-human' is a great reality, and that this does not mean 'dehumanized', on the contrary: the non-human is the radiating center of a neutral love on hertzian waves" (p. 171).

4. CONCLUSION

In Clarice's book, each new chapter repeats the last sentence of the previous one as if it was a common wall or the prolongation in time of a previous situation. Thus, one experiences a postponement of action that intensifies the moment lived. In addition, each room of the house is corporally experienced: first we read the description of the social and service spaces, as they were conceived, then the description is confronted with the perception extended in time. The social space is a decal of beauty; and the service one, "a portrait of hunger". This is reversed throughout the story, when the narrator sees the drawing made by the maid on the wall. Then the spaces begin to deform, as they are experienced: either through the movements of appropriation or transgression of the narrator or the maid. Also, the approximation of the spaces entered, and the narrator's fall when cornered in the little room alter the experience of the space. Finally, the dissolution of physical space occurs with the presence of the cockroach and the discovery of absolute, inhuman space: "the inside is the outside". It is concluded that reality is living matter, which is common to all beings, and that the narrator proved not to fear through the tiny act of eating the cockroach, despising its involucre. If the cockroach were bigger than her, the narrator's fate would be different, and this would be the reality and the "blow of passion" of each being. In addition to the points in common with the proposals of the "Environmental Art" of the time, Clarice Lispector's work presents a self-critical dimension, which is translated through the centrality of female characters as protagonists of the epic of self-knowledge. She does not fail to present with irony all the contradictions inherited from the patriarchal enslavement culture: the character "lives a man's life" and has a maid; "you have to kill a cockroach alone because you have no one to scream at". It is in the confrontation with another woman that she reflects on the mutual invisibility and "use" of the other. Finally, this highlights the absence of men in the debate on gender injustice. It also presents the reversal of the situation through the sacrifice that is: looking at oneself "with the eyes of the world" and recognizing one's own strange and abject part.

Figure 1. Service Area with the doors to the maid's bedroom and bathroom in Rio de Janeiro.
Source: Photo by the author (2024).

Figure 2. Service Area ventilation shaft and indent in Rio de Janeiro.
Source: Photo by the author (2024).

5. BIBLIOGRAPHY / BIBLIOGRAFIA

Agamben, G. (2007). Profanações. Boitempo.

Costa, L. (2018). Registro de uma vivência. Editora 34.

De Certeau, M., (1998). A invenção do cotidiano: artes de fazer. Vozes.

Freyre, G. (1992). Casa Grande & Senzala: formação da família brasileira sob o regime da economia patriarcal. Record.

Jacques, P. (2007). Estética da Ginga: a arquitetura das favelas através da obra de Hélio Oiticica. Casa da Palavra e Salvador: EdUFBA.

Lispector, C. (1964). A paixão segundo G.H. Rocco.

Lefebvre, H. (1991). The Production of space. Blackwell.

Pedrosa, M., Arantes, O. (org.), (2004). Acadêmicos e Modernos. Edusp.

Sennett, R. (2018). Construir e habitar: ética para uma cidade aberta. Record.
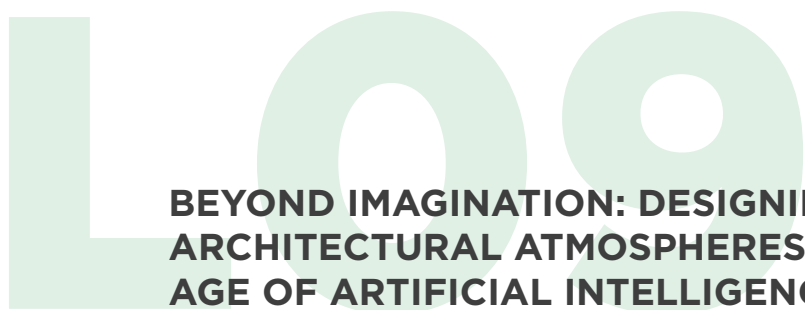
BEYOND IMAGINATION: DESIGNING ARCHITECTURAL ATMOSPHERES IN THE AGE OF ARTIFICIAL INTELLIGENCE

ALÉM DA IMAGINAÇÃO: PROJETANDO ATMOSFERAS ARQUITETÔNICAS NA ERA DA INTELIGÊNCIA ARTIFICIAL

Diogo Ribeiro Carvalho
Adjunct Professor, PhD / Researcher
Departamento de Arquitetura e Urbanismo,
Pontifícia Universidade Católica de Minas Gerais
AAU-CRESSON, École nationale supérieure d'architecture
de Grenoble, Université Grenoble Alpes
diogocarvalho@pucminas.br

ABSTRACT

In an era marked by rapid technological advancements, the intersection of artificial intelligence (AI) and architecture presents unprecedented opportunities for the design of architectural atmospheres. This paper explores this interplay and presents a possible theoretical framework derived from the proposition of fictional narrative as an investigative method for designing of architectural atmospheres through artificial intelligence technology. The hypothesis understands space, perception, and experience and informs the design process in the light of hermeneutic philosophies of architecture. The reflection upon the poetical and critical tasks of imagination and the ontological nature of architecture are positioned as central to create discernment towards the fleeting images condition of contemporary world.

KEYWORDS: architectural atmospheres. artificial intelligence. fictional narrative. critical imagination. hermeneutics.

RESUMO

Em uma era marcada por rápidos avanços tecnológicos, a intersecção entre inteligência artificial (IA) e arquitetura apresenta oportunidades sem precedentes para a concepção de atmosferas arquitectônicas. Este artigo explora esta interação e apresenta um possível quadro teórico derivado da proposta da narrativa ficcional como um método investigativo para o projeto de atmosferas arquitetônicas por meio de tecnologias de inteligência artificial. Essa hipótese compreende espaço, perceção e experiência e informa o processo de projeto à luz das filosofias hermenêuticas da arquitetura. A reflexão sobre as tarefas poética e crítica da imaginação e a natureza ontológica da arquitetura são posicionadas como centrais para criar discernimento em relação à condição de fugacidade imagética do mundo contemporâneo.

PALAVRAS-CHAVE: atmosferas arquitetônicas. inteligência artificial. narrativa ficcional. imaginação crítica. hermenêutica.

1. ARTIFICIAL INTELLIGENCE IN ARCHITECTURE

Throughout the history of architecture, our ways of designing spaces have been shaped by distinct and varied temporal and local human *ethea*, cultural idiosyncrasies, natural aspects of places and technological innovation. As the degree of communication and ideas' exchange between people and cultures became more ubiquitous along the 1900's, especially with the advent of the internet, the architectural disciplinary field is being changed in many aspects by the digital paradigm since the 1990's (Carpo, 2012; Carpo, 2017; Oxman & Oxman, 2013). Now, by the end of the first quarter of the 21st century we are facing the groundbreaking possibilities of Artificial Intelligence (AI) Aided Design (AD).

By the end of the 1990's machine learning models were implemented to recognize characters and patterns, which later allowed the creation of huge data-bases of images and visual information and crossed-referenced classifications. In 2014, the team of the

American computer scientist Ian Goodfellow developed a machine learning framework called generative adversarial network (GAN), by which two neural networks are trained to compete against each other in order to continuously generate new authentic images from a given training visual dataset, for instance. One of the first text to image models was the Deep Recurrent Attention Writer (DRAW), developed in 2015 by Google Deepmind, whose team argued that its' "architecture represents a shift towards a more natural form of image construction, in which parts of a scene are created independently from others, and approximate sketches are successively refined" (Gregor et al, 2015).

The first open AI platforms that allowed the generation of 2d images trough the input of a few lines of text called prompts were DALL-E, launched in 2021 by OpenAI, Stable Diffusion, presented by the CompVis group at Ludwig Maximilian University of Munich and Stability AI in 2022, and in that same year Midjourney was introduced by Midjourney, Inc, within the server Discord. With AI in reach of the general public, the internet and social media were quickly flooded with images of all kinds, and it did not take long for a paradigmatic moment to occur and turn the global creative community towards a discussion on AIgenerated art work. The "*Théâtre D'opéra Spatial*", by digital artist and game designer Jason M. Allen, was awarded the first prize in the 2022 Colorado State Fair Fine Arts Competition in the "digital arts/digitally-manipulated photography" category, and the use of Midjourney in its creation process has incited a lot of conflicting positions about issues such as originality, authorship, ethics, creativity and the nature of art itself.

> The piece sparked a global conversation, challenging traditional notions of art and artist, and captivating audiences with its futuristic yet classical allure. The vivid portrayal of an interstellar opera house, bathed in ethereal light, symbolizes the endless possibilities when technology and imagination collide. This groundbreaking work not only showcases the potential of AI in the art world but also represents a significant milestone in the journey towards broader acceptance and recognition of AI-generated creations. Jason M. Allen's trailblazing approach has set a new standard, inspiring a wave of creativity and innovation in the digital art community. (Art Incarnate, 2024).

Figure 1. Théâtre D'opéra Spatial, by Jason M. Allen, 2022.
Source: Art Incarnate (2024).

After two years, a wide array of professionals, professors, researchers and students within the architecture disciplinary field have already been exploring with the possibilities of AI in creative process and methodologies (Leach, 2022). Three main findings of my own research and teaching experiments are that (1) artificial intelligence aided design (AIAD) processes must be seen as fusions of imaginations – human and non-human – in order to enrich the process; which means to embrace a post-human approach towards creativity. Hence, (2) it is of the utmost importance to have an open-ended mindset during the process and develop a high number of iterations to achieve diversity and openness of concepts. It means that having a fixed idea or parti in mind beforehand can create a lot of difficulties in the process and, in fact, it may lose the whole purpose of using AI in the beginning of a design situation. Moreover (3), AI does not read minds yet, and as consequence the relevance of the images created depend on the way the operator's role is played. In order to achieve powerfulness in this kind of design process, or maybe in any other for that matter, there is a need for theoretical frameworks, design intentions and critical thinking. AI platforms generate images or solutions and different iterations only by human input or demand. The more informed and critical the process is, the more relevant to a situation and context the results are.

Allen's "*Théâtre D'opéra Spatial*" showed us that AI is extremely suitable to create spatial conceptual images and envision architectural atmospheres. The concept atmosphere, developed by Peter Zumthor (2006), involves the capability of space to unveil and express its qualities such as form (morphogenesis and its logic, composition, dimensions…), materiality (material, texture, pattern), light / dark (ethereal, sublime, dramatic…), weight (lightness / heaviness), symbolism / communication / ornamentation (abstraction x figure x figural), movement (fast, slow, dynamic, aggressive, fluid…), to name a few. However, the process of dwelling (Norberg-Schulz, 1985) does not depend only on the qualities of space but also on the qualities of perception and its modes of expression through the intrinsic relation between body (senses, awareness), memory (time, culture, past experiences), imagination (mind, creativity) and action (existence in time and place). This creative process mediates reality and architecture through design intentions and informed research to merge qualities and modes of space and of perception. The mechanism of perception is intertwined with the qualities of a space / an object, meaning that the disposition of the subject to engage with its surroundings is also key to the constitution of the architectural atmosphere.

Figure 2. Raízes Brasileiras (Brazilian Roots), atmosphere investigation by student Larissa Gomes (PUC Minas), 2020. Source: Author's archive from Design Studio "Projeto 2" at DAU PUC Minas.

Although this aesthetic dynamic is extremely complex, diverse and comprises both commensurable and incommensurable issues, this might be one of the most relevant aspects that AI text-to-image engines can give contribution to architectural design process (Jacobus & Kelly, 2023). Every prompt carries and generates a vision of a possible future.

2. VISIONARY ARCHITECTURE: FICTION AS RESEARCH

The ability and necessity to envision the future have historically been within the architects' nature. Whether it may concern a trivial house renovation or the creation of a new language or discourse, the act of projecting is one always for the future. The degree of radicality would depend the motivations in the origin of the act itself. Visionary architecture, experimental architecture, the *avant-garde* are all terms used to address the architectural expressions of the highest degree of radicality. Radical is an ambivalent word since it may be used in the sense of extreme change, unconventionality and being at the limits of control, but can also be understood by its Latin origins meaning "root", that figuratively means the most fundamental or essential part of something. Nevertheless, it is this ambiguity that gives openness and power to the term in regard to visionary architectures.

Visionary architectures perform two fundamental movements: one vertical and deep, towards the bases and foundations upon which the discipline is built; and the other horizontal and extensive, towards other fields of knowledge, seeking fresh and stimulating intersections. They can originate from questioning the internal orthodoxies of the disciplinary field, as well as from emerging situations or contexts where the construction of other visions is necessary. Therefore, they aim to configure other epistemologies by inventing new design processes, pioneering emerging theories, or pushing technological devices to their limits to provoke, challenge, and expand the disciplinary status quo. The design process is also a research process, constructing relevant problems and new hypotheses (Carvalho, 2016). The recurring surreal or exuberant nature of images, objects, or spaces must always be confronted with the criticality of the proposals, as there is always a critical tension between the real and the unreal, where asking questions is as important as seeking solutions. Imagination is at the core of experimental practices in architecture and the arts, while it is desire that ignites it.

Figure 3. The Pregnant Island, project by NaJa & deOstos, 2008.
Source: Jackowski & de Ostos (2008).

Hays (2010) posits architecture as a domain of cultural representation, a "specific kind of socially symbolic production", which means that it plays an ontological role within society "intervening in the realm of symbols and signifying processes at the limit of social order itself". In that sense, visionary architectures play a crucial role in our understanding of reality and in the construction of human meaning for they seem to be radical design experiments in an investigative, and even inquisitive, architecture, which are products of their time and conditions (Jackowski & de Ostos, 2008). In this sense, this kind of architectural manifestation has a notorious fictional quality, as in the project "The Pregnant Island", by NaJa & deOstos, which deploys narrative strategies from the genre Magical Realism – such as the operative categories of fantastic, the strange, the familiar, the repetition and deformation, for instance – to

critically engage with the context in its morphological, environmental, political and cultural specificities.

> (...) architectural desire is materialized in the objects of the late avant-garde – the symbolic desire constituted by architecture's 'big Other,' its laws and language, its original oneness: desire as the architectural unconscious; desire as the pursuit of architecture's original object forever lost (the Tabernacle in the desert, the Vitruvian tree house, the primitive hut). Hence the obsessive search in this work for architecture's fundamental codes and principals, all the time knowing full well there can be none, that outside the architectural Symbolic is the radical nothingness of the architectural Real. Hence too the tumbling into the abyss as desire seeks its object: for desire desires *itself* in its object. It determines itself by negating its object, then becomes the object abolished through its own self-appropriation. (Hays, 2010).

The notion of fiction is a comprehensive philosophical and operational framework that views narrative not merely as a form of storytelling but as a critical tool for exploring and understanding human reality. Ricoeur (1990) argues that fiction operates through a complex process of mimesis, involving the prefiguration, configuration, and refiguration of human actions and experiences. This process allows narratives to unveil a horizon of possibilities with their own referentiality, offering profound insights into human condition. Similar to experimental architectures, the literary fictions allow themselves to put both the narrative and the reader in a parallel position in relation to reality, offering the possibility of critical reflexion of past, current and future experiences, for they possess the ability to reorganize temporal events, providing a nuanced comprehension of human time that neither linear chronology nor the physicality of the real cannot capture (Ricoeur, 1990).

The imaginative exercise inherent in fiction encourages readers to challenge existing paradigms and envision new ways of being and acting in the world. For instance, dystopian and utopian narratives provide a canvas for exploring the extremes of societal organization, prompting reflection on current societal structures and inspiring thoughts on potential reforms or innovations. Similarly, characters in fiction often face moral and existential dilemmas that mirror those in real life. In that sense, the concept of mimesis would offer readers a space to contemplate and navigate their own ethical landscapes.

In the context of visionary architecture, architects are both writers/designers and readers. Hence, the epistemological configuration of «fiction as research» becomes a compelling approach that positions fiction not just as a literary endeavour but as a method of inquiry into the human experience and visionary architecture. Fiction has been an operative framework to architectural design since its origins, and can be understood as an epistemological ecology of relations that deploys specific invention strategies based on theoretical systems. A visionary architectural design process would thus imply an informed and reflexive fictional quality, in order to enable radical investigation and

experimentation of concepts, values and modes of expression (Bédard, 1994).

Even though fiction might have diverse levels of criticality and radicality, fictional logic is at the core of AI text-to-image engines, which may provide an ambiguous yet critical and investigative space to explore hypothetical scenarios and alternative realities. The process of engaging with fantastic worlds necessitates a suspension of disbelief and an openness to the novel and the unexpected. The fiction-narrative investigation becomes a powerful framework for generating knowledge, cultivating empathy, and envisioning alternative futures. At this moment, AI systems that translate textual descriptions into visual imagery are where the imaginative potential of fiction intersects with cutting-edge projectionvisualization technology.

3. THE TASKS OF IMAGINATION

Imagination is an innate faculty that allows the expansion of our sensory apparatus and consequently changes the way we perceive reality. It is both an aesthetic and epistemological category that deals with perception, creativity and processes of knowledge construction. For Spivak (2012), an aesthetic education would be any mechanism or condition that aims to train imagination to carry out epistemological performances. This implies giving imagination a central position in our cultural structures.

In the age of fleeting images that subvert the very opposition between the imaginary and the real, to the point where each one dissolves into the empty imitation of the other, imagination is challenged. According to Kearney (1988), an adequate response to this aporia would be "to radically reinterpret the role of imagination as a relationship between the self and the other." Kearney's proposal involves a radical attitude of using the very structure of this post-humanist condition to subvert it: an ethical imagination, alert to both the potentials of liberation and imprisonment of post-humanist culture; it would be invested in the use all available technologies to exercise its commitment to alterity.

However, a post-human imagination that reacts to the ethical dimension of things and phenomena cannot be merely critical; it must be fundamentally poetic[1]. Poetic imagination empowers individuals to identify with the forgotten, discarded, and repressed figures of history (Ricoeur, 2006). Certainly, without the poetic openness to the pluri-dimensionality of meanings, ethical imagination could be reduced to an authoritarian, repressive, and austerely moralising censorship. Poetic imagination is of the realm of the sensitive and makes desire remain alive as an endless game of possibilities, while the ethical imagination would make the distinction between the desire imprisoned in personal endeavors and the desire that responds to alterity, to the reality of the other (Kearney, 1988).

---

1 Heidegger (In Leach, 1997b) differentiates common language from poetic language, in which the latter would enable man to "dwell". *Poiesis*, from the artist's perspective, is a creative act that interprets the world and presents it in other ways. But from the perspective of the one who experiences it, *poiesis* is the possibility of expanding their perception of the world. The poetic is seen as an opening, a condition for revelation, unveilling.

One of the most notable potentials of AI text-to-image engines is their ability to evoke the fantastic. In the literary field, the fantastic exists in a story when the reader hesitates between the strangely familiar and the marvelous, that is, «the fantastic is the hesitation experienced by a person who knows only the laws of nature, confronting an apparently supernatural event» (Todorov, 1989). Thus, the aesthetic and methodological category of the fantastic can be defined in relation to the notions of the real and the imaginary, constituting a brutal intrusion of mystery into the context of real life. The fantastic is fueled by ambiguity, uncertainty, doubt as to whether something belongs to reality or the realm of dreams, whether it is true or an illusion.

It is both easy to get carried away and excited with the fantastic images AI can generate and, in opposition, to dismiss them all as irrational or inapplicable adventures of the virtual imagery world. Powerful design processes do not depend purely on raw creativity of technical skills but also on the layout of theoretical frameworks, design intentions and critical thinking. The complexity of these processes calls for strategic use of AI tools so architects can benefit better from this technology. Considering artificial intelligence textto-image devices as procedures of fusion of imaginations – of the human operator, of the cultural data-set organized online and of robotic iterations derived from sophisticated machine learning algorithms – it is relevant to discuss what would be the tasks of these merged imaginations that we are to co-create, evaluate and develop further.

Richard Kearney (1988), by the end of the XX century organized three tasks for post-modern imagination that seem still accurate and critical in regard to the post-human condition of the first quarter of the XXI century and also relevant to the discussion of AIAD:

In the realm of hermeneutics (1), imagination is tasked with discerning the latent interests that guide our interpretation of images within a specific context. This difficult endeavor requires a nuanced understanding that our perceptions are invariably colored by underlying motives, be they cultural, political, or personal. Thus, imagination is not merely a passive receiver of visual stimuli but an active interpreter, capable of unmasking the often-subtle biases that influence our understanding. Through this critical engagement, we unveil the multi-faceted layers of meaning embedded within images, recognising that each interpretation is but one of many possible readings, shaped by the interplay of context, intent, and individual perspective.

Imagination's historical task (2) is a profound commitment to the continual reinterpretation of our cultural memory, ensuring that the past remains a living dialogue rather than a static archive. This endeavor requires an imaginative engagement with history that is both reflective and critical, allowing us to reframe and recontextualise historical narratives in light of contemporary understandings and future aspirations. By imaginatively revisiting our collective past, we acknowledge the fluidity of memory and the importance of reevaluating historical events and figures through the prism of contemporary agendas, in particular discourses of alterity. This dynamic process not only preserves the richness of our cultural heritage but also fosters a more inclusive and nuanced historical consciousness.

The narrative task of imagination (3) positions the subject as a reader-writer of their own story, forging a self-reflective and consciously meta-narrative engagement with others' narratives. This meta-narrative engagement would foster a deeper understanding of oneself and others, promoting a more compassionate and interconnected worldview. A narrative is the strategic logic from which a story is arranged and presents itself. An imagination that is critical of its context, condition and limitations, must be able to structure itself in a situational way, meaning that its inherent narrative must have syntactic, semantic and pragmatic malleability in accordance with an intentionality agenda to negotiate with reality.

4. ARCHITECTURE AS ONTOLOGICAL DEVICE: AN APPROACH TOWARDS THE DESIGN OF AI ATMOSPHERES

Aesthetic experience is central to the disciplinary field of architecture in order to inform modes and qualities of the complex dynamics between space, place, time and existence. Architecture is not simply a process of solving problems, but rather a device to create possibilities of ontological experiences through the design of spaces.

Peter Zumthor (2006) presents the concept of "Atmosphere" in architecture through a configuration a fabric of qualities of space and of perception, and entitled them in the following manner: "The Magic of the Real"; "The Body of Architecture"; "Material Compatibility"; "The Sound of a Space"; "The Temperature of a Space"; "Surrounding Objects"; "Between Composure and Seduction"; "Tension between Interior and Exterior"; "Levels of Intimacy"; "The Light on Things"; "Architecture as Surroundings"; "Coherence"; and "The Beautiful Form". Even though most of the time Zumthor brings an ordinary situation into the discussion, a sacred dimension of space appears to be described. That has to do with not only the spaces in themselves but also with the way they are perceived and experienced. For Zumthor (2006) "we perceive atmosphere through our emotional sensibility – a form of perception that works incredibly quickly, and which we humans evidently need to help us survive". Atmosphere, as an aesthetic category, has an ontological nature. That is to say that architecture needs experiences to take place to present and unveil its qualities. Merleau-Ponty (2010) places the act of attention at the center of qualifying the perceptual process.

> The first operation of attention is therefore to create a field, perceptual or mental, that can be 'mastered' (*Ueberschauen*), in which movements of the exploring organ, in which evolutions of thought are possible, without consciousness losing in proportion to what it acquires, and losing itself in the transformations it provokes. (...) Paying attention is not just illuminating more preexisting data; it is creating a new articulation within them by considering them as *figures*. They are only pre-formed as *horizons*; truly, they constitute new regions in the total world. (Merleau-Ponty, 2010)[2].

2 Free translation from the Brazilian Portuguese version of *"Phenomenologie de la perception"*. Original highlights.

Considering a hermeneutic position, every architectural narrative is a proposition of a conversation, in which the disposition and interests of the experiencer influence the experience. Gadamer (1999) explains that "language is the medium in which the agreement of the interlocutors and the understanding of things are realized", what resonates in the architecture disciplinary field as a problem of presentation: how the space presents itself in a given context. The hermeneutic problem in architecture is not the proper accuracy of language itself or clear communication, it is the agreement proposed for the experience of a given spatiality.

> As the art which creates space it both shapes it and leaves it free. It not only embraces all the decorative aspects of the shaping of space, including ornament, but is itself decorative in nature. The nature of decoration consists in performing that two-sided mediation. (...) At the same time it should fit into a living unity and not be an end in itself. It seeks to fit into this unity by providing ornament, a background of mood, or a framework. (Gadamer, 1998).

It is exactly the atmosphere of a space that makes this proposition, and it is the mediation between the levels of intentionality of the architect, the built space in itself with all is its visible and invisible features, and the experiencers with their bodies, memories and imaginations, individually and collectively, that engender the ontological phenomena of architecture. If we are to engage with AI tools to generate architectural atmospheres, it is paramount to discuss not only the design process in an operative level but also to develop awareness of frameworks and agendas that may guide architectural investigations.

In way to conclude, I tried to introduce a theoretical framework to inform, in a discursive level, the design of culturally rooted architectural atmospheres, and presented conceptual strategies for engaging alterity and enable new ontological modes of experience through the proposal of fictional narratives as an investigative method for designing of architectural atmospheres in this age of artificial intelligence. This is a small contribution that seeks discernment towards the fleeting images condition of contemporary world, but also aims to encourage a critical-creative position from the architects of the future.

5. BIBLIOGRAPHY

Art Incarnate. (2024). Embark on a cosmic journey: experience the future of fine ai art with Space Opera Theater. *https://www.jasonmallen.com/space-opera-theater*

Bédard, J-F. (1994). Cities of Artificial Excavation: The Work of Peter Eisenman, 1978-1988. New York: Rizzoli.

Carpo, M. (ed.) (2012). The Digital Turn in Architecture, 1992-2012. An AD Reader. Chichester: Wiley.

Carpo, M. (2017). The Second Digital Turn. Design Beyond Intelligence. Cambridge, MA: The MIT Press.

Carvalho, D. R. (2016). A condição ornamental: as origens e os fundamentos do ornamento arquitetural contemporâneo. PhD Thesis. Belo Horizonte: Universidade Federal de Minas Gerais, Escola de Arquitetura.

https://repositorio.ufmg.br/handle/1843/MMMD-AU8QR2

Gadamer, H. G. (1998). The ontological foundation of the occasional and the decorative. In Leach, Neil. Rethinking Architecture: a reader in cultural theory (p.121-131). London: Routledge.

Gadamer, H. G. (1999). Verdade e Método. Traços fundamentais de uma hermenêutica filosófica. Petrópolis: Vozes.

Gregor, K.; Danihelka, I.; Graves, A.; Rezende, D. J.; Wierstra, D. (2015). DRAW: A Recurrent Neural Network for Image Generation. Proceedings of the 32 nd International Conference on Machine Learning, Lille, France. JMLR: W&CP volume 37. p. 1462-1471.

Hays, K. M. (2010). Architecture's Desire: Reading the Late Avant-Garde. Cambridge, MA: MIT Press.

Heidegger, M. (1998). Building, dwelling, thinking. In Leach, N. Rethinking Architecture: a reader in cultural theory (p.95-119). London: Routledge.

Jackowski, N.; de Ostos, R. (2008). Ambiguous Spaces. NaJa & deOstos. Pamphlet Architecture 29. New York: Princeton Architectural Press.

Jacobus, F.; Kelly, M. B. (2023). Artificial Intelligent Architecture: New Paradigms in Architectural Practice and Production. Novato, CA: ORO Editions.

Kearney, R. (1988). The wake of imagination: Towards a postmodern culture. Minneapolis: University of Minnesota Press.

Leach, N. (2022). Architecture in the Age of Artificial Intelligence: An Introduction to AI for Architects. London: Bloomsbury Visual Arts.

Merleau-Ponty, M. (2010). Fenomenologia da Percepção. São Paulo: Martins Fontes.

Norberg-Schulz, C. (1985). The Concept of Dwelling: On the Way to Figurative Architecture. New York: Rizzoli.

Oxman, R.; Oxman, R. (2013). Theories of the Digital in Architecture. London: Routledge.

Ricoeur, P. (1990). Time and Narrative, Volume 2. Chicago: The University of Chicago Press.

Ricoeur, P. (2006). Memory, history, forgetting. Chicago: The University of Chicago Press.

Spivak, G. C. (2012). An Aesthetic Education in the Era of Globalization. Cambridge, MA: Harvard University Press.

Todorov, T. (1989). The fantastic: a structural approach to a literary genre. New York: Cornell University Press.

Zumthor, P. (2006). Atmospheres: Architectural Environments. Surrounding Objects. Basel: Birkhauser.

L10

IMAGES AND THE AUTOMATION OF SENSE

CHAIRS Stavros Kousoulas
Andrej Radman

This panel will challenge the alleged primacy of the 'physical' world and the implicit homogenisation that a non-critical adoption of automation technologies (i.e., the so-called artificial intelligence) entails. While we engage with a world replete with capacities, tendencies, and values and not with an aggregate of objects, the automation of perception advocated by recent developments in artificial intelligence perpetuates a paralysing schism: perception is separated from action. In this panel the emphasis will be placed on the modes of semiotisation, where experience (perception and action as one) returns the body to a process field of exteriority. Sensibility introduces an aleatory moment into the development of thought and turns contingency into the very condition for thinking, that itself cannot be reduced to the analytical prerequisites of datafication.

What, then, does artificial intelligence automate? In the most straightforward manner, this panel will assume that artificial intelligence automates perception, but to achieve that, it needs to rely first on a perception that is separated from action. To account for a perception that can (potentially) be separated from action, we need to, counterintuitively, destabilise perception itself; and to achieve such a destabilising move, this panel will focus on philosopher Gilbert Simondon and a part of his work that is only recently gaining traction: his provocative understanding of images as outlined in his recently translated Imagination and Invention. In a nutshell, Simondon wishes to provide an account of a genetic unity between distinct phases of individuation that are bound together by the transductive dynamism of the image. At the core of his concerns is precisely the problem of the relation of imagination and invention to perception itself.

If to think differently one has to feel differently, then this panel will place focus on processes of imagi(ni)ng (as the inventive potential of an imagistic cycle) that can become a transindividuating activity that modulates sense. More specifically, it will open to contributions that bring together Simondon's broader philosophical concerns on individuation, information and technical objects, with his work on images, and crucially with the consequences that this would have for architectural thinking and doing. In addition, we welcome contributions that wish to challenge the established representational and annotational principles and practices within architecture (and design) discourses, especially as they themselves become increasingly optimised through automation technologies. Finally, we opt for paper proposals that attempt to destabilise the conventional approaches to the role of images, imagination, creation, and invention in architectural design (and its pedagogies), focusing not on the solipsistic genius but on the relationality of a continuously sustained ignorance: from the optimised egological to the sensible ecological.

L10

ONTOGENESIS IN OPERATION: BOTTOM-UP PLANNING AND PEDAGOGIES FOR INFORMALITY IN NAMIBIA.

ONTOGÊNESE EM OPERAÇÃO: PLANEAMENTO ASCENDENTE E PEDAGOGIAS PARA A INFORMALIDADE NA NAMÍBIA.

Gert van der Merwe
PhD Researcher Architecture Philosophy and Theory
Faculty of Architecture and the Built Environment, TU Delft
G.J.vanderMerwe@tudelft.nl

ABSTRACT

This paper is a reflection on theoretical concerns for spatial practitioners towards developing post-representational logics drawing on Simondon's conception of 'sense' to reflect on the *ontogenetic* procedures, tracing a genealogy from his "political outside the legitimatization of sovereignty", carried through to Deleuze's political philosophy as a theory of *flows,* the importance of 'sense' through the dynamic conception of the diagram and politics as a question of jurisprudence. Finally, I address Rouvroy's problematisation of 'algorithmic governmentality' and 'algorithmic realism', to propose emerging technicities in Participatory Informal Settlement Upgrading may hold the potential to reverse the inductive logics which foreclose, by allowing for dynamic topologies, capable of dealing with contingency and embracing abductive logics focused on difference rather than sameness.

KEYWORDS: Sensing, Artificial Intelligence, informality, ontogenetic, response-ability

RESUMO

Este artigo é uma reflexão sobre preocupações teóricas para praticantes espaciais no desenvolvimento de lógicas pós-representacionais, baseando-se na concepção de 'sentido' de Simondon para refletir sobre os procedimentos ontogenéticos, traçando uma genealogia de seu exterior político à legitimação da soberania, levada à filosofia política de Deleuze como teoria dos fluxos, a importância do 'sentido' através da concepção dinâmica do diagrama e da política como questão de jurisprudência. Finalmente, abordo a problematização de Rouvroy sobre 'governamentalidade algorítmica' e 'realismo algorítmico', para propor que tecnicidades emergentes na Melhoria Participativa de Assentamentos Informais possam reverter as lógicas indutivas que promovem o fechamento, permitindo topologias dinâmicas capazes de lidar com a contingência, ao adotar lógicas abductivas focadas na diferença em vez da semelhança.

PALAVRAS CHAVE: Sensoriamento, Inteligência Artificial, Informalidade, Ontogenético , Capacidade de resposta

1. INTRODUCTION

This paper reflects on Simondon's notion of 'sense' for post-representational theoretical concerns for spatial practitioners. Increasingly, scholars argue that planning can be improved through interaction with and upgrading of informal settlements, as co-dependent adaptation and co-evolutionary dynamics (Silva, 2018) foregrounding an ethics of response-ability (Haraway, 2008; Barad, 2007). This suggests cities are externalised memory, 'images' as 'technicities' in connection with the action potential of bodies (Stiegler, 1998; Kousoulas, 2022) and suggests that Somondonian transductive dynamisms are useful since images external to the thinking subject are seen in connection with the action potential of bodies.

For Simondon imagination is more than a mental image, rather, it is a dynamic and creative force, mediating between perception and invention, which synthesizes and recombines sensory data, concepts, and experiences as re-configurations of possibilities. The core of his concerns is precisely the problem of the relation of imagination and invention to perception itself. Invention emerges from daily decision-making (using incomplete information), and capacities to transcend the given to envision alternatives, from possibilities inherent in the material and social environment, thus, sense injects heterogeneity into thought, which remains contingent (Kousoulas and Radman, 2024). This actualizes new forms, structures, or ideas in response to previously unrecognized needs or challenges. Modulations are imbedded in collective, material, socio-cultural *milieu*, a pre-individual being as the condition for the emergence of the "psycho-social" field and requires practitioners to enter co-productive and response-able relationality (Haraway, 2008; Barad, 2007). They partake in transformations, or *ontogenesis*, from metastable indeterminate pre-individuated to the individuated. Thus, informal settlements are both *autopoietic* and *ontogenetic* since politics is understood to be *outside* the 'legal' (Combes, 2013, p 48) or 'top down' representational logics of the 'formal'.

The implications are that for Sub-Saharan Africa, with one of the fastest urbanization rates globally and an estimated 230 million people living in *informal settlements* (UN STATS, 2024), self-enumeration using digital technology is increasingly being tested; for example, in Kenya (Panek and Sobotova, 2015), South Africa (Berens 2019) and Namibia (Ley et al, 2022). This paper draws on reflections from Namibia where urban dwellers account for more than half of the population, a figure expected to rise to 70% in the next thirty years (UN DESA, 2019; Lühl and Delgado, 2018). As self-enumeration takes root, the mechanistic 'if-then' logics of traditional planning are challenged opening a space for a 'what-if' dynamic that feeds the creative dynamism of the city back into planning. Over 25 years, the Namibia Housing Action Group (NHAG) and Shack Dwellers Federation of Namibia (SDFN) have developed tools for 'bottom-up' information collection in the form of a Community Land Information Program (CLIP) and household surveys, capturing socio-economic data (Muller and Mbanga, 2012) re-centering action and perception. Although these processes aim to improve living conditions (service provision and access to land) they serve more than just utilitarian purposes (d'Cruz et al., 2014; Delgado et al., 2020; Muller and Mbanga, 2012; Weber and Mendelsohn, 2017) by producing knowledge based on experiences and contextualised information (Jacobs et al., 2015) and strengthening community cohesion and organisation (da Silva et al., 2024). As an *ontogenetic* procedure it has been recognised in the revised National Housing Policy (NHP) adopted in September 2023, prioritising Participatory Informal Settlement Upgrading (PIUS) and continuous assessment (modulation) via the Namibian Housing Information System (NHIS) highlighting a collaborative and incremental approach (MURD, 2023).

Challenging the separation of perception and action foregrounds *minor* questions: *when, where, how* and *for what purpose,* feeding back into a transformable and open

system (Kousoulas and Radman, 2024) and foreground Simondonian transduction. To reflect on the *ontogenetic* procedure I shall build up a genealogy from Simondon's conception of the political outside the legitimatization of sovereignty, how this is carried through to Deleuze's political philosophy hinging on perception, as relating to the etymology of sense as directional, and consequently Deleuze's political philosophy as a question of jurisprudence, and finally Antoinette Rouvroy's problematisation of algorithmic governmentality and algorithmic realism, to reflect on the capacity of emerging technicities in planning as a dynamic system of constrains and *potentias* (force, power, ability).

2. POST-REPRESENTATIONAL POLITICS - OUTSIDE THE STATE

The term *informal settlement* presupposes the notion of the *formal*, and consequently the notion of the state (Or institutions) as *a priori* proceeding from theoretical deductive reason rather than from empiricism, neglecting the more important question of how things come into being. In James C. Scott's (1998) *Seeing Like a State, he critiques the* modernist ideology of planners and scientific / technical knowledge to transform social- and economic systems into "rational", "efficient" and "orderly", bringing into question representation and the legitimatization of sovereignty. He critiques these oversimplifications, reducing rich, diverse, and intricate practices of local communities into uniform measures for economic activity, standardized, measurable, and administratively convenient formats; imposing grid-like urban planning, with adverse consequences. This is perhaps best illustrated where he draws on James Holston's *The Modernist City: An Anthropological Critique of Brasilia* (1989) and Jane Jacobs's *The Death and Life of Great American Cities* (1992), two commonly cited sources in urban studies, to make his argument (Scott, 1998, p117- 146). In contrast to these reductive representational logics, we may consider how things come into being to situate the importance of Simondon's transductive dynamism of images, where experience (perception and action as one) returns the body to a process field of exteriority. We need to locate its operationalisation in *transcendental realism*, where it is taken up alongside Spinoza, Bergson, Ruyier, James and Bateson in Deleuze and Guattari, and is then extended by Rouvroy.

Deleuze and Guattari draw on Ruyier's *Neofinalism* (2016) and *The Genesis of Living Forms* (2020) reorganising the sciences, drawing distinction between absolute forms (individual beings), and molar structures (aggregates e.g. data) such that the latter is relegated to secondary status (Smith, 2017) for their own conception of *molecular-* and *molar-* formations (Deleuze and Guattari, 1983, 1987). The etymology of the *milieu* as both "in-between" (relationality) and "environment" describes the reciprocal and relational *sympoietic* operations, as co-constitutive processes of *becoming* or *individuation,* leading to the *ontogenetic* emergence of *autopoietic* urban assemblages.

Thus, for Ruyer, as for Deleuze and Guattari, to observe an object does not give us knowledge of the object (Smith, 2017), rather it is the capacity to *affect* that that is central, constituting 'technics' as central to *ontological becomings*. It is precisely the "difference that makes a difference" attributed to Bateson (1987) that defines in-formation, collapsing the nature-culture divide (Blaeuer, 2010, p78-9), which correlates with James's "radical empiricism", from which Deleuze's "transcendental empiricism" and concept of "pure experience" are derived (Ferro, 2021).

Drawing on Spinoza and Bergson, intra-actions between the *actual* and the *virtual,* on the *plane of immanence*, is developed and formulated as the horizon from which thinking through difference-making becomes foundational to ontology (Deleuze and Guattari, 1983, 1987, 1994; Barad, 2007; Spindler, 2010). However, others have also written materialist accounts developing phylogenetic and topological systems. Deacon (2011) conceives of reciprocal constraints between *molecular-* and *molar-*formations. He describes multi-level constraint interactions in complex systems, forming differential hierarchies from the molecular to the cognitive, through what he calls the teleodynamics as a negentropic formation (For discussion on technics see also *The Neganthropocene* by Stiegler, 2018) of self-organizing that govern living systems. Juarrero (2023) emphasises specific temporal and spatial contexts, where constraints are not merely limitations but integral to the structure and behaviour of systems guiding the development of processes; for example seesaws where children must sit according to their weights in relation to the length of the seesaw (spatial) and swings, where regardless of how hard or often a child kicks, what matters is when the child kicks (temporal).

The importance here, however, is how Deleuze develops the idea of constraints emerging from *flows* into a political philosophy. Smith (2012) argues that in contrast to other political philosophers, who rely on some external telos (Plato - State, Hobbes - social contract, Montesquieu - spirit of the laws, Kant - perpetual peace, or Durkheim and Habermas -legitimation) here "the general theory of society is a generalized theory of flows" (Deleuze and Guattari, 1983) and hence the business of every society is to continually *code* these *flows* requiring technicities. The *flow* is movement through or vector of force, always directional, and impossible to grasp other than through the operative *code*, inscription or recording holding the network of relationalities together. Thus, the *flow* and *code* are reciprocally determined, to produce a *stock* (benefit, control, or incorporation); temporal concentrations and relational intensive differences in dynamic system, forming a topological field of relationalities and intensities (Smith, 2012). It is in the *flow* as vector of force that we may see the centrality of Simondon's notion of 'sense' grasping direction rather than an object since individuation cannot be understood from the fully formed individual, and "the knowledge of individuation is the individuation of knowledge" as a codification (Radman, 2023). Simondon integrates culture and technics, in a theory of operations (*allagmatics*), machinic in nature, not structural, since it produces an ecology (Radman, 2020; 2023). For Deleuze and Guattari (1983, 139–40) the

codification of *flow* is central, stating that decoded or uncoded *flow*, as in capitalism, is the "terrifying nightmare," of any society. To understand sense as a technics, we may turn to the etymology of 'sense' as directional, implying that to make sense is to understand where something is coming from and where it's going. Deleuze's political philosophy thus is indebted to Simondon's formation of images, where perception and action are unified as a transductive dynamism. This is perhaps most evident in the employment of sense in the conception of the diagram, a dynamic map of forces and relations, revealing underlying potentials for change within systems, and how power and movement operate. In *Logic of Sensation* (2003), Deleuze uses the diagram to describe how Bacon disrupts representational forms to capture the intensity of sensation, thus taking on an operative function that intervenes in the figurative elements, creating zones of indeterminacy from which new forms and sensations emerge, to become a site of pure forces and *affects*. Similarly, in *A Thousand Plateaus* (1987), it takes on an explicitly political dimension to map power relations in processes of de- and re-territorialisation, intervening in the *flows* and disruptions within social systems, while in *Foucault* (2006a) this is extended to institutions and discourses, rendering visible the invisible forces that structure social reality.

Thus, diagrams evolve, producing the *milieu* as a creative intersocial expression of sense (action-perception) rather than representations (Radman, 2021). Similarly, Smith (2012) argues that in Deleuze's "Image of Thought", prominently featuring in the plateau on the *Treatise on Nomadology* (Deleuze and Guattari, 1987) we may see the legislative overcoding of the State, as an externalisation, advocating instead for a constant process of differentiation allowing for contingent responses to complexity:

> *"Difference is not diversity. Diversity is given, but difference is that by which the given is given, that by which the given is given as diverse. Difference is not phenomenon but the noumenon closest to the phenomenon."*

This is not only directly related to Bateson's (1987) "difference that makes a difference" but Smith (2012, p96-97) argues that the error of the dogmatic image of thought is a generalisation and denial of diversity, whereas individuality can only be comprehended through sensation; operationalised differences in intensity that actualize differential relations between genetic elements. They are not given in experience as a transcendental metaphysics as in Kant, but differential, genetic, and immanent. Deleuze (1994a) critiques the traditional assumptions and representations of though, which presuppose a harmonious relationship between thought and objects, as passive reflection of truth, instead he emphasizes creativity and difference, by arguing that thinking arises from encounters with problems and experiences, as dynamic forces that produces novelty and difference.

> *"The pure event is a problem-poser: it determines the sin gular and ordinary points that encompass all its historical actualizations, it produces a difference in kind, reshuffling the field of potentials"* (Kousoulas, 2023)

He locates sensation, as an intensity of differential relations on the *plane of immanence* rather than *a priori* forms of space and time, to constitute the real, where sense itself constitutes the object as a genetic operation, which in turn reveals the *ontogenetic* nature of the relationality (Deleuze, 1994a, Smith, 2012). The implication is that in transcendental empiricism sense or experience takes primacy over representation. In *The Fold* (2006b, p107) he states "perception has no object" since it is differential relations of perceptions, centering sensory distortions, to which Smith (2012, p96-97) adds that the genetic operation should be understood through Bergson's notion that subjectivity is (rather than simply has) sensation, and consequently perception is an eliminative and subtractive mechanism of constraints (see Bergson's Cone of Memory). In *What is Philosophy?* (1994b), this is extended and operationalised in the "creation of concepts", reconfiguring existing conceptual frameworks and breaking away from established patterns of thinking by engaging with the unpredictable, valorising contingency and openness.The political implications are also reflected in an interview with Claire Parnet (1988-89) in which Deleuze states that due to the representational problem no leftist government exists, and that instead being on the Left is the creating law (situations of jurisprudence). He explains that it is not a matter of morality, but of perception itself. Perceiving from the periphery or horizon, starting with the edges, requires a constant process of becoming minoritarian, since the minority is everyone while the majority is no one, and demanding the sensing of an aggregate of processes of minoritarian becomings.

We may now return to Simondon, the claim that the "political is an attempt to deal with complexity" and the question at hand of Colebrook's *irreversibility.* If metastability implies that things are not logically necessary but merely contingently obligatory (Radman, 2014) it must emerge from reciprocal constrains which start from movement as *ontogenetic* origin, thus inverting the typical architectural bias towards space, since space, and its constitutive elements, do not pre-exist their sympoietic ontology. To state it otherwise, movement does not happen in space, instead, space is a derivative of movement, implying sensation leads to differential relation (as rates of change), thus undermining signification in favour of significance (Radman, 2014). Simondons motor images are autokinetic and have no content other than movement itself, expressing their affective potentials (between individual and environment) and remain contingent and non-finalised. Organisms are defined by a set of behaviours where motor images emerge as dynamic representations (diagrams) of potential movement, bridging the gap between perception and action. They continuously transform sense into action patterns, facilitating adaptive responses of transduction. It is through movement that experience registers as the perception image, a process of becoming actualised in its own being, experienced between action, environment, and the individual. Integrated through these transductive processes perception images are integrated with motor images, and between the sensing and acting, are continuously refined and restructured, contributing to the ongoing process of individuation. Through the perception image, images are organised and systematized into the symbolic image from concrete experiences. While the motor- and perception

images play out in the moment (*a praesenti*) of movement, the symbolic integrates the actualised, the past or memory (*a priori*) and the future (*a posteriori*) as a desire, from where we can draw the correlation with Deleuze's operations of the *libidinal economy* (production of desire) and the virtual as operative on the *plane of immanence*, forming a complex network of meanings that guide action and thought.

We may now return to the challenge artificial intelligence and algorithmic governance pose against the background of 'smart-cities' and techno-utopian visions, before concluding with the potential of 'bottom-up' process of self-enumeration to remain open-ended and responsive since they may pose *minor* questions: *when, where how* and *for what purpose.*

Rouvroy (2012) coined the term algorithmic governmentality to explain how governmentality is no longer qualitative or based on normative administration, but instead the new regime of power emerges from the 'computational turn' and 'data behaviourism' (Rouvroy, 2012; Harkens, 2018). Algorithmic realism becomes an uncoded *flow* (the "terrifying nightmare") resulting in a common teleology between capitalism and cybernetics, where it functions as the immune system of capitalism. Rouvroy describes "objects of observation, classification and evaluation" in this new regime of power as reduced to the calculable in a field of possibilities determined by the action of others (Rodrigues, 2016) discounting social complexity to quantifiable data points, overlooking the qualitative richness of human experience, contextual nuance and subtleties of social interactions. The mass processing of data is about taming uncertainty, reducing the possible to the probable (Rouvroy, 2020). It is an attempt at quantifying politics, law, and social norms, an oxymoron par excellence, since data has no meaning and AI is unable to perceive context (Rouvroy, 2020). This is no less than an epistemic change from the deductive perceptual regime to inductive logics, indifferent to the be-cause (Rouvroy, 2012; Rodrigues, 2016). Instead of the immediacy of action-perception as our situated being in the world, there is no more room for contingency (Hildebrandt ,2011). She argues that algorithmic government, focusing on prediction and pre-emption, separates subjects from ability to *affect* and eliminates the ability to respond to contingency (Rouvroy, 2012). It denies the distance between 'the world' as produced and 'reality', presupposing a direct correlation, collapsing the 'unknown part of radical uncertainty' which is a precondition for critique through which institutions may be challenged (Rouvroy, 2012). This undermines Bateson's proverbial 'cat's nip', where more complex organism, capable of play, produce a 'what-if' potential in action-perception (jurisprudence) of continuous creative modulation, disrupting deterministic 'if-then' logics, where a cat's nip is very different from its bite (Radman, 2023).

The pre-emptive nature of governing by anticipation rather than by response requires no understanding or explanation, and instead is focused solely on executable functions, constituting a shift from knowledge to 'insights', devoid of epistemic content or ontological relationality, rather it is pure instrumentalization (Rouvroy,

2012). By acting upon the future, it leads to digital determinism which forecloses possibilities; shaping perceptions and behaviours in ways that reinforce existing biases and power structures, rendering the subject impotent (Rouvroy, 2012). The discursive obfuscation lies in the fallacy that data is neutral or unbiased and produces an objective truth. This is self-evidently false, as anyone who has worked with large datasets will admit. The problem is that we remain *sealed inside the 'algorithmic reality',* which does not much require 'equal information', privacy or transparency enhancing technologies (Rouvroy, 2012). The more pernicious problem, however, is that not only does this mean it could never truly 'sense', since it is dependent on an intermediary to train and feed it, but the inner workings behind predictions and decisions are rarely scrutinized or questioned. Where there are attempts, we are faced with the proverbial 'black box' problem, such that the internal operations and decision-making processes cannot be understood, leaving us to trace correlations between inputs and outputs (Rouvroy, 2012). Beyond the obvious problems of democratic principles relating to transparency and accountability, the *ontological opacity* is a deeper problem of response-ability and the production of knowledge where philosophy as the creation of concepts is dependent on encountering problems. This cannot be escaped by introducing legislation on the level of individual data privacy, since it would only further foreclose the ability to respond to difference, which would effectively only enhance the power of data fascism, since algorithmic governmentality is not interested in the individual, and their choices or preferences (Rouvroy, 2020). Instead, following Deleuze and Guattari, Rouvroy proposes that we make sense of it collectively, as assemblages of enunciation, the "fourth person singular", or commons, to regulate data usage, its origin, its destination, and even how the collective can or can't use it, such that it becomes directional (Rouvroy, 2020), foregrounding the notion of 'sense'.

3. CONCLUSION

While Rouvroy critiques inductive logics in favour of a deductive perceptual regime, Simondon's notion of sense goes one step further, since it operates through abductive reasoning, akin to daily decision-making, which operates with the information at hand, incomplete observation, and the likeliest possible explanation. This is topological in nature like Deleuze's conception of the diagram and is different from the real-time character of the 'algorithmic reason' since it is situated and operates on differential qualities, which is where I locate the potential of Participatory Informal Settlement Upgrading (PIUS). Here knowledge is not abstracted, divorced from the context, but instead inverts the hierarchy, such that the *molar-* is continually modulated by the *molecular-formations.* In other words, the artificial intelligence does not sense, but communities, continually produce the assemblages of enunciation as a commons.

If artificial intelligence is to measure something it should not be the individual points, but the variation or difference between them, such that it produces continuous information, without foreclosing it or acting back on it. This remains an impossibility since the 'real' can

never be captured in a 'representation', but PIUS could produce a system that remains open to contingency, responding not to aggregates of sameness, but instead sensing that which is different, and tracing these reactions as vectors that inform a dynamic topology. Furthermore, it remains open to contingency, allowing for the Stuart Kauffman calls the "adjacent possible" (Björneborn, 2023) and in urban theory is described as "frugal innovation" (Pansera, 2013; Soni and Krishnan, 2014) or "technology of the oppressed" (Nemer, 2022) which recombines technologies in unanticipated and creative ways. This allows for a relational ontology of response-ability towards a co-constitutive ethical entaglement that can turn towards human and non-human interactions through situated knowledge as Haraway (2007) suggests, where intra-actions, of entities coming together, emerge through their relations in and ethico-onto-epistemology (Barad, 2007). This retains the human accountability, rather than abdicating it through algorithmic abstraction, and recentres material-discursive practices.

4. BIBLIOGRAPHY

Barad, K. (2007). Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning. Duke University Press.

Bateson, G. (1987). Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology. Jason Aronson Inc.

Berens, C. (2019, May 20). "Bridging The New Digital Divide": Violence Prevention through Urban Upgrade – VPUU. *https://vpuu.org.za/programmes/ict4d/digital-divide-south-africa/*

Blaeuer, D. M. (2010). An Ecology of Performance: Gregory Bateson's Cybernetic Performance [Doctoral dissertation, University of South Florida]. USF Tampa Graduate Theses and Dissertations. *https://digitalcommons.usf.edu/etd/3510*

Björneborn, L. (2023). Adjacent Possible. In V. P. Glăveanu (Ed.), The Palgrave Encyclopedia of the Possible, Springer.

Combes, M. (2013). Gilbert Simondon and the Philosophy of the Transindividual (T. LaMarre. Trans.). The MIT Press. (Original work published 1999)

da Silva, A.A.; Kormann da Silva, I.F. and Westerholt, R. (2024). Mapping the margins: A systematic scoping review of the impact of digital mapping on public participation in informal settlements. Habitat International, 147(2024) 103040, *https://doi.org/10.1016/j.habitatint.2024.103040.*

d'Cruz, C.; Fadrigo Cadornigara, S. and Satterthwaite, D. (2014) Tools for Inclusive Cities: The Roles of Community-Based Engagement and Monitoring in Reducing Poverty. Working Paper, IIED Human Settlements, London. Available at: *http://pubs.iied.org/10708IIED*

Deacon, T. W. (2011) Incomplete Nature: How Mind Emerged from Matter. W. W. Norton & Company.

Delgado, G. (2023) The digital question in spatial production in Namibia (part 1): Negotiating efficiency and equity in informal settlement upgrading in Namibia. Presented at Revisiting Urban Housing Affordability in the Digital Age, University of Manchester and University of Toronto; 27-28 April, 2023. Working Paper, Institute for Land, Livelihoods and Housing, Namibia University of Science and Technology

Delgado, G., Muller, A.M., Mabakeng, R. and Namupala, M., (2020). Co-producing land for housing through informal settlement upgrading: lessons from a Namibian municipality. Environment and Urbanization [online], 32 (1), 175–194. Available at: *https://doi.org/10.1177/0956247820903981. accessed 23rd Mar 2024*

Deleuze, G. and Guattari, F. (1983). Anti-Oedipus: Capitalism and Schizophrenia (R. Hurley, M. Seem, and H.R. Lane. Trans.). University of Minnesota Press. (Original work published 1972)

Deleuze, G. and Guattari, F. (1987). A Thousand Plateaus (B. Massumi. Trans.). University of Minnesota Press Minneapolis. (Original work published 1980)

Deleuze, G. (1994a). Difference and Repetition (P. Patton. Trans.). Columbia University Press. (Original work published 1968)

Deleuze, G. (1994b). What is Philosophy? (H. Tomlinson and G. Burchell. Trans.). Columbia University Press. (Original work published 1991)

Deleuze, G. (2003). Francis Bacon: the logic of sensation (D.W. Smith. Trans.). Continuum. (Original work published 1981)

Deleuze, G. (2006a). Foucault (S. Hand. Trans.). University of Minnesota Press. (Original work published 1986)

Deleuze, G. (2006b). The Fold: Leibniz and the Baroque (T. Conley. Trans.). Continuum. (Original work published 1988)

Ferro, F. (2021). Pure Experience and Nomadism in James and Deleuze. Scenari, 1(13), 119-128. *https://doi.org/10.7413/24208914075*

Haraway, D. J. (2008). When Species Meet. Minneapolis: University of Minnesota Press.

Holston, J. (1989). The Modernist City: An Anthropological Critique of Brasilia. University Of Chicago Press.

Jacobs, J. (1992). The Death and Life o f Great American Cities. Vintage Books Edition, Random House. (Originally published 1961)

Jacobs, F., Jordhus-Lier, D. and de Wet, P.T. (2015) The Politics of Knowledge: Knowledge Management in Informal Settlement Upgrading in Cape Town. Urban Forum 26, 425–441. Springer. DOI: 10.1007/s12132-015-9258-4

Juarrero, A. (2023). Context Changes Everything: How Constraints Create Coherence. The MIT Press.

Kousoulas, S. (2022). Architectural Technicities A Foray into Larval Space. Routledge.

Kousoulas, S. and Radman. A (2024). Annotate This! Semiotisation, Automation and the Recursive Causality of Images. In R.A. Gorny, S. Kousoulas, D. Perera and A. Radman (Ed.), The Space of Technicity: Theorising Social, Technical and Environmental Entanglements (pp 171- 188). Ecologies of Architecture Book Series is published by TU Delft OPEN Publishing and Jap Sam Books. DOI: *https://doi.org/10.59490/mg.95 ISBN: 978-94-93329-14-0* paper version.

Ley, A. Delgado, G. Dobbins, A. Eltrop, L. Fahl, U. Hansen, G. Ileka, H. Katende, J. Lühl, P. Muller, A. Namupolo, M. Thonke, F. van der Merwe, G. Vetter-Gindele, J. Winkler, G. (2022). GoGlocal! in Windhoek and Stuttgart! The Neighbourhood Scale for Collective Action: Building transformative knowledge on SDG implementation and monitoring. ICSD conference paper, available at: <*https://international-urbanism.de/site/wp-content/uploads/2022/11/icsd-2022_goglocal_stuttgart-windhoek.pdf*> accessed 3rd June 2024

Lühl, P. and Delgado, G. (2018) Urban Land Reform in Namibia: Getting Ready for Namibia's Urban Future. Integrated Land Management Institute, Windhoek, available at: *http://dna.nust.na/landconference/submissions_2018/policy-paper-urban-land-reform-2018-final.pdf*

Müller, A. and Mbanga, E. (2012). Participatory enumerations at the national level in Namibia: the Community Land Information Programme (CLIP). Environment and Urbanization. 24(1), 67–75. *https://doi.org/10.1177/0956247811435891*

Ministry of Urban and Rural Development (MURD). (2023) National Housing Policy (Second Revision) 2023, *https://illh.nust.na/sites/default/files/National%20Housing%20Policy-2023%20Revision-Cabinet%20Submission-27%20September%202023-FINAL.pdf*

Nemer, D. (2022). Technology of the Oppressed: Inequity and the Digital Mundane in Favelas of Brazil. The MIT Press.

Panek, J. and Sobotova, L. (2015). Community Mapping in Urban Informal Settlements: Examples from Nairobi, Kenya. The Electronic Journal of Information Systems in Developing Countries, 68(1) 1 -13. *https://doi.org/10.1002/j.1681-4835.2015.tb00487.x*

Pansera, Mario. (2013). Frugality, Grassroots and Inclusiveness: New Challenges for Mainstream Innovation Theories. African Journal of Science, Technology, Innovation and Development. *http://dx.doi.org/10.1080/20421338.2013.820445*

Parnet, C. (Interviewer). (1996). L'Abécédaire de Gilles Deleuze, avec Claire Parnet [Film directed by Pierre-André Boutang]. Unpublished translation and notes: Charles J. Stivale.

Radman, Andrej. 2014. Sensibility is Ground Zero: On Inclusive Disjunction and Politics of Defatalization. In R. Braidotti and R. Dolphijn. This Deleuzian Century: Art, Activism, Life (pp 57-87). Brill, Leiden, The Netherlands.

Scott, J.C. (1998). Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed. Yale University Press.

Silva, P. (2018). Designing urban rules from emergent patterns: co-evolving paths of informal and formal urban systems - the case of Portugal. IOP Conf. Series: Earth and Environmental Science 158 (2018) 012001. IOP Publishing Ltd. DOI :10.1088/1755-1315/158/1/012001

Silva, P. (2020). Not So Much about Informality: Emergent Challenges for Urban Planning and Design Education. Sustainability, 12 (2020) 8450; DOI:10.3390/su12208450

Smith, D.W. (2012). Essays on Deleuze. Edinburgh University Press.

Soni, P. and Krishnan, R.T. (2014). Frugal innovation: Aligning theory, practice, and public policy. Journal of Indian Business Research, 6(1). *http://doi:10.1108/JIBR-03-2013-0025*

Spindler, Fredrika. (2010). Gilles Deleuze: A Philosophy of Immanence. In Bornemark, J and Ruin, H (Ed.), Phenomenology and Religion: New Frontiers (149-163). Huddinge: Södertörns högskola

Stiegler, B. (1998). Technics and Time, 1: The Fault of Epimetheus. (R. Beardsworth and G. Collins. Trans.). Stanford University Press. (Original work published 1994)

Stiegler, B. (2018). The Neganthropocene. (D. Ross. Trans.). Open Humanities Press.

UN DESA Population Division (2019) World Urbanization Prospects: The 2018 Revision, *https://population.un.org/wup/Publications/Files/WUP2018-Report.pdf*

Weber, B. and Mendelsohn, J. (2017). Informal Settlements in Namibia: Their Nature and Growth. Exploring Ways to Make Namibian Urban Development More Socially Just and Inclusive. Occasional Paper 1, Development Workshop, Windhoek, *https://www.raison.com.na/sites/default/files/Informal-Settlements-in-Namibia-Book-Web.pdf*

L10

REPRESENTING INTERACTION: FROM STATIC TO DYNAMIC SPATIAL ENVIRONMENT

REPRESENTANDO A INTERAÇÃO: DO ESPAÇO CONSTRUÍDO ESTÁTICO AO DINÂMICO

Ömer Faruk Ağırsoy
PhD Researcher
Faculty of Architecture and the Built Environment, TU Delft
O.F.Agirsoy@tudelft.nl

ABSTRACT

Buildings are dynamic environments that change over time to accommodate diverse needs, flows, programs, and activities. The rapid adoption of digital technologies into buildings through ubiquitous computing creates a complex infrastructure of interaction between humans, the environment, and technologies that transform the design and operation of architecture. However, conventional architectural drawings fail to visualize the spatiotemporal dynamics of sensorial environments. This paper explores representations for designing human-building interactions. By investigating exemplary architectural drawings from the early 20th century to contemporary installations, it deconstructs the material and immaterial components of interaction through affordances, flows, footprints, behaviors, sensors, and feedback. Drawings highlight the potentials and constraints of building infrastructures to inform architectural design by representing layers of interactions. This approach addresses challenges related to automation, privacy, centralization, and surveillance in digitalized buildings and helps interdisciplinary collaboration for the critical adoption of technologies to balance human needs and environmental performance.

KEYWORDS: Human-Building Interaction. Architectural Representation. Infrastructure. Digitalization. Sensorial Environment.

RESUMO

Os edifícios são ambientes dinâmicos que mudam ao longo do tempo para acomodar diversas necessidades, fluxos, programas e atividades. A rápida adoção de tecnologias digitais em edifícios, através da computação ubíqua cria uma infraestrutura complexa de interação entre os seres humanos, o ambiente e as tecnologias que transformam o design e a operação da arquitetura. No entanto, os desenhos arquitetônicos convencionais falham em visualizar a dinâmica espaço-temporal dos ambientes monitorados por sensores. Este artigo explora representações de interações entre humano e edifício. Ao investigar desenhos arquitetônicos exemplares do início do século XX até instalações contemporâneas, este artigo desconstrói os componentes materiais e imateriais dessa interação por meio de "affordances", fluxos, cobertura de monitoramento, comportamentos, sensores e feedback. Os desenhos destacam os potenciais e as restrições das infraestruturas dos edifícios para informar o design arquitetônico, representando camadas de interações. Esta abordagem aborda desafios relacionados à automação, privacidade, centralização e vigilância em edifícios digitalizados e ajuda a colaboração interdisciplinar para a adoção crítica de tecnologias para equilibrar às necessidades humanas e ao desempenho ambiental.

PALAVRAS-CHAVE: Interação Homem- Edifício. Representação Arquitetônica. Infraestrutura. Digitalização. Ambiente Sensorial.

1. INTRODUCTION

The spatial environment is surrounded by digital technologies, sensors, controllers, IoT devices, wireless networks, multimedia interfaces, home robots, virtual assistants, and smart gadgets. These decentralized devices, embedded software, and distributed intelligence become an integral part of architecture through ubiquitous computing, transforming the dynamic interactions of humans with buildings(Wiberg, 2015). Digitalization of buildings replaces basic interactions of switches, handles, and buttons with invisible sensors, data networks, and digital interfaces that unveil new affordances, mediums, and flows that require special architectural attention. However, the excess automation and optimization of building services "alienate" the relationships between humans, the environment, and technologies (Simondon, 2017). The centralized control of smart building services does not give users enough control, information, or responsibility over systems. Recent studies also demonstrate that human inputs in terms of behavior, control, interaction, and feedback complement automation to improve buildings' performance(O'Brien et al., 2020) evidence suggests buildings are often uncomfortable compared to the requirements of standards; difficult to control by occupants; and, operated inefficiently with regards to occupants' preferences and presence. Meanwhile, practitioners –architects, engineers, technology companies, building managers and operators, and policymakers – lack the knowledge, tools, and precedent to design and operate buildings optimally considering the complex and diverse nature of occupants. Building on the success of IEA EBC Annex 66 ("Definition and simulation of occupant behavior in buildings"; 2013–2017 and occupants' well-being and experience(Alavi et al., 2019; Nembrini & Lalanne, 2017; Park et al., 2019). Stalder(2019) emphasizes the inseparable relationship between humans and machines in prescribing behaviors, programs, and activities through comfort, control, and performance requirements. Beyond the quantitative performance analysis through standardization of users and programs researchers and designers also investigate how human-building interactions can advance the experience in this "spatiotemporally immersive" environment(Alavi et al., 2019).

Latour and Yaneva(2008) argue that a building is never static in either design or operation processes. They emphasize the consideration of architecture through dynamic processes and environments that evolve over time, responding to diverse needs, users, activities, and programs instead of mere objects and static forms. This conceptualization of architecture is repeated in the literature with alternating terminologies as a shift from "object forms" to "active forms"(Easterling, 2012), ''from artifacts to environments''(Alavi et al., 2019), from "passive objects" to "active producers"(Vrachliotis, 2022), or ''from static to cybernetic architectural systems''(Bali et al., 2019). Understanding systems, infrastructures, and flows of resources, people, and data through "their exchange over space"(Larkin, 2013) is essential for perceiving, experiencing, and designing architecture in action. The architectural project can be redefined as "Medium Design" shifting focus from objects to the design of a spatial interface that augments the active dialogue, continuous exchange, and emerging interactions(Easterling, 2021). This ensures the relationships between dynamic flows, systems, environment, and their visible and invisible components in the spatial environment.

Representations are essential analysis, communication, collaboration, and design tools for architecture(Savaş et al., 2018). David Kirsh(2010) emphasizes external representations for an interactive cognitive process that enhances referencing, persistence, and collaboration in design for dealing with cost, organization, computation, and complexity. Representations can help to visualize the interplay between decentralized and centralized systems, static objects and dynamic scenarios, and autonomous and embedded agents. Making the invisible relationships and limitations visible can bridge perception and action for the "concretization" of technical objects(Simondon, 2017). As Juarrero(2023) highlights the capability of interaction in coherent wholes to generate novel properties and information in complex systems, representations can also emerge new interactions to communicate and exchange information for reinforcing the spatialization of technologies during architectural design.

This paper aims to focus on representations of human-building interactions at the intersection of architecture and building services to help interdisciplinary collaboration in the design process. By bringing distinctive architectural drawings from mechanization in the early 20th century to multimedia exhibitions, cybernetic projects of the 1960s, and interactive installations, the goal is to represent the spatiality of interaction to dissolve the traditional distinctions between material(visible) and immaterial(invisible) components. The examples deconstruct interaction through interconnected layers of affordances, flows, footprints, behaviors, sensors, and feedback to suggest a representation method for designing human-building interactions. This representational deconstruction helps to situate and responsibly integrate technologies, mediums, and digital systems into architecture through extended potentials as well as constraints of these system networks.

2. STATING THE OBVIOUS: VISUALIZING THE MATERIAL

Seminal books of Giedion(1948) and Banham(1969) provided an early architectural theory and history of environmental control systems and mechanical services starting from the mid-20th century. Since then, building services and mechanized interiors have found their ground in architectural research and practice. Starting with the use of services in buildings in the first machine age, new visualization and design methods are developed for their seamless integration into architecture(Banham, 1969). Building services and associated drawings are standardized through sets of mechanical, electrical, plumbing, and fire safety needs. Contemporary buildings are drawn and designed with all anatomical details presenting the materiality, equipment, and machinery of services in the buildings (Figures 1 and 2). CAD drawings and BIM models visualize the spatial allocation of services allowing clash detection, performance simulations, and optimizations in the design process to avoid problems during and after construction. Although conventional architectural drawings and information models are well-developed for the implementation of static systems

and building services, they have shortcomings in representing the dynamic behavior of human and non-human agents in space, solidifying the inanimate perception of architecture. These drawings facilitate limited information to present flows, interactions, data processes, behaviors, and communications in buildings. Data spreadsheets, system diagrams, or functional schemes, on the other hand, lack to present interconnections with actual spatial conditions. The continuous automation and digitalization of the built environment bring similar challenges to the machine age for designing, visualizing, and integrating new technologies. Representations can -once again- inform the design process by visualizing experiences and interactions.
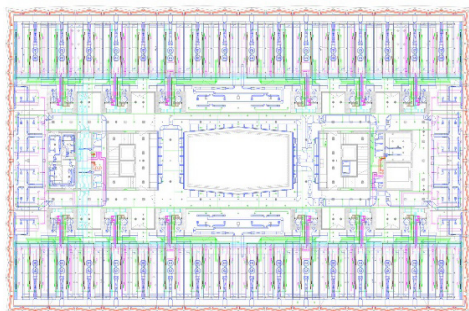
Figure 1. Adolf Krischanitz, Laboratory Building, Basel 2003-2008. Source: Stalder(2017) from www.e-flux.com/architecture/history-theory/162450/an-elementary-proposition/ (2020)
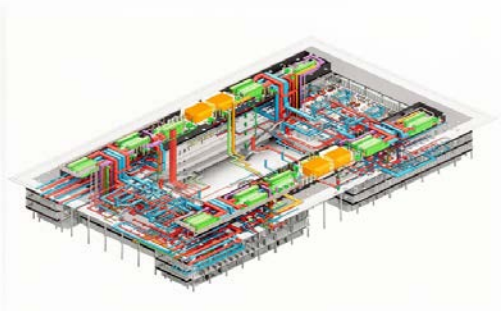
Figure 2. Foster + Partners, coordination drawing, Cleveland Clinic Health Education Campus, Ohio, 2015. BIM drawing. DMC 2909.7. Source: drawingmatter.org/foster-partners/

3. VISUALIZING THE IMMATERIAL
3.1 Affordances

The term "Affordance" was coined by J. J. Gibson(1979) to explain the possibilities that the environment offers to humans, connecting the perception of the environment with affordances. In his seminal book "The Design of Everyday Things", Don Norman(2013) adapts this concept for interaction design and states that "Affordances represent the possibilities in the world how an agent (a person, animal, or machine) can interact with something". Affordances and signifiers are essential to conceptualizing the architecture of interactions to reveal the advantages, possibilities, and challenges of spatial elements and services. Koutamanis(2006) mentions that architectural affordances and their design representations not only help to understand users through their abilities and behaviors but also reveal the potentials and constraints of interacting agents in multiple resolutions and scales.

From the 1950s to the late 70s, "Cybernetics" became a significant inspiration for the theory and design in architecture. As Steenson(2017, p. 17) explains "With cybernetics, architecture became a mechanism of information exchange and provided the groundwork for architecture as an interactive practice." The design process becomes "scientific problem-solving procedures" through the drawings of "circuit diagrams

and feedback loops"(Vrachliotis, 2022, p. 13). The drawings of the Fun Palace (Figure 3) and Interaction Center (Figure 4) projects designed by Cedric Price represent the spatiotemporal affordances for alternating activities and dynamic programs instead of fixed architectural elements and forms. By bringing a set of flow diagrams, activity models, and organization charts, these experimental projects visualize how humans can utilize, adapt, communicate, transform, and interact with machines and spaces over time (Steenson, 2017). By shifting attention from appearance to experience, they celebrate affordances and continuous interactions between users and space.
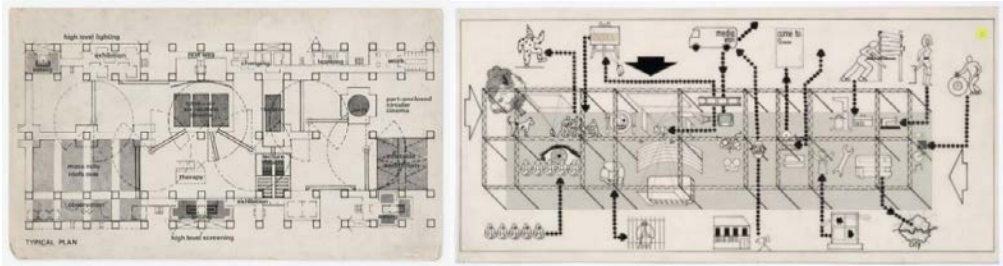
Figure 3. Typical plan of Fun Palace complex, 1964.
Source: Canadian Centre for Architecture, Cedric Price Fonds, DR1995: 0188: 710

Figure 4. Diagram mapping programme and community for Inter-Action Centre, London, England, 1977.
Source: Canadian Centre for Architecture, Montréal, Cedric Price Fonds, DR1995:0252:621

3.2 Flows

Flows are an integral part of the architectural design process for multiple reasons. Flows propagate architectural methods and concepts for emphasizing monumentality, ceremonial rituals, ambiances, or promenades as well as creating functional zonings, movement, and circulation patterns in buildings. Today, flows in complex projects can be simulated not just for circulation but also for air, water, and energy flows analyzing heating, cooling, or ventilation needs to optimize healthy environmental conditions. Flows connect nodes with networks in spatial topologies and provide a generative representational tool for designers to organize space with behaviors, movements, and environmental forces.

One of the early visualizations of flow studies dates to the beginning of the 19th century. Christina Frederick(1913) utilizes visuals to compare the kitchen layouts in terms of the arrangement and allocation of equipment for the efficient workflow of its users (Figure 5). These comparative diagrams represent how movement patterns for different activities and interactions can influence the effectiveness of a design. It ensures essential feedback on how architectural space can be further utilized and elaborated through associated movements. Northstar Medical Campus designed by ANONYMOUS Architects presents a contemporary example of how flow simulations facilitate optimization of the floor plan according to the circulation patterns of different user groups in alternative scenarios and times (Figure 6). The project highlights the relevance of representing flows in the design process for the interactions between humans and architectural space(Ansari, 2022).
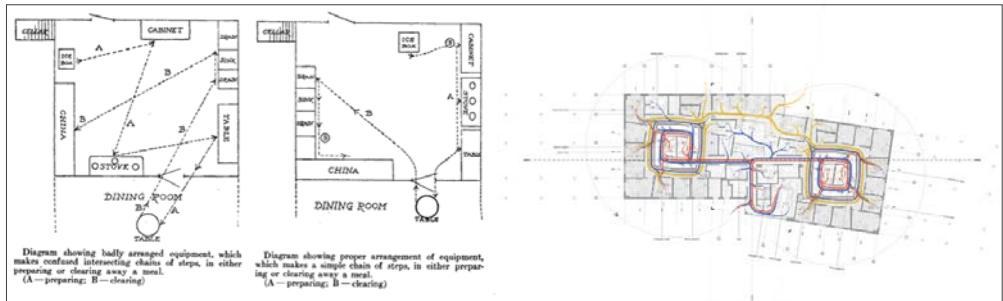
Figure 5. Diagrams showing the arrangement of equipment. Source: Frederick (1913)
Figure 6. Building 2 Circulation Diagram, Northstar Medical Campus. Source: Ansari (2022)

3.3 Footprints

Technological development in multimedia devices, speakers, high-resolution screens, and projectors for larger spaces after the 1950s creates new media infrastructure for artistic and architectural experimentations(Buckley, 2018). Archigram's "Living 1990" (Figure 7), "Living City Exhibitions" and "Light Sound Workshops" in the 1960s present early examples of benefiting from these technologies that juxtapose light, sound, and moving images in space to create multisensory ambiances. The harmony of dynamic colors, music, and patterns generates an audiovisual interplay of interactions with mobile audiences(Buckley, 2018). These networked experiences offer immersive modes of perceptions and expressions to engage with humans blurring the boundaries between media, arts, and architecture(Buckley, 2018). As a result, exhibition designs lead to challenges in visualizing the infrastructure of new equipment, control devices, and fields of media devices that interact with space and visitors. As Buckley states referring to Peter Cook:

> Cook noted that the integration of visible mechanical elements with invisible electronic control systems made the problem of representation especially difficult: "In a place where the hardware, software, and ephemera are all intermixed (and interdependent at any one time) there has to be a much looser hierarchy of parts. It becomes almost impossible to draw." (Cook, 1972, as cited in Buckley, 2018, p. 43)

The exhibition drawings of Archigram are innovative experiments bringing electrical control mechanisms and footprints of plug-in multimedia devices with their mobile placement and coverage within a spatial organization of this immersive infrastructure. These novel visualizations represent the topography of opportunities and affordances as well as the limits and constraints of control and multimedia. These footprint mappings engrave the fields of affordances for the interactions between multimedia devices, space, and humans. Contemporary buildings have similar drawings visualizing the CCTV systems that mark the coverage of cameras, sensors, or multimedia devices in buildings for ensuring constraints for security, safety, fire systems, or accessibility purposes (Figure 8). Although, it is underestimating to

use these drawings for specific security purposes or safety regulations, utilizing these representations in the design process will become more important with the accumulation of digital technologies. These drawings can help with the growing concerns and protocols about surveillance, footprints, big data, cookies, and privacy in the smart environments served by private companies(Söderström et al., 2014).
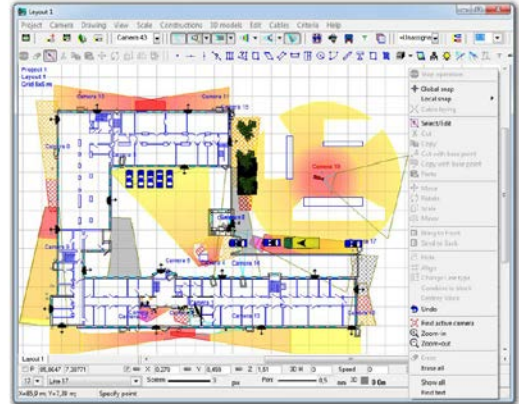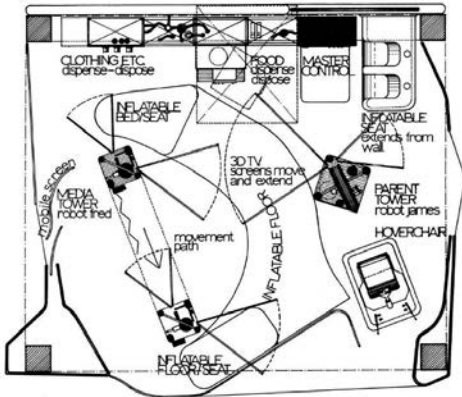
Figure 7. Plan, Living 1990 exhibit for the Weekend Telegraph constructed in Harrods department store, London, 1967. Warren Chalk, Peter Cook, Dennis Crompton, and Ron Herron. Copyright Archigram. Source: Buckley(2019)
Figure 8. CCTV CAD Software, Working with 2D projections, Source: www.cctvcad.com/VideoCAD-Versions.html (n.d.)

3.4 Behaviors

English illustration artist William Heath Robinson(1872-1944) illustrated many ironic yet intriguing drawings depicting people's struggle with the mechanization of living environments at the beginning of the 20th century. These visualizations concentrated on the swift evolution of daily activities through the integration of numerous gadgets and machines on the verge of the new lifestyle and comfort requests of society (Figures 9 and 10). His representations are imaginary examples of what extent the design of technologies can transform human behaviors, activities, and interactions. On the other hand, these drawings put criticality on the exaggerated utilization of machinery exemplifying a visual method to inform the design process for questioning our behaviors, never-ending needs, naive enthusiasm, and relationships with technology.

The "Becoming Animal" installation designed by "Minimaforms" is a contemporary example highlighting playful, sensorial experiences between people, space, and digital technologies. The installation reacts to various densities and movements of human agents through different combinations of colors, sounds, and facial expressions for creating "spatial environments that are adaptive, emotive and behavioural"(Spyropoulos, 2016, p. 38). The project diagrams map the parametric possibilities of dynamic interactions associated with different senses, times, emotions, actions, and movement states, visualizing a concrete example for programming interactive spatial environments (Figure 11). As Spyropoulos(2016) explains:

Interaction understood as the evolving relationships between things allows a generative and timebased framework to explore space as a model of interfacing that shifts the tendencies of passive occupancy towards an active and evolving ecology of interacting agents. (Spyropolous, 2016, p. 38)
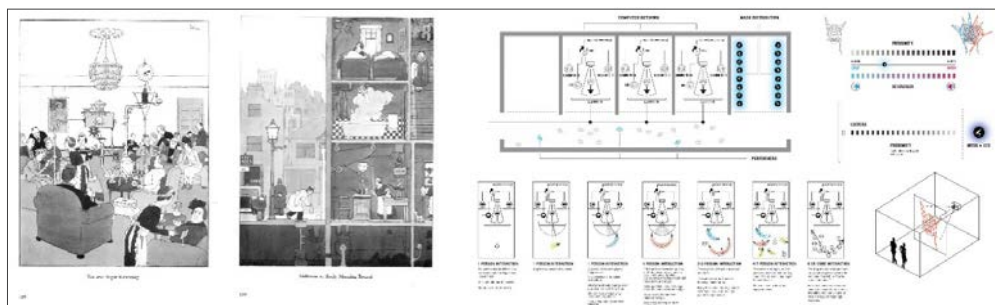
Figure 9 and 10 William Heath Robinson Illustrations, 1900s, Source: Robinson (1973)

Figure 11 Becoming Animal Mapping, MoMA: Talk to Me, 2011, Minimaforms Source: Spyropoulos (2017)

3.5 Sensors and Feedback

Banham(1965) stresses the dissolution of architecture through its takeover by the "mechanical pudenda" of environmental control systems, in the mechanical turn. Kotsioris(2018) extends this shift with sensors and discusses the conceptual transformation of architecture from a protective shelter composed of thick components and strong materials to thin reflective surfaces providing an "indispensable medium" of signals, alarms, and ultrasonic waves for sensorial interactions (Figures 12 and 13). He recommends a deeper look into patent drawings and engineering visuals to investigate this invisible nature of sensing and control mechanisms. Kotsioris(2018, p. 234) notes that "filtering of bodies, once relegated to doors, windows, and locks, is singlehandedly made obsolete. Sensors and controllers defeat bricks and mortar." These visuals of early sensors exemplify a new representation mode that superimposes the perception of space with its afforded interactions.

Similarly, The Diffuse House by MAIO(2021) is a conceptual project created through the juxtaposition of floor plans generated by autonomous robotic vacuum cleaners (Figure 14). The drawings map the spatial medium afforded for robots' movement by visualizing the territory of the footprint of devices instead of conventional building plans. The drawings are composed of peculiar shapes and forms representing how these autonomous robots sense and interact with their environment. Both methods highlight alternative visualization methods for this shift from material forms to immaterial mediums of sensory interactions.
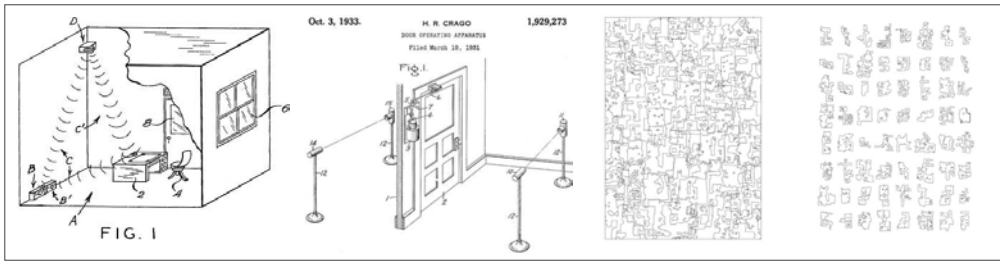
Figure 12. Patent drawing from Samuel M. Bagno's "Method and Apparatus for Detecting Motion in a Confined Space," 1947–53. Source: Kotsioris (2018)

Figure 13. Patent drawing from General Electric's "Door Operating Apparatus," 1933. Source: Kotsioris (2018)

Figure 14. MAIO, The Diffuse House, 2020 Source: MAIO(2021)

Multimedia experiments of Charles and Ray Eames at the World's Fair in the 1950s set a precedent for the power of multiscreen devices. These exhibitions are significant for the early usage of media as a multichannel information source to generate narratives for their visitors(Colomina, 2001). Colomina(2001) notes that the simultaneous usage of multiple screens, films, signals, and sound intensifies the immersive ambiances and constructs time through feedback loops. The complete control of new communication modes regulates and conveys interactions and information flows between mediums superimposing architecture, information modes, and multimedia. The exhibition drawings represent design and storytelling methods through overlaps of simultaneous senses, devices, environments, and their narratives over time in multisensory environments (Figures 15 and 16).

The Power Exhibition at the CIVA Museum of Architecture in Brussels presented a progressive example of interactive building services. "Feel the Heat" installation designed by TU Delft Design, Data, and Society Group & The New Open project together with Meta Office showcases future potentials for data-driven building systems to decrease unnecessary consumption(The New Open, 2023). The integrated interface of the heating installation includes data visualizations of the timely operation of heating systems, available energy, and consumption levels combined with the territorial footprint and exchange of renewable energies around Brussels. The installation brings multiple times; personal, architectural, and territorial scales together and allows physical, sensory, and informational interaction, and exchange with visitors (Figures 17 and 18). Representational interface makes the relationships between services, times, scales, and humans visible to generate feedback loops and inform their occupants on performance and consumption to raise ecological consciousness.

Figure 15. Charles and Ray Eames. Glimpses of the USA, 1959. Source: Colomina (2001)
Figure 16. Notation of timing of sequences for Glimpses of the USA, 1959. Source: Colomina (2001)
Figure 17 and 18. Feel the Heat, 2023 from "Power Exhibition, Project by TU Delft Design, Data and Society Group & The New Open project in collaboration with Meta Office, CIVA Brussels 2023, Photos by Filip Dujardin
Source: https://www.newopen.design/community/(2023)

4. DISCUSSION

Stan Allen(1999, p. 54) highlights the importance of architecture having the "capacity to actualize social and cultural concepts, it can also contribute something that strictly technical disciplines such as engineering cannot." By looking at the multiple modes of interaction between humans and technologies, this paper attempts to bring material and immaterial layers of interaction through architectural representation. The given examples of drawings can be read as clues, responses, or methods developed by architects and designers to deal with the de-spatialization of architecture through digitalization within the sensory landscape of buildings. The intention is to perceive, visualize, and design architecture by re-spatializing them as socio-eco-technical infrastructures of emergent dynamics and flows of interactions(Easterling, 2012). Representations have the capacity to bring the spatiotemporal, intermedial, sensorial, territorial, and behavioral relationships to reinforce theoretical, communicational, and critical grounds for architecting interactions.

Firstly, interactions open up alternative ways of architectural thinking regarding the theoretical position of complexity science associated with the definitions of *flows, causality, emergence, coherence, metastability, feedback, mereology,* and *catalysts* in complex dynamic systems(Juarrero, 2023). Norman(2013) also explains interaction design with overlapping terminologies of *affordances, signifiers, modalities, constraints, mappings, feedback, and paradoxes*. This extended understanding of the spatial medium helps to represent interactions through multiple layers, scales, modalities, and dimensions. The focus on interactions questions the relations between perception and action, individual and collective, living organisms and technical objects(Simondon, 2017) to differentiate technicities from technology (Gorny et al., 2024). This provides a better understanding of the relationships between animals and machines(Wiener, 2013), humans and non-humans(Latour, 1988), artificial and

natural environment(Gibson, 1979) referring to diverse theories and ontologies about and beyond architecture.

Spatial representation of interaction augments the communication mediums and tools for collaboration. Visualizations facilitate the co-creation of multidisciplinary design teams of architects, engineers, and specialists by revealing the potential of services and datafication for human-building interactions. Drawing architecture as a cybernetic system of dynamic flows and interactions informs the design process for responding to the recent questions about designing intelligent environments. Building interfaces can also utilize representations for the operation stages of buildings to communicate with users. Spatial integration of interfaces enables multichannel sources of information and feedback for designing immersive experiences and behavioral interactions with humans and the environment.

Finally, representing the interaction underlines the drawing as a critical architectural design method for the responsible use of digital technologies in buildings. Understanding how immaterial layers of systems interact with the material ones refers to privacy, security, and surveillance challenges. This can also bring attention to putting equal emphasis on "individuation", isolation, and detachments as well as relations, networks, and interactions during the design(Simondon, 2017). Visualization can make the interconnectedness visible to evaluate, cultivate, and maybe limit digital, spatial, and ecological footprints within the growing hyperconnectivity in digitalized environments. Better visualization helps improve the integration beyond their optimization but also critical adoption of technologies regarding contemporary social, material, and ecological discussions.

5. BIBLIOGRAPHY

Alavi, H. S., Churchill, E. F., Wiberg, M., Lalanne, D., Dalsgaard, P., Fatah Gen Schieck, A., & Rogers, Y. (2019). Introduction to Human-Building Interaction (HBI): Interfacing HCI with Architecture and Urban Design. ACM Transactions on Computer-Human Interaction, 26(2), 1–10. https://doi.org/10.1145/3309714

Allen, S. (1999). Infrastructural Urbanism. In Points + Lines: Diagrams and Projects for the City (pp. 48–57). Princeton Architectural Press.

Ansari, I. (2022, February). Iman Ansari: The Architecture of Interaction | TED Talk [Video]. TED Conferences. https://www.ted.com/talks/iman_ansari_the_architecture_of_interaction

Bali, M., Half, D. A., Polle, D., & Spitz, J. (2019). Smart Building Design: Conception, Planning, Realization, and Operation. Birkhäuser.

Banham, R. (1965). A Home is Not a House. Art in America, 2, 70–79.

Banham, R. (1969). The Architecture of The Well-Tempered Environment. The University of Chicago Press.

Buckley, C. (2018). Envisioning Assembly: Archigram and the Light/Sound Workshop. Grey Room, 73, 26–53. https://doi.org/10.1162/grey_a_00255

Buckley, C. (2019). Graphic Assembly: Montage, Media, and Experimental Architecture in the 1960s. University of Minnesota Press. *http://www.jstor.org/stable/10.5749/j.ctvpwhdbd*

Colomina, B. (2001). Enclosed by Images: The Eameses' Multimedia Architecture. Grey Room, 02, 6–29.

Easterling, K. (2012). We Will Be Making Active Form. Architectural Design, 82(5), 58–63. *https://doi.org/10.1002/ad.1461*

Easterling, K. (2021). Medium Design: Knowing How to Work on the World. Verso.

Frederick, C. (1913). The New Housekeeping: Efficiency Studies in Home Management. Garden City, N. Y., Doubleday, Page & Company.

Gibson, J. J. (1979). The Theory of Affordances. In The Ecological Approach to Visual Perception (pp. 127–137). Psychology Press.

Giedion, S. (1948). Mechanization Takes Command a Contribution to Anonymous History. Oxford University Press.

Gorny, R., Kousoulas, S., Radman, A., & Perera, D. (2024). Introduction. In The Space of Technicity: Theorising Social, Technical and Environmental Entanglements (1st ed.). TU Delft OPEN Publishing. *https://doi.org/10.59490/mg.95*

Juarrero, A. (2023). Context Changes Everything: How Constraints Create Coherence. The MIT Press.

Kirsh, D. (2010). Thinking with external representations. AI & SOCIETY, 25(4), 441–454. *https://doi.org/10.1007/s00146-010-0272-8*

Kotsioris, E. (2018). Sensing Architecture. In S. de Silva, D. Furioso, & S. Jaff (Eds.), Medium (pp. 227–244). MIT-Press.

Koutamanis, A. (2006). Buildings and Affordances. In J. S. Gero (Ed.), Design Computing and Cognition '06 (pp. 345–364). Springer Netherlands. *https://doi.org/10.1007/978-1-4020-5131-9_18*

Larkin, B. (2013). The Politics and Poetics of Infrastructure. Annual Review of Anthropology, 42(1), 327–343. *https://doi.org/10.1146/annurev-anthro-092412-155522*

Latour, B. (1988). Mixing Humans and Nonhumans Together: The Sociology of a Door-Closer. Social Problems, 35(3), 298–310. *https://doi.org/10.2307/800624*

Latour, B., & Yaneva, A. (2008). Give Me a Gun and I Will Make All Buildings Move: An ANT's View of Architecture. In R. Geiser (Ed.), Explorations in Architecture: Teaching, Design, Research (pp. 80–89). Birkhäuser. *https://doi.org/10.4324/9780203084274-13*

MAIO. (2021). The Diffuse House—Confinement. E-Flux Architecture. *https://www.e-flux.com/architecture/confinement/373338/the-diffuse-house/*

Nembrini, J., & Lalanne, D. (2017). Human-Building Interaction: When the Machine Becomes a Building. In R. Bernhaupt, G. Dalvi, A. Joshi, D. K. Balkrishan, J. O'Neill, & M. Winckler (Eds.), Human-Computer Interaction—INTERACT 2017 (pp. 348–369). Springer International. *https://doi.org/10.1007/978-3-319-67684-5_21*

Norman, D. A. (2013). The Design of Everyday Things (Revised and expanded edition). Basic Books.

O'Brien, W., Wagner, A., Schweiker, M., Mahdavi, A., Day, J., Kjærgaard, M. B., Carlucci, S., Dong, B., Tahmasebi, F., Yan, D., Hong, T., Gunay, H. B., Nagy, Z., Miller, C., & Berger, C. (2020). Introducing IEA EBC annex 79: Key challenges and opportunities in the field of occupant-centric building design and operation. Building and Environment, 178, 106738. *https://doi.org/10.1016/j.buildenv.2020.106738*

Park, J. Y., Ouf, M. M., Gunay, B., Peng, Y., O'Brien, W., Kjærgaard, M. B., & Nagy, Z. (2019). A critical review of field implementations of occupant-centric building controls. Building and Environment, 165, 106351. *https://doi.org/10.1016/j.buildenv.2019.106351*

Robinson, W. H. (1973). Inventions. Duckworth.

Savaş, A., Derebaşı, B., Dino, İ. G., Sarıca, S., İnan, F. S., & Akın, Ş. (2018). Research and Conservation Planning for the METU Faculty of Architecture Building By Altuğ-Behruz Çinici, Ankara, Turkey [Keeping It Modern Project Report]. Getty Foundation.

Simondon, G. (2017). On the Mode of Existence of Technical Objects "Du mode d'existence des objets techniques" (C. Malaspina & J. Rogove, Trans.). Univocal Publishing.

Söderström, O., Paasche, T., & Klauser, F. (2014). Smart cities as corporate storytelling. City, 18(3), 307–320. *https://doi.org/10.1080/13604813.2014.906716*

Spyropoulos, T. (2016). Behavioural Complexity: Constructing Frameworks for Human-Machine Ecologies. Architectural Design, 86(2), 36–43. *https://doi.org/10.1002/ad.2022*

Spyropoulos, T. (2017). Constructing Participatory Environments: A Behavioural Model for Design [Doctoral Thesis]. UCL (University College London), London. *https://discovery.ucl.ac.uk/id/eprint/1574512/*

Stalder, L. (2019). Machines in Architecture: From Performance to Accident: A Modern Trope and its Afterlife. In C. Ahrens & A. Sprecher (Eds.), Instabilities and Potentialities (pp. 169–175). Routledge.

Steenson, M. W. (2017). Architectural Intelligence: How Designers and Architects Created the Digital Landscape. MIT Press. *https://doi.org/10.7551/mitpress/10971.001.0001*

The New Open. (2023). The New Open Exhibition 2023. THE NEW OPEN. *http://www.newopen.design/*

Vrachliotis, G. (2022). The New Technological Condition: Architecture and Design in the Age of Cybernetics. Birkhäuser. *https://doi.org/10.1515/9783035624816*

Wiberg, M. (2015). Interaction design meets architectural thinking. Interactions, 22(2), 60–63. *https://doi.org/10.1145/2732936*

Wiener, N. (2013). Cybernetics or Control and Communication in the Animal and the Machine, Reissue of the 1961 second edition (2. ed). MIT Press.

SURGING SOCIOCEPTION: AFFIRMING ASSURANCE AGAINST AN ALIENATING AMBIANCE

SOCIOCEPÇÃO EMERGENTE: AFIRMAR A SEGURANÇA CONTRA UM AMBIENTE ALIENANTE

Dr.Marc Boumeester
Head of research and development
/ Diretor de Investigação e Desenvolvimento
ArtEZ Art and Design Zwolle
m.boumeester@artez.nl

ABSTRACT

In a world where perception is detached from action, images and bodies act as proxies, separated by a doublesided mirror. Images now evolve into autonomous, self-replicating entities through AI, raising the question: whose problem is this? With a current human-to-image ratio of 1 to 1750 and growing, our historical visual reference shifts ever closer to the present. Richard Dawkins' concept of the meme assures us that images have a bright future. Simondon seeks to reveal a genetic unity between individuation phases, tied by the image's transductive dynamism, focusing on the relationship between imagination, invention, and perception. He posits that a visual object is a nexus of subjective perception and objective reality. Today, we seem to have lost control of this relationship. If we don't break our automated symbiosis with technology – and return to an older version of modernism - we risk becoming mere fuel for its growth, disrupting the vital link between action and perception, with significant impacts on ambiances, worldviews, opinions, and planetary health.

KEYWORDS: proxy. affect. image. Simondon. technology. transduction. Modernism.

RESUMO

Num mundo em que a perceção está desligada da ação, as imagens e os corpos actuam como substitutos, separados por um espelho de dupla face. As imagens evoluem agora para entidades autónomas e autoreplicantes através da IA, levantando a questão: de quem é este problema? Com um rácio humano-imagem atual de 1 para 1750 e em crescimento, a nossa referência visual histórica aproxima-se cada vez mais do presente. O conceito de meme de Richard Dawkins garante-nos que as imagens têm um futuro brilhante. Simondon procura revelar uma unidade genética entre as fases de individuação, ligadas pelo dinamismo transdutivo da imagem, centrando-se na relação entre imaginação, invenção e perceção. Afirma que um objeto visual é um nexo entre a perceção subjectiva e a realidade objetiva. Hoje, parece que perdemos o controlo desta relação. Se não quebrarmos nossa simbiose automatizada com a tecnologia – e voltarmos a uma versão mais antiga do modernismo – corremos o risco de nos tornarmos mero combustível para seu crescimento, interrompendo o elo vital entre ação e perceção, com impactos significativos em ambientes, visões de mundo, opiniões e saúde planetária.

PALAVRAS-CHAVE: proxy. afeto. imagem. Simondon. tecnologia. transdução. Modernismo.

1. INTRODUCTION

With the current human-to-image ratio standing at 1 to 1750 and widening at an accelerating pace, the notion of statistical historical visual reference is continuously reset closer to the present. In 2024 around 80% of all photographic images have

been created in the previous decade, the annual growth is predicted to increase acceleratingly starting at 15%. The volume of images will thus grow exponentially the further we go in time, making the statistical significance for any image before 2014 increasingly irrelevant. In light of the databasing for AI, making this system the largest and fastest growing entity of production and distribution on the planet. This creates a world where perception is dissociated from action, and the image and the body exist as mere proxies, separated by a double-sided mirror. As images transcend human capacity for perception and rapidly evolve into autonomous entities capable of self-replication through AI, a pressing question emerges: Whose problem is this? Seen from the autobiographic perspective of the image, Richard Dawkins' (1976) notion of the 'meme' as a cultural replicator assures us that its prospects are promising, but what does this mean for our relationship with the image as an instrument of building both veracity, remembrance, and anticipation?

Simondon aims to elucidate a genetic unity between distinct phases of individuation bound together by the transductive dynamism of the image. At the heart of his inquiry lies the problem of the relationship between imagination, invention, and perception. He argues that a created visual object is not merely a physical representation or an artificial addition to the world, but rather a nexus where subjective perceptions and objective reality intersect and communicate. Simondon (2022, p.186): "A created object is not a materialized image, nor is it placed arbitrarily in the world like an object among other objects in order to overload nature with an artificial supplement; it is (through its origin) and remains (through its function) a linkage system between the living and its milieu, a double point in which the subjective world and the objective world communicate." Given the current circumstances, it appears that we have relinquished control over this relationship. Unless we sever our automated symbiotic relationship with technology, we risk becoming mere fuel for its insatiable appetite as this technological advancement risks petrifying and separating the vital correlation between action and perception, with palpable effects on the formation of worldviews, opinions, and policies that detrimentally affect the health of the planet and its inhabitants.

Fuelled by the rapidly growing awareness of the imperative to dismantle and replace the Anthropocene, a secondary sentiment emerges, contending with the question: If the Anthropocene needs substitution, what should replace it? At an accelerating pace, the underlying structures of the world's capitalist powerhouses are increasingly being exposed for implementing blatantly short-sighted policies. These policies are just as damaging as the territorial, religious, and ideological wars that stem from them. The false correlation between progression and prosperity and the equally false dichotomy between maintaining a level of opulence and prioritizing genuine well-being are worldviews that have been created to clear the path for the ever-increasing appetite for profit that serves a relatively small group of individuals. Simultaneously, potential responses to this based on «modernist» ways of thinking undergo a radical revision of their foundations, rooted in a long-overdue and vigorous overhaul of imperialist, colonialist and idealist thinking. These dilemmas forefront

the daunting realization that the intricate nature of the poly-crisis can never be adequately addressed without considering the default absence of a holistic outlook as a framework for human decision-making. One ground for this is the historical and canonical propagation of false oppositions between body and mind, mine and ours, us and them, and the proliferation of various variations of gender-related biases. This line of inquiry aligns with certain traditions within modernism, critiquing established dichotomies and advocating for a holistic perspective that breaks away from rigid conventions, challenging traditional norms and structures. However, the focus on replacing the Anthropocene with a more sustainable framework, one not centred on humanity, introduces environmental and ethical dimensions that were not central in earlier modernist movements. Furthermore, the anti-linear regression required for the next holistic progression finds little resonance in the causalities connected to the emergence of the modernist drive.

In response to this existential crisis, this text proposes to reexamine the 'machinic' workings of modernism and forefront Richard Shusterman somaesthetics as a means of reclaiming embodied perception and bodily autonomy, studying the sensory-aesthetic appreciation and self-fashioning that extends beyond mere reflection, encompassing the entirety of the symbiotic whole that is the body. In addition, this text examines the development of the notion of a "socioception" as a safeguard for the automation of affect. Key to grasping this approach is the continuous endeavour to be omni-sentient in any situation, whether actualized or virtual, within its context, considering its interrelations with others (exteriority), yet limiting its scope to that what is sensible in the most literal way, thus intrinsically critiquing the role of the image in our society.

To escape the paradigms of renewal, innovation, and replacement as signs of progression, it would be truer to the nature of this inquiry not to invent anything new, but to see what can be done with the existing. Besides that, a specific strand of inquiry in academia centres on the question of whether a solution lies in the regeneration, revival, or revamping of modernism, which has a 'natural connection' to the difficulties at hand as modernism has both a cause and effect in the Anthropocene. The 'machine' of modernism, with all its requisite elements in place albeit with room for improvement in priority, order, and organization, could potentially benefit from a reassessment of its current configuration. Perhaps, reversing the workings of this machine could prove more effective in countering the modes of thinking and formation of worldviews that contribute to the devastating era of the Anthropocene. Analogous to how a vacuum cleaner could be repurposed into a hair blower by simply switching its input and output gauges, we might leverage the familiar instrument of modernism to contribute to this cause. To this end, this exploration extends Richard Schusterman's concept of 'Somaesthetics', which delves into the interrelation between body, mind, and aesthetics, emphasizing the embodied experience and the role of bodily perception in shaping aesthetic judgments, experiences, and awareness. By altering the way in which the montage-production of perception is shaped, a fundamental shift in our judgments and beliefs can be achieved (Boumeester, 2024a). Consequently, rather

than proposing a new future for modernism, the exploration suggests an enhanced older one that has always existed but remained unrealized. It advocates not for a new movement, but for a better-executed version of the existing one achieved by reversing its input and, consequently, its output.

2. AUTONOMOS AND THE REVERSAL OF CONTENT AND FORM

When examining the 'original' modernism, it can be asserted that its fundamental elements encompass experimentation, fragmentation, subjectivity, rejection of realism, and cultural change. Moreover, modernism often critiqued the socius, challenging prevailing societal norms, hierarchies, and structures, thus advocating for radical social change alongside its aesthetic innovations. The first step in exploring whether the present era necessitates or prompts a reconfigured version of modernism is to assess whether the 'social constructs' underlying these shifts still embody the same values as during their inception. Here, a notable challenge arises: the inherent historicization of comparison, a pitfall this text seeks to avoid for various reasons. One of these reasons is the risk of relying on canonical contrast as a basis for signification. In this context, it implies the difficulty of overlooking the transition from the relative value of modernism in its era to the absolute value of modernism within its historical context. For example, the significance of the 'birth' of Cubism at its emergence vastly differs from its historical, canonical, and causal value in relation to the periods before and after its inception. Additionally, any comparison between social milieus separated by over a century, even when narrowly defined, would necessitate a comprehensive review of world history and the reverse engineering of historical contexts. Such an undertaking would surpass the intended scope of this text and its specific discourse.

To truly encapsulate the significance of the theme, it is necessary to re-evaluate both the form and content of the discussion. Specifically, an alternative approach involves redefining the primary elements of modernism as verbs of transformation (of ambiances), relative to any Zeitgeist, rather than treating them as fixed historical and 'objective' entities. This entails a shift from viewing experimentation as an isolated act to considering experimentation with what? Fragmentation of what? Subjectification, rejection, and change of what or whom? Moreover, it is crucial to pinpoint an anchor point in the social constructions of both eras that has experienced the least change or is inherently selfreferential. This approach ensures that any comparison of the effects of modernism in its own era is articulated in terms of capacities rather than properties. Drawing a parallel to comparing the wealth of an individual in 1910 to that of someone in 2010, it is evidently more accurate to assess purchasing power relative to the median income in the respective era, rather than focusing solely on absolute income. Therefore, for a more nuanced perspective, I advocate two shifts: firstly, transitioning from thinking in terms of the socius to emphasizing the (auto-) nomos, and subsequently, moving away from macro- or microreductionism towards a form of meso-reductionism. I will further elaborate on these shifts.

2.1 First Shift

According to sociologist Peter L. Berger (1967), the constructed world follows an inherent order, comprising a set of principles that individuals externalize and objectify. This externalization leads to internalization within each person. Subsequently, this order is assumed, articulated, and woven into social discourse, eventually becoming an integral part of common sense. The entire process of organizing the world and shaping experiences, both on collective and individual scales, constitutes what Berger refers to as a nomos. Berger underscores the concept of a «socially established nomos,» interpreting it as a protective shield against terror. In essence, he suggests that the primary function of the socius is the establishment of a nomos, offering stability, predictability, and a framework for living. Berger and Luckmann (1966, P.25) speak of the intersubjective social construction of reality, which refers to the coexistence of manifold realities: "Compared to the reality of everyday life, other realities appear as finite provinces of meaning, enclaves within the paramount reality marked by circumscribed meanings and modes of experience". Thus, to them, everyday life stands in contrast to alternative realities, such as dreams, theoretical constructs, religious or mystical beliefs, artistic and imaginative worlds, and so forth. Although individuals may temporarily immerse themselves in these other realities, such as when watching a film, they inevitably return to the realm of everyday reality once the experience concludes. Individuals possess the ability to contemplate these various realities, including their own social everyday reality. This form of contemplation is commonly known as reflexivity. However, it is essential to recognize that reflexivity relies on some «source material» or its anchoring in some form of intersubjectivity, which – as will be argued later – can become problematic when this source material is not actualized.

What then, to speak with Simondon, can be in transduction? Furthermore, it would be a rather 'one-sided' view to rely on the socius to produce a nomos, when it is precisely the socius that needs change. Still, the capacity for establishing a nomos is valuable, as the alternative (anomie) would never be a force capable of producing the collective change that is so direly needed.

The first suggestion is thus to shift from looking at a specific socius (property) as a baseline or source to centring the specific way of organizing itself (capacity); the nomos. Furthermore, it is wise to utilize the concept of nomos in its context of being part of *autonomos*, with a shift from the focus on the self to the way the self negotiates its drives and desires with other "selves", coming to some form of governance that is created and agreed upon by all parties involved. Close to what Jean Piaget (1952) denotes as an individual's capacity to think and act independently, forming moral judgments according to their internalized principles rather than adhering solely to external rules and authority. This signifies an elevated level of moral reasoning and self-reliance in decision-making. The Nomos thus created is very much closer to the capacity to negate, than to the negotiation itself. Therefore, nomos, as part of autonomos, not only allows for many more variations on the binaries mentioned above, but also questions the validity of 'binarification' itself. Additionally, as also

introduced earlier, this conquest should not be seen as a thing in itself; it is embedded in a larger framework of questions that are prompted by the devastating condition the world finds itself in today, both in terms of interhuman relations and human/non-human relations. With the shift from focusing on the socius (which is based on properties), we clear the way for an organizational form based on capacities, including the capacity to include previously unheard voices.

2.2 Second Shift

In order to begin addressing some of the earlier questions regarding the characteristics of modernism as verbs of transformation, we need to select a level at which to do so, which would entail searching for the middle ground (the excluded middle) between the individual and the socius. In other words, how can we emphasize the agency of the event itself, rather than the agency of the encountering forces? This necessitates surpassing the level of the individual without reducing individuals to mere parts of a group. Philosopher Brian Massumi (2015, p.4) argues: "What is most intensely individual is at the same time most widely social." Similarly, it is crucial to heed philosopher and artist Manuel DeLanda's caution against reductionism. DeLanda distinguishes between what he terms 'macroreductionism,' which acknowledges the existence of individual persons while assuming that they entirely adopt the values of a higher social order or class to which they supposedly belong (viewing individuals as products of society). Conversely, the contrasting perspective is that of 'micro-reductionism,' asserting that society as an entity does exist, but solely as the surplus resulting from the aggregation of its individual components. Thus, the third position - that of "meso-reductionism", linked to scholars such as Giddens (1984) - arises from the recognition of (medium) large, nonhuman entities that do not possess a social nature by default, but which form the true agency of society, from which both social structure and individual activity emerge. To transition to the level of meso-reductionism, it becomes necessary to adjust the grid of vision to that of population thinking. Population thinking transcends the focus on individual cases and avoids rigid categorization; instead, it concerns itself with overarching tendencies that encompass all types of interactions—be they social, environmental, or psychological. As Manuel DeLanda (1994, p.797). notes: "In short, for population thinkers, only the variation is real, and the ideal type [...] is a mere shadow." Thus, we will focus on the domain demarcated by meso-reductionism on a population level and emphasize affect, rather than affection, percepts, rather than perception, nomos, rather than socius, and focus on somaesthetics rather than on "formal" aesthetics.

These lemmas will serve as a preliminary foundation for further exploration, albeit with a fair warning. As I have argued elsewhere (Boumeester,2022), the construction of daily life is not merely a matter of distinguishing between the actualized (what Berger calls everyday reality) and reflexivity thereof, but a merger between the domains of the actualized and the potential realities that are not or never will be actualized. Thinking of the example of watching a film, it profoundly influences the way a person feels and thinks afterwards, carrying affects for a long duration. Moreover, if there has

been a significant theme, affect, or a specific song, this can be a heart- or earworm for many days and shape the construction of daily life for a longer time. Also, the mere anticipation of seeing the film can significantly influence someone's mood, casting a foreshadow of its event, regardless of whether, for whatever reason, this film will not be seen in the end. I have termed this the autopoiesis of the elements that construct reality. Simultaneously, there are physical and psychological effects that filter and block percepts from being perceived (whereby a percept is defined as something with the capacity of being perceivable) in a process dubbed entropy (for instance exclusion of the Lacanian Otherness or more simple cases of cognitive dissonance). The interplay between these two forces creates an endless number of potential outcomes, yet also reduces them to a single result. To give the logic of revamping modernism a fair chance, we need to examine the nomos of interhuman populations simultaneously on all three levels (individual, meso, and socius) with a parallel view (individuation) as well as a serial view (causality), which presents us with an unlimited volume of potential outcomes, yet always yields just one result. We will explore how this relates to the socius as an image and the body by proxy in somaesthetics in the next paragraph.

3. SOCIOCEPTION AND THE BODY BY PROXY

Arguably, we could claim that the socius during the 'first' modernism was largely embodied, and that the transformations thereof through modernism were mostly mediated, after all modernism was predominantly expressed through the arts. In the current timeframe, an incomparable role has been created for the image, both in its literal and semi-metaphorical meaning. To start unpacking this statement, we need to look at the image a little closer. The present discussion on the ontology of the image can be delineated in a two-tiered progression: the political tier and the empowering tier. The political tier initiates a pertinent debate with the emergence of the image as an active participant in the public domain. It scrutinizes the power structures that dictate the placement of images (in terms of how, where, and when), challenging semiotics from an altered perspective on normativity. Within this tier, systems of codification, situation, commodification, and signification act as veils, complicating direct perception, causing aesthetic encounters never to be devoid of context. The empowering tier, on the other hand, functions by enabling without directly engaging with the first tier. It refrains from passing judgment, imposing dogma, attaching stigma, or assigning value to political acts. Instead, it fosters the expression of multiple worldviews in a non-conformist and non-normative manner, and this is where the arts enter the playing field.

Exploring the contextual aspects of the image by investigating the precise intersection of context and imaging, approaches the (photographic, snapshot) image as a product of the individual drive to essentialize *subject events* that, by definition, resist essentialization. This tendency can result in distorted worldviews built upon misshaped representations, or even, to the formation of a socius that is completely mediated and has no embodiment apart from the production of itself,

whereby we tentatively regard the image as an embodiment, rather than a depiction or object. Motivated by the emergence and role of images generated through new material-discursive developments, juxtaposed with a growing awareness of the implications stemming from the agency of the Anthropocene, this thinking builds an extension to the current classifications of the image. This novel type of image possesses qualities that defy alignment with the prevailing understanding or any existing classification, yet it exerts a daily influence on our consciousness. To comprehend the role and significance of this image type in 'the making of reality,' commonly referred to as the process of worlding—with branches extending into technology, ideology, inclusivity, empowerment, and factuality—it is imperative to subject them to careful study and classification.

Simondon (2022, p.187) sets "the genesis of the image across the stages of a direct cycle of growth, development, and saturation of a sub-individual component of the mental activity under consideration, more or less like an organism or an organ within a larger organism." Additionally, as I have argued elsewhere (Boumeester, 2024a), new research forefronts the next phase in refining the "taxonomy" of the image, involving an exploration of images emerging from the machinic realm—images that transcend both physicality and time, where content and form seamlessly converge. This taxonomy is not designed to merely 'sort' image types; rather, its purpose is to scrutinize the effects and roles of potentially the same image when placed against different backgrounds or scapes. Here we can see that a new type of image recently has emerged: *The Image by Proxy.* This image does not exist in singular form but is always part of a larger system of pluralities, following Simondon's concept of «transduction,» a process where an initial form (image) or structure undergoes continuous transformation and generates new forms, mediating between the subjective (imagination, perception) and the objective (physical reality), serving as a bridge that connects and transforms both realms. In this context, images are seen as transductive entities that evolve and adapt through interaction with human perception and technological mediation, in which images are part of a dynamic process and interact with both the observer and the environment, affecting and being affected by them.

Different from the era of hyperreality in which Baudrillard placed the simulacrum - both as cause and effect thereof - the current times are marked by the autonomous generation of images, both artificially and human-made, that lack a semiotic baseline. These images are composed solely by the intersecting Venn diagram of signification, conditioning, commodification, and codification. This phenomenon, termed 'image by proxy,' is not an artificially produced product by default, but rather a representative of a worldview that has no need for any type of embodiment or responsibility, rendering 'reality' opaque to a translucent décor of a translucent image, which has become its own reference. Here we return to the problem of the relationship between imagination, invention, and perception. The Image by Proxy departs from the conventional notion of casting its formless presence across the four domains of codification, situation, commodification, and signification. Instead, it emanates from these domains, serving as the temporal embodiment of a system manifested in the guise of an image, thus exhibiting a machinic essence. Positioned

as the 'negative' body of the Asignifying Sign, the Image by Proxy distinguishes itself by being born out of the coalescence of signification, resulting in a temporal embodiment that is never a fixed image. Unlike the Asignifying Sign, which ruptures established meanings yet remains a recognizable sign on an affective level, the Image by Proxy is intricately linked to the coalescent signification process, rendering it a perpetually evolving embodiment of shadows cast from the aforementioned domains. Described by me (Boumeester, 2024b) as a body (or nebula) of signification portrayed as a signifier, the Image by Proxy exerts significant impact without ever crystallizing into a definitive form of expression. And yet, this operation stays largely undetected by those instrumental in the process of creating such images, as they are 'tricked' into believing in their veracity. The production of the image by proxy is, in fact, the production of a false signifier.

To exemplify this phenomenon, consider the production of images on social media. The majority of «newly» produced images are individual copies of preformatted imagery: a shot of oneself in front of the Brandenburg Gate, a shot of a cappuccino heart, a mirror shot showing a prefab pose in prefab fashion, and so forth. While these individual images are mere copies of existing imagery without a traceable original, they are socially well-known, making these individual copies semi-metaphorical as they also serve as blueprints for the next. The images produced are thought to hold significance as images themselves, and surely, they will feel that way to the consumers of that particular image. Yet the true significance lies in the fact that the consumers are not in control of their desire to produce images by proxy; the vast number of similar images, with no semiotic criterion, collectively form a colossal meta-image, and any new edition created by the consumer is merely a proximation thereof.

4. SOMAEASTHETICS

It appears that the only armament against being instrumentalized in this techno-social 'faux-ambiance', is to find an anchor in the physical realm that is incapable of being mediated in any way or shape. If the nomos during the first modernism was rooted in physical social embodiment, and its modernist transformations was mediated. In contrast, nowadays the nomos has been transformed in an image of a (individuated) socius, an image by proxy, by default. This causes our connection to the self also to be a proximated relation, the body by proxy. The nomos is fully mediated, the socius is in the image, the image by proxy is the nomos, therefore the true modernism lies in the effect of this translation to the individual body. Thus, we can re-define modernism as the embodiment of the body by proxy. To enable this, we can draw on the work of philosopher Richard Shusterman (2008, p.267) who introduced somaesthetics as the «critical, meliorative study of the experience and the use of one's body as a locus of sensory-aesthetic appreciation (aisthesis) and creative self-fashioning.» This interdisciplinary field is dedicated not only to exploring the personal experience and expressive use of the body but also to understanding the knowledge, discourses, and disciplines that shape somatic care or contribute

to its enhancement. Expanding upon the notion of «experimental somaesthetics,» this model pushes the boundaries of our reflective awareness and evaluation of our sensory appreciation. It envisions the body as a symbiotic whole, recognizing the pivotal role of sensory organs in perceiving and translating stimuli. Human sensory systems, including vision, audition (hearing), tactition (touch), olfaction (smell), and gustation (taste), are integral to this expanded perspective. Furthermore, the model incorporates internal sensations, known as interoception, which involves detecting stimuli from internal organs and tissues. This encompasses systems like the vestibular system (responsible for balance and spatial awareness), proprioception (perception of the body's position, movement, and orientation in space), and nociception (perception of stimuli in the form of pain). Additionally, humans experience internal chemoreception (perception of chemical changes) and osmoreception (perception of osmotic changes), influencing perceptions such as hunger, thirst, suffocation, and nausea. If we make use of modernism's pallet of tricks and rules and start from the mediated image of the socius, we can individuate back again into the ambient body. For this, we must fully be grounded in the present, and with Somaeasthetics, there can be no mediation, the here and now are defined as the core of everything.

5. CONCLUSION

The overarching objective of this approach is to cultivate a renewed understanding of one's relationship to the extended milieu. This includes developing a form of «socioception» that evaluates both the literal and metaphorical proximity and capacity of the mind/body within the socius/world. The application of such philosophy is getting traction in different domains. Inspired by the permaculture movement, for instance, permacomputing has implemented a set of ethical values in the heart of its modus operandi. The question should then be how we could mirror this set of ethical values in an own version of 'permaambiancing'. Key to grasping this approach is the continuous readiness to engage with any situation, whether actualized or virtual, within its context, considering its interrelations with others (exteriority). The crux of this conceptual manoeuvre lies in the inversion of the argument, all the while preserving the inherent capacity for connection. By reversing the process of individualization inherent in transformative modernist actions concerning the environment they influence, we engender a societal framework susceptible to transformation through the perpetual individuation of reality. The essence of action remains unchanged, yet the contextual parameters undergo a reversal: modernism ceases to be a reaction to societal dynamics; rather, the societal framework emerges as a product of modernist influence. Despite the constancy of the underlying mechanism, there exists a transposition of input and output: not a novel instantiation of modernism, but rather the same paradigm endowed with an altered trajectory—a trajectory perpetually laden with unrealized potentialities, yet never fully actualized—an antiquated prospect of the future: an older future. A type of socioception that affirms an assurance against an alienating ambiance which is desperate in need of vigorous overhaul.

6. BIBLIOGRAPHY

Barthes, R. (1977 [1964]). The rhetoric of the image (S. Heath, Trans.). In Image-music-text (pp. 33-51). New York: Hill and Wang.

Baudrillard, J. (1994 [1981]). Simulacra and simulation. Ann Arbor: University of Michigan Press.

Berger, P. L. (1967). The sacred canopy: Elements of a sociology of religion. New York: Anchor Books.

Berger, P. L., & Luckmann, T. (1966). The social construction of reality: A treatise in the sociology of knowledge. New York: Anchor Books.

Boumeester, M. (2022). Cinematic perception and the image by proxy. In Proceedings AVANCA Cinema 2022 International Conference Cinema - Art, Technology, Communication. Avanca, Portugal.

Boumeester, M. (2024a). Technicity as the montage production of the mundane. In The space of technicity: Theorising social, technical and environmental entanglements. Delft: Delft University Press.

Boumeester, M. (2024b). The hollow noetics of the image by proxy: Kaleidoscopic waypoints in the technosocial mediascape. In Noetics without a mind. Delft: Delft University Press.

Dawkins,R. (1976). The Selfish Gene. Oxford University Press.

Dawkins, R. (2016 [1982]). The extended phenotype: The long reach of the gene. Oxford, UK: Oxford University Press.

DeLanda, M. (1994). Virtual environments and the emergence of synthetic reason. In M. Dery (Ed.), Flame wars: The discourse of cyberculture (pp. 793-815). Durham, NC: Duke University Press.

Giddens, A. (1984). The constitution of society. Berkeley: University of California Press.

Massumi, B. (2015). The power at the end of the economy. Durham, NC: Duke University Press.

Piaget, J. (1952 [1936]). The origins of intelligence in children. New York: International Universities Press, Inc.

Shusterman, R. (2008). Body consciousness: A philosophy of mindfulness and somaesthetics. Cambridge: Cambridge University Press.

Simondon, G. (2022 [1966]). Imagination and Invention, translated by Joe Hughes and Christophe WallRomana, University of Minnesota Press.

L10

ADVANCING CLIMATE CHANGE COMMUNICATION THROUGH SEMIOTIC VISUAL STRATEGIES

AVANÇANDO A COMUNICAÇÃO CLIMÁTICA ATRAVÉS DE ESTRATÉGIAS VISUAIS SEMIÓTICAS

Ricardo da Cruz e Sousa
Post-doctoral Researcher
PROURB/FAU/Universidade Federal do Rio de Janeiro
ricardosousa@fau.ufrj.br

ABSTRACT

Climate change communication presents unique challenges, particularly in conveying complex scientific concepts in a way that resonates with the public. This paper explores the integration of semiotic visual strategies to enhance the effectiveness of climate change messaging. By leveraging the power of images and symbols, communicators can bridge the gap between abstract scientific data and public understanding, making the issue more relatable and urgent. Drawing on semiotic theory, this paper examines the potential of visual tools to convey both denotative and connotative meanings, creating a more emotional and culturally rich narrative around climate change. The paper also discusses the role of artificial intelligence (AI) in generating context-specific visuals that can further enhance these strategies, while addressing ethical considerations related to visual manipulation and accessibility.

KEYWORDS: climate change communication. semiotics. artificial intelligence. visual narratives

RESUMO

A comunicação sobre as mudanças climáticas apresenta desafios únicos, especialmente ao transmitir conceitos científicos complexos de maneira que repercute com o público. Este artigo explora a integração de estratégias visuais semióticas para melhorar a eficácia das mensagens sobre as mudanças climáticas. Ao aproveitar o poder das imagens e dos símbolos, os comunicadores podem diminuir a distância entre dados científicos abstratos e a compreensão pública, tornando a questão mais relacionável e urgente. Com base na teoria semiótica, este artigo examina o potencial das ferramentas visuais para transmitir significados denotativos e conotativos, criando uma narrativa mais emocional e culturalmente rica em torno das mudanças climáticas. O artigo também discute o papel da inteligência artificial (IA) na geração de visuais contextualmente específicas que podem aprimorar essas estratégias, ao mesmo tempo em que aborda considerações éticas relacionadas à manipulação visual e acessibilidade.

PALAVRAS-CHAVE: comunicação climática. semiótica. inteligência artificial. narrativas visuais

1. INTRODUCTION / INTRODUÇÃO

Climate change, recognized as one of the most pressing global crises of our time, demands not only scientific and technical solutions but also effective communication strategies to bridge the gap between complex scientific data and public understanding. The scientific consensus on climate change is clear: human activities, particularly the burning of fossil fuels, are driving an unprecedented increase in global temperatures, leading to severe environmental, social, and economic consequences (IPCC, 2021). However, translating this scientific knowledge into public awareness and action remains a significant challenge. The abstract nature of climate change, its slow onset,

complex systems, and often geographically distant impacts, makes it difficult for the public to grasp its urgency and relevance to their daily lives (Moser, 2010)public communication of climate change and—more recently—the question of how to communicate it most effectively have witnessed a steep rise. This paper synthesizes what is known, presumed, and still unknown about how to effectively communicate this problem. An introductory historical overview of climate change communication is followed by a discussion of the challenges that communicators face in trying to convey the issue (invisibility of causes, distant impacts, lack of immediacy and direct experience of the impacts, lack of gratification for taking mitigative actions, disbelief in human's global influence, complexity and uncertainty, inadequate signals indicating the need for change, perceptual limits and self-interest.

One of the primary obstacles in climate change communication is the difficulty in making scientific data relatable to a broad audience. Climate change is often perceived as a distant problem, both in time and space, which diminishes the sense of urgency necessary for motivating action (Moser & Dilling, 2004). This perception is exacerbated by the complexity of climate science, which involves intricate interactions between various atmospheric, oceanic, and terrestrial systems. The challenge, therefore, lies in finding ways to make this complex information accessible and compelling to the public.

Visual communication offers a powerful solution to this problem. As the saying goes, "a picture is worth a thousand words," and this is particularly true in the context of climate change communication. Visuals can convey complex scientific information quickly and effectively, often in ways that are more engaging and memorable than text alone (O'Neill & Nicholson-Cole, 2009). In addition, visuals can evoke greater emotional responses, which are crucial for motivating public engagement and action. By making the abstract more concrete, and the distant more immediate, visual communication can play a pivotal role in enhancing public understanding of and response to climate change.

Nevertheless, the use of visuals in climate change communication has its issues. The effectiveness of visual communication depends on the ability of the image to convey the intended message clearly and accurately. This is where semiotics, the study of signs and symbols and their use or interpretation, comes into play. Semiotics provides a framework for understanding how images create meaning and how this meaning can be used to influence public perception and behavior (Barthes, 1977; Eco, 1976). By applying semiotic principles to the design and interpretation of visual communication, climate change communicators can create more effective and resonant messages.

This paper explores the integration of semiotic visual strategies in climate change communication. It examines how these strategies can be used to bridge the gap between scientific data and public understanding. Drawing on semiotic theory,

the paper discusses the potential of visual tools to convey both denotative and connotative meanings, creating a more emotional and culturally rich narrative around climate change. The paper also explores the role of artificial intelligence (AI) in generating context-specific visuals that can further enhance these strategies, while addressing ethical considerations related to visual manipulation and accessibility.

The structure of the paper is as follows: The next section provides a theoretical framework for understanding semiotics in visual communication, including key concepts and their relevance to climate change communication. Section 3 discusses the challenges of climate change communication and how visual strategies can help overcome these challenges. Section 4 emphasizes the role of visualization in overcoming these challenges. Section 5 presents case studies that illustrate the application of semiotic visual strategies in climate change communication. Section 6 explores the integration of AI in visual communication and the ethical considerations that arise. Finally, the paper concludes with a set of recommendations for advancing the use of semiotic visual strategies in climate change communication.

2. SEMIOTICS IN VISUAL COMMUNICATION

Semiotics, as a field of study, is fundamentally concerned with how meaning is created and communicated. It provides a structured approach to analyzing the signs and symbols that make up our visual and verbal communication, offering valuable insights into how these elements can be used to convey complex ideas effectively. In the context of climate change communication, semiotics can help us understand how images and other visual representations can be used not only to inform but also to persuade and motivate action.

The foundation of semiotics lies in the beginning of the twentieth century with the works of Ferdinand de Saussure, who introduced the concept of the sign as a combination of the "signifier" (the form that the sign takes) and the "signified" (the concept it represents). Building on Saussure's work, Charles Sanders Peirce expanded the concept to include a triadic model consisting of the representamen (the form), the interpretant (the sense made of the sign), and the object (the thing to which the sign refers) (Chandler, 2002). These foundational theories laid the groundwork for understanding how signs operate within a system of meaning, and how they can be used to communicate complex ideas.

In visual communication, particularly within the context of climate change, semiotics provides a framework for analyzing how images function as signs. Roland Barthes' (1977) distinction between denotation and connotation is particularly relevant. Denotation refers to the literal, obvious meaning of a sign, while connotation refers to the additional, associated meanings that the sign carries. For instance, an image of a melting glacier denotatively represents the physical process of ice melting due to rising temperatures. However, connotatively, it may evoke feelings of loss, fear, or

urgency, depending on the cultural and emotional context of the viewer. Umberto Eco's (1976) concept of "unlimited semiosis" further extends the idea that the meaning of signs is not fixed but can evolve and expand over time as they are interpreted in different contexts. This dynamic nature of signs is particularly important in climate change communication, where the meanings of visual symbols must be continuously reinterpreted and adapted to new scientific findings, cultural shifts, and emerging narratives.

The application of semiotics to climate change communication allows for a more nuanced understanding of how visual images can be used to convey complex scientific ideas in a way that resonates emotionally and culturally with diverse audiences. By carefully considering the denotative and connotative meanings of images, communicators can craft messages that are not only informative but also compelling and persuasive.

3. CLIMATE CHANGE COMMUNICATION CHALLENGES

Communicating the complexities of climate change is a formidable task, fraught with challenges that are rooted in both the nature of the issue and the limitations of traditional communication methods. Climate change is a slow-moving, global phenomenon that often seems abstract and distant to those who are not directly affected by its impacts. This perception is one of the greatest challenges to effective climate change communication (Ballantyne, 2016; Holmes & Hall, 2019; Moser, 2010; Wolf & Moser, 2011)

The temporal and spatial distance of climate change effects, where the most severe impacts may not be felt until decades from now or in regions far from the source of emissions, creates a psychological distance that diminishes the urgency of the issue (Moser & Dilling, 2004; Spence & Pidgeon, 2009). For many people, the risks associated with climate change are perceived as less immediate or less personal compared to other, more tangible threats (Spence et al., 2012). This psychological distance is further compounded by the fact that climate change is often framed as an issue of future generations, rather than one that requires immediate action.

The complexity of climate science also poses a significant communication challenge. The interactions between atmospheric, oceanic, and terrestrial systems that drive climate change are complex and difficult to explain in simple terms. Scientific data on climate change is often presented in technical language and abstract formats, such as graphs and charts, which can be difficult for the general public to understand and relate to (Nisbet, 2009). Furthermore, the scale of climate change, the fact that it is a global issue with multifaceted impacts, can make it seem overwhelming and beyond the control of individuals. This sense of helplessness can lead to apathy or denial, further hindering efforts to engage the public in meaningful action (Eisenack et al., 2014; Moser, 2010).

Given these challenges, it is clear that traditional methods of communication, which rely heavily on text and numerical data, may not be sufficient to convey the urgency and relevance of climate change. There is a need for new approaches that can make the abstract more concrete, the distant more immediate, and the complex more understandable.

4. THE ROLE OF VISUAL COMMUNICATION

Visual communication holds significant promise in addressing the challenges to effective climate change communication. Images have the power to convey complex information in a way that is both accessible and emotionally engaging (Blair, 2004). By translating scientific data into visual formats, communicators can make abstract concepts more tangible and relatable, thereby bridging the gap between knowledge and action. One of the key advantages of visual communication is its ability to convey information quickly and effectively. Images can encapsulate a large amount of information in a single glance, making them an efficient means of communication. This is particularly important in a media landscape where attention spans are short, and the competition for attention is fierce (Boykoff, 2011; O'Neill et al., 2013; O'Neill & Nicholson-Cole, 2009). Moreover, research has shown that people are more likely to be moved to action by emotional appeals than by rational arguments alone (Moser, 2017; Nisbet, 2009). By tapping into the emotional and symbolic dimensions of climate change, visual communication can help to overcome the psychological challenges that often impede public engagement with the issue.

Another advantage of visual communication is its ability to make the invisible visible. Climate change is often described as a "creeping" crisis, with many of its effects, such as rising temperatures, melting ice caps, and shifting weather patterns, unfolding gradually and invisibly. Visual tools, such as maps and simulations, can help to make these changes more visible and understandable, thereby making the issue more immediate and pressing (Chapman et al., 2016). Finally, visual communication can help to contextualize climate change in ways that resonate with people's lived experiences. By using images that are culturally and contextually relevant, communicators can create messages that are more likely to cause a reaction with diverse audiences. This is particularly important in a global issue like climate change, where the impacts and perceptions of the issue can vary widely across different regions and communities (Hulme, 2009; Wolf & Moser, 2011).

5. CASE STUDIES IN SEMIOTIC VISUAL COMMUNICATION

To further explore the application of semiotic visual strategies in climate change communication, this section presents three examples that demonstrate how these strategies have been effectively employed.

5.1 The Use of Iconic Imagery in Advocacy Campaigns

One of the most effective uses of semiotic strategies in climate change communication is the deployment of iconic imagery in advocacy campaigns. An iconic image serves as a powerful symbol that encapsulates complex ideas and emotions in a way that is immediately recognizable and relatable. A prime example of this are the images of polar bears stranded on a melting ice floe (Figure 1). This type of image has become a global symbol of the impacts of climate change, representing not just the physical reality of melting ice but also the broader implications for ecosystems and biodiversity. The power of this image lies in its ability to convey multiple layers of meaning. On a denotative level, it shows the direct impact of rising temperatures on polar habitats. However, on a connotative level, it evokes a sense of urgency, vulnerability, and loss, tapping into deep-seated emotions about the natural world and our responsibility to protect it (Barthes, 1977). This dual-layered meaning makes the image an effective tool for raising awareness and mobilizing action. Furthermore, the use of such imagery in advocacy campaigns demonstrates how semiotic strategies can be used to create a strong, unified message that resonates across different cultural and geographical contexts. Images of polar bears, for example, have been used by environmental organizations around the world to highlight the global nature of the climate crisis, making it a powerful tool for building a global movement for climate action.

Figure 1. Images of polar bears in melting ice floe are commonly used by environmental groups.
Source: Paul Nicklen Photography

5.2 Visualization of Sea Level Rise Scenarios

Another effective application of semiotic visual strategies is in the visualization of future climate scenarios, particularly in relation to sea level rise. The National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise Viewer is an example of how detailed maps and projections can be used to communicate the potential impacts of climate change on coastal communities (Figure 2). These visualizations allow users

to see the effects of different levels of sea level rise on familiar landscapes, making the abstract concept of sea level rise more tangible and immediate.

The effectiveness of these visualizations lies in their ability to contextualize the impacts of climate change in ways that are relevant to people's everyday lives. By showing how rising sea levels could affect specific locations, such as homes, schools, and landmarks, these visualizations make the issue more personal and pressing. They also serve as a powerful tool for engaging policymakers and decision-makers, who can use the visualizations to assess the risks and make informed decisions about adaptation and mitigation strategies. Moreover, the interactive nature of these tools allows users to explore different scenarios and see the potential impacts of different levels of sea level rise. This not only enhances understanding but also empowers users to take action by providing them with the information they need to make informed decisions about their own communities.
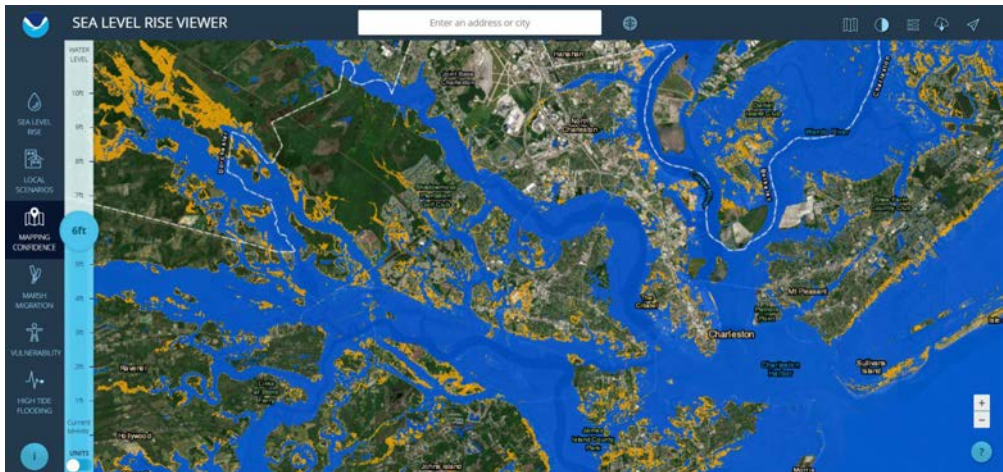
Figure 2. Map representing the inundation caused by 6-feet of sea level rise.
Source: NOAA Sea Level Rise Viewer

5.3 Communicating the Human Impact of Climate Change

The third example focuses on the use of photography and documentary film to highlight the human impact of climate change. Documentary projects like "Years of Living Dangerously" and "Before the Flood" use powerful imagery and personal stories to connect viewers with the experiences of those most affected by climate change. By focusing on the human dimension of the crisis, these projects help to humanize the issue and make it more relatable to a wider audience.

The success of these projects lies in their ability to combine the denotative and connotative meanings of images to create a compelling narrative. For example, a photograph of a family displaced by rising sea levels may denotatively show the

physical reality of climate-induced migration. However, connotatively, it also evokes a sense of loss, displacement, and the urgent need for action. This dual-layered meaning makes the image a powerful tool for raising awareness and mobilizing action. Furthermore, by focusing on the human stories behind the statistics, these projects help to overcome the psychological distance that often impedes public engagement with climate change. By showing the real-world impacts of climate change on individuals and communities, they make the issue more tangible and immediate, thereby fostering a sense of urgency and responsibility.

6. INTEGRATING SEMIOTICS AND AI IN VISUAL COMMUNICATION

The integration of artificial intelligence (AI) into visual communication marks a significant advancement in the field of climate change communication. AI tools, such as generative adversarial networks (GANs) and diffusion models, have the capacity to create highly realistic and context-specific images that can effectively engage target audiences. These tools enhance the effectiveness of semiotic strategies by generating visuals tailored to specific cultural and social contexts, thereby making the communication more relevant and impactful.

By incorporating semiotic principles into AI-generated images, communicators can create visuals that not only convey critical information but also resonate emotionally and culturally with diverse audiences (Foster, 2023). However, the rise of AI in visual communication also raises important ethical concerns, particularly regarding authorship, originality, and the potential for bias (Roose, 2022). As AI-generated images become more common, questions about ownership and proper attribution arise, along with the risk that these images could perpetuate existing biases if the algorithms are trained on biased data sets. Therefore, it is essential that AI tools are employed transparently and responsibly, with a clear understanding of their limitations and potential risks, ensuring that the algorithms are trained on diverse and representative data sets and that the resulting images are used in a manner that is fair and respectful to all stakeholders (Kundi et al., 2022).

In addition to these considerations, the ethical implications of visual communication strategies, particularly in the context of climate change discourse, must be carefully examined. A major ethical concern is the potential for visual manipulation, where images may be altered or presented in ways that mislead the viewer, either by exaggerating the severity of a situation or by downplaying the associated risks. Such practices can undermine public trust in climate science and hinder effective communication efforts (Treen et al., 2020). The representation of vulnerable communities in climate change communication is another critical ethical issue. While it is important to highlight the impacts of climate change on marginalized populations, it is equally crucial to ensure that these communities are not exploited or misrepresented. This involves obtaining consent from those depicted, accurately portraying their experiences, and ensuring

that their voices are authentically included in the narrative (McNaught et al., 2014). Furthermore, visual communications must be designed with inclusivity in mind, ensuring that they are accessible and relevant to diverse audiences. This includes considering cultural relevance, language, and accessible formats, such as designing visualizations with colorblind users in mind and providing text in multiple languages to reach a broader audience (Wirth et al., 2014).

7. CONCLUSION AND RECOMMENDATIONS

This paper delved into the transformative potential of semiotic visual strategies in enhancing the effectiveness of climate change communication. Through the strategic use of images, communicators can bridge the often vast gap between complex scientific data and public understanding by evoking emotional responses and making abstract concepts more tangible. However, the success of these strategies hinges on their ethical and responsible implementation, with a thorough understanding of their inherent risks and limitations.

To further the field of climate change communication, several key recommendations have emerged. First, it is essential to establish clear ethical guidelines for visual communication, ensuring transparency, accuracy, and respect for the communities depicted. Second, promoting inclusivity in visual communications is crucial, which involves designing content that is accessible and relevant to diverse audiences, taking into account cultural contexts, language, and format. Third, the integration of semiotic principles into AI-generated visuals offers a promising avenue for creating more effective and contextually resonant climate change messages. Lastly, fostering collaboration between scientists, communicators, designers, and AI experts will be vital in developing innovative and impactful strategies. By adopting these recommendations, communicators can fully leverage the power of visual media to engage the public with the pressing realities of climate change and inspire meaningful action.

8. BIBLIOGRAPHY

Ballantyne, A. G. (2016). Climate change communication: What can we learn from communication theory? *WIREs Climate Change, 7*(3), 329–344. *https://doi.org/10.1002/wcc.392*

Barthes, R. (1977). *Elements of Semiology* (A. Lavers & C. Smith, Trads.; Redition). Hill and Wang.

Blair, J. A. (2004). The Rhetoric of Visual Arguments. En *Defining Visual Rhetorics* (pp. 41–61). Taylor & Francis.

Boykoff, M. T. (2011). *Who speaks for the climate?: Making sense of media reporting on climate change.* Cambridge University Press.

Chandler, D. (2002). *Semiotics:* The Basics (1a ed.). Routledge. *https://doi.org/10.4324/9781003155744*

Chapman, D. A., Corner, A., Webster, R., & Markowitz, E. M. (2016). Climate visuals: A mixed methods investigation of public perceptions of climate images in three countries. *Global Environmental Change, 41,* 172–182. *https://doi.org/10.1016/j.gloenvcha.2016.10.003*

Eco, U. (1976). *A Theory of Semiotics.* Indiana University Press. *https://www.jstor.org/stable/j.ctt16xwcfd*

Eisenack, K., Moser, S. C., Hoffmann, E., Klein, R. J. T., Oberlack, C., Pechan, A., Rotter, M., & Termeer, C. J. A. M. (2014). Explaining and overcoming barriers to climate change adaptation. *Nature Climate Change*, 4(10), 867–872. *https://doi.org/10.1038/nclimate2350*

Foster, D. (2023). *Generative Deep Learning: Teaching Machines to Paint, Write, Compose, and Play* (2ª edição). O'Reilly Media.

Holmes, D., & Hall, S. (2019). *A literature review of best practice communication of climate science and impacts: Guide for Policy Makers*. Monash University. chro*https://www.climatechange.vic.gov.au/__data/assets/pdf_file/0027/419148/CCC-Lit-Review-Guide-for-Policymakers.pdf*

Hulme, M. (2009). *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity*. Cambridge University Press.

IPCC. (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Intergovernmental Panel on Climate Change*. *https://www.ipcc.ch/report/ar6/wg1/#FullReport*

Kundi, B., Morr, C. E., Gorman, R., & Dua, E. (2022). Artificial Intelligence and Bias: A Scoping Review. En *AI and Society*. Chapman and Hall/CRC.

McNaught, R., Warrick, O., & Cooper, A. (2014). Communicating climate change for adaptation in rural communities: A Pacific study. *Regional Environmental Change*, 14(4), 1491–1503. *https://doi.org/10.1007/s10113-014-0592-1*

Moser, S. C. (2010). Communicating climate change: History, challenges, process and future directions. *WIREs Climate Change*, 1(1), 31–53. *https://doi.org/10.1002/wcc.11*

Moser, S. C. (2017). Communicating climate change adaptation and resilience. *Oxford Research Encyclopedia of Climate Science.* *https://oxfordre.com/climatescience/climatescience/view/10.1093/acrefore/9780190228620.001.0001/acrefore-9780190228620-e-436*

Moser, S. C., & Dilling, L. (2004). Making Climate HOT. *Environment: Science and Policy for Sustainable Development, 46*(10), 32–46. *https://doi.org/10.1080/00139150409605820*

Nisbet, M. C. (2009). Communicating Climate Change: Why Frames Matter for Public Engagement. *Environment: Science and Policy for Sustainable Development, 51*(2), 12–23. *https://doi.org/10.3200/ENVT.51.2.12-23*

O'Neill, S., Boykoff, M., Niemeyer, S., & Day, S. A. (2013). On the use of imagery for climate change engagement. *Global Environmental Change*, 23(2), 413–421. *https://doi.org/10.1016/j.gloenvcha.2012.11.006*

O'Neill, S., & Nicholson-Cole, S. (2009). "Fear Won't Do It": Promoting Positive Engagement With Climate Change Through Visual and Iconic Representations. *Science Communication, 30*(3), 355–379. *https://doi.org/10.1177/1075547008329201*

Roose, K. (2022, septiembre 2). An A.I.-Generated Picture Won an Art Prize. Artists Aren't Happy. *The New York Times.* *https://www.nytimes.com/2022/09/02/technology/ai-artificial-intelligence-artists.html*

Spence, A., & Pidgeon, N. (2009). Psychology, Climate Change & Sustainable Bahaviour. *Environment: Science and Policy for Sustainable Development, 51*(6), 8–18. *https://doi.org/10.1080/00139150903337217*

Spence, A., Poortinga, W., & Pidgeon, N. (2012). The Psychological Distance of Climate Change. *Risk Analysis, 32*(6), 957–972. *https://doi.org/10.1111/j.1539-6924.2011.01695.x*

Treen, K. M. d'I., Williams, H. T. P., & O'Neill, S. J. (2020). Online misinformation about climate change. *WIREs Climate Change, 11*(5), e665. *https://doi.org/10.1002/wcc.665*

Wirth, V., Prutsch, A., & Grothmann, T. (2014). Communicating Climate Change Adaptation. State of the Art and Lessons Learned from Ten OECD Countries. *GAIA - Ecological Perspectives for Science and Society, 23*(1), 30–39. *https://doi.org/10.14512/gaia.23.1.9*

Wolf, J., & Moser, S. C. (2011). Individual understandings, perceptions, and engagement with climate change: Insights from in-depth studies across the world. WIREs Climate Change, 2(4), 547–569. *https://doi.org/10.1002/wcc.120*
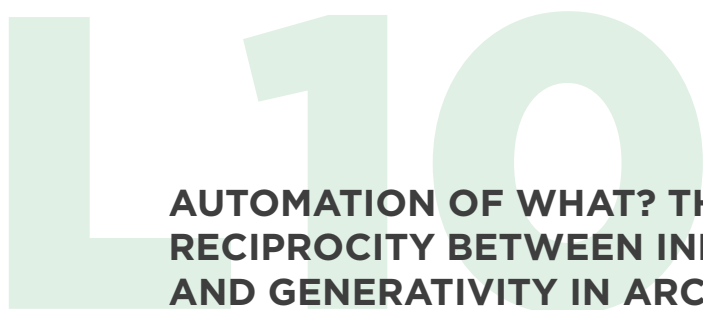
AUTOMATION OF WHAT? THE RECIPROCITY BETWEEN INDETERMINACY AND GENERATIVITY IN ARCHITECTURAL TECHNICITIES

AUTOMAÇÃO DE QUÊ? A RECIPROCIDADE ENTRE INDETERMINAÇÃO E GENERATIVIDADE NAS TECNICIDADES ARQUITETÓNICAS

A. Yasin Dündar
PhD Researcher Architecture Philosophy and Theory
Faculty of Architecture and the Built Environment, TU Delft
a.y.dundar@tudelft.nl

ABSTRACT

For philosopher William James, the problem of what makes what is not so much about finding what is hierarchically higher and efficient but equating one and many, thus highlighting solely "generative impregnators of difference." This equation of relating and transducing what is ongoing, one, and what is unfinished, many, would tend to pose its problematisation and affirmation of generativity for James. Simondonian genetic approach to imaging understands the indeterminate difference as a reciprocal unfolding process. Rather than opposing automation, this study will question in which ways the automation of architecture leads to an impasse by bypassing imagining and creating meaningless repetition that would not lead to the unfolding of novel affordances. Also, it will question in which ways automation of actions rather than perception is vital to increasing the capabilities of a new cycle of architectural imagining.

KEYWORDS: technicity. automation. imagination. generativity. architecture. indeterminacy.

RESUMO

Para o filósofo William James, o problema do que faz o que não é tanto encontrar o que é hierarquicamente superior e eficiente, mas igualar um e muitos, destacando assim apenas "impregnadores geradores de diferença". Esta equação de relacionar e transduzir o que está em curso, um, e o que está inacabado, muitos, tenderia a colocar a sua problematização e afirmação de generatividade para James. A abordagem genética Simondonian da imagem entende a diferença indeterminada como um processo de desdobramento recíproco. Em vez de se opor à automatização, este estudo irá questionar de que forma a automatização da arquitetura leva a um impasse ao contornar a imaginação e criar repetições sem sentido que não levariam ao desenvolvimento de novas possibilidades. Além disso, questionará de que forma a automatização das ações, em vez da perceção, é vital para aumentar as capacidades de um novo ciclo de imaginação arquitetónica.

PALAVRAS-CHAVE: tecnicidade. automação. imaginação. generatividade. arquitetura. Indeterminação.

1. INTRODUCTION / INTRODUÇÃO

The What one has and what one can do with what one has is shaped by perception cues of the environment and capacities of one's action towards the world. While perception cues are based on stimuli and how to understand them, affordances of action are connected to the productive responses of a being to the limit of one's capacity. As the form of stimuli and response, as we witness in the worlds of snakes and ticks, transforms into a more complicated form of perception and action, as we see in cats and humans, the ability to smartly manipulate the environment becomes complicated and dynamically generative. The range of options leading to differentiated relations with the environment that is not based on efficiency increases

to the extent of the capabilities of play-beings (Savransky, 2021). These playful beings (referred to as play-beings from now on) are not limited to humans as designers and participants of games but also include other more-than-human actors, animals, constraints, technicities, ecologies, rules, and values that produce and are produced by their milieu continuously. Having a more relational perspective on the genesis of actions similar to what philosopher William James highlights, understanding and analysing the productive differences between disparate individuals would give us more "impregnator" insights about senses and their automation. In the Jamesian sense, the difference would afford new environments, actions, roles within environments, and designs that push the limits of roles and spaces into novel defined dimensions. That emphasis would show how causes other than efficiency are vital in terms of increasing the generativity of a system, understanding the ongoing mechanisms of an individual, and the affects of technicities, which are the reciprocal transformative relationalities between humans, environment, and technology (Kousoulas, 2023). With the interval between an animal's perception and action, the doer and deed of a system cannot be isolated from each other and the environment since all those are in a reticular relationship that consists of their Umwelt.

Biologist Jakob von Uexküll suggests the concept of Umwelt to highlight the indistinguishability of an organism and its environment in terms of discussing what an animal is (Kousoulas, 2023, p. 83) (von Uexküll, 1992). According to biologist, animals live and produce their Umwelt through their perceptual cues and images about the outer world (Merkwelt) with activity tones (Wirkwelt) that their relationship would afford. The environment, whether built or not, is not a container or a shared place filled with every aspect and element taking a part in its area. Nevertheless, due to its relationship with organisms, the affect is a field that affects and is affected by disparate individuals, as Spinoza argues (Spinoza, 1996, 70). In that sense, rather than understanding the world from subject-object linearity, where human perception is prioritised over other types of perceptual cues and images, Uexküll discusses different realities that we do not know but are familiar to other creatures. Thus, the focal point needs to be on the self-world of an individual that appears to them, not us (von Uexküll, 1992, p. 319). Novel connections with the environment produce a new world that has not existed before the very relation. An array of rods with holes connected with two long sticks does not mean anything to a tribal individual living in an Umwelt where ladder technology has not been introduced or invented before (von Uexküll, 1992, p. 358). After introducing a novel affordance, Umwelt's affectional tones and perceptual images for this individual could be widened. This affect will produce new perceptual cues and affective tones, transforming this individual's Umwelt. Put succinctly, the meaning is produced by the capacities and capabilities of the action an individual could afford. This very action is shaped by perception; the action produces perception, as seen in that example. If the act of climbing a ladder is not introduced to an individual, the perception of a ladder would be nothing more than an obstacle in one's daily life. The technology then shapes actional tonalities and perception cues by manipulating the environment without strictly following efficient causalities (Kousoulas & Radman, 2024). Playful manipulations in

dynamic systems, such as any culture with technology, including architecture, cannot be solely defined and predetermined by aggregating elements and constraints in the vacuum. Nor is it meaningless to find one perpetrator actor who is responsible for all the acts and perceptions or relying heavily on efficient causes may lead to think that some non-spontaneous forces, such as the will of an architect or the effects of abstract concepts, are the only pushing factors that would make the built environment more 'liveable' and 'optimised' surpassing its older and 'poorer' state. But all its playfulness is meaningful at the expense of potential capacity and affection of actions in a relationship with the other. Having a similar understanding, philosopher Felix Guattari defines architecture as an act producing ways of life in the Umwelt to "reveal the virtual desires of space, place, journeys and territory" (Guattari, 2005) rather than only seeing it as a will to inhabit and situate the chaotic entanglements of the world.

2. PERCEPTIONS, ACTIONS AND THE POTENTIALITY OF DIFFERENCE

If a fly sees a branch, the perceptual cues about this branch will afford a sitting tone where a fluid surface would not. Through an example of a room where a fly, a dog, and a human take part, Uexküll illustrates their afforded Umwelts as in Figure 1 (von Uexküll, 1992, p. 361). Receptors of a fly are only sensible towards light and heat. Therefore, any other object that does not disseminate heat or light would mean nothing to flies. Only the soup on the plate and the lamp hanging from the ceiling are valuable for their perceptual cues and potential action tones. The fly can land on the plate to drink soup or fly around the lamp within a specific distance, which are the only aspects of the Umwelt for the fly that open up meaningful differences according to its capacity. The receptors of the fly limit the affordance of its actions, and its actions limit any further style of action, such as playfully flying to manipulate the environment or landing without a need to approximate light or heat. All the other objects in its world only have an obstacle tone, as Uexküll suggests. In other words, the fly is the most efficient so-called machine that directly responds to stimuli, leaving no space for indeterminacy to reach efficiency seamlessly. All the actions of the fly are automated in order for it to survive. In the case of a dog, the same room is sensible and valuable only for its chair, sofa, and plates on the table, which is a more complex situation where meaningful relations between objects are increased, and the interval between perception and action is widened. A dog can sit on a chair, sleep under the couch or the table or playfully manipulate them to increase the joy of its play or be willing to eat something from the plate, but bookshelves, the desk, and the desk stool have no functional tonality or relational meaning that is caused by its perception. A dog and a fly can sense books, but they are nothing more than obstacles for them, similar to the tribal individual who does not know what a ladder is and how to use it.

On the other hand, the affordance of a room for a human is much different from that of the others. The limit of a tick or a fly's perception receptors makes them sense stimuli and respond very restrictedly, leaving no room for further potential

relations. As the capacities and capabilities of affection get complicated towards dogs, the spectrum of receptor images and tonalities of action widens. A couch for a dog does not only have sitting tonality but also sleeping and playing tones based on different relations that affect the interval between stimuli and response. In that sense, perceptual images with affordance tones are created by new experiences that the capabilities of a play-being have. Having tonalities more than obstacles means that humans have more paths to sense the environment, which also causes a range of options to afford novel capacities of action, named multiple realisability by philosopher Alicia Juarrero. The sensibility of multiple constraints causes expanding capacity to evolve for Juarrero (Juarrero, 2023, p. 134). Supporting evolvability also affects the modes of generativity of a being. Having response-ability to the world to increase the chances of multiple realisability is connected with the skill of a being. Rather than defining skill as a talent inherent to a body, mind, or organ, philosopher John Protevi defines it as a capability to make response-able solutions to dynamic problems posed by interdependent relations between play-beings (Protevi, 2023). The indeterminate interval of acting towards the Umwelt comes through the playful constraints of the environment and the skills that achieve more than what a system needs to sustain its consistency. Multiple realisability of a physical constraint of an object can indicate different roles and behaviours in the Umwelt, such as a sofa being a place to sit, play, lie down, sleep, cuddle, read or watch TV.

Figure 1. Umwelts of a fly, a dog, and a human (von Uexküll, 1992, pp. 360-361).

The indeterminacy of the interval, which can be understood as the vital element for generativity affording untapped potentials, pushes the boundaries of organisms and environment, and it also widens the proximity between input and output of play-beings without separating doer and deed. In this flow of play, where technicities of all objects transform each other, disparate dynamic differences cause different play styles and roles. Operational aspects of action transform the structural elements, and reciprocally, structural ones affect the potential of operations, as philosopher Gilbert Simondon underlines with the reciprocal unfolding process between structure and operation of an individual when individuating (Simondon, 2020). Sitting as an operation affects the creation of a couch or a chair, where one focuses on more relaxing seating and the other leads to a more focused specified action such as eating or working. Reciprocally, affordances of chairs and couches have led to the production of a new type of seating with untapped potential that differentiates the way of seating. Piano chairs, drawing desks and stools, and even pinball machines can be understood as an outcome of differentiated individuation of sitting and doing an action. The meaning of Umwelt is transduced directly from the experience coming from the action itself.

In Simondon's words, transduction refers to creating meaning through relations between disparate individuals that are meaningful for them and cause the creation of novel information through action (Simondon, 2017, p. 156) (Simondon, 2020, p. 13). Transduction of meanings and information, for Simondon, can be analysed

through operational and structural aspects of action, but without separating them to create any binaries, as we see in the equal value between perception and action to create novel affordances. Transduction, for Simondon, is a regulatory process where the indeterminate margin of an individual, similar to machines, is compatibilised between stability and instability (Simondon, 2017, p. 155). As we just saw, the transduction of a fly is only modulated and regulated by its sensitivity to heat and light. Individuals increase their potential to manipulate the Umwelt playfully as the interval between input and output gets indeterminate. Game of Taboo can be understood as a playful interruption to the general use of language, where a signifier denotes a predeterminate sign to affect the signified. Rather than choosing a defined path to express the meaning of a singular word, this game delimits its players to use three of the most associated words. In other words, the game destabilises the language by interrupting the established use. By doing that, players tend to explain the word without using taboo words by finding alternative and less-used ways. For example, if my teammate is a close friend of mine, I can explain the word based on our shared experiences and memories. I can also try to talk about the words indirectly through seemingly irrelevant topics that would lead my teammates to find the word. Following these alternative potentials, the player playfully modulates the language to find new affordances, leading to an action's amplified potential to manipulate the environment (in this case, the linguistic system). The playful perspective of understanding the dynamism of life and the capacities of actions in it through playful constraints offers a non-determinate and non-optimised approach to looking at sensation, perception and cognition.

3. GENERATIVITY OF PERCEPTION AND ACTION

Understanding imagining as the playful leeway of unnecessary acts, or a counteractivity to rational determinacy in the Simondonian sense, shows the importance of indeterminate interventions on a system other than acts that need to be done to maintain its persistence (Simondon, 2022, p. 164). Similar to Simondon's metastability, philosopher Alicia Juarrero also highlights the need for interdependent relationality between open systems and persistence (Juarrero, 2023). For Simondon, a metastable system consistently shapes a structure with form and allows novel dynamics, which defines a state of becoming between differences of disparate individuals to invent through imagining. Juarrero analyses complex dynamic systems from the lens of catalyser effects of constraints to produce novel dimensions and govern the system they produce. Enabling constraints opens new phases and features in dynamic systems to increase indeterminacy and generativity; as the open system operates, governing constraints keep the interdependent parts coherent (Juarrero, 2023). The extreme version of stratification and sedimentation of constraints would lead to a static and fully determined system without room to speculate further. Overreliance on an aspect of a dynamic system to fix problems by narrowing down all the options, in other words, optimisation, could be achieved by automation of action or perception of images. I propose that optimisation aims to increase results while decreasing efforts.

Nevertheless, the cycle of imagining leads to an opposite direction by increasing relationality while reducing the effort to achieve a solution or result.

In his book Imagination and Invention, Simondon unfolds the black box of imagination and invention and suggests a more-than-human approach to understanding images in life that are sensed, intuited, and imagined in four steps (2022). Motor image, as the first step, denotes the actualisation of an action without the need for any indeterminacy between stimuli and response. A baby's inherent tendency to reach for the breast to drink milk is a form of motor image that catalyses the baby's movement without any concrete perception. Or, a caveman's immediate actions of drinking water, eating meals, running from threats or covering from rain are action-based instant decisions, which are a form of action preceding conscious thoughts caused by the affects of the milieu (Protevi, 2009, p. 157). The motor image focuses on actions of behaviour schemas that produce operational aspects of an individual preceding the sensation. Perception image is the rhythm between recollecting an operation through structure and anticipating a possible outcome. Continuing the caveman example, when this individual sees dark clouds with strong winds, the recollection of the coldness of rain and anticipation of a freezing state occurs. After that, taking shelter in a cave, as a novel action, occurs through the intertwined relation between motor and perception images. The action of freezing is remembered through the form of clouds and the flow of winds, and this situation created a novel capacity for an action, which is to reside in a cave. The third image, the symbolic image, is a retention of an experience about a form or operation that comes with operation and form. Recollecting dark clouds, hot weather, blizzards and dust storms and making an inference to the need for a place to inhabit to prevent problems is a form of symbolic image that catalyses the occurrence of a new action, which is inhabiting caves even before a disaster occurs. Bird nests, lion dens, and beaver dams are symbolic images that push the boundaries of imagination and invention of the first two images. As a last chain of imagining, the object image, novel objects of imagination are created to produce externalised tools, storing and conveying all the images of the first three steps to make a novel affordance. This new dimension of the invention would repeat the cycle of imagining through new features and dynamics of complex systems. Rather than only residing in a cave to meet one's need for protection from sun, rain, and storm, producing new ways of life in the built environment by territorialising, inhabiting, dwelling and differentiating what we have and what we do with what we have is invented (Guattari, 2005).

I propose that all the widening between perception and action from motor image to object image I sketched out above is catalysed by the indeterminacy of unnecessary acts that are more than what we need to do to survive. There were always more efficient ways to cope with the problems of the milieu and other organisms. Still, every act with enabling constraints opened up the vitality of difference between various individuals, including values, norms, rules, constraints, ecologies, and more-than-humans. The so-called primitive hut of Laugier was nothing more than a playful speculation of the environment that would afford novel physical and behavioural constraints (Laugier,

1755). In Deleuze and Guattari's words, the very first incidence of architecture can be defined as a line of flight from three images of running away from rain, seeing the dark clouds and remembering storms, recollecting dangers of the environment and making new spatial action, respectively (Deleuze & Guattari, 1987). Architecture, as a form of technicity, a store and conveys all the information of physical and behavioural constraints, such as the first hut's characteristic of protecting from threats as a physical constraint and allowing the vital functions of life inside, such as cooking, eating, socialising, and sleeping, and many more playful ones through the composability of disparate individuals, constraints, and differences. The last phase of imaging causes the occurrence of novel technological objects that stem from the technicity of the milieu and game constraints, such as architecture, art, and language.

4. PRODUCTIVE AND REPLICATIVE AUTOMATION

The persistence of actions and its further forms of stratification and sedimentation as phases of a complex system staying interlocked with its elements and actors leads to other playful paths of persistence, supporting the capacity to evolve (Juarrero, 2023, p. 134). The automation of moving vertically instead of climbing stairs, as we see in elevators and escalators, is a form of a stratified version of reaching higher levels without showing a great effort, which can be understood as a form of memory of action (Juarrero, 2023, p. 144). Similar to the automation of toilets, from collecting faeces by bucket and disposing of it in a river to automating all the processes with a single flush button and all the toilet mechanisms behind it, as Kousoulas and Radman exemplify (Kousoulas & Radman, 2024), allows individuals to behave in new ways and roles by the invention of an object image.

In the design of escalators, the motion of climbing stairs in buildings is automated by a technical object, which starts with the motor image of walking and continues with the perception image of the structure of stairs affording a pedetic (leaping towards) move and the symbolic image of the recollection of reaching higher levels with the assistance of a technical object. As the last phase of the object image, the escalator, as productive automation, automates the entire cycle of imagining without any overreliance on a single phase, feature, or concept. The automation is done by transduction, having a line of flight from structural aspects of action to operational aspects of form, as Simondon describes with allagmatics and modulation (Simondon, 2020). This automation widens the compatibility of individuals and their extended milieu by preserving the response-ability and singularities of each individual. Afterwards, the technicity of the escalator, as a way of automation that is catalysed through physical constraints, produces new ways to behave in the built environment without entrenching and insisting on a single style, such as user dynamics in shopping and transportation areas caused by behavioural constraints. As the final causes a new cycle of imagining, the object image of the design of shopping malls and airports makes space for novel affordances of the built environment. This genealogical understanding of architecture does not aim to find the efficient causality between designs. Nevertheless, it highlights the catalysing

effects of game constraints and the playfulness of unnecessary acts, blending all the dynamics of the milieu in a non-optimised sense to be an open system to allow any indeterminate intervention.

In the Era of Big Data, the difference or significance of relationality is understood as an "impairment" that imposes a connection between data and context (Athanasiadou et al., 2022, p. 122). In other words, the cycle of imagining is neglected for the sake of infinite acceleration of data. Philosopher Bernard Stiegler suggests that this infinite growth exhausts all singularities by quantifying information (Athanasiadou et al., 2022, p. 123). Infinite expansion of imaging without any dynamic shifts between images would lead to optimisation of congestion and aggregation of data. Most recent AI-related interventions in architecture, art and language, e.g. Midjourney, Chat-GPT, and Microsoft Copilot, use clustering of statistical aggregations of approximate imagery of a structure or operation. These outcomes are produced from an automated perception of images with no event, impregnator difference, value or relation that would leave a space for meaningful indeterminacy (Kousoulas & Radman, 2024, p. 181). In creating a described prompt for a situation, only the perception image is clustered, categorised, and narrowed down into an optimised and most efficient use of the image without any other relation to three ecologies, namely psychological, environmental and social aspects (Guattari, 2014). Instead of transducing productive automation from operation to structure or vice versa, replicative automation insists on the approximate result of an input. The optimisation by the automation of perception aims only to satisfy what is needed without any line of flights since its system is based on the median of the compiled data.

5. CONCLUSION

Regarding the generative effect of images, automation of perception and action differs from the imaging process. While the replicative automation of perception relies on the abundance of data, erasing singularities, events and contextual relations, thus difference, the productive one catalyses indeterminate acts whilst sustaining the Simondonian cycle of imaging and invention. I propose that optimising perception increases results while decreasing efforts by replicating perceptions. Nevertheless, the cycle of imagining and the automation of action leads to an opposite direction by increasing relationality while reducing the effort to achieve a solution or result. Transductive relations produce meaningful information between different individuals through action, composing various constraints and dynamics of life as a line of flights from structural aspects of an individual to operational ones, or vice versa. The importance of playful constraints is that their productive catalysing effect on dynamic systems is to a point where deterritorialising what is already structured thus transduces novel motor, perception, symbolic and object images. By genealogically analysing the occurrence of images through the first possible incidences of architecture and how the Simondonian imagining can be a productive method to analyse the automation of escalators, I aimed to illustrate the need for automation in the generative processes of architecture without biasedly criticising automation.

6. BIBLIOGRAPHY

Athanasiadou, L., Klumbyte, G., & Rouvroy, A. (2022). Re-Imagining a "We" Beyond the Gathering of Reductions. FOOTPRINT. https://doi.org/10.59490/FOOTPRINT.16.1.5933

Deleuze, G., & Guattari, F. (1987). A thousand plateaus: Capitalism and schizophrenia. University of Minnesota Press.

Guattari, F. (2005). Architectural Enunciation (T. Adams, Trans.). Interstices: Journal of Architecture and Related Arts. https://doi.org/10.24135/ijara.v0i0.320

Guattari, F. (2014). The three ecologies. Bloomsbury Academic.

Juarrero, A. (2023). Context Changes Everything: How Constraints Create Coherence. The MIT Press. https://doi.org/10.7551/mitpress/14630.001.0001

Kousoulas, S. (2023). Architectural technicities: A foray into larval space. Routledge.

Kousoulas, S., & Radman, A. (2024). Annotate This! Semiotization, Automation and the Recursive Causality of Images. In R. Gorny, S. Kousoulas, D. Perera, & A. Radman (Eds.), The Space of TechnicityTheorising Social, Technical and Environmental Entanglements (1st ed.). TU Delft OPEN Publishing. https://doi.org/10.59490/mg.95

Laugier, M.-A. (1755). An essay on architecture. T. Osborne&Shipton.

Protevi, J. (2009). Political affect: Connecting the social and the somatic. University of Minnesota Press.

Protevi, J. (2023). Esprit de Corps and thinking on (and with) your feet: Standard, enactive, and poststructuralist aspects of relational autonomy and collective intentionality in team sports. The Southern Journal of Philosophy, 61(S1), 24–38. https://doi.org/10.1111/sjp.12525

Savransky, M. (2021). The Pluralistic Problematic: William James and the Pragmatics of the Pluriverse. Theory, Culture & Society, 38(2), 141–159. https://doi.org/10.1177/0263276419848030

Simondon, G. (2020). Individuation in Light of Notions of Form and Information. University of Minnesota Press.

Simondon, G. (2022). Imagination and invention (J. Hughes & C. Wall-Romana, Trans.). University of Minnesota Press.

Simondon, G. (with Univocal Publishing). (2017). On the mode of existence of technical objects (C. Malaspina & J. Rogove, Trans.; First edition). Univocal Publishing.

Spinoza, B. de. (1996). Ethics (E. M. Curley, Trans.; New edition). Penguin Books.

von Uexküll, J. (1992). A stroll through the worlds of animals and men: A picture book of invisible worlds. Semiotica, 89(4). https://doi.org/10.1515/semi.1992.89.4.319

REIMAGI(NI)NG SENSIBILITY TO ARCHITECTURAL MULTIPLICITY – TRANSDUCTIVE APPROACH TO INTERPRETATION

REIMAG(IN)ANDO A SENSIBILIDADE À MULTIPLICIDADE ARQUITECTÓNICA – ABORDAGEM TRANSDUTIVA À INTERPRETAÇÃO

Dr. Ivana Lovrinčević
Independent researcher
iv.jevremovic@gmail.com

ABSTRACT

This paper discusses the transductive approach to interpretation of architecture from the aspect of the intellectual dimensions. Architecture is considered a complex multiplicity of material and immaterial aspects. In order to experience actual and virtual layers within which architecture operates, this research deals with the reimagi(ni)ng of logical content. The goal is to acknowledge the complexity of the architectural sense and the possibilities for innovation (as improvement of knowledge) by rethinking sensibility towards the architectural interpretation. This paper strives for transindividuating activity that would stratify the multiplicity of architecture. Referring to Simondon's view of transductivity as the functioning of the mind that discovers, a transductive approach to the interpretation of architecture refers to asking a question rather than answering it.

KEYWORDS: interpretation. architectural multiplicity. transductive approach. reading architecture. reimagi(ni)ng.

RESUMO

Este artigo discute a abordagem transdutiva da interpretação da arquitetura sob o aspeto das dimensões intelectuais. A arquitetura é considerada uma multiplicidade complexa de aspetos materiais e imateriais. Para experimentar as camadas reais e virtuais dentro das quais a arquitetura opera, esta pesquisa trata da reimaginação do conteúdo lógico. O objectivo é reconhecer a complexidade do sentido arquitectónico e as possibilidades de inovação (como melhoria do conhecimento) repensando a sensibilidade face à interpretação arquitectónica. Este artigo procura uma atividade transindividualizante que estratifique a multiplicidade da arquitetura. Referindo-se à visão de Simondon da transdutividade como o funcionamento da mente que descobre, uma abordagem transdutiva à interpretação da arquitetura refere-se a colocar uma questão em vez de lhe responder.

PALAVRAS-CHAVE: interpretação. multiplicidade arquitetónica. abordagem transdutiva. arquitetura de leitura. reimagin(ni)ng.

The interpretation of the architectural space resonance is conducted intuitively by the user on a daily basis, relying on abilities acquired through personal experience. Understanding the built environment is related to "tacit reading skills" (Singley, 2019, pp. 5), not necessarily articulated. The process of interpreting architecture is based on one's ability to read built environment from multiple perspectives and at multiple scales. Acknowledging the complexity of the architectural sense and the possibilities for innovation (as improvement of knowledge) is related to rethinking sensibility towards the architectural interpretation. This is not about improving our technical skills or finding new software or methods but relies on a simple connection between man and the space that surrounds him - improving the way he sees space, in order to improve knowledge about space, and ultimately to progress in terms of innovation in existing frameworks. Simondon (1959/2010), when discussing the different developmental stages of disciplines, scientific fields or humanity in general, criticizes the positions of individualizing disciplines and conducting research and considering progress within strictly disciplinary boundaries. He states that humanity would live without success in all its endeavours if they were not actually interconnected. And then we are not talking about the progress of individual fields, but about the progress of (hu)man.

> Indeed, what these successive phases of objective concretization have in common is not the content of that concretization: pontifical power cares as little for Greek theatre as radar cares for the cathedral. It is man who is common, man as the motor and promoter of concretization, and man as the creature in whom objective concretization resonates, that is to say, man as agent and as patient. (Simondon, 1958/2010, pp. 231)

In this sense, this paper proposes a consideration of architecture outside the strictly disciplinary limits of interpretation of mere form (the materiality of the object) or formally framed and defined immaterial properties such as function or communication. Rather, let us read architecture as a complex multiplicity of different material and immaterial aspects, a milieu of elements and relations from architecture, but also from sociological, philosophical, political, technological and other discourses.

Reading, in this case, is considered a creative act of interpreting the space shaped by architectural language - understanding the material and immaterial aspects of architecture. Jonathan Hill (2006) advocates an architecture that combines material and immaterial. Observing immaterial architecture as the perceived absence of matter before the absence itself, he investigates the question of the creativity of the architect as well as the user. The architect creates material conditions for observation and interpretation of the immaterial, and the user decides whether the architecture is immaterial. However, Hill (2006) states that, regardless of the user's decisions, the material and immaterial state of architecture exist in a constant interweaving, in conjunction, and not in opposition. These two aspects of architecture should not be considered from a dualistic discourse but understood that material and

immaterial stand independently and inseparable at every moment. Based on this, it can be said that the interpretation of architecture is based on the simultaneous reading of the material and the immaterial. Concealed within each other, the terms material and immaterial blur and slip, challenging other terms such as intellectual and manual, form and formless, real and virtual. That impurity of architecture places it often in a position of interdependence with other fields and disciplines. "The complexity of the phenomenon of architecture comes from its "impure" conceptual essence as a field of human endeavours" (Pallasmaa, 2017, pp. 29). It is important to emphasize that in this research, "impure" is used with positive connotations, referring to the complexity of the architectural work, with the aim of its detailed interpretation. Juhani Pallasmaa (2017) believes that architecture is both a practical and a metaphysical act at the same time. He further states that it is at the same time utilitarian and poetic, technological and artistic, economic and existential, as well as a collective and individualistic manifestation of our being. The simultaneity of the duality of architecture leads to the conclusion that one cannot put materiality before immateriality and vice versa, but always interpret it in both directions. Observing the elements of both aspects and their interrelationships makes it possible to read the whole picture. The technicity of architecture is identified through its intellectual dimensions, operating between actual and virtual, creating logical content and sense. This paper suggests reading architecture as a technical object, referring to Simondon (1958/1980) who claims that technical object has an abstract and concrete form. We should re(imagine) the approach to the interpretation of architecture from his point of view that the technical object represents an ensemble but with a finite number of variations (Simondon, 1958/1980). And yet, technical objects are constantly getting their new "improved" variations, before anyone has actually dealt with improving the existing ones (Simondon, 1983/2013). The (technical) object "ends *dated* even though it is not outdated from the point of view of its essential characteristics" (Simondon, 1983/2013). When we look at architecture from that point of view, we can say that the hermetic patterns of analysing and interpreting architecture require constant innovation, the search for new typologies, the consideration of science for the purpose of producing "new" architecture. In this sense, this paper advocates for changes in positions and perspectives for the interpretation of architecture, and above all for the necessity of understanding architecture as a complex multiplicity of elements and relations between them, in order to create opportunities for improving its "technicity" from the existing sense, and not by adding new. In the context of the plurality of reality, culture and society, we can approach the intellectual dimension of architecture only through transindividuating activities from the positions of different disciplines, striving for the impurity of architecture, mentioned by Pallasmaa.

When it comes to the material aspect of architecture, there is no dilemma - form and materials are identified with the architect's work. Architecture is a spatial and material reflection of human existence. Its appearance is close to the human in the sense that it is an "instrumental artifact of utility and rationality" (Pallasmaa, 2017, pp. 38). Materiality refers to all those unambiguous and tangible characteristics of

architecture such as shape, material, colour, distance and size, scale. Architecture is designed and built to be inhabited, and therefore its essence is solidity and stability. "[…] the essence of architecture is not in buildings as physical objects, but in their role as a framework through which to observe the world and a horizon of experience and understanding of the existential state" (Pallasmaa, 2017, pp. 36). The interpretation of the material aspect of architecture is based on the reading of concrete, measurable and tangible data, but also from its immaterial - connotation aspect.

Humans inhabit, simultaneously, the material and immaterial world - in physical reality interwoven with semiotic systems. To clarify what immaterial means, it is necessary to refer to man's capacity for imagination. When reading a novel, a person's ability of imagination projects it into space, place and time, even the atmosphere of what is read. Pallasmaa (2017) states that reader can constantly construct all the settings and situations of the narrative based on the suggestions of the writer's words and move effortlessly and imperceptibly from one situation to another, as if they existed in physical reality even before his act of reading. Similarly, the user perceives and reads immaterial architecture, consciously or unconsciously, through its material frames. The very act of imagination is directly conditioned by all previous experiences and knowledge. The space that is experienced has an experiential dimension that includes existing, potential and imaginary elements. Immaterial architecture is "a product of perception and an instrument of selfreflection" (Hill, 2006, pp. 199) of both the architect and the user (reader of architecture). Reading the immaterial layer of architecture refers to the observation and interpretation of meaningful, historical and relational patterns through human perceptive and imaginative tools. All those patterns exist inseparably from the material features of the architectural work, which are a platform for reading and interpreting architecture. Daniel Liebeskind (1995/2012) through the term "Traces of the Unborn" describes the need for resisting the erasure of history, looking back on history and opening the future, in other words, delineating the invisible on the basis of the visible, which can be identified with the material-immaterial relationship.

The interpretation of architecture begins with a simultaneous reading of the material and the immaterial. The selection of the term reading, originally from the field of literature, refers to its complex capacities to simultaneously relate to the perception of the material/visible side of the text and the immaterial/imagination of the read content. The reader observes the text, understands the letters as words and further shapes them into sentences and finally into the text, which he then experiences and constructs in imaginary spaces, often placing himself in the picture as an observer or even a participant. Man's ability to simultaneously interpret the material and the immaterial enables the consumption of what is read by imagination. In the same way, when reading poetry, we very easily find ourselves in the position of an empath or even a direct participant - one who himself feels and experiences the read feeling or situation. Gaston Bachelard (2014) says that we appropriate the image offered to us by reading a poem. It states that it takes root in us and becomes a new being

in our language. Reading architecture is understood in De Certeau's sense, that reading is not a passive state but an active participation where the reader becomes a co-producer. He claims that "another world (the reader's) invades the place of the author" (De Certeau, 1984/1988). Putting the above in the context of architectural design, architectural language should be understood as a platform that will offer breadth for different ways of reading and types of interpretation - depending on the reader's experiences and tendencies.

The reading of architecture is based on the perception of architecture as a complex - unrefined discipline that has the ability to awaken all senses at the same time. Steven Holl (2006) states that sensations such as: the tactile characteristics of rough stone surfaces and polished wooden benches, the experience of changing lighting with movement, the smell and resonance of space, the bodily relationships of scale and proportion, combine in a complex experience of architecture. In this sense, the reading process enables the simultaneous interpretation of all sensations, whether they are the product of the material or immaterial aspect of the architectural work. The material frames of the architectural work represent a meeting ground of existing concepts and the contingencies and particularities of the experience. The relationship between the experiential qualities of architecture and the generative concepts is analogous to the tension between the empirical and the rational. (Steven Holl, 2006, pp. 41) The creative act of reading architecture is an act of perceiving sensations, motives and insinuations within the framework of spatial relationships and material characteristics of architecture. Pallasmaa (2009) summarizes: "We live in a spatial and continuous world thanks to our dynamic system of perception, consciousness and memory that continuously constructs a whole from discontinuous fragments."

"Architecture, more fully than other art forms, engages the immediacy of our sensory perceptions" (Steven Holl, 2006, pp. 41). Cecil Balmond (1998) states that current research and studies of new sciences are based on dynamic living systems and asks the question: How does this relate to architecture, based on fixed forms and static structures? "Hybrid situations do not represent a collection of unfortunate circumstances but are understood as valid starting points." (Balmond, 1998/2012, pp. 60) He believes that the contemporary context of plural features can contribute to the understanding and interpretation of architecture in the sense that in the midst of overlapping and ambiguity, different readings will appear. The subjective nature of the process of reading architecture contributes to the interpretation of architectural language due to its multiple possibilities to penetrate the equally multiple character or sense of architecture. In the informal, there are no recognizable rules, that is, fixed patterns that need to be blindly followed. If there is a rhythm, it rests in hidden connections that merge and are understood but not noticed as obvious. (Balmond, 1998/2012) For a plural culture and society it is necessary to approach the process of reading architecture in order to move the boundaries of understanding the structure and the informal that Balmond talks about.

In Simondon's (1958/2007) text on Technical Individualization, he speaks of the technical object as a set: "We would argue that technical individuals exist where there is an associated milieu which is the sine qua non / essential condition of the condition of its functioning. Where this is not the case, we have a technical ensemble" (pp. 210). The question arises, is architecture a technical ensemble of possible variable relationships between elements, and would a hybrid approach to the interpretation of architecture enable understanding, and thus improvement of their properties and the properties of the "ensemble" itself? On that premise, the paper discusses the hybrid interpretation instrument, liminal state of text and drawing, for *reading* what architectural multiplicity is, was or will be. Considering this instrument as an artifice rather than artefact, this paper challenges the established representational role of architectural drawing. Dogan and Pahre (1990) view hybridization as a general characteristic of knowledge production today. Such an approach to the methodology of knowledge production within the architectural discipline is transcribed to its autochthonous practical instrument - drawing, and it acquires an exploratory role as opposed to a representational one. This approach should be understood as the idea of changing the process and principles of architectural interpretation through the reinterpretation of simple analytical procedures - textual and graphic analysis. By performing them alternately, producing conclusions through both aspects of the instrument, a hybrid interpretation instrument is created. It should be used to decode and disassemble the architecture and describe the layers and design principles. Specifically, returning to the discussion about the impurity of the discipline and the establishment of transductive activities, this approach reflects more than the elements and standard relations from architectural discipline, and rather proposes relations beyond disciplinary knowledge striving to improve the existing (knowledge). For the development of architecture as a technical object, it is necessary to speculate on the topic of its concrete but also abstract form in relation to knowledge and concepts beyond disciplinary boundaries. When Simondon (1958/1980) talks about the relationship between the concrete and abstract form of a technical object, he says that "in the incompatibilities that arise from the progressive saturation of the system of sub-sets there is discoverable an indefiniteness in limitations, and the transcending of these limitations is what constitutes progress" (pp. 22). We are not talking about the production of new devices or software, we are talking about mapping and overcoming incompatibilities and limitations with the (re)creation of operational instruments. The automation of the analysis or design process is opposed to the technicity of architecture. In contrast to AI automation of sense, this paper proposes hybrid interpretation instrument so that knowledge develops rhizomatically. Linearity is unavailing because it leads to simplification and autonomy of the discipline, whose end product is stupidity. Transductive approach to the interpretation of the architecture is proposed through hybrid instrument - reading architecture beyond disciplinary boundaries. Referring to Simondon's view (1964/2009) of transductivity as the functioning of the mind that discovers, a transductive approach to the interpretation of architecture refers to asking a question rather than answering it. According to that, instead of conclusion of this paper, the questions arise: Does

humanity, in an attempt to improve its life, prioritize ease, forgetting that progress is possible through technicity, which we can consume and develop only through imagining, discovering and inventing? Is the pursuit of autonomy in architecture equal to the production of stupidity and is it possible to overcome such disciplinary constraints through the reimagin(ni)ng of logical content through already well-known instruments and techniques reinterpreted in transdisciplinary frameworks?
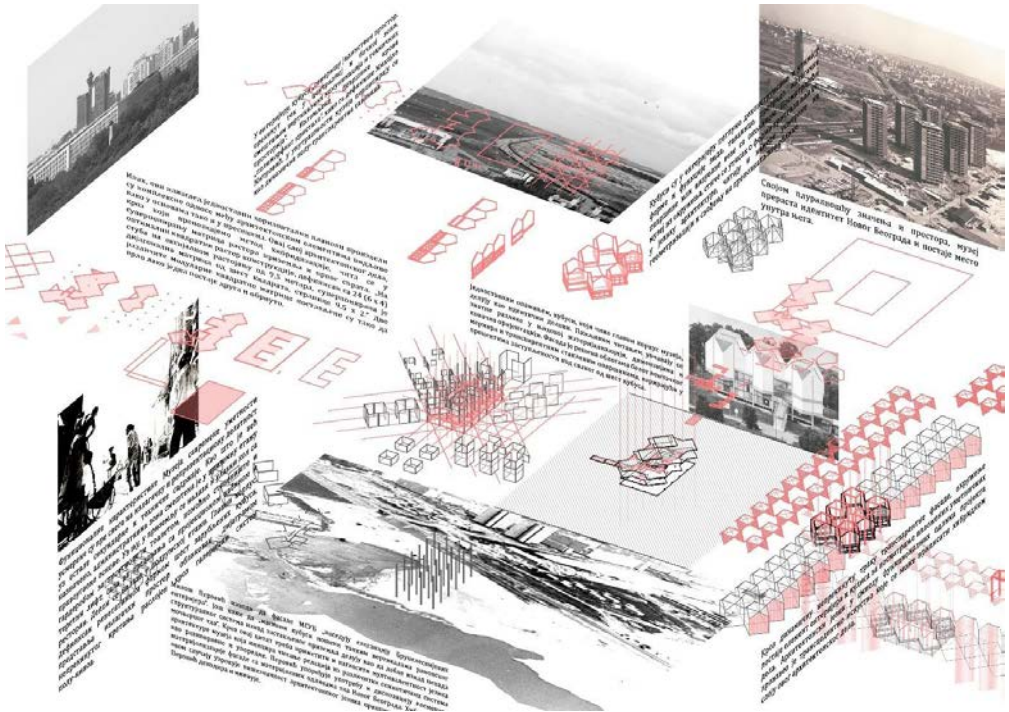
Figure 1. Hybrid interpretation instrument – collage of mental process. Source: author (2024).

BIBLIOGRAPHY

Bachelard, G. (2014). *The Poetics of Space.* New York: Penguin Classics.

Balmond, S. (2012) Odlomci iz Nove konstrukcije i neformalno. In P. Bojanić & V. Đokić (Ed.) *Arhitektura kao gest* (pp. 59-63). Beograd: Univerzitet u Beogradu, Arhitektonski fakultet. (Original work published 1997) Certeau, M. de. (1988). *The Practice of Everyday Life.* University of California Press, Berkeley.

Deleuze, G., & Guattari, F. (1987). Introduction: Rhizome. In G. Deleuze & F. Guattari (Ed.), *A Thousand Plateaus: Capitalism and Schizophrenia* (pp. 3-25). Minneapolis: University of Minnesota Press.

Deleuze, G. & Parnet, C. (2007). The Actual and the Virtual. (E. Ross Albert, Trans.). In *Dialogues II* (pp. 148152). New York: Columbia University Press.

Dogan, M. and Pahre, R. (1990). *Creative marginality: Innovation at the intersections of social sciences*, Boulder, CO: Westview.

Hill, J. (2006). *Immaterial Architecture.* London, New York: Routledge.

Holl, S. (2006). Questions of Perceptions - Phenomenology of Architecture. In A. Péréz-Gomez, J. Pallasmaa & S. Holl (Ed.). *Questions of Perceptions. Phenomenology of Architecture* (pp. 39-43). San Francisco: William K. Stout Pub.

Libeskind, Daniel. (2012) Tragovi nerođenog. In P. Bojanić & V. Đokić (Ed.) *Arhitektura kao gest* (pp. 274-275). Beograd: Univerzitet u Beogradu, Arhitektonski fakultet. (Original work published 1995)

Merleau-Ponty, M. (1968). Chiasm/Intertwining. In Lefort C. (Ed.) *The Visible and the Invisible* (pp. 130-155). Evanstone: Northwestern University Press.

Pallasmaa, J. (2017). Predeli arhitekture. In A. Selenić & V. Đokić (Ed.) *Prostor vremena* (pp. 29-30). Beograd: Univerzitet u Beogradu, Arhitektonski fakultet.

Paulette S. (2019). *How to read architecture: an introduction to interpreting the built environment*. New York: Routledge.

Simondon, G. (1980) *On the Mode of Existence of Technical Objects*. (N. Mellamphy, Trans.). Ontario: University of Western Ontario. (Original work published 1958)

Kechickian, A. (1983, April). Interview with Gilbert Simondon: "Save the Technical Object" (A. Iliadis, Trans.). *Esprit,* 76:147-52. https://web.archive.org/web/20160915185732/https://philosophyofinformationandcommunication.wordpress.com/2013/03/06/is-not-all-creation-a-transgression-gilbert-simondon-interview-1989-save-thetechnical-object/

Simondon, G. (2007). Technical Individualization. In J. Brouwer & A. Mulder (Ed.) *Interact or Die* (pp. 206-213). Rotterdam: V2 Publishing/Nai Publishers. (Original work published 1958)

Simondon, G. (2009). The Position of the Problem of Ontogenesis. (G. Flanders, Trans.). *Parrhesia,* 7, 4-16. (Original work published 1964) https://parrhesiajournal.org/parrhesia07/parrhesia07_simondon1.pdf

Simondon, G. (2010). The Limits of Human Progress: A Critical Study. (S. Cubitt, Trans.). *Cultural Politics,* 6:2,

229-236. (Original work published 1958) https://doi.org/10.2752/175174310X12672016548405

METASTABILITY AND SENSORY-MOTOR EXPERIENCE IN THE CHINESE LITERATI GARDEN

METASTABILIDADE E EXPERIÊNCIA SENSÓRIO-MOTORA NO JARDIM DE LITERATOS CHINÊS

Ran Pan
PhD Researcher, Architecture Philosophy and Theory
Faculty of Architecture and the Built Environment, TU Delft
r.pan@tudelft.nl

ABSTRACT

There has been an emerging discourse on contemporary operational images, which emphasises the automation and machinic aspects of digital image applications. This automation, along with digital technologies like language-based image generation, increasingly separates perception from action, thus petrifying the bodily experience and sensibility to the multiplicity of urban life. This petrification and loss of sensibility reduce the infinite possibilities of sensor-motor experiences to limited iterations, leading to homogenisation. This threatens design fields that thrive on creativity and differentiation. To address this, the research departs from Gilbert Simondon's concept of *metastability,* connecting a series of notions of *disparation, intensity, sensory-motor experience* and *image of thought* to depict the process of creative individualisation and the significance of cultivating sensibility. It uses the Chinese literati garden to frame and situate those concepts in the context of *cosmo-technics* and suggests garden experiences as a synthesis of intensive-image and ethico-aesthetic pedagogy in the digital age.

KEYWORDS: Metastability. Chinese Literati Garden. Sensory-motor Experience. Individuation.

RESUMO

Tem havido um discurso emergente sobre imagens operacionais contemporâneas, que enfatiza os aspectos de automação e maquinaria nas aplicações de imagens digitais. Esta automação, juntamente com tecnologias digitais como a geração de imagens baseada em linguagem, separa cada vez mais a perceção da ação, petrificando assim a experiência corporal e a sensibilidade à multiplicidade da vida urbana. Esta petrificação e perda de sensibilidade reduzem as possibilidades infinitas de experiências sensório-motoras a iterações limitadas, levando à homogeneização. Isto ameaça áreas de design que prosperam na criatividade e diferenciação. Para abordar esta questão, a pesquisa parte do conceito de metastabilidade de Gilbert Simondon, conectando uma série de noções de disparidade, intensidade, experiência sensório-motora e imagem do pensamento para descrever o processo de individualização criativa e a importância de cultivar a sensibilidade. Utiliza o jardim de literatos chinês para enquadrar e situar esses conceitos no contexto das cosmo-técnicas e sugere as experiências no jardim como uma síntese de imagem intensiva e pedagogia ético-estética na era digital.

PALAVRAS-CHAVE: Metastabilidade. Jardim de Literatos Chinês. Experiência Sensório-motora. Individuação.

1. INTRODUCTION

Right at the beginning of this year, Sora, a novel text-to-video diffusion model, ignited extensive discussion in the design industry, prompting further investigation into what design and design education entails. This form of automation, together with other developments of digital technologies such as algorithm-based big-data push and language-based image generation, increasingly separates the perception and action and, therefore, generalises, masks, and petrifies the bodily experience and sensibility to the multiplicity of urban *life.* Such petrification and absence of sensibility are, in a sense, fatal as they largely deprive the heterogeneous and unlimited combination of sensor-motor experience and reduce the infinite possibility into a limited set of iterations of images, leading to self-referencing and homogenisation. The reduction poses a particularly severe threat to fields like design and design education, which are regarded as highly creative and intimately connected to *vitality*–the concept coined by French philosopher Henri Bergson referring to the movement of *differentiation*. How do we bring the sensibility back? How do we sustain the spark of vitality in design disciplines? How can we rebuild the intuitive connection between humans and the environment to enhance the emergence of differences and differentiation and augment the process of individuation?

To respond to these questions, this paper starts with the concept of *metastability* thoroughly articulated by French philosopher Gilbert Simondon as a crucial state in energy transferring amongst quantum particles. Following Simondon's idea, the paper then dives into the process of *individuation* and the notion of *disparation.* The elaboration of these concepts allows the migration of the notions to connect other concepts, such as *problematisation* and intuition coins by Henri Bergson and *differentiation* and *intensity* from Gilles Deleuze. Based on the understanding of those ideas, this paper attempts to elaborate further on the notion of intensity through the thinking path of the image of thought. By introducing the concept of the intensive-image, it tries to navigate the discussion toward a more concretising context.

To bring the discussion further into the context of architecture and urban design, the last part of this paper attempts to build a ladder between *metastability* and the experience of place by grounding the discussion in the context of sensor-motor experience within Chinese literati gardens. The connection may be established due to several considerations. For one thing, the philosophy behind the Chinese literati garden-making and experiencing is embedded in Daoism, which provides a non-binary understanding between nature and humans and largely recognises the inseparable and immanent fluxes of matter and energy between people and places, which together transform into and modulate the ethico-aesthetical values. For another, the garden-experiencing requires visitors to actively feel, sense and differentiate multiple signs in a synthetic manner; such process may also be augmented throughout the understanding of *metastability.* As such, this paper aims to reciprocally stimulate the understanding of both concepts and suggest that the garden-experiencing can potentially be an ethico-aesthetical pedagogy to revive the connection between action and perception in the digital age.

2. METASTABILITY AND THE PROCESS OF DISPARATION

The concept of metastability has been recognised as an important dynamical mechanism in contemporary science for comprehending the functioning, adapting, and evolving process in various complex systems, such as neuro and cognitive systems, ecosystems, and socio-economic systems. A classic example of metastability is supercooled water, which is below the freezing point of 0°C yet remains liquid. In this metastable state, even small disturbances, such as shaking the container or introducing an impurity, can trigger a rapid phase transition from liquid to solid ice. Etymologically, metastability comes from the Latin *meta* meaning 'to change, to transform' and *stabilis* referring to 'being able to stand'. Metastability is thus far from equilibrium but exists as a flexible and dynamic equilibrium in which the full possibilities are preserved in a higher energy state, and the external energy input, even a marginal amount, would trigger a transition into a new equilibrium until the preserved possibilities or energy potentials are exhausted.

Metastability exists prevalently in complex systems in which the flexible and coherent dynamics are tied together by contextual constraints and distinct relational phenomena as constrained patterns of energy flows embodied and enacted by coherent dynamics (Juarrero, 2023). Due to its capacity to facilitate the understanding of complex systems and dynamics of changes within those systems, metastability attracts significant attention from scientists and philosophers, such as Norbert Wiener, who established the science of cybernetics; Gilbert Simondon, best known for his theory of individuation and his work in the field of philosophy of technology; and Gilles Deleuze who extends Simondon's understanding of metastability to explore how individuation and differentiation occur through continuous modulation and transformation (Boundas, 2010). Simondon (2020 [2005]) considers metastability beyond the classical opposition between stability and instability and guides the understanding towards the potential of becoming. In his work *The Individual and its Physico-Biological Genesis,* Simondon (1995) further critiques the hylomorphic schema, which involves a binary relationship between form and matter and considers form privileged over matter. He argues that it is insufficient to think of true genesis through a hylomorphic schema in which the matter and form pre-exist their union, and the individuation can be considered in a unitary manner.

Informed by the theory of information and the physics of phase shifts, Simondon gives the concept of metastability a metaphysical extension, applying it to every field of individuation from material to vital. By treating both psychic and collective individuation on the same plane, metastability then becomes a transgeneric concept that involves the asymmetrical disequilibrium accounting for tension and the production of new, which is the emergence of singularities (Sauvagnargues, 2012). Simondon (1992 [1964]) uses the instance of crystallisation to spot two significant conditions in a morphogenetic process, namely the irruption of the singularity and compatibility of the difference within the pre-individual milieu. The former refers

to the 'seeds', or impurity, which creates an emergent tension of problematic heterogeneous elements; the latter refers to the crystalline solution, a pre-individual milieu in a metastable state providing the affordance for the morphogenesis. These two together curate the conflictual emergence, which determines the *problematic* encounters between pre-individual milieu and singularity, which, in other words, *disparation* (Sauvagnargues, 2012). Simondon (1992 [1964]) further argues that information is nothing but the signification emerging from the process of disparation and establishes a 'transductive order within a system of reality replete with potentials'. The emphasis on *disparation* attracts the attention later of Gilles Deleuze. In *Difference and Repetition*, Deleuze (1994, p. 87) notes in his review of Simondon, 'what essentially defines a metastable system is the existence of a "disparation", the existence of at least two different dimensions, two disparate levels of reality, between which there is not yet any interactive communication.' Such accentuation of disparation provides Deleuze with an alternative way of approaching the ontological character of problems as real-virtual complexes of unresolved difference, which can only be resolved through the creation or actualisation of new beings (Toscano, 2009).

Following Simondon's idea, the very distinction between the virtual and the actual is processual and differential rather than a merely unilateral one. It is the product of the individuating process that distinguishes the *a priori* and the *a posteriori* rather than their pre-given conditions. In this sense, it allows the shifting of questioning from the 'what' question, the question of essence, to an operational answer to the question of 'how' (Toscano, 2009). Deleuze (2004) further picks this lineage and elaborates it as 'the method of dramatization'. For Deleuze (1994, p. 218), 'dramatization' refers to the sense that 'everything changes when the dynamisms are posited no longer as *schemata of concepts* but as *dramas of Ideas*". The method of dramatisation refers to the methods which consider actions and propositions interpreted as various sets of symptoms that express the mode of existence in the spatio-temporal dynamisms (Deleuze, 2004). That is to say, instead of *judging* actions and thoughts by appealing to transcendental or universal values, one *evaluates* them by determining the mode of existence that underlies them within the spatio-temporal dynamism (Smith, 2012). Connecting to the disparation mentioned previously, such spatio-temporal dynamism refers to a system of *differential* relations. Deleuze (2004, p. 94) puts it, 'the Idea is in itself a system of differential relations and the result of a distribution of remarkable or singular points (ideal events)… the method of dramatisation as a whole is represented in the complex concept of *differentiation*.'

Deleuze's reading of Simondon converges with his reading of Bergson on disparation and differentiation. He synthesises Simondon's emphasis on individuation and metastability with Bergson's focus on creative evolution and intuition. For Deleuze, his understanding of the morphogenetic process within the spatio-temporal dynamism based on Simondon's idea is intricately infused with the Bergsonian notion of duration. While Simondon himself may indeed get influenced by Bergson, it is Deleuze who pulls the thread into a natural lineage (Chabot, 2005). For Bergson, the

problem of duration, that is to say, the nature of real time, is the problem of precision in philosophy; to tackle such a problem, one is supposed to find an appropriate method, which, according to him, is intuition (Lundy, 2018). Such intuition shares very little common with the conventional sense and the general use of the term as a vague empathy or feeling. Instead, it is a rigorous philosophical method for an 'attunement with the concrete specificities of the real' (Grosz, 2011, p. 47). In Bergsonism, Deleuze (1991, p. 22) provides an insightful interpretation of intuition: he puts, "intuition as a method is the method of division." In this sense, intuition helps provide a reliable and appropriate means of dividing up the composite of experience in order to capture the nature of reality, which, in other words, is a process of problematisation (Lundy, 2019). This echoes the aforementioned Simondonian idea of problematic encounters. Meanwhile, as discussed previously, the problematic encounters or the problematisation should never be separated from the 'crystalline solution' of pre-individual milieu, which is, in other words, the metastability of experience.

3. SENSORY-MOTOR INDIVIDUATION AND INTENSIVE-IMAGE

Based on the previous discussion, it has been clearly established that the process of individuating is, in fact, a continuous process of differentiating, which is to say, the constant emergence of singularities. Such generating of the singularities plays a crucial part in the process of creation in both the physical and the vital. Meanwhile, the previous examination of metastability and related concepts underlines two critical characteristics within such process, namely the heterogeneous encounters and the duration enabling the experience in-between, which, according to Deleuze's (2004, p. 101) interpretation of Proust, is the state in which 'real without being actual, ideal without being abstract.' Such experience of the *in-betweenness,* characterised by metastability, appears as *sensori-motoricity* in Bergson's *Matter and Memory* (1991 [1939]) connecting the action and perception and can be associated with Gibsonian 'affordance' to ground the examination of the spatio-temporal characteristics in the middle and relation of organisms and the environment (Protevi, 2013). Therefore, given such relation between organism and the environment is also related to the ambience in architecture and urban design, the following writing aims to weave these threads together to dive into the concept of *sensory-motor individuation*.

The concept of the 'image of thought' appears intricately throughout Deleuze's thoughts and marks his shifts in thought from his earlier writing, from the 'rebellious' calls for the "new image of thought" in *Difference and Repetition* (1994 [1968]), to his attention to cinema and the movement-image in *Cinema 1* (1986), to his later work with Felix Guattari in *A Thousand Plateaus* (1988) and *What is Philosophy?* (1994) arguing that every movement-image implies a milieu of individuation and image-individuation driven by the motor functions as the very core of thought and creative individuation. The image, once seen as vital for differentiation, no longer serves as reproduction and loses its status as a duplication or imitation. Rather, by producing

singularities and pushing the limits to the division, the image is liberated from the representative and reproductive functions and reveals its creative potential. Such division and differentiation tend to appear in a Bergsonian problematic sense, as a production of a subjectivity individuating itself through matter. That is to say, a new image of thought is a new way of envisaging experience (Zourabichvili, 2012). Following this idea, Sauvagnargues (2016, p. 48) draws a connection towards the Guattarian ritornello of *The Machinic Unconscious* and suggests the view seeing the problematic of image as *sensory-motor individuation*–'a sensible centre of indetermination tracing its perspective, unfolding its fan of perceptions, actions, and subjective and material affections.' Connecting through the lineage from cinema, Sauvagnargues (2016, pp. 54–55) argues that the process of individuation is defined by an actualising or a subtractive operation in the mobile universe of forces, which detaches a provisional relation of variable speeds and affects. In this sense, perception is also produced via subjective framing, attuning the universal flows into a sign, a privileged image. Thus, she asserts that 'perception is individuation.'

Then, what does the image do in the process of sensory-motor individuation? To respond to this question, it is necessary to bring back the previous discussion on singularities. In *The Actual and Virtual,* Deleuze (2007 [1996]) asserts, 'Actualisation belongs to the virtual. The actualisation of the virtual is singularity [*singularité*], whereas the actual itself is constituted individuality.' In his own conception of singularity and creation, Deleuze retains most of the features that Bergson associates with the virtual, including the notion of *intensity*. Taking the concept originally from thermodynamics, Deleuze expands the notion into two concepts: *intensive differences* and *drive fluxes/drive processes*, which resonate with the two critical characteristics of metastability. As De Landa (2013) summarises, experienced differences in intensities drive the flows of individuation.

Following this thread, Escobar (2023b) develops the concept of intensive-image to understand how the imagination and the senses find expression in problematisation and provocations as "an art of affect rather than representation" (Grosz, 2008, p. 3). As Escobar (2023b) refers to Deleuze's own understanding of intensity in *The Logic of Sense* (1990), intensity presents as stemming from the *depths* and transforms into Deleuze's novel learning and exploration about *surfaces*; the concept of intensities is thus equivalent to 'multiplicities', 'singularities', 'events', and 'problems' but according to various dimensions. Taking this idea in mind, Escobar introduces the intensity to highlight the *dis*-continuities of the moving image. In this sense, instead of getting indulged in the extensive flows of sensory-motor cohesion, intensive-image tends to enact the fissure in the image and the "crack" in life, to discontinue the given audio-visual flows and confront the logic of action and entertainment in favour of a logic of contemplation and repose (Escobar, 2023a). This resonates with what Guattari suggests on the production of subjectivity in *Chaosmosis* (1995). In this sense, the intensive-image as an enunciative assemblage would also involve '*shattering* the concept of substance in a pluralistic manner, and … promote the category of

substance of Expression not only in semiology and semiotics but in domains that are extra-linguistic, non-human, biological, technological, aesthetic, etc.' (Guattari, 1995, p. 24) In this way, the concept of the intensive-image need not be confined to images within cinema or on screens. Later in this article, it will attempt to argue that Chinese literati gardens, as a form of spatio-temporal synthesis, can also be understood as a synthesis of intensive-images.

4. CHINESE LITERATI GARDEN AS SYNTHESIS OF INTENSIVE-IMAGE

Chinese literati garden, as well as *shanshui* painting, implicitly pervades Daoist philosophy and worldview, rejecting rigid binaries between human and nature, form and flow, space and time, and largely emphasising the concept of *in-betweenness*. In his book *Topophilia*, Yi-fu Tuan (1990) vividly depicted such in-betweenness as the entanglement between nature and human perception. By comparing distinct styles of painting in landscape, literary and artistic, and garden-making techniques in different cultures, Tuan demonstrates the intertwined connections between psychological, social, and environmental perspectives embedded in various cosmologies that are incrementally formed in different cultures. In his later masterpiece *Space and place: the perspective of experience*, Tuan (2002) explicitly hinges on such bodily experience toward 'place attachment' and thus differentiates place and space. He highlights the significance of the embodiment of feelings, images, and thoughts in the place, which lingers somewhere *in between* humans and the environment.

Such immanent intra-action between humans and nature reflects the pursuit of the median (*zhong,* 中) and harmonious (*he,* 和), which plays a central role in Chinese aesthetic thinking and the education of sensibility (Li, 2010). According to Chinese philosopher Yuk Hui (2020), zhong can be understood as metastability as it is full of potential and subject to change; harmony, on the other hand, is the dynamic balance of the intensive flows, the attunement of the rhythm. That is to say, neither of these states clings to its own static condition while viewing others or differences as oppositional; instead, both states are dynamic and largely embrace others and differences. Hence, Hui (2020) furthers that the *shanshui* painting shows a quest for the meaning of existence as a liberation of oneself rather than a challenge or confrontation between human and nature. When such ideas are expressed in *shanshui* painting, it appears as the image in the Bergsonian sense: more than an idea and less representative. Taking painter Guo Xi's painting *Early Spring* as an example (Figure 1), it depicts the atmosphere of the scenery in the mountains in early spring. Instead of having a precise representation for outlines or perspectives, Guo largely used blurry lines and dispersed perspective to capture the ambience and the flows of space-time energy.

In his writing *On Landscapes*, Guo names four crucial characteristics of the landscape, namely, climbing, looking from a distance, playing and dwelling (Lin, 1967). Particularly,

Guo places livability and playability before the other two, emphasising the intensive bodily engagement in the Chinese literati garden. With this idea in mind, one will find the intriguing point in the use of 'play' (*you,* 游) in Chinese literature expressing the activity of garden-experiencing. The etymology of the character, *you,* in Oracle Bone Script, appears as '' capturing the movement of the flag in the wind. The flag is also a sign, a message. Later in the small-seal script (*Xiaozhuan,* 小篆), *you* appears as ' ', enhancing the fluidity sense of the character. Thus, *you* can also be combined with other characters into 'swimming' (*you yong,* 游泳), referring to picking up the sign of the wave. As such, the experience of the Chinese literati garden (*you yuan,* 游园), according to Yuk Hui (2020), is also an apprenticeship of the art of living, an apprenticeship of the signs. It, hence, resonates with the pedagogy of the image in the sense of producing a new image and emitting new signs (Bogue, 2008).

In this sense, the intensive-image largely exists in garden-experiencing and garden-making. For instance, the seemingly enclosed courtyards are interconnected in a fractal nesting structure. As one navigates the yard, each perceived boundary gives way to a new space—a porch appears, leading to another yard, and the exploration continues indefinitely. This heterogenesis activates affect, transforming it from a passive state to one of self-genesis and self-reference. Meanwhile, this topographical fractalisation, or granularity, is also evident in the use of stones (see Figure 2). Stones possess their own structures, featuring cracks that create hallucinated and individuated perceptions from time to time. Such an idea resonates with the 'line of flight', which escaping from the given structure and embracing intensive differences. A similar structure frequently appears within the notion of 'borrowing' views, which refers to the design and placement of windows directing visitors' gaze toward somewhere behind the wall yet containing more 'intensive' movement.

To sum up, the experience of the Chinese literati garden serves as an ethico-aesthetic pedagogy, revitalising the connection between action and perception. By extending the concept beyond the sensory-motor experience in cinema, the Chinese literati garden synthesizes the intensive-image, integrating it with its inherent qualities of metastability. This synthesis enhances the cultivation of sensibility and fosters creative individuation. In doing so, the garden exemplifies a harmonious blend of natural and artistic elements, offering profound insights into the processes of creative individuation and the importance of sensory engagement. Thus, the Chinese literati garden not only preserves cultural heritage but also provides a valuable framework for rethinking design and sensory experiences in the context of contemporary digital technologies.

Figure 1. Guo Xi (郭熙), Early Spring (早春圖) Hanging scroll, ink and light color on silk, 158.3 × 108.1 cm. Source: (Guo, 1072)

Figure 2. The rockery mountain and the courtyard view of The Lion Grove Garden of Suzhou
Source: Photo by author

5. BIBLIOGRAPHY

Bergson, H. (1991). *Matter and memory* (N. M. Paul & W. S. Palmer, Trans.). Zone Books.

Boundas, C. V. (2010). Individuation. In A. Parr (Ed.), *The Deleuze dictionary* (Rev. ed, pp. 131–133). Edinburgh University Press.

Chabot, P. (2005). The Philosophical August 4th: Simondon as a Reader of Bergson. *Angelaki, 10*(2), 103–108. https://doi.org/10.1080/09697250500417290

De Landa, M. (2013). *Intensive science and virtual philosophy* (Paperback edition). Bloomsbury.

Deleuze, G. (1986). *Cinema 1: The movement-image* (H. Tomlinson & B. Habberjam, Trans.; Vol. 1). University of Minnesota.

Deleuze, G. (1990). *The logic of sense* (C. V. Boundas, Ed.; M. Lester & C. J. Stivale, Trans.). Columbia University Press.

Deleuze, G. (1991). *Bergsonism* (1–1). Zone.

Deleuze, G. (1994). *Difference and Repetition* (P. Patton, Trans.). Columbia University Press.

Deleuze, G. (2004). *Desert islands and other texts, 1953-1974*. Semiotext(e) ; Distributed by MIT Press.

Deleuze, G., & Guattari, F. (1988). *A Thousand Plateaus: Capitalism and Schizophrenia* (B. Massumi, Trans.). University of Minnesota Press.

Deleuze, G., & Guattari, F. (1994). *What is philosophy?* (H. Tomlinson & G. Burchell, Trans.). Columbia University Press.

Deleuze, G., & Parnet, C. (2007). The Actual and the Virtual. In E. R. Albert (Trans.), *Dialogues II* (Rev. ed, pp. 148–152). Columbia University Press.

Escobar, C. (2023a). The Intensive-Image and the Poetic Film Tradition: Notes on Ruiz, Deren, Pasolini, Buñuel and Deleuze. *Film-Philosophy, 27*(3), 424–442. https://doi.org/10.3366/film.2023.0240

Escobar, C. de. (2023b). *The intensive-image in Deleuze's film-philosophy.* Edinburgh University Press.

Grosz, E. (2008). *Chaos, territory, art: Deleuze and the framing of the earth*. Columbia University Press.

Grosz, E. (2011). *Becoming Undone: Darwinian Reflections on Life, Politics, and Art*. Duke University Press. https://doi.org/10.1515/9780822394433

Guattari, F. (1995). *Chaosmosis: An ethico-aesthetic paradigm* (P. Bains & J. Pefanis, Trans.). Indiana University Press.

Guo, X. (郭熙). (1072). *Early* Spring (早春图) (Taipei) [Hanging scroll, ink and light color on silk.].

Hui, Y. (2020). *Art and cosmotechnics*. e-flux books.

Juarrero, A. (2023). *Context Changes Everything: How Constraints Create Coherence*. The MIT Press. https://doi.org/10.7551/mitpress/14630.001.0001

Li, Z. (2010). *The Chinese Aesthetic Tradition* (M. B. Samei, Trans.). University of Hawai'i Press.

Lundy, C. (2018). Bergson's Method of Problematisation and The Pursuit of Metaphysical Precision. *Angelaki, 23*(2), 31–44. https://doi.org/10.1080/0969725X.2018.1451460

Lundy, C. (2019). *Deleuze's Bergsonism*. Edinburgh University Press.

Protevi, J. (2013). *Life, war, earth: Deleuze and the sciences*. University of Minnesota Press.

Sauvagnargues, A. (2012). Crystals and Membranes: Individuation and Temporality. In A. De Boever (Ed.)J. Roffe (Trans.), *Gilbert Simondon: Being and technology* (pp. 57–70). Edinburgh University Press.

Sauvagnargues, A. (with Flaxman, G.). (2016). *Artmachines* (S. Verderber & E. W. Holland, Trans.). Edinburgh University Press. http://www.jstor.org/stable/10.3366/j.ctt1bh2jvt

Simondon, G. (1992). The Genesis of the Individual. In J. Crary & S. Kwinter (Eds.)S. Kwinter & M. Cohen (Trans.), *Incorporations* (1st ed.). Zone Books.

Simondon, G. (1995). *L'individu et sa genèse physico-biologique*. Jerome Millon.

Simondon, G. (2020). *Individuation in light of notions of form and information* (T. Adkins, Trans.). University of Minnesota Press.

Smith, D. W. (2012). *Essays on Deleuze.* Edinburgh University Press.

Toscano, A. (2009). Gilbert Simondon. In G. Jones & J. Roffe (Eds.), *Deleuze's philosophical lineage* (pp. 380–398). Edinburgh university press.

Tuan, Y. (1990). *Topophilia: A study of environmental perception, attitudes, and values* (Morningside ed). Columbia University Press.

Tuan, Y. (2002). *Space and place: The perspective of experience.* University of Minnesota press.

Zourabichvili, F. (2012). *Deleuze: A philosophy of the event together with the vocabulary of Deleuze* (G. Lambert & D. W. Smith, Eds.; K. Aarons, Trans.). Edinburgh University Press Ltd.

IMAGINATION AS A CONSTRUCTION SITE

A IMAGINAÇÃO COMO CANTEIRO DE CONSTRUÇÃO

Eleni Theotokatou
Architect, NTUA PhD Candidate, UniWA Adjunct Lecturer
National Technical University of Athens
eltheotok@mail.ntua.gr

ABSTRACT

For the main representatives of classical philosophy, the image remains a thing. Even in Kant the image does not acquire the importance of the *schema*, the essential mediator between the faculties of imagination and understanding, with a regulative function upon sensory data, in order for knowledge to emerge.

Simondon seems to restore image to its primary role within consciousness. The image for Simondon is a kind of a hybrid that resolves the distance between object and subject, precise representation and abstraction.

Based on these two divergent approaches, this paper wishes to emphasize that imagination appears as an autonomous process, a neutral field of creative activity, where preconceptions, hard facts and planned configurations are at stake, giving up their regular status, for the sake of creating something new.

KEYWORDS: image. imagination. schema. schematism. Kant. Simondon.

RESUMO

Para os principais representantes da filosofia clássica, a imagem continua a ser uma coisa. Mesmo em Kant não se adquire na imagem a importância do esquema, o mediador essencial entre as faculdades da imaginação e da compreensão, com função reguladora dos dados sensoriais, para que o conhecimento possa emergir.

Simondon parece restituir a imagem ao seu papel principal na consciência. A imagem para Simondon é uma espécie de híbrido que resolve a distância entre objeto e sujeito, a representação precisa e a abstração.

Com base nestas duas abordagens divergentes, este artigo pretende sublinhar que a imaginação surge como um processo autónomo, um campo neutro de atividade criativa, onde estão em jogo pré-conceitos, factos concretos e configurações planeadas, abrindo mão do seu estatuto regular, em prol da criação.

PALAVRAS-CHAVE: imagem. imaginação. esquema. esquematismo. Kant. Simondon.

1. INTRODUCTION

As Sartre notes, for the main representatives of classical philosophy, the image remains a thing; an object. As long as imagination – the mechanism responsible for its production – is totally disassociated from the mind, the image appears as a result of the body's sensitivity, in the same way the object's reflection is captured on the photographic film· that is, analogically. But if the imaginary follows the real - supposing that the original object ontologically precedes its representation - the image is degraded to a minor thing.

Either we consider the image as a reflection of the original, a by-product of the encounter of consciousness with the outer world, or the object reconstituted in detail from its tiny reanimated bits, the image is supposed to be depended upon its prototype – even if the original comes in text. Roughly speaking, the image seems to carry the flaw attributed to it by Plato, when he clearly distinguished the Real from the sensible and diminished the image - εικόνα - to the ontological level of mere, undocumented, speculation: δόξα. In Greek, the word "εικόνα", shares the same root with the verb "εικάζω" (εικ-), which means to imagine, to speculate.

Even with Kant, the image is not of the importance of schema. Schema mediates between the faculties of imagination and understanding, with a regulative function upon sensory data, in order for knowledge to emerge.

Not convinced with the exclusion of the concrete human being with all its affectivity from the creation of knowledge, Simondon seems to restore image to its primary role within consciousness. The image for Simondon is a kind of a hybrid that resolves the distance between object and subject, precise representation and abstraction.

Following Simondon's method (2022, p.xi), the present encounter between himself and Kant is not set to "[…] oppose specific thesis" (2022, p.xx). If the parallel study of these texts, which follow diverse lines of thought, may reveal common features for the image and the imagination, then the convergent lines must make a point that lies closer to truth (2022, p.xi). We will approach the two texts, according to their specific nature. In order to talk about image and imagination in Kant, one must show their place in the general structure of the Critique of Pure Reason. With Simondon, the focus goes directly to image rather than imagination, as the latter "[…] connects images to the subject who produced them]" and as such tends to ignore its exteriority (2022, p.7). Imagination is implied as a necessary cradle, but not analyzed as a distinct faculty.

2. IMAGINATION & SCHEMATISM | SCHEMA & IMAGE IN KANT

"There can be no doubt that all our knowledge begins with experience" (Kant, 1929)

but

"[…] nothing in a priori knowledge can be ascribed to objects, save what the thinking subject derives from itself" (Kant, 1929, p.25)

Until Kant the problematic – therefore, fruitful – relation between the subject and the object depended on the compatibility of the nature of things (as the object of knowledge) and of the mind (as the cognitive subject). Rationalism relied on the intervention of a (higher) principle to ensure that the incompatibility between the

order of things and that of the ideas stay resonant, allowing for knowledge to emerge. For traditional empiricism, knowing things is possible with experience and the logical elaboration of the perceptual data, supposing there is a harmony between Nature in general and human nature in particular that ensures the continuity between concrete experience and abstract knowledge.

Kant's novelty consists in the inversion of the problem: instead of searching for resemblances between Nature and the human mind, that could allow for Natural Law to be recognized, Kant suggests instead that to know is to rule: "[...] the first thing that the Copernican Revolution teaches us is that it is we that are giving the orders" (Deleuze, 1984, p.14) and "[...] save through it (i.e., understanding), nature [...] would not exist at all" (Kant, 1929, p.148).

What is proposed is that the human mind is structured a priori - before any experience - and that premise ensures the validity of knowledge. While the formation of knowledge was established on the analogy between mental structure and the exterior world,

> "[...] in Kant the relation between subject and object tends to be internalized· it becomes the problem of a relation between subjective faculties which differ in nature (receptive sensibility and active understanding)" (Deleuze, 1984, p.14).

2.1 Imagination as a faculty of the mind

Then the mind must partly remain passive, receiving information and at the same time possess the necessary faculties for its elaboration. *Sense* is the capacity that allows for the *reception* of representations from raw experience and, by nature, it is passive (Kant, 1929, p.92-93). *Understanding* is the capacity to produce representations and relate them to concepts· that is, to elaborate the received sensorial data. "Knowledge springs from these two fundamental sources of the mind [...]" (Kant, 1929, p.92): Receptive (passive) sensibility and active understanding. They differ in nature and are incompatible from each other, yet they must cooperate for knowledge to occur.

There must be a third condition, capable of mediating between sensibility and understanding, where the sensible can become evaluated according to the general categories, that shape the mind's predetermined structure and become apprehended. This mediating faculty has to be related with sense as well as with understanding and as such, resolve their incompatibility. The gap between sensation and perception is bridged by the capacity to create representations of the object, even when it is not present.

Imagination provides for a common ground, neither rough and raw as experience, nor smooth and purified as theoretical concepts, for "[...] the two extremes" (Kant, 1929, p.146) to co-exist, before a final schema is attributed to the raw material and can finally be *understood* – be subjected to the rules (categories) imposed by the faculty of understanding, as prescribed by *reason.*

Imagination works with inhomogeneous materials, but in diverse ontological levels as well. Sense receives information which would remain unhinged, hanging one next to the other, as raw data, if it were not for imagination to reconstitute the image in the mind (1929, p.144). The act of re-assembling the object in the mind from a series of representations (the manifold of intuition) takes place in imagination and is called *synthesis* (1929, p.111-112). The unity of the synthesis is due to the concepts (1929, p.120).

2.2 Schematism

Imagination is a faculty of the mind, but of the third order: mediates between the passive reservoir of appearances and the act of understanding, that is, the subordination of phenomena upon rules; produces images of things, reconstituting sensorial data as wholes - under the principle of unity (Kant, 1929, p.142); but, above all and before anything else, imagination schematizes (Deleuze, 1984, p.36).

Understanding is possible only if we can classify the object of perception by way of its appearance, under the general categories we already have in mind (Kant, 1929, p.113-115). Otherwise, the object remains unidentified· something we cannot recognize. Schematism is the process appearances go through in order for our mind to recognize them. It works by putting sensorial data through pre-formed contours, that describe the general concept under which the object is subsumed. Schematism requires the cooperation of imagination and understanding, with imagination exercising its creative abilities and acting by-its-own-will.

The mind for Kant is structured a priori – before any experience – already prepared to organize sensory data in categories, but needs an outline for each category to determine whether the incoming data fits:

> "Obviously there must be some third thing, which is homogeneous on the one hand with the category and on the other hand with appearance and which thus makes the application of the former to the latter possible". "Such a representation is the transcendental schema" (Kant, 1929, p.181).

2.3 Schema | Image

The schema could be described as the monogram of the representation of the object to which it refers or its abstract expression, save that it is not produced by abstracting information from the real. On the contrary, the schema is a necessary prerequisite, the outline that delimits the manifold that composes the image. The schema *identifies*, while the image is presented as the reconstitution of the object within the imagination:

> "The schemata of the pure concepts of understanding are thus the true and sole conditions under which these concepts obtain relation to objects and so possess significance" (Kant, 1929, p.186).

Kant hurries to clarify that "The schema has to be distinguished from the image" (1929, p.182). In fact, the schema precedes the image, as the preconfigured general outline that can apply to more than one images· the schema is generic – exists a priori – while the image is a mere a posteriori representation of a thing.

Yet, both the schema and the image are products of the imagination. Kant insists on the distinction between *creative* (productive) and *reproductive* imagination. In fact, it is the same faculty, who works in a different mode in each occasion: "Insofar as imagination is acting by its own will, I sometimes call it creative imagination and thereby distinguish it from reproductive (imagination)" (1929, p.143,145). Imagination invents a schema for each theoretical concept a priori, to be prepared for reality. The image is the product of reproductive imagination, that reassembles the bits into which the thing is perceived in a synthesis, as a whole (1929, p.112). While working for the production of the image, imagination does not fulfill its creative potential, but works solely for the reproduction of the sensible within the mind.

3. IMAGE & IMAGINATION IN SIMONDON

Although Simondon promises he will talk about "Imagination and Invention", early in the introduction clarifies that

> "...the term of imagination can lead to misunderstandings, for it connects images to the subject who produced them and it tends to exclude the hypothesis of a primordial exteriority of images in relation to the subject" (Simondon, 2022, p.7).

His concern is not the purity of a faculty detached from real life, but rather to describe the way images inhabit and develop in our bodies, became sociable, even attaining a regulative role (2022, p.12). Images are described as quasi-organisms (2022, p.9,13) implanted in the subject, following a life cycle like that of a living organism. The book is structured based on the stages of a life cycle of an organism, not necessarily human.

3.1 A priori images - The inherited motor schemas

The early stages of development of an organism are characterized by pure growth on a biological level. The organism is not yet conscious of its individuality and with no prior experience of exchanging information and activity with the milieu· it is uninformed. It is a situation of total exposure in the milieu, often presented in mythology in the form of the intentional abandonment of infants (Moses, Oedipus, Romulus and Remus etc.). The organism has little time for inactivity, faced with primordial feelings of fear, danger, hunger and other vital categories and must respond effectively to the "bundle of signals" (2022, p.30) coming from the milieu: "The first form of anticipation, before the organism is related to the object, is the set of activities that make the organism an auto-kinetic system;" (2022, p.30).

Behavior schemas activate unconsciously, as immediate motor reactions of the nervous system and, as such, are entirely connected to materiality. Imagination then is a rehearsal stage where the organism can set itself in a virtual situation and test its action schemas, before applying them to the real object (2022, p.32).

Being able to put oneself in a virtual situation, presupposes the initial sense of a body schema, as a representation of the body of the organism related to space. The body schema is not static, but "[...] contains the intuition of the action system of each individual" (2022, p.39)

The a priori in Simondon is hereditary and is biologically inherited through the materiality of the nervous system in the organism: "[...] the primordial source of the a priori appear to be, in the form of the anticipations of movement, the organism" (2022, p.41).

3.2 A praesenti images - The intra-perceptual images

Even at the first mode of relation to the milieu, the organism does not act on the basis of trial-and-error activity, but is unconsciously prepared for exogenous interference in the form of a priori images, inherited on a phylogenetic basis (2022, p.20). At the end of this spontaneous activity "[...] enough information is gathered to identify the object [...]" (2022, p.65). Perception refers to a secondary level of relation between the organism and the milieu, where the blurry and unknown situation has become a familiar territory.

At this stage, the organism has consumed (2022, p.65) the situation it was subjected to and is now well informed on how to react in front of a similar situation. It has created images in the form of "[...] perceptual anticipations of potentialities [...]" (2022, p.66), that apply to more than one situation. Those images are not the analog to concepts inducted from experience in an empirical manner, but "[...] a posteriori constructions summarizing experience" (2022, p.66), that release an action sequence on the occasion of a relevant stimulus: "[...] if incident stimuli do not display features corresponding to the image, the reaction does not occur" (2022, p.67).

Now, the intra-perceptual (schematized) image may be recalled as a prefigured model for the identification of the object at a first level, as a means of differential information gathering, in order for the different states of the same object to be recorded and finally as a way to designate a perception of a particular variation of the object.

After all, Simondon reminds us that it is the exceptional singularity we recognize, not the flat generality: "Singularities are more pregnant than regularities" (2022, p.85); "[...] it is the unexpected that imposes itself and becomes figural against the ground of regularities (2022, p.86). That is the reason why geometrically shaped constructions become significant against "natural" backgrounds, because geometrical forms are usually artificially made and stand out against the wilderness of the context. In a similar

way, abandoned sites reclaimed by nature in the urban fabric or extremities in the landscape become meaningful, out of their incongruous presence (2022, p.81-83).

The image so far stands as an extension of the perceiving subject, identifying, gathering information that gradually refine the original impression and eventually guiding the organism to organize its territory. Its configuration cannot be ascribed to the passive reception of information. The intra-perceptual image is shaped by a dynamic contour that is definite enough to produce a concrete image of the object, but at the same time extremely elastic to express the tendencies that come from the subject and from its territory. The outline of the intra-perceptual image is affected by both the preconceptions of the subject, as well as the tendencies exerted from the territory (2022, p.92).

3.3 A posteriori images – Symbols

The early stages of the organism – when a priori images activate spontaneous behavior as a basic correspondence with the milieu – follow the secondary level of development towards maturity – with the image used as an instrument of adaptation to the object. Eventually the organism becomes related with the objects in its territory and adapts a formal activity that comes from experience. At that late phase of the life cycle of the organism, images consist of what must be preserved after the situation no longer exists. The image no longer represents an automatic anticipation before the object, nor the schematic expectation that arises when the object is present and in the process of becoming recognized.

The mental image is the concrete representation that is left in the mind when the object is no longer present. Apart from a series of image types that are more related to mechanical features of the organism – the consecutive image (2022, p.101); the immediate image (2022, p.103); the eidetic image (2022, 105-110) – it seems that the image type with an essential cognitive and symbolic function is the memory image. Imagination does not only work with visual material, but may produce imaginative types with regard to vision (visual type), to hearing (aural type) and motricity (motor type) (2022, p.112-115).

Some memory images may even evolve to become symbols: "[...] symbols are 'absolute objects', detached from the empirical situations of their emergence, yet having preserved their power [...]" (2022, p.136); "[...] they are powers without support, without subject, and without external milieu in which to be inserted" (2022, p.137).

But how can a concrete representation become a symbol? The memory image is a reconstitution of a particular perceptual situation, in the form of an a posteriori revival. In order to become a symbol, the image should undergo a process of abstraction, for the symbol has a generic character. We are in front of the major problem of empiricism: how can subjective perceptual data (the image) become processed to extract its objective (cognitive/symbolic) content. Both induction – a process of extracting convergencies through various concrete situations – and deduction –

a process of abstracting divergencies from concrete cases – are reductive (2022, p.121), thus inappropriate methods of treating the image. Simondon presents the image as a different way of knowing, where "[...] successive experiences [...] inscribe themselves as variants of a basic text whose anteriority is considered an absolute term of reference [...]" (2022, p.122) and accounts for an archetypical model.

The road from the memory image to the symbolic "[...] entails a certain process of abstraction, where 'abstraction' means 'an extraction from'; but it is an extraction of the elements of display [manifestation] from complete situations" (2022, p.135-136).

4. DISCUSSION

Imagination and schematism hold a critical position in the architecture of the Kantian system, but resist analysis. Schematism seems to be "[...] an art concealed in the depths of the human soul, whose real modes of activity nature is hardly likely ever to allow us to discover" (Kant, 1929, p.183). Imagination is presented as a multitasking activity: mingles with the deficiencies of materiality with respect to the theoretical purity of the mind; shows flexibility and efficiency to restore the unity of thought, who has been fragmented for the sake of analytical study, so that the world does not render incomprehensible.

In the Critique of Pure Reason, the complexity of the methods and the hybrid nature of imagination resist a definite description. It is in the Critique of Practical reason though, where imagination fails to provide with the image of nature in all its magnitude, not because understanding is narrow-minded, but because sense is too narrow-sighted and cannot grasp it as a whole (Kant, 1987). It seems as if by nature, imagination and its products are too open to conform to a mental world with a strict structure of hierarchically superimposed levels that gradually draw away from the fuzziness of reality, on the way to knowledge.

Kant's constitution is a remarkable effort for the determination of the conditions under which the transcendental subject is related to reality, applying its own rules (Kant, 1929, p.148); "Formalizations are always accompanied by domination" (Simondon, 2022, p.160). Simondon remains immanent to a world with flaws but functional, observing his subject – which is not always human - developing in time and in space, along with its images that pop up as bubbles full of primitive fears (2022, p.42,45), conceptual personae (2022, p.12), (Deleuze, 2009, p.61), expectations and calculated plans, as blurred extensions of its body and the territory.

Whereas Kant sees a reasonable, regulating mind, suffering from sensitivity that disturbs its equilibrium, Simondon opposes the organism in full body, passing through a series of metastable stages, always in the process of becoming, in a situation of a continuous exchange of informational material to and from the milieu (2022, p.67, p.93-138).

Eventually for Kant, the image is a way for the subject to interiorize - possess – the object which stands out of its mind, producing its representation. For Simondon the image has its own way of becoming, developing in the common ground between the organism and the milieu. He strives to restore the extroversion of the image as a vital part of reality, as it was until the 17th century. In a world of an uncontested continuity, the image was a way for the gods to deliver their message through visions and dreams or the representations performed in rituals (2022, p.8), if not the general mode of existence (2022, p.26-57). From then on, imagination was associated with the psyche of the subject and as such, not a reliable faculty for cognition.

As divergent as these approaches may be, imagination appears as an autonomous process, a field of creative activity, where preconceptions, hard facts and planned configurations are at stake, giving up their regular status, for the sake of creating something new. A new configuration acquires its own value, as something more than the sum of its parts, having invented its own constitutive principles. In this process, it is the senses that indicate the path.

5. BIBLIOGRAPHY

Deleuze, G. (1984). Kant's Critical Philosophy. The Doctrine of the Faculties. The Athlone Press.

Deleuze, G. (2009), What is Philosophy? Verso.

Kant, I. (1929). Critique of Pure Reason. Macmillan and CO. Limited.

Kant, I. (1979). Κριτική του Καθαρού Λόγου, τόμοι I, II. Παπαζήση.

Kant, I. (1987). Critique of Judgment. Hackett Publishing Company.

Simondon, G. (2017). On the Mode of Existence of Technical Objects. Univocal Publishing.

Simondon, G. (2020). Individuation in Light of Notion of From and Information, vol.1. University of Minnesota Press.

Simondon, G. (2022). Imagination and Invention. University of Minnesota Press.

L10

SITTING ON THE BALCONY OF AN ATHENIAN APARTMENT, EATING SCHNITZEL

SENTADO NA VARANDA DE UM APARTAMENTO ATENIENSE, COMENDO SCHNITZEL

Lena Galanopoulou
Ph.D. Candidate
School of Architecture, National Technical University of Athens (NTUA)
galanopoulou.lena@gmail.com

ABSTRACT

The article draws parallels between death and invention, both approached as mechanisms of redistribution of bio-technological possessions. The self is seen as composable through different domains, not contained within the body or mind alone, but co-constructed by human interactions and technological mediations. Thus, death comes as a transductive process of disassociation happening across different platforms of existence -from biological (physical decomposition) to social (will executions and obituaries). Whether considered as a singular event or an ongoing process, death is fundamentally ecological, challenging existential frameworks and redistributing available affordances. Announcements of such possession shifts are mediated through images, serving as dynamic conveyors of information within different environmental settings. In Gilbert Simondon's ontology of images, images transcend static representations, dynamically emerging through organism-environment interactions and mediating resource allocation by activating imagination. In this process, the cognitive milieu folds, leading to novel conducts that extract and isolate affordances from specific contexts, essentially redefining their availability through technological means.

KEYWORDS: invention. death. imagination. metabolism. negentropy. Simondon.

RESUMO

O artigo traça paralelos entre a morte e a invenção, ambos abordados como mecanismos de redistribuição de posses bio-tecnológicas. O "eu" é visto como componível através de diferentes domínios, não contido apenas no corpo ou na mente, mas co-construído por interações humanas e mediações tecnológicas. Assim, a morte surge como um processo transdutivo de dissociação que ocorre em diferentes plataformas de existência - desde o biológico (decomposição física) até o social (execuções de testamentos e obituários). Seja considerada como um evento singular ou um processo contínuo, a morte é fundamentalmente ecológica, desafiando os frameworks existenciais e redistribuindo as disponibilidades de recursos. Anúncios dessas mudanças de posse são mediados por imagens, que atuam como transportadores dinâmicos de informações em diferentes contextos ambientais. Na ontologia das imagens de Gilbert Simondon, as imagens transcendem representações estáticas, emergindo dinamicamente através das interações organismo-ambiente e mediando a alocação de recursos ao ativar a imaginação. Neste processo, o meio cognitivo se dobra, levando a condutas inovadoras que extraem e isolam recursos de contextos específicos, redefinindo essencialmente sua disponibilidade por meio de meios tecnológicos.

PALAVRAS-CHAVE: Invenção. morte. imaginação. metabolismo. negentropia. Simondon.

1. INTRODUCTION

In Dante's *Inferno, Canto XXX*, (Dante, 1320/2003) the eighth circle of Hell is reserved for fraudulent souls. Among the falsifiers is Gianni Schicchi, a historical figure from Florence, condemned for impersonating the deceased Buoso Donati, so as to alter his will. The character is revived in Giacomo Puccini's opera *Gianni Schicchi,* where the narrative takes on a satirical wit. As Donati's avaricious relatives frantically search for his will, their desperation leads them to rummage through his belongings, ultimately discovering the crucial document within his bedclothes. In versions of the libretto, it is noted that Rinuccio finds the will in the *tasca del letto*, which translates to the *pocket of the bed,* implying it was eventually hidden inside Donati's sleeping trousers. Perhaps, Puccini's take on the story humorously plays with the idea that what is valuable enough to pass on to the next generations is mostly considered to be hidden in our pants; Or perhaps, this is a personal reading aiming to question how a formerly vital system relates to its environment after losing its vitality.

2. POST-RAVE MELANCHOLIA

But to think about death, we must firstly consider life. Gilbert Simondon in his magnum opus *Individuation in Light of Notions of Form and Information* (2020) distinguishes vital systems from physical systems and vital activity from physical activity. He argues that vital systems are defined by their ability to maintain a state of dynamic equilibrium through internal processes and interactions with their environment. Unlike physical systems, which tend toward entropy and disorder, vital systems exhibit a degree of self-organization and resilience, where the system's coherence and adaptability are constantly being reconstituted through feedback mechanisms. Simondon (2020, p. 6-13) uses the formation of a crystal as an example of a physical system. During crystallization, a crystal grows by sequentially adding highly ordered layers. Once the crystal reaches a certain size and the environmental conditions stabilize, it ceases to change. At this point, it attains a static equilibrium, with a fixed structure and no ongoing processes of adaptation or self-organization. In his own words:

> *Above this scale, there is physical individuation when the system is capable of receiving information a single time, then develops and amplifies this initial singularity by individuating in a non-self- limited way. If the system is capable of successively receiving several inputs of information (of compatibilizing several singularities instead of iterating the single and initial singularity cumulatively and through transductive amplification), then individuation is vital, self-limited and organized.* (Simondon, 2020, p. 163)

Thus, life is not simply a biological state but a process of becoming, where vitality is maintained through a constant negotiation between internal and external forces. Simondon emphasizes that understanding life involves recognizing the complex interplay between an organism and its milieu. This interaction is dynamic, involving

a continuous process of trans-individuation, wherein each individuality is composed of and interacts with other individualities. "A *vital unit* is *literally what is directly social; information that is attached to social structures and functions is lacking in individuated organisms qua organism"* (Simondon, 2020, p. 179). Hence, it can be understood as composable through different domains, not contained within the body or mind alone, but co-constructed by human interactions and technological mediations.

From such a view, death is the point at which the vital system can no longer sustain the processes that maintain its coherence and adaptability. As such, it prompts a process of reorganization, a liminal negotiation whereby a system gradually evolves from a structured, differentiated state to a more open and generalized one. It emerges as a transductive process of disassociation, necessitating *announcements* across different platforms of existence - from physical decomposition, where complex biological structures break down into simpler nutrients that nourish new forms of life, to social disassociation, manifested through obituaries and will executions.

3. NO NO NOVELTY

Death is wild, as it requires an intense moment of disengagement from the certainties of the past. It encompasses loss and the terror of irrevocable change, along with a craving for the new and unexperienced. Death is both hurtful and hedonistic; it is playful in its escape from any kind of purposefulness, yet it is not funny at all. This state of immanent uncertainty and infinite potentiality highlights that novelty requires loss, perishing, and death. Whether considered an event, that is, a moment of intense transductive potential in absolute openness, or an ongoing process of opening up, death is fundamentally ecological. It implies a radical reconceptualization that challenges the very foundations of existential frameworks, necessitating the dismantling and subsequent redistribution of available affordances. Alfred North Whitehead, in his process philosophy, understands the nature of reality as a constant process of becoming and perishing that allows for creativity and the emergence of novelty. From such a perspective, death represents an existential paradox, serving as a threshold between the desire for novelty and the fear of loss. As Whitehead states:

> The world is thus faced by the paradox [...] it craves for novelty and yet is haunted by terror at the loss of the past, with its familiarities and its loved ones. It seeks escape from time in its character of "perpetually perishing". (Whitehead, 1978, p. 340)

In drawing parallels between death and invention, both could be approached as mechanisms of redistribution of bio-technological possessions. *Announcements of* such *possession shifts* in the different plateaus of existence are mediated through images, serving as dynamic conveyors of information within different environmental settings (in the house, in the church, on the bed, on the paper, and so on). The choice

of the word *possessions* emphasizes vitality as a catalyzing force that integrates and rejects, or in other words metabolizes informational input to sustain some kind of integrity within a system. As a system loses its vitality, this binding force becomes unable to catalyze its entity, leading to a redistribution of its possessions and an opening to a field of unlimited potential. Yet potentiality is not equipotentiality.

Completion, according to Whitehead (1978, p. 85), is the *perishing of immediacy.* This means that the direct experience of an event ends as it becomes part of the flow of time, similar to how a physical system reaches its individuating limits. However, this does not imply that the system stops interacting in mediated ways. In Dante's Inferno, Gianni Schicchi's presence among the falsifiers illustrates that death is not an absolute end, but a transition to another phase of existence influenced by an individual's actions in life. Similarly, the ancient Greek view of death, as described by Homer in The Odyssey (Book 11), sees Thanatos (Θάνατος), as a journey to Hades (Ἅδης), an underworld where souls get judged and organized based on their lived experiences. This perspective posits death as a post-continuum that promotes transformation and opens new potentialities. Even after death or the loss of immediacy, past interactions and experiences continue to influence new potentialities of becoming. This prompts to question: Is there a driving force or an epigenetic landscape of potentials that guides the emergence of novelty? Does death promote a state of order or disorder?

4. ALIVE PASTS

The painful consummation of the past prepares a rebirth. Death prepares a birth; the complete image of death declares and prophesizes the call of a birth. (Simondon, 2022, p. 17)

For Gilbert Simondon, the essence of the fear of death lies in its effect on the imagination which creates a doubling (dédouble) of the self. A person imagines standing beside their own lifeless body, mourning it as one might mourn a deceased friend. This imagery duplication leads to a feeling of great sorrow by anticipation, as it confronts us with the inevitability of our own mortality (Simondon, 2022, p. 45). Thus, the imaginative process can be seen as a re-contextualization of former experiences and sensory inputs (individual or collective memory); A doubling effect, in which the imagined is devoid of consciousness and sensation. This doubling is a manifestation of thought, and thought, in that sense, is considered an event on its own that involves the continual reorganization of an experiential repository.

In Simondon's ontology of images, an image transcends the simplistic notion of a static, visual representation; it is understood as a dynamic emergence, a group of signals produced by the interaction of an organism with its environment. Within this framework, images function as pivotal mediators in the allocation of resources. This emergence involves a transductive, loop process encompassing the motor-image, the perception-image, the symbolic-image, and the invention-image. Each phase

modulates relationships among humans, non-humans, and their shared environment, dissolving hierarchical distinctions. As A.M. Oliveira and F.R. Palazuaelos (2016, p. 103) note, *"the image is thus understood as a transient, intermediate processual reality between individual individuations and milieus existing within an evolutive technological multiplicity".*

The initial images in this transductive cycle are primarily motor in nature operating as autokinetic systems that are not yet finalized (Simondon, 2022, p. 29). Thus, they have no other content than movement itself and are linked to *"the most simple behaviors through which the living take possession of the milieu and proceed to the first identification of the (living or non-living) objects they encounter"* (Simondon, 2022, p.xxvi). Building on the motor-image, the perception-image involves the sensory processing and interpretation of environmental stimuli. Through perception, images are organized and systematized, enabling capacities we associate with consciousness. The symbolic-image serves as a repository for past memories and anticipations of the future, shaped by prior experiences and encounters. When a system's integrity cannot be maintained through its internal dispositions alone, technological interventions become essential. These interventions, or object-images, function as mediators that bridge discontinuities in activity. In other words, if a system's metabolic processes fail, a transducer becomes necessary to sustain its ongoing interactions. Inventions enter the equation as differentials, eventually conserving a system's metastable state.

Consequently, each phase acts upon one another as a progressive intensification of agency, with the invention-image, in particular, serving as a crucial agent to (re) conceptualization. In that sense, inventions act as mediators that redistribute biological and technological possessions, by extracting and isolating affordances provided in a specific context and redefining their availability through technological means. This process extends the accessibility to specific resources across varied temporal and spatial settings, making technological artifacts a possible *bandage* that secures and delays the opening up of a system. Therefore, a system's gradual death could be understood as aligned with becoming more (and more) technological in a constant process of resolving, what Simondon would describe as *the disparate tensions between different orders of magnitude,* to maintain the continuity of a function. From such a perspective, invention comes out of a process of acquiring context independency, that is, a disassociation that enables reassociation; a deterritorialization that enables reterritorialization; a post-continuum that emerges through imaginative processes prompting a re-organization of potentials within the milieu.

5. DEAD FUTURES

The idea that technological artifacts function as *bandages* to delay a system's breakdown and maintain continuity aligns with the concept of negentropy, or negative entropy, as discussed in Bernard Stiegler's book *The Neganthropocene* (2018). Stiegler posits that negentropy encompasses processes that foster order,

complexity, and organization, thereby constructing new forms of knowledge and social organization that resist the entropic tendency. Such a perspective presupposes understanding knowledge as infinitely extendable through circuits of transindividuation, involving both epigenetic and tertiary technological inscriptions (Stiegler, 2018, p. 28). Therefore, the anti-entropic functions within systems are not limited to biological processes but also include technical or exosomatic ones. Stiegler (2018, p. 26) uses the term exosomatization to refer to the development of external, technical organs that extend human capabilities beyond the biological (endosomatic) ones. In his view, biology deals with endosomatic organogenesis, and technology with exosomatic organogenesis. Accordingly, exosomatization goes beyond the process of exteriorization, which is projecting internal capabilities outward through tools. Technical organs act as transducers that enhance a system's continuity and as negentropic agents that maintain its order.

Entropy describes a system's tendency toward a state of equilibrium, leading to increased homogeneity. However, Ilya Prigogine, recipient of the 1977 Nobel Prize for Chemistry, formulated the theory of *dissipative structures*, positioning that *"non-equilibrium may be a source of order"* (Jantsch, 1980, p. 28). Rather than viewing entropy solely as a pathway to equilibrium, Prigogine emphasized that irreversibility -the production of entropy- is intrinsically linked to the processes that constitute living organisms (Stengers, 2011, p. 239). He demonstrated that irreversible processes generating entropy can lead to the creation of new, dynamic regimes of activity unattainable at or near equilibrium (Stengers, 2011, p. 125). Prigogine's theory asserts that when a system is far from equilibrium, local sinks of macroscopic order can be produced without violating the second law of thermodynamics (Juarrero, 1999, p. 120). More precisely, driven by its mutualistic dynamics, a system reaches a critical point, a threshold where instability occurs, and random fluctuations can no longer be suppressed; instead, the internal mutualistic dynamics of the autocatalytic hypercycle amplify these fluctuations, leading the reaction to a new mode of organization (Juarrero, 1999, p. 121). Ultimately, orderly patterns and structures can emerge during discontinuous phase transitions, establishing irreversibility as a fundamental aspect of evolution and challenging the traditional view that entropic processes only lead to disorder.

To foster complexity and resist entropy (in its traditional understanding), one must consider the active processes of metabolics that sustain life and the interplay between biological changes (epigenetics) and technological advancements. Georgios Tsagdis (2022) uses the notion of general metabolics, emphasizing that metabolism should not be confined to the traditional concept of the Krebbs cycle, which involves standard anabolic-catabolic processes. Instead, it should be seen as part of a broader process that embodies the actuality of metastability, simultaneously preserving and transforming life. He asserts that *"such a metabolism includes, along the anabolic and catabolic, the symbolic in the specific sense of elements that enter into sym-metric, sym-pathetic, and sym-biotic relations"* (Tsagdis, 2022, p. 33). In this sense, metabolic processes highlight the significance of the milieu in the ongoing evolution

of a system, that is affected both from an immediate negotiation with environmental inputs and a mediated one that includes symbolic forms. These processes are dynamic and continuous, underscoring the synergistic relationships between biological and technological evolution and ultimately introducing the concept of thought as a metabolic process itself. The Simondonian imagistic loop exemplifies this, where information from the immediate environment (experiential and sensory input) is broken down and resynthesized, leading to the creation of new forms and structures. This intellectual metabolism is an expansion of bodily metabolic capacities enabled through technological means -technical organs.

6. THEATRUM TECTUM

Death is brutal, embodying the fear of becoming unstructured and undifferentiated; The fear of losing autocatalysis and suddenly being catalyzed, becoming objects left to external forces. The image of death is one of systemic failure, evoking grief not for past events, but for non-actualized potentialities and futures that will never come to pass. Grief is inherently anticipatory, focusing on what could have been rather than what was. This distinction is evident when comparing the nostalgia felt as we walk by ancient ruins, which are crystallized remnants of history, with the grief experienced in abandoned malls, which serve as reminders of unfulfilled dreams and a collapsed vision of prosperity. From such a perspective, objects carry memories and meanings, essentially acting as physical expressions of those lost potentialities and dead futures. Thus, technical objects transduce grief into mourning, as they host processes of exteriorization of thought. From pieces of paper (obituaries) to concrete structures, these objects emerge as announcements, or as doubles of those hopes left unrealized.

In *Theatrum Philosophicum* (1977), Michel Foucault comments on Deleuze's perception of thinking as a continuous and never-ending unfolding, where events are moments of becoming that disrupt the status quo, opening up new possibilities for innovation and transformation. For Deleuze, "thinking is *incapable of finishing anything, or being finished with finishing"* (Zourabichvili, 2012, p. 52)*.* Foucault (1977, p. 9) explains that thinking involves effectuating the phantasm in the mime that produces it, making the event indefinite so that it repeats itself as a singular universal. That means that thought brings an imaginative projection (the phantasm) into reality through an imaginative process (the mime), allowing it to repeat and manifest in new forms. This view resonates with Simondon's notion of imagination, which involves the arising of meaningful (symbolic) images that act upon our reality through a doubling effect, fostering eventful interactions. This doubling effect facilitates iterative interactions with environmental stimuli, expanding the range of organizational and classification possibilities, leading to further differentiation and complexification. It is through these iterative and feedback processes that systematic organization and classification of the milieu is promoted, eventually leading to novelty (Simondon, 2020, p. 427-28).

The concept of *Theatrum Tectum* dramatizes objects within a system acknowledging them as agents that transcend pure materiality and function, as they carry forms of memory and are meaningfully charged. Epiphylogenetic memory, a concept introduced by Bernard Stiegler, extends beyond the biological transmission of information to encompass how environmental organizations influence the unfolding of phylogenetic processes. Specifically, it refers to the transmission of knowledge through technological means rather than biological inheritance. This concept broadens the traditional understanding of genetics and epigenetics by incorporating the ways in which human experiences and cultural practices are externalized and stored outside the human body through technology. Epiphylogenetic memory involves the sedimentation of successive epigeneses, where past environmental influences are conserved and accumulated in material and symbolic forms, creating new evolutionary pressures and opportunities over time (Gorny & Radman, 2022, p. 10). In this way, technological artifacts, serving as repositories of cultural memory, foster an ongoing process of *expressive individuation*, thereby reaffirming the infinite continuity of a universe fundamentally composed of finite forms (Kousoulas, 2022, p. 102).

7. GOD IS A MARXIST, THE PROBLEM IS THAT EARTH DOESN'T FOLD

Entropy, traditionally associated with disorder, can also lead to new forms of order, contingent on specific environmental conditions. Recognizing that entropy's effects vary across different locales elucidates why different environments yield diverse evolutionary trajectories. This localized perspective of evolution suggests that immediate surroundings primarily benefit from the redistribution or reorganization of biological and technological resources. When a system undergoes change, its local environment is the first to experience and adapt to those changes. For instance, as a body decomposes, its nutrients are reabsorbed into the immediate environment, while an individual's technological possessions are typically passed on to close relatives (will/inheritance). This indicates that environments rich in resources are likely to remain so due to localized redistributions.

Simondon expands the concept of the milieu beyond its immediate aspects by emphasizing the various ways of its *associatedness.* He uses the concept of the *associated milieu* to stress environment's significance in the functioning and evolution of both organisms and technical objects. According to Simondon, the *associated milieu* refers to the specific set of conditions required for an entity to exist and operate effectively. This milieu extends beyond its physical aspects to include a range of factors that can influence a system's process of individuation and evolution indirectly or from a distance. These influences might be mediated through various intermediaries or exert their effects through complex, non-immediate interactions, thereby shaping the developmental and evolutionary pathways of the system in more subtle ways. For living organisms as well as for technical objects, the *associated milieu* refers to all environmental influences on their maintenance and development, including social, and cultural ones.

Ultimately, even if Earth itself is incapable of folding in a way that would radically reorganize the milieu, thought does and it does so through images. Such cognitive folding significantly alters an individual's perception and interaction with the surroundings, leading to radical changes in the milieu. The provocative *God is a Marxist* premise sets the stage for a re-evaluation of death through the lens of systemic redistribution that dismantles and reallocates affordances within and across various frameworks. Invention plays a crucial role in this process, not only as a novelty-producing process but also as a mediator that redistributes both biological and technological resources, thereby redefining the existential territories we inhabit.

8. SITTING ON THE BALCONY OF AN ATHENIAN APARTMENT, EATING SCHNITZEL
and thinking of images, metabolism, and death.

Simondon with his approach to imagination and the imagistic loop, indicates that the cognitive milieu is dynamic and constantly folding in on itself. That folding, through small deaths (extreme points of singularity) re-organizes cognitive possessions, that is, past experiences, sensory inputs, and memories. Such re-organization leads to unexpected, inventive conducts that inevitably affect existing socio-techno-environmental entanglements. In the milieu of this paper, one should blame these mental processes of folding for bringing an image of a body sitting on a balcony, Puccini, and a piece of dead fried veal together under the topic of death.

9. BIBLIOGRAPHY
Dante A. (2003). *The Divine Comedy* (H. W. Longfellow, Trans.). Barnes & Noble Books. (Original work published 1320).

Deleuze, G. (1993). *The logic of sense* (M. Lester & C. Stivale, Trans.). Columbia University Press.

Deleuze, G. (1994). *Difference and repetition* (P. Patton, Trans.). Columbia University Press.

Foucault, M. (1977). Theatrum Philosophicum. In D. F. Bouchard (Ed.), *Language, Counter-Memory, Practice: Selected Essays and Interviews* (pp. 165-196). Cornell University Press.

Gorny, R. A., & Radman, A. (Eds.). (2022). *The epiphylogenetic turn and architecture: In (tertiary) memory of Bernard Stiegler.* Footprint, 16(1). *https://doi.org/10.7480/footprint.16.1*

Jantsch, E. (1980). *The Self-Organizing Universe: Scientific and Human Implications of the Emerging Paradigm of Evolution.* Pergamon Press.

Juarrero, A. (1999). *Dynamics in action: Intentional behavior as a complex system*. The MIT Press.

Kodalak, G., & Kousoulas, S. (2022). Simondoniana: Essays by Kodalak and Kousoulas, with mutual responses. In R. A. Gorny & A. Radman (Eds.), *The epiphylogenetic turn and architecture: In (tertiary) memory of Bernard Stiegler* (pp. 91-106). Footprint , 16(1). *https://doi.org/10.7480/footprint.16.1.6162*

Oliveira Machado, A., & Rebolledo Palazuelos, F. (2016). Simondon's concept of the image: At the junction of the technological and the animal. In *Proceedings of the 22nd International Symposium on Electronic Art,* ISEA2016 (pp. 101-107).

Prigogine, I. (1984). *Order Out of Chaos: Man's New Dialogue with Nature*. Bantam Books.

Simondon, G. (2017). *On the mode of existence of technical objects* (C. Malaspina & J. Rogove, Trans.). Univocal.

Simondon G., (2020) *Individuation in Light of the Notions of Form and Information* (T. Adkins, Trans.). University of Minnesota Press

Simondon, G. (2022). *Imagination and invention* (J. Hughes & C. Wall-Romana, Trans.). Minnesota University Press.

Stengers, I. (1997). *Power and Invention.* Minneapolis: University of Minnesota Press.

Stengers, I. (2010). *Cosmopolitics. Volume I.* Minneapolis: University of Minnesota Pres.

Stengers, I. (2011). *Cosmopolitics. Volume II.* Minneapolis: University of Minnesota Press.

Stiegler, B. (1998). *Technics and time 1: The fault of Epimetheus* (R. Beardsworth & G. Collins, Trans.). Stanford University Press.

Stiegler, B. (2018). *The Neganthropocene* (D. Ross, Trans.). Open Humanities Press.

Tsagdis, S. (2022). Architectures of Thought. In R. A. Gorny & A. Radman (Eds.), *The epiphylogenetic turn and architecture: In (tertiary) memory of Bernard Stiegler* (pp. 79-94). *Footprint*, 16(1). https://doi.org/10.7480/footprint.16.1.6269

Whitehead, A. N. (1978). *Process and reality: An essay in cosmology (Gifford lectures delivered in the University of Edinburgh during the session 1927–28)* (D. R. Griffin & D. W. Sherburne, Eds.). The Free Press.

Zourabichvili, F. (2012). *Deleuze: A Philosophy of the Event.* Edinburgh University Press.

L11

IMMERSIVE EXPERIENCE AS A SCIENTIFIC, CREATIVE AND PEDAGOGICAL TOOL

CHAIRS Cristina Palmese
José Luis Carles
Alejandro Rodríguez Antolín

The aim of this thematic session is to explore atmospheres in movement, focusing on the concept of immersive long-term experience such as the augmented soundwalk, considered as a scientific, creative and pedagogical tool. We use the term 'augmented' in a double meaning, on one hand, the use of technologies that help us to amplify or augment the feeling of our bodies; on the other hand, the possibility of inhabiting possible worlds thanks to the activation of the imagination through attentive listening. The soundwalk, with its several complementary techniques, is actually one of the most complex tools for exploring the city's soundscape. From the first proposals by Hildegard Westerkamp until today's theoretical and practical proposals, the interest has been nothing but growth and development. This potential of the soundwalk is also captured in the ISO standard, which recognizes in a more technical framework the soundscape as "a sound environment (or sonic environment) with emphasis on how it is perceived and understood by the individual, or by a society" [International Organization for Standardization (2014). Acoustics—Soundscape—Part 1:

Definition and conceptual framework (ISO Standard No. 12913 1:2014)]. In this case it is understood in a broader framework, in addition to being used as a data collection tool, it is invited to be explored also as a transversal tool that connects creation and pedagogy.

For this session we are invited to explore atmosfere through the act of sharing a place from a multiple relationship with the context, the imagination, creation, sound experiences, daily experiences, happenings, casual interaction with the inhabitants, pedagogical experiences. This can be synthesized with the Francesco Careri's proposal "losing time to gain space". Careri adds: "we know that whoever goes around setting a goal and a definite time loses all the possibilities that derive offers" [Careri, F. (2016). Pasear, detenerse. Gustavo Gili, p. 127].

At this point, there are some interesting questions to invite to reflect:

How to involve the population in an open and non-directed research, to collect spontaneity, perception and feelings towards the soundscape?

How can we analyze the rhythms and urban choreographies of situated space by situating ourselves as researchers in the environment?

How to represent and share the results?
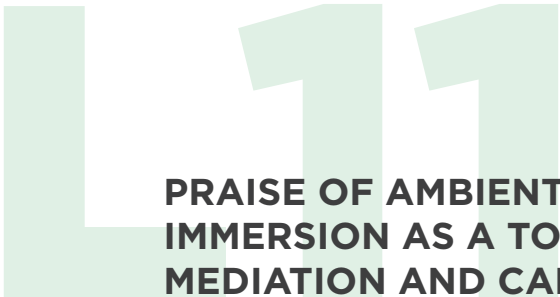
How to explore the body as a witness to the memory of a sense of place, culture, rhythm, and rituals (the importance of heritage in the identity of place)?

How to actively involve people in the assessment and creation of a collective environment?

How, through collective listening, is it possible to understand and share the affective aspects and emotions experienced in the place?

How collective action helps us to understand the impact of transitory, emergent and unexpected events, of unforeseen resonances determined by the fact of being in a place?

And, finally, how to approach augmented soundwalk as scientific, creative and pedagogical tools?

PRAISE OF AMBIENT METHODS: IMMERSION AS A TOOL FOR AMBIENT MEDIATION AND CAPTURING ALTER-PATRIMONIALIZATION

ELOGIO AOS MÉTODOS AMBIENTAIS: A IMERSÃO COMO FERRAMENTA DE MEDIAÇÃO AMBIENTAL E DE CAPTAÇÃO DA ALTERPATRIMONIALIZAÇÃO

Anwar HAMROUNI
Enseignant Responsable pédagogique, Docteur en sciences de l'Architecture
École d'ingénieurs CESI
hamrounianwar32@yahoo.fr

ABSTRACT

Heritage interest is marked by irregular and intermittent efforts, often driven by societal pressure or international funding. National institutions and various stakeholders cite economic, technical, legal, and land-related issues as barriers to a sustainable heritage strategy, with the core problem being the overall approach from identification to rehabilitation. The article proposes a new, more accessible, human, and social expertise in heritage action, suggesting that heritage encompasses more than material value; it includes collective narratives and memories. It advocates for a reflective debate on heritage transformation, integrating psychosocial and anthropological dimensions through "ambiental" approaches. This perspective aims to incorporate urban experiences, sensitive environments, and inhabitants' practices into the heritage process. The phenomenon of Oukalisation, explored through immersive studies in Burj Toukebri, Villa Mussolini, and the Israeli school, demonstrates how ambient methods can highlight and promote ordinary and citizen heritage.

KEYWORDS: Alter-patrimonialization. Ambient methods. Immersion. Oukalization. Sensitive experience.

RESUMO

O interesse patrimonial é marcado por esforços irregulares e intermitentes, muitas vezes impulsionados por pressões sociais ou financiamento internacional. As instituições nacionais e várias partes interessadas citam as questões económicas, técnicas, jurídicas e relacionadas com a terra como barreiras a uma estratégia de património sustentável, sendo o problema central a abordagem global desde a identificação até à reabilitação. O artigo propõe uma nova experiência, mais acessível, humana e social na acção patrimonial, sugerindo que o património abrange mais do que valor material; inclui narrativas e memórias coletivas. Defende um debate reflexivo sobre a transformação do património, integrando dimensões psicossociais e antropológicas através de abordagens "ambientais". Esta perspetiva visa incorporar as experiências urbanas, os ambientes sensíveis e as práticas dos habitantes no processo patrimonial. O fenómeno da Oukalização, explorado através de estudos imersivos no Burj Toukebri, na Villa Mussolini e na escola israelita, demonstra como os métodos ambientais podem destacar e promover o património comum e cidadão.

PALAVRAS-CHAVE: Alter-patrimonialização. Métodos ambientais. Imersão. Oukalização. Experiência sensível.

1. INTRODUCTION / INTRODUÇÃO

The heritage process in Tunisia faces significant challenges, including land, strategic, urban, socio-economic, and legal issues. Often politicized and used for territorial marketing, heritage is neglected in favor of real estate-driven modernization. The post-2011 "oukalization" phenomenon, linked to the housing crisis and social inequality, poses challenges to heritage policies. Understanding these spaces requires analyzing how occupants use and adapt them. This study explores "alter-patrimonialization" through immersive, participatory methods to integrate diverse backgrounds into a cohesive heritage framework.

Research involved direct contact and cross-referencing information, focusing on locations like the rue du tribunal school, Bùrj Toukebri, and the Zodiac villa. A five-phase immersion aimed to construct an ambient reading of collected data. We adopted roles as observers, guides, facilitators, and sometimes provocateurs, using simple analysis tools to avoid distorting occupant behavior. Establishing trust with oukalizers was crucial, involving gradual relationship building and numerous visits. Mental maps and commented tours were used, ensuring participatory and inclusive sensitive writing. Understanding the research terrain involves observing dynamics and interactions through "sensitive discovery" of the unforeseen and fragile (Ammar, 2017). The researcher's emotional and sensory engagement, alongside ethnographic observation (Laplantine, 2010), shapes their relationship with the field. Active involvement and adaptation of methods were crucial for including oukalizers in the research.

After a year and a half of immersion, findings were reevaluated and analyzed objectively. The five phases of the approach are detailed to define civic heritage, ordinary maintenance, and everyday architecture in these housing types. This article presents a collection of the participatory immersive approach as well as the film analysis carried out in order to complete the analysis panel. We will present a selection of much denser work.

2. ADAPT THE APPROACH TO THE CONTEXT STUDIED

Four families have improperly occupied parts of the ground floor, creating distinct "housing units." Despite having no family ties, they established solidarity and mutual aid to prevent exclusion. Each family has personalized their space, resulting in unique facades and structural modifications like extensions and additions.

Figure 1. The second unit.
Source : Hamrouni. (2020)

The first unit, a single room occupied by two brothers or cousins, shows neglect due to their minimal presence. The second unit, occupied by Ezzine, his wife, and two children, is maintained as a valued heritage site, with the father organizing tours and fostering communal respect. The third family, economically challenged, lives in a collapsing part of the building, hoping for social rehousing. The fourth family, displaced by divorce, occupies a self-built extension, living in disordered conditions and focusing on basic needs, while hoping for better housing.

Figure 2. The third and fourth unit.
Source : Hamrouni. (2020).

3. TALK ABOUT THE FEELING

In order to describe the life paths of the occupants before their installation in the Bùrj, we adopted the investigation technique based on mental maps and reactivation by images. It is indeed "a process of putting memory into images" (RICOEUR, 2014) to highlight memory, buried memories and imagination. To this end, we provided them with tracing paper, white sheets, felt-tip pens and pencils, and we asked them to draw, or even represent schematically, some aspects linked to their former home/ squat as well as the modes of organization and the solutions they have implemented,

in order to make their permanence more comfortable. Subsequently, the drawings made were discussed collectively to understand the similarities and identify the differences between the two situations experienced (before and after the occupation of the Bùrj). Finally, via image reactivation, we were able to collect the different types of learning used by occupants to familiarize themselves with oukalization gestures.

Figure 3. The immersive approach.
Source : Hamrouni. (2020).

3.1 Memories of the occupants and the place

From this phase of study, it emerged that a certain number of convergences, particularly at the level of the modes of organization of space and the types of difficulties encountered on a daily basis, in obtaining water and electricity , exist between the two situations. As for the way of understanding sensory experience, we have detected the dual role played respectively by experience and imitation.
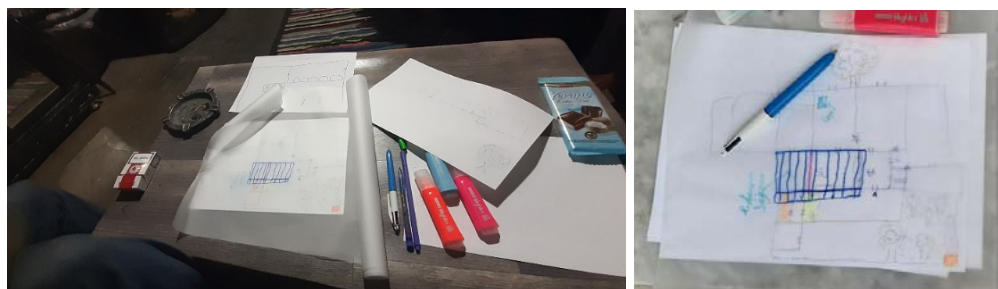
Figure 4. Basic tools to draw and express.
Source : Hamrouni. (2020).

3.2 Live daily

The exercise was carried out with a woman, a man and a child, which allowed us to collect various indicators and various angles of view concerning the use and

transformation of living spaces. By analyzing the mental maps produced, we tried to detect the different lifestyles and perception of space, to identify the comfort zones of the occupants, as well as to discuss the notions of "promiscuity" and " private space", in a structure which lends itself to a strong value of "public space" and "common places". Indeed, these squats, often considered as marginal spaces, hide a complex reality specific to them, which influences aspects related to everyday life.
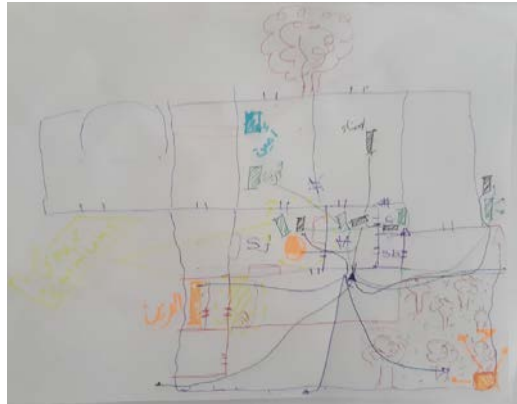
Figure 5. Mental map.
Source : Hamrouni. (2020).

Following the analysis of the map, we were able to identify two main activities which punctuate the daily life of oukalizers and contribute to the identification of places of rest and comfort at home. The recurring element on all the maps and plans produced by oukalizers is gardening, recounted as a common and central practice in their experience.

3.3 Transformations of and by the ambiances

During the installation stage, the Ezzine family, being the first to arrive at the Bùrj, began a process of identifying and recognizing the original ambiance of the place in order to understand it and decide on the actions to be taken accordingly.
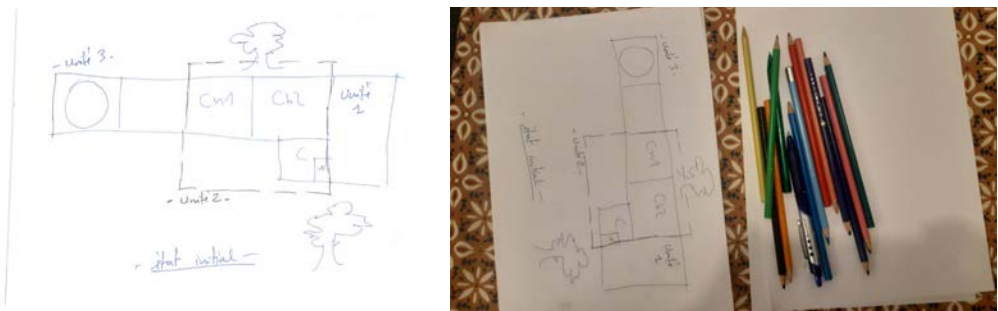
Figure 6. Initial and transformed ambiances.
Source : Hamrouni. (2020).

We asked Ezzine to create thematic mental maps for us which retrace the stages of evolution of the Bùrj, from its arrival to the present day. We also gave him the choice to

define for himself the themes addressed, with the aim of grasping his own qualitative perception of the place and, consequently, identifying the correlations between the ambient factor and the oukalization strategies. From the first days, he detected problem areas that could alter the quality of housing. The feeling of heat, freshness as well as the detection of traces of humidity marked his vision. Through his speech, it appeared that for him and his family, the most important elements affecting the quality of spaces are: the feeling of security, temperature, brightness and air quality to avoid humidity.
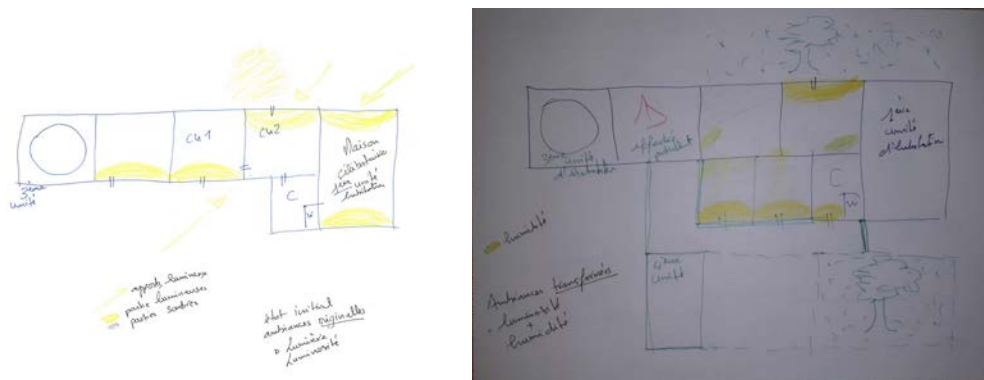
Figure 7. Comparing initial (left) and transformed lightenning ambiances (right).
Source: Hamrouni. (2020).

We will only present the brightness part (Figure 7). Our approach was to ask the oukalizers to first draw the initial state of the Burj in the form of a mental map. Then recount the modifications made and the new ambiances produced in relation to this theme. The absence and/or absence of an opening to bring more light to certain nooks and crannies of the house was noted on the plans.

Factor	Original Ambiance	Transformed Ambiance	Oukalization Actions
Lighting	Low to medium in spaces initially intended as bedrooms.	Introduce light to dark areas with new openings.	Addition.
	Lack of openings in the second bedroom.	Maintain medium light in bedrooms due to their function.	Creation of new openings.
	Kitchen lacks sufficient light.	Create large openings to bring light to extensions and existing areas.	Conservation.

Tableau 1. Ambiances transformation strategies. Source : Hamrouni. (2023).

3.4 Involve and participate neighbors
In addition to the occupants, we also wanted to involve and involve the inhabitants of neighboring buildings, with the aim of understanding the different interactions and connections they form with the Bùrj.

3.4.1 The coffee protocol

The café protocol method involves using a popular public space, such as a café, to gather residents' opinions on a specific topic. A question is placed on the café counter for two weeks to collect anonymous, spontaneous responses. Afterward, the responses are analyzed either statistically to identify trends or through content analysis to understand diverse viewpoints. The question, written in Tunisian dialect, asked: "What would you like to improve in the Bùrj and its land?"

Figure 8. The café protocol.
Source : Hamrouni. (2020).

The majority of respondents would like the demolition of the Bùrj and its replacement with a building for commercial use to boost the economic attractiveness of the neighborhood. However, some clients had expressed the idea of rehabilitating the palace without demolishing it, showing an awareness of the heritage value of the building.

3.4.2 Round table

The spontaneous round table at the gallery was a pivotal event for citizen participation in our study. We organized the space with a table and chairs, and displayed mind maps on the subject to kickstart the discussion. These maps provided initial points for reflection and debate. Store blinds served as a display board for post-its, allowing participants to visualize and share their ideas. This setup created an open forum for neighborhood residents and passersby to engage in the discussion.

Figure 9. A table, chairs and a simple invitation to share and discuss.
Source: Hamrouni. (2020).

Figure 10. Conducting the moment.
Source: Hamrouni. (2020).

3.4.3 The Bùrj as activation by image

We activated images in front of the Bùrj by asking residents and passers-by how they feel about the building and what inspirations it gives them. A table with papers and pens was set up for responses. Feedback varied from admiration to calls for demolition, reflecting urban neglect and curiosity.

Figure 11. While observing the Burj, discussing about its future.
Source : Hamrouni. (2020).

4. CROSSED FIELDS: ANALYZE AND CAPITALIZE ON EXCHANGES

Oukalizers, resourceful squatters, creatively convert unused buildings (schools, hammams) into homes while respecting the original structure. This adaptability showcases their critique of standardized housing, prioritizing space appropriation

over pre-defined structures. Their ingenuity allows them to meet their needs within these constraints. This ability to adapt and reuse existing space demonstrates a certain form of resilience and creativity on the part of the oukalizers. In the school on Rue du Tribunal, the initial classroom was redeveloped for the needs of the family that occupies it.
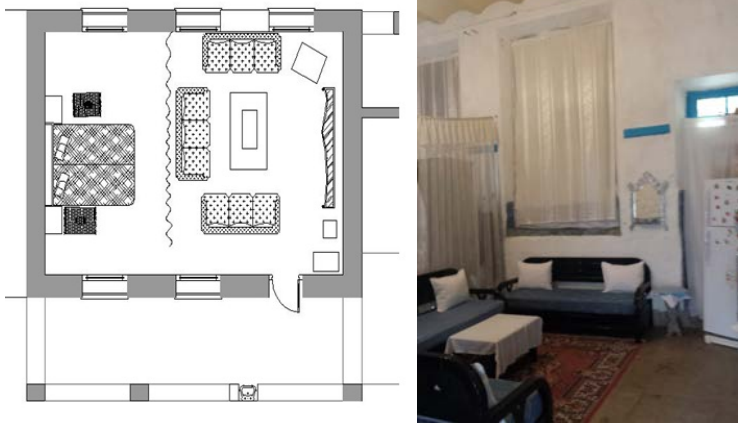
Figure 12. Transformation's plan : From a class room to a housing unit.
Source : Hamrouni. (2020).

Oukalizers' approach varies. Unlike respectful conversions, the Zodiac villa shows destruction and disregard for original features. Modifications prioritize living space, even converting the stairwell into a home. This flexibility highlights their ability to radically adapt buildings to their needs.

Figure 13. Modifcation to the building.
Source : Hamrouni. (2020).

The film "It was better tomorrow" offers another example of how oukalizers adapt space. A shared patio is used by women and children from two families. The living space inside the oukala is a single room with minimal furnishings, serving as a bedroom, living room, and dining area. This simple design reflects the temporary nature of the

oukala. The dark lighting and colors in the film depict the discomfort and hardship of living in an oukala, which the protagonist, Aida, associates with feelings of failure and social rejection. However, the film also shows moments of togetherness, hospitality, and sharing among oukalizers, highlighting the positive aspects of this living situation.

Figure 14. Screenshots from the movie : Two types of occupation.
Source : Screenshot from the movie by Hamrouni. (2023)

Oukalizers living in collective housing complex cooperate to maintain their environment through activities like maintenance, cooking and celebrations, fostering solidarity. This collaboration highlights their ability to adapt to their challenging environment.

Figure 15. Collective responsability to maintin the building.
Source : Screenshot from the movie by Hamrouni. (2023)

5. CONCLUSION AND DISCUSSION

Squatters (oukalizers) adapt buildings to create comfortable living spaces, considering factors like light, air quality, and temperature during modifications (referring to the ambiances and affordances of the occupied building). These changes are temporary and respect the original character of the space. Oukalizers go through a recognition process upon occupying a new building, identifying its inherent qualities like light, air, temperature, safety, and rhythms.

The transformed ambiances remain adaptable due to the impermanent nature of squatting, evolving amidst uncertainties like eviction, disasters, or overcrowding. The

goal is not to distort the original ambiance but to hybridize it through new uses and representations, aligning with the new rhythms of occupation.

Sensitivity to the building's value varies among occupants. Those with fewer resources prioritize basic necessities, potentially limiting their consideration of the ambiance. However, oukalization, when accompanied, can transform existing environments harmoniously while respecting the spirit of the place. Environmental criteria consistently dictate occupant strategies. Oukalization, despite being a transient form of housing, acts as an "ambient medium." Through continuous transformations, it integrates a dynamic dimension into valuable old buildings, even those considered heritage.

This approach contrasts with rehabilitation and rehousing projects that lack this modularity and environmental integration. A key criticism of current heritage policies is their asynchronous response to socio-urban rhythms. The role of the architect in this context becomes crucial. Researchers like Lucien & Simone Kroll and Patrick Bouchain propose innovative solutions. The Krolls advocate for the architect as a "liaison agent," facilitating communication between stakeholders and encouraging citizen participation (Kroll & Kroll, 2017). Bouchain emphasizes the architect as a "coordinator" who works closely with residents and stakeholders to design projects adapted to community needs (Bouchain, 2014). Additionally, architects should validate technical choices and actions while simplifying and implementing these approaches (Kroll & Kroll, 2017). In essence, the architect's role should center on mediation, support, and coordination within these emerging situations.

6. BIBLIOGRAPHY

1. Books and Academic journal article:

Ammar, T. (2016). De Capaci à Gabadgi, phénomènes d'ambiance et métissage. In L. Simon (Ed.), L'ambiance au-delà du décor: Sensorialité, spatialités et temporalités des environnements (pp. 171-178). Grenoble: Presses Universitaires de Grenoble.

Bouchain, P. (2014). L'altérité constructive. Les éditions de l'Attribut.

Laplantine, F. (2010). Le social et le sensible: Introduction à une anthropologie modale. Paris: Téraèdre.

Ricœur, P. (2014). Mémoire et imagination. In P. Ricœur, La mémoire, l'histoire, l'oubli (pp. 5-66). Paris: Le Seuil.

Kroll, L., & Kroll, S. (2017). L'alter-patrimonialisation: Des communs, des mémoires, des paysages. In S. Coutureau (Ed.), Héritages, patrimonialisations, identités: Un regard critique (pp. 75-84). Presses Universitaires de Rennes.

2. Filmography:

Boujemaa, H. (2012), 'C'était mieux demain'. Normandie Images, CinéFilms.

Dhouib, M. (1992), ' Le Sultan de la médina'. *https://www.3continents.com/fr/film/le-sultan-de-la-medina/*

A MULTISENSORIAL APPROACH TO URBAN SPACE

UMA ABORDAGEM MULTISSENSORIAL DO ESPAÇO URBANO

Cristina Palmese
PhD in Architecture
Universidad Europea de Madrid,Department of Comunication,Madrid, Spain
cristina.palmese@universidadeuropea.es

Gulce Kirdar
PhD in Architecture
Yeditepe University, Department of Architecture, Istanbul, Turkey.
gulce.kirdar@yeditepe.edu.tr

José Luis Carles
PhD in Ecology
Universidad Autónoma de Madrid,Departent of Music, Madrid, Spain
joseluis.carles@uam.es

Alejandro Rodríguez Antolín
PhD in Music
Universidad Autónoma de Madrid (UAM)
/ Universidad Internacional de La Rioja (UNIR), Spain
alejandro.rodrigueza@uam.es

ABSTRACT

This article focuses on ongoing research that develops and applies a hybrid in situ methodology that combines soundscape and visual/digital research aimed at collaborative design and place-making strategy. Our starting point is that understanding and designing shared public space requires an approach that considers both sensory interactions - the experience of sound, light, smell, touch, proprioception, etc. - and biodiversity, spatial, cultural, and social aspects to understand the dynamics that make a space a place.

Researchers from different countries and fields have begun a several-stage research process in which citizen participation, creativity, affect, and direct experience of place are central to the processes of understanding and planning the landscape. The first phase involves theoretical exploration, including exchanging methodologies, representation tools, and disciplinary languages. The second phase includes applying the common method in a pilot study conducted in Istanbul's Eminönü Square and Madrid's Puerta del Sol.

KEYWORDS: Soundscape. Visualscape. Soundwalk. Visual/Digital Analysis. Urban Perception.

RESUMO

Este artigo centra-se na investigação em curso que desenvolve e aplica uma metodologia híbrida in situ que combina a paisagem sonora e a investigação visual/digital para uma estratégia colaborativa de conceção e criação de lugares. O nosso ponto de partida é que a compreensão e a conceção de espaços públicos partilhados requerem uma abordagem que tenha em conta tanto as inteirações sensoriais como a cultura e a sociedade, para compreender as dinâmicas que fazem de um espaço um lugar.

Investigadores de diferentes países e áreas embarcaram num processo de investigação em várias fases, no qual a participação dos cidadãos, a criatividade, os afectos e a experiência direta do lugar são centrais para os processos de compreensão e planeamento da paisagem. Foram desenvolvidas duas fases: a primeira é teórica e metodológica e a segunda é a aplicação da metodologia na Praça Eminönü em Istambul e na Puerta del Sol em Madrid.

PALAVRAS-CHAVE: Paisagem Sonora. Paisagem Visual. Soundwalk. Análise Visual/Digital. Perceção Urbana.

1. INTRODUCTION

Multiple methods and indices have been developed to assess public open spaces (POS) by converting qualitative observations into quantitative metrics. In the literature, POS has been assessed from the aspects of physical characteristics (Brower, 1988),

activities and uses (Gehl and Gemzoe, 1996), and experiential qualities (Zamanifard et al., 2019). This research quantifies soundscape and visualscape considering urban and user dynamics to understand urban perception in POS.

We present key studies that have employed soundscape and visualscape mapping to explore urban sensorial perceptions, highlighting methodologies and findings that have significantly contributed to our understanding of how urban environments are perceived through auditory and visual experiences. Woloszyn and Leduc (2010) integrated soundscape data within GIS spatial maps through sound walks, illustrating the impact of sound ambiances on urban pedestrian trajectories. Their detailed soundscape analysis used soundscape fingerprints to identify diverse sonic atmospheres based on participant evaluations. Barros et al. (2021) employed web mapping and GIS technology with Nasar's (1998) evaluative framework to capture citizens' urban perceptions, highlighting the spatial distribution of likeability, and identifying significant likeability elements.

The main objective of this research is to develop and test a combined audiovisual methodology to thoroughly understand the events, practices, and processes that turn an urban space into an urban place. Traditional methods of urban analysis are often neither comprehensive nor cross-disciplinary, failing to capture the complex essence of urban spaces. It is crucial to approach urban spaces by considering sensory interactions, including experiences of sound, light, smell, tactile proprioception, etc., as well as biodiversity, physical, cultural, and social dimensions. This comprehensive perspective is vital to fully understand the dynamics that give life to a place where creativity, affect and the direct experience of place by citizens and researchers are central to the processes of understanding and designing a better public place. Furthermore, we aim to build a digital informal space of situations, actions, experiences, and listening. This multi-layered map is a place for local people, artists, researchers, urban planners, and municipalities to work together, as well as to provide collective knowledge about the multisensorial environment in which we are living and to improve collaborative design for a sustainable and creative environment (Levy-Landesberg, 2022; Duffy, M., 2017). The study methodology involves several phases: theoretical exploration, exchanging methodologies, and conducting case studies in Istanbul's Eminönü Square and Madrid's Puerta del Sol, followed by the evaluation and comparison of the results. This research promotes a collaborative environment between citizens and researchers. It highlights the benefits of incorporating auditory and visual perceptions into urban planning disciplines. In further stages, the findings provide valuable multi-sensorial insights for placemaking in disabilities.

2. LITERATURE REVIEW
2.1 Visualscape evaluation
The visualscape evaluation focuses on how public perceptions of visual quality influence place attachment and the overall image of the city. Lynch (1960) introduced

the concept of imageability, which refers to the quality of physical objects that evoke strong images in observers, enhancing place attachment. Lynch (1960) developed a cognitive city map to analyze city image elements based on the urban form's structure and identity.

Nasar (1998) expands on this by introducing the concept of likeability, which evaluates the visual quality of urban scenes based on public perceptions. Nasar's (1998) evaluation, derived from public interviews, identifies preferences and dislikes about street images. The criteria for likeability include naturalness (urban greening and vegetation), upkeep (cleanliness and maintenance), openness (open vistas), order (organization and clarity of built elements), and historical significance (vernacular architecture and landmarks). This study evaluates the visualscape using Nasar's (1998) likeability criteria.

2.2 Soundscape evaluation

The study of soundscapes has been developing in various fields including anthropology (Feld, 2012), geography (Rodaway, 1994), music (Duhautpas & Solomos, 2014), and urban planning (Amphoux, 1991; Augoyard, & Torgue,2005). This growth is giving rise to a mix of disciplines and methods that encompass the physical, cultural, sensory, and historical aspects of sound. In the context of disciplinary diversity, the concept of soundscape can have different meanings depending on its usage. The authors highlight the challenge of quantifying it in environmental acoustics due to the complex phenomenological characteristics of sound (Barrie 2020). Nevertheless, there are efforts underway to establish a consensus on the importance of considering sound when dealing with urban spaces, especially taking into account citizens' experiences and memories of the city's sounds.

2.3 Case study sites:
Eminönü Square and Puerta del Sol
2.3.1 *Eminömü Square*

Eminönü Square stands out as the historical, cultural, and tourist destination of Istanbul's Historical Peninsula. As a result of urban developments, Eminönü Square's character has significantly evolved (Kuban, 1994). The physical and cultural change in Eminönü Square influences sensory and perceptual qualities. Eminönü Square underwent significant transformations, starting with the construction of the Galata Bridge, continuing with the introduction of railway transportation, the construction of new public landmark buildings such as Sirkeci Station, the Great Fourth Foundation Inn, and the post office, and the demolition of historical neighborhoods and traditional buildings (Kuban, 1994). These developments shifted the area's historical unique character to that of a commercial and transportation hub. However, Eminönü remains a unique place with its vibrant, dynamic, and distinct cultural traits and cosmopolitan atmosphere.

2.3.2 *Puerta del Sol*

Since the city was first developed in 1500, the Plaza de la Puerta del Sol has always played a crucial role in the city's life. It has been a place for social gatherings, meetings, and shopping, and it's noteworthy that it was the site of the 2011 camp (known as '15M'), the start of a protest movement that has had an impact in many parts of the world. This iconic site has evolved with the city's changes, undergoing three redesigns since 1996, altering its shape, occupancy, and activities. Nowadays, Plaza de la Puerta del Sol is primarily a commercial area, serving as a transit and meeting point for people heading to other destinations. The interdisciplinary study, "Urban Landscape Needs and Functionalities of the Square System in the Surroundings of Sol Madrid", carried out by the Instituto Juan de Herrera of the Universidad Politécnica de Madrid (UPM), which did not include the study of the soundscape, was used for demographic information, functional characteristics of the square, historical evolution, socio-economic analysis. As part of the historical evolution of the soundscape of Puerta del Sol, two additional studies have been considered: the first is from an unpublished document from 1996 prepared by José Luis Carles at the Spanish National Research Council (CESIC), and the second is from the "Paisajes Sonoros de Madrid" project (2005).

3. METHODOLOGY

This study compares Eminönü Square in Istanbul and Puerta del Sol in Madrid in terms of soundscape and visualscape. The comprehensive analysis of the audio-visualscape underscores the intricate interplay between environment, sensory input, and human perception within urban spaces. This study emphasizes the necessity to move beyond the predominant visual-centric approach in analyzing urban spaces towards a more inclusive, multi-sensory understanding. The sound and sight sensory experiences are illustrated through cartographic representation using Geographic Information Systems (GIS). Sensorial maps visualize the spatial distribution of sensory experiences, highlighting distinct sensory characteristics of each urban environment. Sensorial maps not only provide insights into place ambiance but also help identify unique or shared sensory traits between different locations.

The research involves two primary steps: the theoretical step and the in situ step. In the theoretical step, researchers engage in discussions to build a common language, share the theoretical backgrounds of soundscape and visual landscape theories, and find common ground. The in situ step involves adapting interventions based on the theoretical discussions, collecting quantitative and qualitative data collaboratively, and analyzing the results with citizen involvement. This process includes methods such as documentation, interviews, storytelling, augmented boardwalks, the Counterpoint app, and digital audio measurement, culminating in the creation of a digital map.

Impromptu Interview: Engaging with people in a public setting, directly interacting with the environment to gather the perspectives of all the individuals present at that moment. This provides a diverse range of experiences and an impromptu insight into the life of a place. The encounter includes an unexpected mix of inhabitants: people who work in the area, residents, passersby, tourists, as well as individuals from different generational backgrounds, either temporary or permanent residents of the place.

'The Soundwalk Augmented' is a 90-minute method for collecting qualitative and quantitative data on urban soundscapes (Westerkamp, 1974). The soundwalk, designed from observations and impromptu interviews, involves participants listening, describing, and sharing their experiences at four designated points. Data collected includes the quality and quantity of sounds, the sound and visual environment quality, and the congruence between soundscape and visual landscape. In this form, participants assessed the sound categories and other sound characteristics. The tools used were for sound level measurement (iPhone app Decibel X) to record H6 and H4 Zoom and a Google Form to collect data from the participants (assessment, photo, video, and sound). At each stop, we collected responses to a form including questions following ISO 12913-2:2018 recommendations about sound identification and soundscape coalification, and creative input from participants. In the soundwalk, we survey and collect sounds, videos, and photographs from participants to enrich the representation of the place's ambiance. This approach ensures a deeper understanding of the place's unique atmosphere derived from sensorial insight by reflecting what is seen but also what is heard by the participants. Using GIS, we quantify both the urban soundscape and visualscape, illustrating the impact of sound ambiances and the positive image (likeability) on urban pedestrian trajectories.

The ways of **assessing the visualscape** are twofold: participant evaluation and image segmentation. Participants decide the level of likeability and the most dominant likable elements. The likeability features are the building enclosure, urban greening, physical incivilities features, traffic density, and cultural landscape; corresponding to the order, naturalness, upkeep, and historical significance as Nassar (1998) defines. The image segmentation method utilizes a deep learning method that extracts image features and learns from the hierarchical feature representations (Liang et al., 2017). In this method, the algorithm is trained with visual datasets labeled based on urban feature categories. Then, the labeled image data is processed in a Python environment to calculate the proportion of pixel size relative to the overall streetscape. Tensorflow has been used for image segmentation, which is a Google-developed interface for machine learning algorithms within the Tensorflow API (Abadi et al., 2016).

For **image segmentation**, we import essential libraries (TensorFlow, Os, Matplotlib, and Pandas) and construct a deep-learning model for semantic image segmentation, which labels each pixel in the input images. The algorithm calculates the ratio of each image feature by determining the frequency of specific labels relative to the total

pixels (*label frequencies [2]/ total_pixels)*100*). Categories include traffic elements, vehicles, buildings, street furniture, and natural elements with each quantified by corresponding scores. The evaluation is based on pixel accuracy. As an exemption, the participants identify the historical landmarks and the algorithm calculates their ratio. The algorithm calculates the ratios of the likeability features based on the pixel destiny, in the images captured by participants. In the table, the median of these features is presented (Table 1).

Image Code	Building envelope	Historical landmarks	Ground	Sky	Traffic (vehicles)	Urban greening	Physical incivilities	Pedestrian
The pixel density of likeability features in Eminönü Square								
point 1	24.97%	29.05%	22.50%	27.90%	3.65%	5.90%	6.03%	8.63%
point 2	32.40%	32.40%	19.30%	46.70%	10.40%	3.60%	19.60%	17.60%
point 3	10.58%	10.13%	36.55%	39.08%	0.00%	11.93%	1.43%	1.30%
point 4	16.16%	16.95%	21.04%	20.20%	12.63%	20.14%	1.80%	5.17%
The pixel density of likeability features in Puerta del Sol								
point 1	8%	50%	23%	43%	3.65%	0%	0%	3%
point 2	28%	0%	47%	20%	0%	20%	28%	8%
point 3	17.5%	0%	33.1%	41%	0.00%	41.2%	0%	8.6%
point 4	45.6%	36.8%	36.8%	20.20%	12.63%	35.8%	1.80%	5.17%

Table 1. The pixel density of likeability features in Eminönü Square and Puerta del Sol
Source: Prepared by authors.

Figure 1. The segmented street image, based on urban elements
Source: Prepared by authors.

4. RESULTS
4.1 Eminömü Square

The Soundwalk starts at the entrance of the Spice Bazaar, passing by the New Mosque, the Spice Bazaar, the open market, and through the square. Five participants, all females over the age of 30, followed a predetermined path in Eminönü Square, guided by a [Google Form Questionnaire](#).

In Eminönü Square, **Point 1** is a culturally vibrant location with a rich soundscape, where participants liked the soundscape (100%) and visualscape (60%). The soundscape was pleasant, calm, and eventful, with dominant sounds from human activity and traffic noise. The dominant sounds included human sounds, specifically cultural sounds like muezzin calls. The visualscape was highly liked due to cultural landmarks and well-maintained buildings; while the soundscape was liked due to intrinsic sounds specific to this site. Dominant features were cultural landscape and vista (60% each), due to the existence of historical landmarks and high sky density. The contrast between historical silhouettes and modern city views reflects the likability of the urban ambiance. Point 1 is characterized by its dynamic environment hosting diverse auditory experiences, that reflect its unique cultural significance and urban activities. The majority found **Point 2** vibrant but chaotic, due to the high density of shoppers, and diverse sounds from commercial and social activities. The visualscape was dominated by physical incivilities (100%), and vista (40%). The most dominant sound sources are coming from the crowds of shoppers. Despite the cultural attractions, the chaotic nature led to a decrease in visual and audial attractiveness. Most participants disliked both the soundscape and visualscape. This point is a hotspot for social gatherings and shopping, but the overcrowding and the negativities it brings reduce the attractiveness of the place. The soundscape at **Point 3** was dominated by traffic noise, overshadowing human sounds and leading to high annoyance levels. It had lower people density and activity levels, making it less favorable despite its cultural significance and scenic views. Participants were neutral about the visualscape and found the soundscape uneventful, neither particularly annoying nor calm. Dominant features were traffic density (80%) and cultural landscape (40%), with traffic noise prevalent among crowd sounds. The area presents a sound and space incongruency, with its visual and spatial elements contrasting a traffic-dominated environment. The scenic spot has been affected by the heavy traffic noise and congestion, and fewer people somewhat lessen its role as a cultural hub. **Point 4** featured a variety of sounds from human activities and mechanical sources. It had high pedestrian density but lower visitor density. Participants were neutral about both soundscape and visualscape. Interestingly, they feature the area as both calm and chaotic. Dominant likable features were vistas, cultural landscapes (60% each), and traffic density (40%), with dominant sound sources from traffic and human activities. presents an interesting contrast in its urban dynamics, despite its central position. The area functions primarily as a transitional space, where people briefly pass through or pause for a quick rest. The variety of sound sources, including conversations and footsteps, reflects its role as a hub of momentary activities and brief encounters.

4.2 Puerta del Sol

The Soundwalk starts at kilometer 0, passing by the Mallorquina bakery, one of the points most frequently mentioned by respondents and in the Google form, to Calle Alcalá, a monumental street that has been redesigned in recent years and is a favorite among street musicians. Sixteen people between 19 and 22 years old, 10 females and 5 males, participated. Volunteers follow a predetermined path in Puerta del Sol, guided by a Google Form Questionnaire.

In Puerta del Sol, **Point 1,** participants disliked the visualscape (53.3%), and found the place highly incongruent (73.3%). They remembered a feeling, situation, or place. The visualscape is dominated by building envelope (40%) and physical incivilities (20%) as likable elements; while the soundscape is dominated by human sounds. The location is characterized by its eventfulness, and vibrant yet chaotic atmosphere (93.3%). This dynamic environment offers a unique auditory experience, as a result of being a hotspot landmark. **Point 2**, participants had similar experiences to Point 1. They disliked the visualscape (60%) and found the relationship between image and sound highly incongruent (46.7%). Dominant elements of the visualscape included traffic density (60%) and building density (46.7%). The soundscape was primarily dominated by human sounds (46.7%) and other sounds (36.3%). The location is characterized by its eventfulness and a vibrant yet chaotic atmosphere, similar to Point 1. In **Point 3,** the soundscape is dominated by human sounds (86.7%). The visualscape features cultural landmarks (33.3%) and vistas (40%). Participants generally liked the visualscape (60%). The ambiance of the place is pleasant and calm, yet interestingly vibrant and eventful. **Point 4**, the soundscape is dominated exclusively by traffic. This high traffic density is reflected in the soundscape and visualscape evaluation, where participants predominantly disliked the visualscape (40%). The visualscape is dominated by traffic density (86.7%) and building envelope (33.3%), while the soundscape is only dominated by traffic noise (100%). The ambiance of the place is unpleasant and chaotic, yet eventful. Overall, except for Point 2, most participants reported hearing sounds during their walk that evoked memories of sensations, situations, or places. In summary, Points 1 and 2 were similarly vibrant and chaotic but differed in their soundscape congruence and memory evocation. Point 3 offered a more pleasant ambiance with significant memory evocation, while Point 4 was characterized by unpleasantness and high traffic noise.

5. CONCLUSION

The research emphasizes the need for comprehensive urban planning strategies that prioritize both sensory and spatial factors, fostering lively and cohesive urban environments that mirror the community's identity and culture. The findings aim to provide sensorial maps that illustrate the intensity, variety, and distribution of sensory stimuli in these areas, offering insights into how local culture impacts sensory experiences. This multisensory approach aims to enhance urban planning by creating more inclusive and vibrant public spaces, accommodating diverse human experiences, and fostering a deeper connection to urban environments.

6. REFERENCES

Abadi, M., et. al (2016). *Tensorflow: Large-scale machine learning on heterogeneous distributed systems*. Cornell University. arXiv:1603.04467v2. *https://doi.org/10.48550/arXiv.1603.04467*

Amphoux, P., Jaccoud, C., Meier, H., Meier-Dallach, H. P., Gehring, M., Bardyn, J.-L., & Chelkoff, G. (1991). *Aux écoutes de la ville: La qualité sonore des espaces publics européens, méthode d'analyse comparative. Enquête sur trois villes suisses* [Rapport de recherche No. 20]. Institut de Recherche sur l'Environnement Construit.

Augoyard, J. F. & Torgue, H. (Eds.). (2005). *Sonic experience: A guide to everyday sounds.* McGill-Queen's University Press.

Barrie, L. (2020). Alcances del procedimiento de normalización en el estudio del paisaje sonoro: La frontera epistemológica [Scope of the Standardization Procedure in the Study of the Soundscape: The Epistemological Frontier]. In E. F. Alarcón Mercado (Ed.), Proceedings of INGEACUS2020 International Congress of Acoustics and Professional Audio (pp. 54-57). Acústica JACh & Universidad Austral de Chile

Barros, M., Degbelo, A., & Filomena, G. (2021). Evaluative image 2.0: a web mapping approach to capture people's perceptions of a city. *Transactions in Gis, 26*(2), 1116-1139. *https://doi.org/10.1111/tgis.12867*

Brower, S. (1988). *Design in familiar places: What makes home environments look good.* Greenwood Press.

Carles, J. L. & Palmese, C. (2005). *Paisajes Sonoros de Madrid* [Madrid soundscapes]. Área de las Artes del Ayuntamiento de Madrid.

Duffy, M. (2017). Re-sounding place and mapping the affects of sound. In T. Leppänen, P. Moisala, M. Tiainen & H. Väätäinen (Eds.), *Becoming with Music and Sound: Musicking Deleuze and Guattari* (pp. 189-203). Bloomsbury.

Duhautpas, F., Solomos, M. (2014). Hildegard Westerkamp and the Ecology of Sound as Experience. Notes on Beneath the Forest Floor. *Soundscape, The Journal of Acoustic Ecology, 13*(1), (hal-01202890)

Gehl, J. & Gemzoe, L. (1996). *Public spaces: Public life.* Danish Architectural Press and the Royal Danish Academy of Fine Arts & School of Architecture.

Feld, S., (2012). *Sound and Sentiment Birds, Weeping, Poetics, and Song in Kaluli Expression*. Duke University Press, Durham & London

Kuban, D. (1994). Eminönü Square. In N. Akbayar, N. Sakaoğlu, B. Tanman, & B. Aksoy (Eds.), *Istanbul Ansiklopedisi [Istanbul Encyclopedia]* (pp. 161–164). Yurt Publications.

Levy-Landesberg, H. (2022). Sound and the City: Rethinking Spatial Epistemologies with Urban Sound Maps. *Sound Studies, 8*, 2022, 20-42. *https://doi.org/10.1080/20551940.2021.1982563*

Liang, J., Gong, J., Sun, J., Zhou, J., Li, W., Li, Y., Liu, J. & Shen, S. (2017). Automatic sky-view factor estimation from street view photographs—a big data approach. *Remote Sensing,* 9(411), 1–17. *https://doi.org/10.3390/rs9050411*

Lynch, K. (1960). *The image of the city*. MIT Press.

Nasar, J. L. (1998). *Evaluative image of the city.* SAGE Publications.

Palmese, C., Carles Arribas, J. L. & Rodríguez Antolín, A. (2023). The Soundscape and Listening as an Approach to Sensuous Urbanism: The Case of Puerta Del Sol (Madrid). *Urban Planning,* 9(1), Article 7206. *https://doi.org/10.17645/up.7206*

Palmese, C. & Carles Arribas, J. L. (2024). Madrid Soundscape Map: Listening and Identity_ MADLIST. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 17*(2), 337–355. *https://doi:10.1080/17549175.2024.2327592*

Rodaway, P. (1994). *Sensuous Geographies*. Routledge.

Westerkamp, H. (1974). Soundwalking. *Sound Heritage,* 3(4), 18-27.

Woloszyn, P. & Leduc, T. (2010). Urban Soundscape Informational Quantization: Validation Using a Comparative Approach. *Journal of Service Science and Management,* 3(4), 429-439. *http://dx.doi.org/10.4236/jssm.2010.34049*

Zamanifard, H., Alizadeh, T., Bosman, C., & Coiacetto, E. (2019). Measuring experiential qualities of urban public spaces: users' perspective. *Journal of Urban Design*, 24(3), 340–364. *https://doi.org/10.1080/13574809.2018.1484664*

EXPERIENTIAL LEARNING SET IN AUTHENTIC ENVIRONMENTS. PEDAGOGIES OF CO-CREATION IN ARCHITECTURE

APRENDIZAGEM EXPERIENCIAL EM AMBIENTES AUTÊNTICOS. PEDAGOGIAS DE CO-CRIAÇÃO EM ARQUITETURA

Susana Moreno Soriano
Ph. D. Arch.
Universidad Europea
susana.moreno@universidadeuropea.es

Zuhal Kol Zarco Sanz
Arch.
Universidad Europea
zuhal.kolzarco@universidadeuropea.es
Rioja (UNIR), Spain
alejandro.rodrigueza@uam.es

ABSTRACT

This paper delves into a case study originating from an architectural workshop encompassing architectural design, material production, and theoretical research conducted both within and outside the institutional boundaries of the university, aiming to mobilize its resources and challenge its limits. Designed as an interactive and productive process for communication, the workshop reimagines architecture as a conduit for a more entangled and more symbiotic sum of processes and focuses on collective world-making in a natural setting through debates, round-table sessions, role-playing, concept mapping, narrative building, peer-to-peer reviews, and field trips. It seeks to explore the essential requirements, including spatial, technical, ecological, digital, financial and personnel resources while outlining the pedagogical approaches utilized to effectively monitor and evaluate the learning process, ensuring its efficacy and relevance in the frame of education for sustainability.

KEYWORDS: situated knowledges. experiential learning. interpersonal skills. collaborative practices. Interspecies design.

RESUMO

Este artigo investiga um estudo de caso originado de uma oficina de arquitetura que abrange projeto arquitetônico, produção de materiais e pesquisa teórica realizada dentro e fora dos limites institucionais da universidade, com o objetivo de mobilizar seus recursos e desafiar seus limites. Concebido como um processo interactivo e produtivo de comunicação, o workshop reimagina a arquitectura como um canal para uma soma de processos mais emaranhados e mais simbióticos e centra-se na criação colectiva do mundo num ambiente natural através de debates, sessões de mesa redonda, dramatização, mapeamento de conceitos, construção de narrativas, revisões entre pares e visitas de campo. Procura explorar os requisitos essenciais, incluindo recursos espaciais, técnicos, ecológicos, digitais, financeiros e de pessoal, ao mesmo tempo que delineia as abordagens pedagógicas utilizadas para monitorizar e avaliar eficazmente o processo de aprendizagem, garantindo a sua eficácia e relevância no quadro da educação para a sustentabilidade

PALAVRAS-CHAVE: conhecimentos situados. aprendizagem experiencial. habilidades interpessoais. práticas colaborativas. Projeto interespécies.

1. PEDAGOGIE: TOOLS AND TARGETS

The In our days, a vision of a world in danger has been stablished, in the face of which a strategy of future analysis and construction has been built under the paradigm of sustainability.

Education is identified as the most important resource for the transformation of society. Multiple efforts have been made to generate this transition. The importance of lifelong learning and the priority of learning to be a citizen have been highlighted,

based on support for the development of transversal competences, skills and the need to generate attitudes in individuals/students as an outcome of the learning process. (European Commission,2020)

Efforts has been done developing key sustainability competencies and attitudes. In LifeComp – The European Framework for personal, social and learning to learn key competence (European Commission, 2020), it is stated that human brains are programmed for empathy and that ability to understand and help others. Empathy has been key to the survival of our species and can be improved through specific training.

Action-oriented learning increases knowledge acquisition, value clarification, and competency development by relating abstract principles to personal experiences. Intrapersonal competence (or self-awareness) allows us to reflect on our role in the community. It allows self-awareness, self-regulation and self-empowerment to grow as a change agent for sustainability. It allows us to face contradictory feelings and thoughts; confront complexity and manage personal and group stress. Self and peer feedback is a key tool. Dealing with setbacks, failure and negative feedback and learning from it, enables to move forward effectively. Interpersonal competence (or collaboration) allows us to understand and respect the needs, perspectives and actions of others and to deal with conflicts as a group. (Scalabrino, 2022)

Education for sustainability has gone through different stages. Initially, greater emphasis was placed on Environmental Education EE, in which the aim was for the student to acquire knowledge about ecology and understand how natural ecosystems behave. Later, social and economic aspects were incorporated to create the concept, both within the framework of education systems and in the very understanding of sustainable development (Scalabrino, 2022) symbolized by the diagram of the three rings representing the social, economic and environmental spheres.

The three rings model, representing in the intersection the sustainable development, has been criticized by several authors. It has been considered that it leads to a static vision based on the current production model, instead of a dynamic vision capable of evolving within the framework of the planet that welcomes us. Giddings advocates a way of symbolizing the world where human activity, which includes the economy, is nested within the environment, with the possibility of moving within it in a more dynamic way. Aware of the alienation in which our lives move in today's world, he advocates for a greater connection between society and the planet by accepting its multiplicity. (Giddings, 2002). The construction of knowledge requires a degree of abstraction, but oversimplification consolidates an anthropocentric model from which it is difficult to move towards a new model that renews the relationship with nature of the human species. Other authors advocate a middle way (Davies, 2013).

Real-world contexts enhance the learning experience for students. When phenomena are studied as complete entities, in their real context, intuition and logic are intertwined

and the information and skills related to them are understood and encouraged to cross the boundaries between subjects. (Habash, 2022).

 Donna Haraway (2016) aims us to think beyond individual perspectives and engage in collaborative practices that honour the interconnectedness of all beings. She advocates for "staying with the trouble" to embrace the real complexities of our world rather than seeking utopian ideals or oversimplified fixes. She invites us to acknowledge that everything is connected—humans, nonhumans, ecosystems, technologies, histories, and futures, therefore, instead of seeking to disentangle these threads, she suggests being present and engage with them in active participation, even when it's uncomfortable or challenging. Haraway's vision is one of coexistence and collaboration. According to her, we stay with the trouble by creating kinships, alliances, and coalitions across species, cultures, and disciplines, understanding that there are no perfect solutions but working together will help mitigate harm and co-create more liveable futures.

One of the themes that are presented as important in the model promoted by Haraway is the insterpecies design. She advocates for sym-poiesis, or making-with, as a way of fostering relationships between all living beings. The book explores the concept of making kin, not limited to genealogical ties but extending to other species and the environment. Haraway uses speculative fabulation to envision new ways of co-existing in our multispecies world. For architects, the book offers insights into designing spaces that foster community, accommodate multiple species, and encourage participatory design and co-creation processes. (Haraway, 2016)

The option to adopt for architecture students in Haraway's proposal is a challenge that can be addressed in a multidisciplinary way by creating teams that allow other species to give a voice. But the human being, as a builder, has conducted himself by transferring his own constructions to the animal world, through the reproduction on an animal scale of our houses. Juhani Pallasmaa (2020) has observed how animal architecture is an extraordinarily valuable source for an ecological conception of human construction.

According to Pallasma (2020), animal constructions are an example of ecology where function, free of cultural and social considerations, is strictly efficient in ecological terms. Animal constructions are the result of a process that has taken place over a long period of time, which makes their effectiveness in the use of resources particularly instructive. The budget used in animal constructions is strictly aimed at satisfying rigorous criteria of cost-effectiveness. The costs of animal architecture are not measured in monetary terms, but in terms of energy and the time spent in the construction process. Issues such as the availability and suitability of materials, functional efficiency and the transport of materials. They also consider the planning of tasks over time and tend to build at times when costs are lower. The action of humidity and water on the materials is also used by animals to take advantage of the

softness that imprints on the materials, whether it is the appearance of the mud or the effect of humidity on the twigs.

As architecture teachers aims to introduce to the students, Pallasmaa (2020) argues that animals build their artifacts based on the logics of the material. -It affects considerations at different level, constructions techniques, geometry and structures. The result of their manufacturing activity depends basically on two factors, the materials used and the methods of manufacturing, rolling and folding, gluing fabric, sewing, applicating, moulding, etc. Most of the natural materials that man uses in his constructions use the same materials, and due to the limitations imposed by these materials, there are great parallels between our own constructions and those of the animal architects.

The relationship between animal and human architecture also appears in structures, typical examples are the efficiency of the hexagonal cells of bee combs, capable of withstanding the weight of honey with minimal use of material. The geometry of animal constructions is effective and can be applied to higher scales, such as the webs of arachnids, which in addition to the considerations of directly applicable geometry, are equipped with structural mechanisms to absorb the energy of the impact and prevent the entire structure from breaking. Birds often use strategies as counterweights to achieve balance in their light structures, such as the addition of mud mortar or small stones that they introduce into the interior of nests. (Pallasmaa, 2020)

Lessons of animal architecture would be more disruptive than those offered by vernacular architecture.

> "Greater efficiency and sophistication are clearly the goals of the process of evolution of animal architecture. The architecture of animals teaches us that the proper path to that ecologically conscious human architecture that we all demand today does not lead us back to primitive forms of construction, but the one that leads to advanced technological sophistication. Evolution is moving towards an ever more subtle refinement." (Pallasmaa, 2020, p. 135)

2. PROJECT: INTERSPECIES SCAPE
2.1 Project objectives

The course centres on a collective project, emphasizing teamwork within a large group of students as a key learning objective. It promotes the idea that knowledge is produced through experiential learning in authentic environments, using diverse resources, embodied experiences, and digital tools.

The course aims to carry out a complete project, covering all design and construction phases, including meeting with a real client, with limited resources and time, built

at 1:1 scale while developing essential soft skills for teamwork, preparing students to thrive in relationships, collaborate effectively, and adapt to uncertainties through hands-on, real-world exploration.

Specific objectives are linked to the field of nature-based architectural solutions. Their purpose is to design for other non-human species and to discover ways to accommodate other species and allow for a relationship between humans and non-humans.

The project seeks to construct a living space within a high-value protected environment that innovatively establishes a way to share the space with both the client and the local wildlife and plant species.

2.2 Workshop description

The The overall view of the process was set in for phases that corresponded to task
.
   • Phase 1: Diagnosis
A collective idea about the existing (context) is constructed

   • Phase II: Discovery
Observation of the context, ethnography, and interaction with users fosters a deep understanding of what is needed

   • Phase III: Project
Solutions are prototyped in a process that defines the design and show intermediate results (sketches, models, workshop plans, details at full scale)

   • Phase IV: Construction
Students collectively organize and construct their proposed intervention

   • Task 1.
The initial task formed four groups to demonstrate collaboration and leverage diverse skills for managing project complexities.

   • Task 2
The activity involved extensive research on history, landscape, biodiversity, and urban connections, using digital and conventional tools, drawings and diagrams for site exploration near El Escorial to inform design plans aligned with client preferences.

   • Task 3
It began with presenting preliminary design proposals post-site visit, refining ideas and presenting final designs to the client in a competitive pitch format, leading to the selection of two designs for further development.
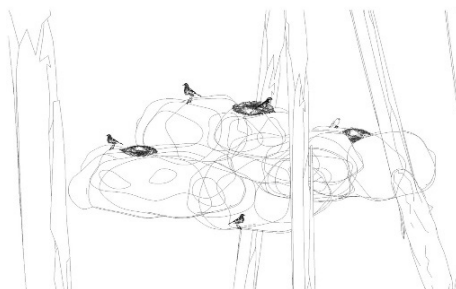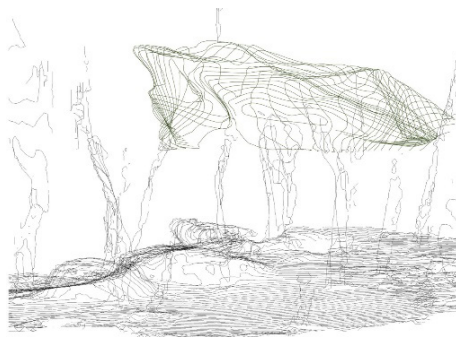
Figure 1/Figura 1. First ideas: location representation based on scanning geographic information using an App.
Source: Author. / Fonte: Author

Figure 2/Figura 2. Refining the idea of an inhabited cloud
Source: Author. / Fonte: Author.

• Task 4

The goal was to refine selected proposals for the prototype stage, focusing on site intervention, construction details, material selection, and budget estimation.

• Task 5

The work concluded with groups refining designs and prototypes based on feedback, preparing detailed shop drawings and quantities, and lastly with on-site construction and assembly.

Finally, the legacy of the course was presented in an exhibition. It included models manufactured during the process, the different elements that played a specific role in the construction, plans, photobooks and reports of the full course development.

2.3 Results

Initially, four groups began by presenting various proposals under the theme of "inter-species design." From these, two proposals were selected for further detailed development. During this phase, team configurations were adjusted, and an additional proposal was formulated as a preliminary plan to adapt an existing building for workshop programs. Throughout the process, evaluations were conducted by both professors and peers among the students to assess the outcomes comprehensively. The client has been actively engaged throughout the project, visiting the workshop multiple times — initially and on two subsequent occasions — to review results and discuss their needs and preferences. In addition to these visits, two Teams meetings were conducted with one of the teams to finalize the solution among various options. The client also participated in the construction phase of the project.
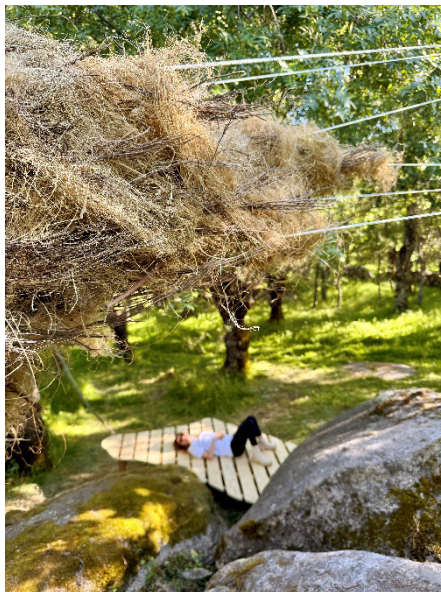
Figure 3/Figura 3. The work was conducted by two groups
in charge of ground works and air works.
Source: Author / Fonte: Autor

2.4 Assessment

Same rubric was used by teachers and students in the peer review, the outcomes evaluated in the midterm were:

- Approach to the site,
- Architectural narrative,
- Production and development
- Approach to the client

Final review: The criteria of the mid-review remained consistent, and additional ones were introduced as follows:

- Production - construction,
- Production - documentation

3. CONCLUSIONS

Working on the project in a nature and setting boundaries on human activity has been particularly impactful, offering valuable insights into alternative solutions embracing ecology. The experience has also fostered essential skills in creative development, technical design, and manufacturing.

By having students produce in a natural environment, the connections between what they produce, and the environment are amplified, including awareness of the material and cultural resources and well-being that are available in the natural environment (water, air, sounds, etc) and the impact that our action as actors and consumers of it entails.

Working as a team underscored the importance of establishing effective organizational and communication structures. It also demonstrated the potential of collective collaboration in undertaking ambitious projects. The whole experience contributed to enhance mindset and social attitudes.

Figure 4/Figura 4. Students on pause during the construction process on site.
Source: Author / Fonte: Autor

Figure 5/Figura5. Interspecies Scape

4. BIBLIOGRAPHY

Davies, G. R. (2013). Appraising Weak and Strong Sustainability: Searching for a Middle Ground. Consilience, 10, 111–124. *https://www.jstor.org/stable/26476142*

European Commission, Joint Research Centre, (2020) Sala, A., Punie, Y., Garkov, V. et al., LifeComp – The European Framework for personal, social and learning to learn key competence, Publications Office of the European Union, *https://data.europa.eu/doi/10.2760/302967*

Giddings, B., Hopwood, B. & O'Brien, G. (2002). Environment, economy and society: fitting them together into sustainable development. Sust. Dev., 10: 187-196. *https://doi.org/10.1002/sd.199*

Habash, R., Hasan, M. M., Chiasson, J., & Tannous, M. (2022). Phenomenon- and Project-Based Learning Through the Lens of Sustainability. International Journal of Engineering Education, 38(1), 110–116.

Haraway, D. J. (2016). Staying with the Trouble: Making Kin in the Chthulucene. Duke University Press.

Pallasmaa, J., Keyl, F. W., & Smith, E. (2020). Animales arquitectos (P. Vázquez, Trans.). GG.

Scalabrino, C., (2022) European sustainability competence framework background document, Publications Office of the European Union, *https://data.europa.eu/doi:10.2760/378627*

Symeonidis, V., & Schwartz, J. F. (2016). Phenomenon-based teaching and learning through the pedagogical lenses of phenomenology: The recent curriculum reform in Finland, Forum Owiatowe, 28(2), 31–47. *https://www.researchgate.net/publication/313696751*

SENSORY WALK AS A METHOD FOR EXPLORING CONCERT EXPERIENCE IN BERLIN PHILHARMONIE

CAMINHADA SENSORIAL COMO MÉTODO PARA EXPLORAR A EXPERIÊNCIA DE CONCERTO NA BERLIN PHILHARMONIE

Anna Hakula
Doctoral student
Tampere University
anna.hakula@tuni.fi

ABSTRACT

The concert experience comprehends more than listening to music in a dark room. It involves being in a space with others, movement, attunement, scents, light, and acoustics. In the paper, sensory walking is investigated as a method for atmospheric research at the Berlin Philharmonic. The building, designed by Hans Scharoun, was completed in 1963 and is the first so-called "vineyard hall."

The study is based on phenomenology but also includes autoethnographic field research. The experience has been observed by attending numerous concerts in the spring of 2023 on-site. The ongoing research suggests that visiting the same building for multiple concerts and documenting the experience using different senses and media provides insights into how the building is used and what it means to us. By delving into the multisensory experience, we gain a deeper understanding of how the physical environment shapes us and the culture we create.

KEYWORDS: concert hall. atmosphere. experience. multisensory. sensory walk.

RESUMO

A experiência de um concerto vai além de simplesmente ouvir música em uma sala escura. Envolve estar em um espaço com outras pessoas, movimento, sintonia, aromas, luz e acústica. A caminhada sensorial é investigada como um método de pesquisa atmosférica na Berlin Philharmonie. O edifício, projetado por Hans Scharoun, foi concluído em 1963 e é o chamado "salão em forma de vinhedo".

O estudo baseia-se na fenomenologia, mas também inclui pesquisa de campo autoetnográfica. A experiência foi observada ao comparecer a vários concertos na primavera de 2023 no local. A pesquisa em andamento sugere que visitar o mesmo prédio para múltiplos concertos e documentar a experiência usando diferentes sentidos e mídias nos proporciona insights sobre como o edifício é utilizado e o que ele significa para nós. Ao explorar a experiência multissensorial, obtemos uma compreensão mais profunda de como o ambiente físico nos molda e a cultura que criamos.

PALAVRAS-CHAVE: sala de concertos. atmosfera. experiência. multissensorial. caminhada sensorial.

1. INTRODUCTION

Traditional research methods in architecture include inventorying buildings and building components, examining drawings and photographs, and conducting various user interviews. These methods help uncover a building's repair history, originality, and functionality, allowing us to connect buildings to the design ideologies, values, or societal context of their time. However, there are no similarly established methods for

studying architectural experience. It remains challenging to definitively argue how the environment affects the individual experiencing architecture.

Phenomenological thinking emphasizes the multisensory nature of architectural experience, which also gives rise to the concept of atmosphere. Authors who study atmosphere and the phenomenology of architecture include Borch (2014), Böhme (2014), and Griffero (2016). Pallasmaa (2018) highlights the significance of the senses in architectural experiences, while Rauhala (2005) explores human subjectivity and diversity. Passinmäki (2011) delves into the poetics of architectural experience and discusses the relationship between Heidegger and Scharoun. Approaching music as atmosphere, researchers like Riedel and Torvinen (2019) have explored the relationship between music and space. Composer and researcher Murray Schafer (e.g., 1994 and 2009) has also discussed this relationship polemically. Emily Thompson (2002) writes about listening culture and architectural acoustics.

In my ongoing doctoral research, I investigate the architectural experience of concerts, focusing on the concert hall's atmosphere and multisensory perception. In this paper, I specifically explore the sensory walk method, which I employed during my fieldwork at the Berlin Philharmonie in spring 2023.

My background as an architect, musician, and composer informs my observations and guides the scope of my research. Understanding the multisensory impact of our environment can provide fresh perspectives for both architecture and classical music professionals. By delving deeper into how our surroundings affect us, we gain better insights into ourselves and the culture in which we operate and create.

In the following chapters, I will discuss theory, the applied methodology, my observations in Berlin linking them to the recordings used, and finally, I will reflect on the suitability of the sensory walk method for studying architectural experiences.

2. THEORY

This study adheres to the phenomenological framework (Heidegger, 2000; Merleau-Ponty, 2003) as a foundational theory, conceiving humans as integral components of their environment, and investigating the act of music listening as a multifaceted phenomenon. Framing the comprehension of artistic experiences within phenomenological ontology, the central position of subjective experience in the artistic encounter becomes apparent. Woodruff (2015, pp. 134–135) describes phenomenology as an examination of conscious experience as apprehended from a first-person perspective.

Within the scope of phenomenological inquiry, the focus is not directed towards an investigation into the inherent nature of objects, but rather towards an exploration of the contextual framework of meaning and intelligibility that underpins the

investigative process. Such an approach underscores the significance of the way objects manifest, while concurrently necessitating a concentration on the subjective achievements inherent to the phenomenon (Zahavi, 2015, pp. 2–3).

The concept of "atmosphere" is rooted in phenomenology. Böhme (2014, pp. 6–7) posits that the atmosphere resides in the intermediary realm between object and subject, situated between the experiencer and the experienced entity. Atmosphere resonates within a place, simultaneously comprising emotional and spatial dimensions. It embodies a perceptual quality that persists across spatial dimensions.

Böhme (2013, p. 1) explains that the term 'atmosphere' comes from meteorology, where it refers to the part of the Earth's atmosphere that carries weather conditions. Metaphorically, this holds in everyday language: we describe the atmosphere as a kind of space that surrounds all experiencers. Riedel (2020, pp. 9–10) describes how Adolf Bernhard Marks already wrote in 1857 that an atmosphere emanating from one person could transform an entire room and affect everyone present. This idea applies to art, especially music, which has the power to carry listeners along. In concert experiences, it's clear that highlighted individuals (such as soloists and conductors) have more influence on the experience or atmosphere than individual listeners.

The German term 'Stimmung' is used synonymously with the term 'atmosphere.' This term related to attunement suggests that we attune ourselves to the atmosphere. Attunement as an action always removes the notion of a stable 'prevailing state' and directs us to think about experiencing atmosphere along a timeline: atmosphere can transform or attune people from different moods into a unified experience (Riedel, 2020, pp. 2–10). An average architectural experience doesn't follow this temporal pattern in the same way as music or even film. Architectural experiences usually allow freedom to move at one's own pace and even return to a previous state. In music, people are compelled to synchronize, experiencing events with a unified rhythm, and pulse, and following a specific order.

The architectural experience of a concert hall can also be loosely placed along a timeline: it includes approaching the building, arriving inside, foyer rituals, finding a seat, the music experience, and the stages of departure. The concert experience is orchestrated partly by the architect's choices and partly by traditions and other practices. The term 'attune' or 'attunement' applies on multiple levels to concert experiences.

Understanding concert experiences can be approached through the concept of atmosphere. We can observe how the atmosphere is constructed and how the audience is attuned through arrival rituals, materials, lighting, and movement, leading to a state of quiet listening.

3. MULTISENSORIAL METHOD

I wanted to empirically explore the art experience: to study concerts and concert experiences from within an authentic environment, as part of the audience. The Berlin Philharmonie was chosen as the target building because, as the first vineyard-style concert hall, it has significantly influenced the entire building type and the development of acoustic solutions. Additionally, the building is in Central Europe, where Western classical music has largely evolved to its current form, and where concert culture flourishes still.

Drawing from the emergence of "aural flânerie," "night walks," and the Situationist concept of "dérive" in the mid-20th century, the concept of "sensory walking" was introduced to investigate and analyse how we understand, experience, and utilize spaces. Currently, the sensory walking method is employed within the framework of "Sensuous Urbanism," which is built upon Kevin Lynch's theoretical foundation and contributions from scholars like J. Douglas Porteous, Jane Jacobs, and William H. Whyte (Radicchi, 2017, p. 70).

Sensory walking usually involves focusing on one sense at a time (Radicchi, 2017, p. 71). However, this approach encounters challenges due to the synesthetic nature of most sensory perceptions. Synesthesia refers to the phenomenon where different senses mix in each other. For example, upon seeing a particular material, one simultaneously knows how it tastes; certain scents evoke memories, and texture generates strong visual and tactile imagery. While my observations primarily concentrated on isolating one sense at a time, I also documented other observations, as it is difficult to completely segregate the senses from one another.

Given the multisensory nature of the concert phenomenon, a comprehensive examination necessitates the incorporation of various sensory modalities. Consequently, I opted to employ on-site recording and sketching as data collection methods, supplementing traditional field notes and photographs.

4. APPLYING THE METHOD – FIELDWORK IN BERLIN

I attended a total of eleven concerts at the Berlin Philharmonie, of which nine were in the main hall, one in the foyer, and one in the chamber music hall. The data primarily focuses on concerts held in the main hall. For each concert, I used a single recording method: photography, drawing, writing, or audio recording. Additionally, I always carried a notebook to jot down notes related to recording and occasionally took photos to complement other observations. Furthermore, I wrote a report-style text about each concert the following day. Writing on-site was the slowest recording method for me, and I often felt that I couldn't capture even a small portion of my observations. However, this improved with multiple concert visits, as I could supplement previous days' observations during subsequent concerts.

When recording audio, I used binaural microphones, placing them in my ears so that when listened to with headphones, the same sound environment in which I moved could be heard in stereo. Although I didn't record the music during the concerts, I obtained audio recordings made by the Berlin Philharmonie from two of the concerts I attended. Carrying the microphones made me to perceive sounds differently around me: traffic noises became more pronounced, and I paid attention to the acoustics of the urban space, trees, and the materials within the building.
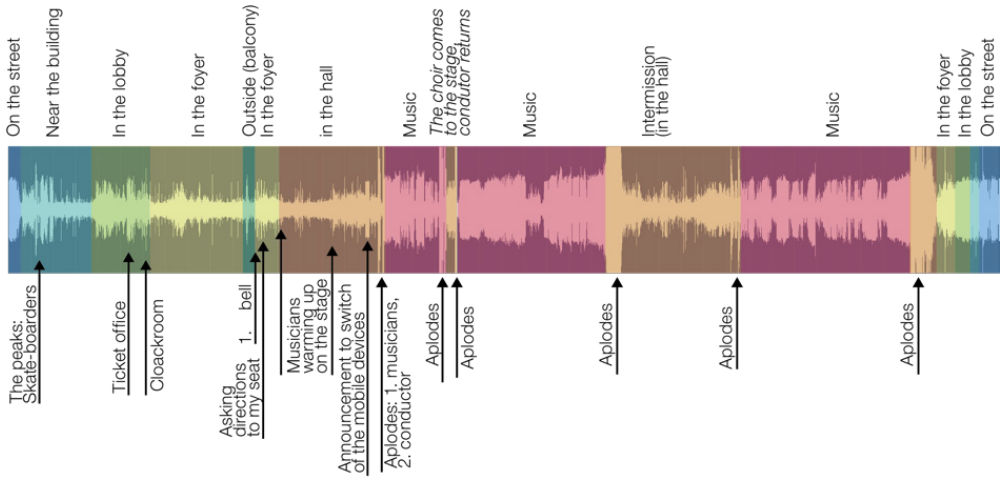
Figure 1 Audio recording on the 20th of May.
Source: Author (2024).

4.1 Approaching the site

In Figure 1, there is a graph representing an audio recording from a concert on May 20, 2023. I've color-coded segments to indicate my movement and location, as well as marked events audible on the recording. As seen from the graph, the arrival phase plays a significant role in relation to the entire concert duration. Due to the available time, my observations have also focused on the moments just before the concert begins—the time when I attune myself to the performance.

Approaching the Berlin Philharmonie from the direction of Potsdamer Platz (see Figure 2), the buildings are all relatively new, constructed after the fall of the Berlin Wall, and they are temporally close to each other. The bustling traffic noise reflects off large glass surfaces, asphalt, and steel structures. The wide roadways accommodate heavy traffic, and pedestrians move quickly, often having to negotiate their way. The city feels touristy, busy, and filled with sounds and shiny surfaces.
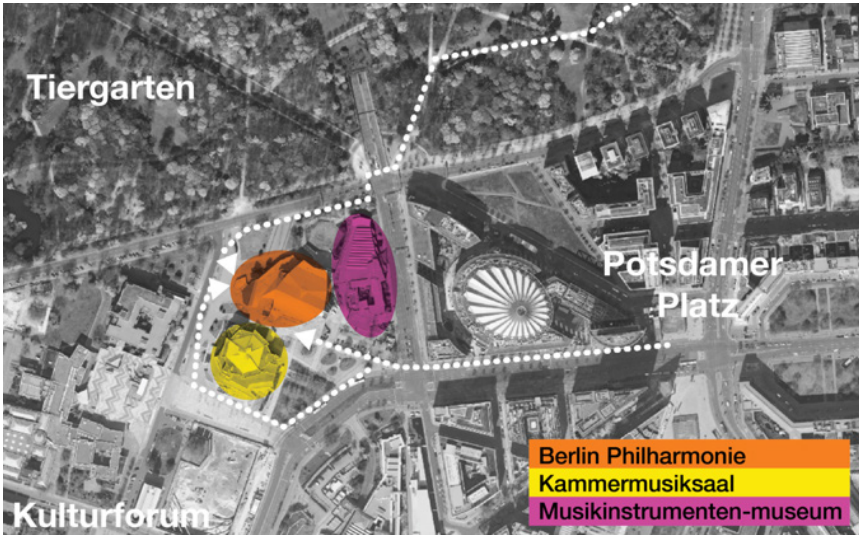
Figure 2. The location of the Berlin Philharmonie in city structure
Source: orthomap Geoportal Berlin (2024) editing and markings: author (2024).

However, when approaching from the direction of Tiergarten, the atmosphere is significantly different for a long time: the sound of my footsteps on the sandy ground becomes audible, accompanied by birdsong from the foliage. The temperature and microclimate are pleasant, and the park features various statues, lamps, and signs. Their patina and style evoke a historical era before World War II and even before the first one. Yet, between the park area and the Berlin Philharmonie lies a multi-lane, bustling road that alters the ambiance and raises my pulse—keeping me alert.

The Philharmonie is part of the Kulturforum, an area with non-mixed functions and a large scale, where the atmosphere feels touristy. The building seems to have turned its back on the surrounding urban structure, which can be explained by its unique historical origins: it was constructed on the ruins of World War II, far from the central district of West Berlin. The design of the building prioritizes accessibility by motor vehicles, with consideration for pedestrians beginning only a few meters before the main entrance.

4.2 Arrival

Upon entering the Berlin Philharmonie (Figure 3), the architectural experience intensifies significantly. The floor is made of natural stone, reminiscent of a piazza. Indirect sunlight filters through the roof and walls. Functional areas like the cloakroom, ticket sales, and restrooms have simple yet cautious designs. The wooden counter is pleasant to touch, and the coat racks are unobtrusive, allowing the sculptural walls, stairs, and levels to shine.

The first floor of the foyer clearly serves both practical functions and as a space for people to be seen. Visitors can purchase refreshments, music, and Philharmonie merchandise there. This central location is visible from different levels. However, the noise level increases due to sound reflecting off hard surfaces. As a solitary observer, I found this space somewhat overwhelming—filled with sounds, scents, and people everywhere.
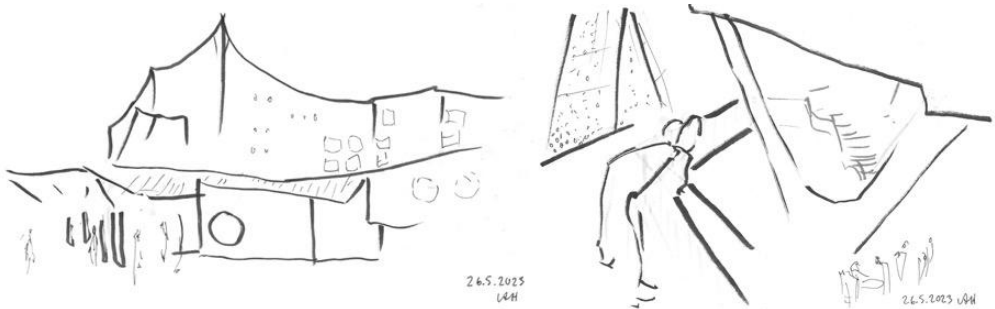
Figure 3 (left): People gather near the main entrance before the doors open. A canopy marks the entrance, and the tent-like silhouette indicates the location of the concert hall. Figure 4 (right): The view from the balcony down to the ground floor foyer reveals an area for encounters and presentations. The first floor of the foyer serves as both a service area and a space for people to be seen.
Source: Author (2023).

The second floor of the foyer is dominated by the balcony, providing a view of the gathering area (as shown in Figure 4). Food and drinks are not allowed on this level, which may affect the number of people present and the intensity of conversations. Louder sounds come from below, while the balcony offers a quieter ambiance.

Ascending the stairs, I notice the carpet covering the steps (see Figure 5). Through photography, I captured the textures of these different surfaces, as well as reflections of natural light, the overall ambiance, and people's positioning. When drawing, I focused more intently on the building, allowing me to better understand the spatial sequences, structural logic, and proportions. I also paid different attention to people and their interactions.

When climbing even higher, the number of people decreases, and the sounds fade. There are still sightlines to the lower-level foyers. The distant hum of activity from downstairs reaches you as a steady murmur, and here, people converse in hushed tones. The higher you go, the more affordable the seating options become.

Approaching and entering the building were relatively straightforward actions, with only slight variations each time. However, inside the building, after ticket inspection, the experience varied based on my choices. I explored different routes and made various observations.

Figure 5. The photograph shows the ground floor lobby with its stone floor and mosaic art. On the left, there are cloakrooms that extend to the upper floor, along with stained glass art from the floor above. Natural light filters indirectly through the ceiling window into the foyer consisting multiple levels and stairs. The levels and stairs are covered with carpeting, which dampens sound. The stone flooring in the ground floor echoes and amplifies noise. Source: author (2023)

The atmosphere undergoes a distinct shift upon entering the concert hall (Figure 6). Suddenly, all surrounding materials change, and people become part of this vast space. As you step into the hall, you notice something is off: the floor is uniformly sloped. Balancing feels peculiar, especially if you're accustomed to level surfaces. What is happening?

Finding my own seat feels like a relief. After navigating through the confusing hallways and feeling unsteady on the floor, I am finally safe: neither the building nor other people can threaten me anymore. Now, I can focus on the music. No one expects anything from me. Soon, the lights in the hall will dim, and then I won't even be visible. I become part of the large audience, while the musicians take centre stage.

4.3 Music Experience

As the lights dim, the audience falls silent. Applause follows for the arriving musicians, short tuning moment, and more applause for the conductor. Up to this point, everything feels somewhat familiar, but as the music begins, the experience becomes unique. Today, surrounded by these people, interpreted by these musicians, I get

to feel something special. Some pieces are familiar, yet they transform each time. I sit in different parts of the hall, hearing the orchestra from various directions, with different balances. Around me, there are different people—some fully immersed in the moment, others looking a bit weary. Some are more refined, while others appear more reserved.

Figure 6. The hall before the concert begins. Walking on the sloping parquet floor evokes an image of a ship. The metallic handrails and marble details feel cool to the touch, while the wooden seats and soft cushions are warm. The nearby ambient light is indirect, and even the ceiling lights don't overwhelm. Source: Author (2023).

Orchestras and conductors change during my field period: sometimes I hear bold, expressive playing, and other times, a more restrained expression. The energy and sensitivity of soloists shape my experience. Even the same soloists have different moments, different days.

Scharoun's concert hall design emphasizes visibility of the orchestra and the audience's distance from it. Compared to traditional 'shoebox' concert halls, this 'vineyard-style' hall aimed for greater democracy, ensuring a consistent experience for everyone (Jasper, 2019, pp. 1123–1125). However, sound behaves differently from sight. Instruments direct sound predominantly in one direction and managing sound waves with reflective and absorbing materials is challenging. Sound varies across different parts of the hall, and there are still better and worse seating positions.

4.4 Departure

After the concert, the audience departs slowly but directly. The location of the exit doors and the number of stairs allow for a smooth flow of people toward the cloakrooms. All queues progress without congestion. Refreshment stands are closed, and people don't linger in the hall or foyer.

Since very little time is spent on exiting, my own documentation of the event was significantly less than during arrival. On warm evenings, some audience members stayed near the building to chat and exchange thoughts, while others headed elsewhere or back home.

5. CONCLUSION

Applying the sensory walk method during Berlin Philharmonie concerts in spring 2023 yielded different insights compared to more traditional architectural research methods. The architectural experience was captured on a timeline, emphasizing the early part of the experience more than I had expected.

As a researcher, I was part of my environment and participated as an audience member. I recorded the sensory experience using the sensory walk method. My observations were directed both toward the audience and the environment and toward my own experience. Music, performers, and other audience members significantly influenced my emotions more than the architectural space itself. The sense of belonging or shared listening experience sometimes strengthened and sometimes waned, depending on the people around me, the music, the musicians, and the conductor. Becoming more familiar with the building over the observation period also positively affected my experiences. The feeling of belonging to the place and community grew, and memories of previous concerts resurfaced when I saw, smelled, heard, or touched something familiar.

Different recording methods focused on different aspects: Drawing highlighted the spatial layout, structures, proportions, and lighting. Listening emphasized orientation and materials. Photography captured textures, light, and colours. Writing conveyed my feelings, scents, interactions with others, and immediate surroundings. All observations felt fragmentary and capturing a unified 'overall atmosphere' or 'overall state' seemed impossible.

Multisensory methods, including sensory walks, should be further developed in architectural research. In the future, I hope to test this method in small groups, where participants can share their concert experiences using various recording techniques and engage in discussions about their experiences and documentation.

This research demonstrates that by attending multiple concerts in the same building and documenting the experience in different ways, we gain insights into the building's use and meanings that traditional inventory methods or interviews cannot fully capture. By exploring the concert hall's atmosphere, our understanding of how the built environment affects us and the culture we create expands.

6. BIBLIOGRAPHY

Borch, C. (Ed.). (2014). Architectural atmospheres: On the experience and politics of architecture. Birkhäuser.

Böhme, G. (2014). Atmospheres: New perspectives for architecture and design. In G. Böhme, T. Griffero, & J.-P. Thibaud (Eds.), Architecture and atmosphere (pp. 7–14). Tapio Wirkkala-Rut Bryk Foundation.

Böhme, G. (2013). The art of the stage set as a paradigm for an aesthetics of atmospheres [Preprint]. Ambiances.

Griffero, T. (2016). Atmospheres: Aesthetics of emotional spaces. Routledge.

Heidegger, M. (2000). Oleminen ja aika. Vastapaino.

Jasper, S. (2019). Acoustic ecologies: Architecture, nature, and modernist experimentation in West Berlin. Annals of the American Association of Geographers, 110(4), 1114–1133.

Merleau-Ponty, M. (2003). Phenomenology of perception. New York: Routledge Classics.

Pallasmaa, J. (2018). The eyes of the skin: Architecture and the senses.

Passinmäki, P. (2011). Arkkitehtuurin uusi poetiikka: Fenomenologinen tutkimus teknologian ylittämisen mahdollisuudesta nykyarkkitehtuurissa. Tampereen teknillinen yliopisto. Arkkitehtuurin laitos.

Radicchi, A. (2017). A pocket guide to soundwalking. Some introductory notes on its origin, established methods and four experimental variations. In Besecke et al. (Eds.), Perspectives on urban economics. Universitätsverlag der TU Berlin.

Rauhala, L. (2005). Ihminen kulttuurissa – kulttuuri ihmisessä. Helsinki: Gaudeamus.

Riedel, F., & Torvinen, J. (Eds.). (2020). Music as atmosphere: Collective feelings and affective sounds. Routledge.

Vadén, T., & Torvinen, J. (2014). Musical meaning in between: Ineffability, atmosphere and asubjectivity in musical experience. Journal of Aesthetics and Phenomenology, 1(2), 209–230.

Thompson, E. (2002). The soundscape of modernity: Architectural acoustics and the culture of listening in America, 1900–1933. Cambridge: MIT Press.

Woodruff Smith, D. (2015). Perception, Context and Direct Realism (pp. 134–157). In Zahavi, D. (Eds.), The Oxford Handbook of Contemporary Phenomenology. Oxford University Press.

Zahavi, D. (2015). Introduction (pp. 1–6). In Zahavi, D. (Eds.), The Oxford Handbook of Contemporary Phenomenology. Oxford University Press.

L12

INSTRUMENTARIUM OF ARCHITECTURAL AND URBAN AMBIANCES, SPATIALISATION OF THE SENSIBLE IN THE PROJECT

CHAIR Mohammed Boubezari

At the heart of architectural and urban design, mastering complexity proves essential. The instrumentation of ambiances becomes a crucial element for understanding and shaping spaces. This thematic session focuses on the significance of conceptual and technical tools as supports for mastering complexity, particularly in the context of the spatialisation of the sensible at the early stages of the project. The latest technological advances in terms of immersive virtual models and interactive modelling (AR-VR- MR) confirm the trend towards the integration of sensitivity and spatial practices upstream in the design of living spaces, certainly in an intuitive way but which questions notions to be developed urgently to think about project.

We invite contributions from researchers, architects, urban planners, and practitioners on the following axes:

Theoretical Concepts: Sensitive topologies, affordances in virtual environments, AI-assisted design narratives, interface design, and usage design applied to architecture are examples of new theoretical concepts that are becoming necessary in design or at least merit discussion.

Topological Tools and Technologies: Exploration of tools, digital technologies, topological modeling methods, and innovative approaches as key instruments for mastering the complexity of ambiances.

Integration of the Sensible with a Topological Approach: Analysis of how these conceptual and technical tools facilitate the integration of the sensible from the early stages of architectural and urban design.

Sensory Experiences: Study of user sensory experiences in architectural and urban spaces, emphasizing the spatialization of the sensible through a topological perspective, facilitated by appropriate methods, techniques, or instruments.

Case Studies: Presentation of innovative projects where the use of conceptual and technical tools has resolved complex challenges related to the integration of the sensible.

Original contributions and research articles are welcome. Authors are invited to submit their abstracts before the specified deadline. Articles will be peer-reviewed based on criteria of academic excellence, originality, and relevance to the thematic session. Submissions must be in English.

We look forward to engaging and innovative contributions that will enrich the discussion on the instrumentation of architectural and urban ambiances, as well as the spatialisation of the sensible in the project.

ECHOES OF EMBODIED EXPERIENCES: METHODOLOGIES FOR SENSORY RESEARCH

ECOS DE EXPERIÊNCIAS CORPORAIS: METODOLOGIAS PARA A INVESTIGAÇÃO SENSORIAL

Mersida Ndrevataj
PhD Fellow
Iuav University of Venice, Italy
mndrevataj@iuav.it

Petros Flampouris
PhD Fellow
University of Thessaly, Greece
pflampouris@uth.gr

ABSTRACT

Urban environments are characterized by their physical structures and the rich tapestry of sensory experiences they offer their inhabitants. However, conventional methods of assessing urban experiences often privilege the tangible and visible aspects and the nuances by which these influence social practices and the use of public space. A sensory approach to urban environments is proposed in this article to emphasise the multifaceted nature of human perception, highlighting the importance of sensory experiences in understanding interactions with surroundings. This article presents the results of field research at Lisbon's Oriente Station. Using shadowing and sound recording as sensory methodologies, researchers observed the walk of a blind person within the different areas of the station, focusing on auditory stimuli and mapping his journey. The two proposed methodologies proved effective in uncovering hidden dimensions of urban experience and capturing the nuances of the context's soundscape.

KEYWORDS: sensorial approach. shadowing. sound-recording. user-experience design. urban environments.

RESUMO

Os ambientes urbanos são caracterizados pelas suas estruturas físicas e pela rica tapeçaria de experiências sensoriais que oferecem aos seus habitantes. Todavia, os métodos convencionais de avaliação das experiências urbanas privilegiam frequentemente os aspectos tangíveis e visíveis e as nuances com que estes influenciam as práticas sociais e a utilização do espaço público. Neste artigo, propõe-se uma abordagem sensorial dos ambientes urbanos com o objetivo de enfatizar a multifacetação da perceção humana, evidenciando a importância das experiências sensoriais na compreensão das interações com o ambiente urbano. Este artigo apresenta os resultados de uma investigação de campo na Estação do Oriente, em Lisboa. Utilizando o sombreamento e o registo sonoro como metodologias de investigação sensorial, os autores observaram a caminhada de uma pessoa cega nas diferentes áreas da estação, focando-se nos estímulos auditivos e mapeando o seu percurso. As duas metodologias propostas revelaram-se eficazes na descoberta de dimensões ocultas da experiência urbana e na captação das nuances da paisagem sonora do contexto.

PALAVRAS-CHAVE: abordagem sensorial. shadowing. sound-recording. UX design. ambientes urbanos.

1. INTRODUCTION[1]

Oriente Station, designed by Spanish architect Santiago Calatrava, is one of the many architectural operas built during the Lisbon International Exhibition (Expo '98) which later led to the creation of Parque das Nações new quartier as well as new urban centrality for the city of Lisbon.

Located east of the city center, the Parque das Nações was the result of a large-scale urban regeneration project of a former industrial dockland area spanning 5 km along the Tejo River waterfront. Subject to local criticism for being a financial engineering and territorial marketing project, and gentrification one no less, what struck us instead is the conceptualization of this area as a space of consumption or living on a certain level compared to the rest of the city; a space as a commodity, socially distinctive and representative of a peculiar urban lifestyle. Locals describe it as a "vacation" or a "magical" place that can carry its inhabitants into "parallel dimensions, both temporal and spatial" (Gato, 2012). Accordingly, multiple atmospheres are constructed to seduce 'consumers' who, in turn, represent rather homogeneous social activities and categories that visit and/or inhabit these spaces. It appears in concrete, as a mixed residential and commercial block, surrounded by a finely curated public space.

Within this urban territory fragment, in itself alien and alienated from the rest of the city, the Oriente Station, a multimodal station, where metro, buses, cars, and trains run on three distinct levels and serve as a gateway to the area, which itself represents a peculiar architectural structure: a 'non-place' (Auge, 1996). A deliberate juxtaposition, of ours, in calling the Station of the Orient a non-place after describing the context in which it is located with a strong tendency towards a pursuit of identity recognition. How does the tangible aesthetic and symbolic identity of this place, strongly supported by its architecture, affect and shape socio-spatial practices and how people use and interact with the space?

The station exemplifies modern architecture, seamlessly integrating the creator's distinctive design ethos that blends structural ingenuity with artistic flair. Its standout feature is a spacious glass and steel canopy reminiscent of a grove of trees, fostering a luminous and open ambiance within. This ambitious, large-scale project serves not only as a gateway for the city's residents to the new urban centrality but also as a gateway to the capital for visitors from the rest of the country and other European cities with which the station connects.

Between the metro located on the lower level and the railway station on the upper level, an enormous, open, and transparent pedestrian tunnel opens up on the intermediate floor, which serves as a connecting structure between the various modes of transport, and perpendicularly crosses the entire building leading to a large

---

[1] The present article collects the outcomes of field research conducted by the two authors, during their attendance at the "Sensorial Workshop: Putting Architecture under the Use of Our Senses" held in November 2022 and organized by Lusofona University in Lisbon.

shopping and leisure area located in the station square. The gallery is crossed parallel and crosswise by bridges that open up views of the various levels of the station. Within it, a variety of activities and services cater to the needs of both, travellers and locals: cafes, barbershops, souvenir stores, bookstores, post offices, bank offices, etc.

To study the lived experiences of people using spaces such as the Oriente Station, we used a sensory approach, emphasising how individuals perceive and interact with the environment through their senses. Specifically, we conducted a sensory ethnography (Pink, 2009), by immersing ourselves in the daily life of the station, recording detailed field notes, and capturing audio-visual materials.

By focusing on sensory experiences, it was possible to discover how this specific architectural design influences feelings of alienation or belonging, and how the sounds of the environment, specifically, contribute to the overall atmosphere of the space. By understanding these sensory interactions, we could better understand how station sound design influences lived experiences, contributing to a more nuanced understanding of how public spaces can be optimised for human use and enjoyment through increased attention to aural aspects.

2. METHODOLOGY: SHADOWING AND SOUND-RECORDING

Two research methodologies drawn from different disciplines are proposed here as particularly valuable for urban studies that employ a sensory approach that allows us (researchers) to capture in situ ambiances (Augoyard, 1998): shadowing and sound recording. Both techniques offer a unique insight into the lived experiences of individuals within urban environments, shedding light on the intricate interplay between sensory perception and socio-spatial fruition.

2.1 Shadowing

Shadowing is a qualitative ethnographic research methodology, whose origins are related to organizational studies disciplines, proposed for researching individuals within organizational contexts (McDonald, 2005). However, over time it has gained prominence within different social disciplines thanks to its ability to provide rich insights into the everyday lives of individuals within their natural environments (Sclavi, 2005; Cerulo, 2015).

Shadowing involves closely following and observing a subject of interest in their natural setting, documenting their movements, actions, and interactions within specific social, spatial, and temporal contexts. The researcher assumes the role of a silent companion, immersing themselves in the subject's environment to capture nuanced behaviors and habits, as well as its socio-spatial interaction dynamics (Czarniawska, 2007; McDonald, 2005; Quinlan, 2008).

The practice of shadowing entails a structured process of observation, description, and analysis. It requires cultivating empathy during observation while maintaining objectivity during analysis to ensure scientific rigor (McDonald, 2005; Cerulo, 2015). Shadowing is typically conducted over a short timeframe, meticulously documenting observations without pre-selection of data to avoid bias.

In our case, the shadowing technique was employed following an input from the fieldwork that complemented the method chosen a priori for the research purposes, i.e. sound recording. Specifically, during a field visit aimed at making some sound recordings, among the various users of the station, we noticed the presence of a blind person and decided to follow him in his activities, recording the sounds along the route he traced and noting the places he passes through and those where he pauses, the activities he engages in and the time he takes to complete each one. The observation we conducted was non-exposed[2] to the shadowed person, therefore also his/her identity will remain anonymous.

By adopting this complementary methodology, we were able to limit the field of investigation to a specific pathway and user, which in turn gave us access to a daily life scenario little familiar to us, which in turn helped lead us to discover the intricate ways in which the sounds of the environment can shape the human perception, their behaviour and ultimately their emotions to space.

2.2 Sound-recording

Field recording and sound recordings are used in divested ways and different styles. The different recording schools overlap in many manners though they differentiate in how they use and analyse the collected "data" of a space. There is a difference in what type of information can sound data communicate as this is defined by many sound theorists (Schafer, 1997). Different approaches on the matter suggest listening to the sounds and their sonic content (frequency, pitch, rhythm, gesture, etc.), regardless of their meaning or source (Schaeffer, 2017), or listening to the sound effects that those are creating (Augoyard, 2006) or are interested in acoustic ecology as a total (Schafer, 1997). Others suggest listening to the acoustic properties and the sound descriptors without paying attention to what the sound means, socially, culturally, or politically (applied acoustics and environmental acoustics). At the same time the analysis of sound into information, qualitative or quantitative, is a way of approaching sound data concretely.

---

2 There are different shadowing modalities depending on the role of the researcher and the purpose of the investigation. They include exposed, semi-exposed, unexposed and self-shadowed modes of observation, each of which responds to distinct research objectives. Shadowing can be classified according to the levels of interaction between the researcher and the shadowed person as natural, controlled or participatory, offering varying degrees of understanding of the subject's activities and experiences. In our case, guided by in situ circumscriptions, we opted for a non-exposed and natural mode. In the unexposed mode, the researcher maintains a covert presence throughout the observation period of the observed person. As for the natural mode, it refers to the non-interference of the researcher on the activities carried out by the person.

Our initial perception of the Oriente Station space was the opposite of the architecture glair. A gigantic volume of the space under a canopy with mixed-uses, with different public transport, malls, and catering establishments. Simultaneously a large part of the space provided for surplus value ones was now unused and forgotten welcoming unproper behaviours. All the above circumstances evoked a combinatorial sound space with different sound scenes/layers that were no physical divisions but aural atmospheres overlapping as the users were transitioning as the users transitioned in space, creating an ephemeral sound space. All the above led us to the decision to choose the sound as a parallel method to provide the analysis of the space.

3. NOTES FROM THE FIELD: SHADOWING AND SOUND-RECORDING THE JOURNEY OF A BLIND PERSON AT THE ORIENTE STATION IN LISBON

Following the methods described above, the shadowing and sound recording was carried out on 28/11/2022, from 14:00 to 15:23. For the latter, we adopted two sound recording modalities: a moving sound recording lasting 5.15 minutes and a static sound recording lasting 4 minutes. From now on, we will refer to our shadowed person with the name Alex.

3.1 Shadowing data collection and findings

During this observation time frame, we shadowed Alex step by step. One researcher took written notes of all the spaces he traveled through, the activities he engaged in, and the social interactions he participated in, while the other researcher focused on sound-recording the walk.

We observed Alex engaged in various activities within the station, including smoking, taking a coffee break, shopping, and performing banking transactions. Each of these activities was completed in a relatively short time, but it is noteworthy that the request for assistance in navigating certain spaces took longer, indicating that accessing them poses significant challenges for people with visual impairments. Notwithstanding the complexity and dynamism of the space, Alex showed remarkable familiarity with the environment, effortlessly navigating two floors of the station using the escalators and relying on tactile feedback from a guide stick. Alex actively seeks help when necessary, demonstrating a proactive approach to overcoming barriers in his environment. But we also noticed that support was at some moments spontaneously offered and/or provided by passersby.

Figure 1a illustrates the activities Alex performed during our observation and the time it took him to perform each. Each axis represents the places visited by Alex in chronological order from the smoking area to the bus station, and the distance from the center indicates the time spent in each in minutes. Among all of them, there are two specific places where Alex spent considerable time without performing any

activity but asking and waiting for assistance from passersby in moving from one point to another: the Optical Shop and Info Point. This data highlights that navigation within the station's mall corridor, where these two spots are located, is particularly challenging and time-consuming for blind individuals. The need for assistance to navigate certain areas significantly increases the time it takes to complete tasks, as it not only delays the individual requiring help but also interrupts and affects the activities of those who assist.

During our observational study, we also analysed Alex's emotional responses by observing the facial expressions while moving through various areas within Orient Station—both indoor, outdoor, and transitional spaces. The emotional mapping illustrated in Figure 1b, shows how different parts of the station elicit varying emotional experiences. Our findings revealed that navigating outdoor spaces tends to evoke predominantly positive emotions such as relief, wonder, joy, and enjoyment. In contrast, emotions in indoor and transitional spaces were more diverse, ranging from intense negative feelings like confusion and frustration to moments of relief and gratitude in response to challenges encountered earlier.

Categorising these emotional states provides insights into how distinct spatial environments significantly influence emotional well-being, underscoring the importance of thoughtful design in shaping such experiences.
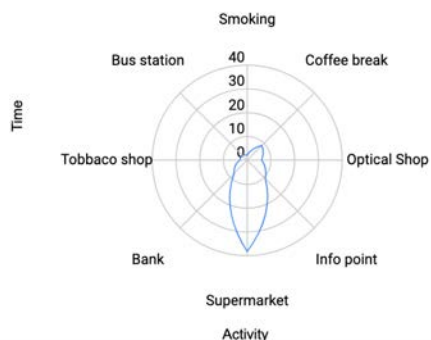
Figure 1a. Time it Took Alex to perform different activities
Source: Authors' creation (2024).
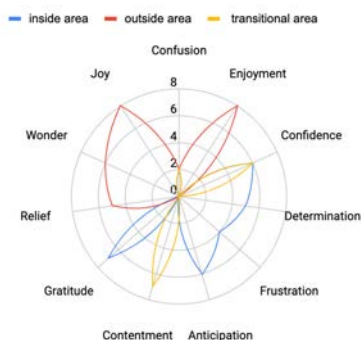
Figure 1b. Alex's emotional states in the spaces he visited.
Source: Authors' creation (2024).

3.2 Sound-recording data collection and findings

The equipment set-up that was used for the in situ recording of the station included a set of Soundman OKM-II studio that were amplified from a pre-amplifier a3 soundman and were recorded on a Tascam dr-40 with an input level set to 75. The choice of using the binaural recording methodology to capture the sound ambiance was due to its ability to specialise the sound scene providing the chance of locating the object in the recording, thus is believed that is an ideal technique for capturing a large and socially busy scene that numerous and spontaneous sound events are taking place at

the same moment. The pre-amplifier and the amount of input level were used and set in that amount so would be possible to record delicate sound but at the same time render efficiently the massive volume of the space, at the interior under the canopy, without having the possibility of a loud sound incident to "pick" the recording.

3.2.1 On the move recordings

Figure 2 shows the first of the two recordings, in the on-the-move modality, that we conducted in Oriente Station while shadowing Alex.
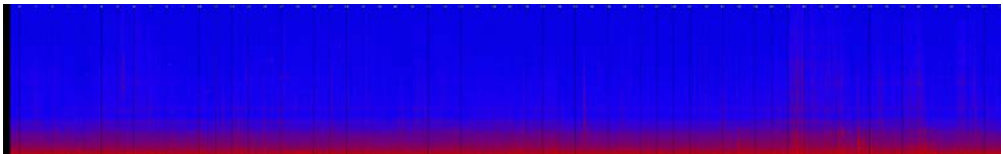
Figure 2. On the move recording of Alex's itinerary within the Orient Station, duration 5.15 minutes.
Source: Authors' creation (2024).

In this recording frame, we listen to a steady interior ambiance with periodic distance sounds moving from the background to the foreground.

At the same time, different sound marks exist between the foreground and background as the sound marks and the receiver move in space and shift places. The sound marks of bus and train brakes, bus engines, the sound of social interactions (chatter, footsteps, laughter), Music from shops, luggage, shopping carts, and cutlery from the coffee shops characterising the sound scene.

During the sound recording, we have the impression of an enclosed space though several times the sound ambiance of the space changes due to the architecture of the space, and the penetrated facade of the canopy, creating the impression of an outside sound ambiance.

As this is a shadowing recording following Alex the field recording is characterised by the sound of Alex's blind stick as shown in Figure 3.
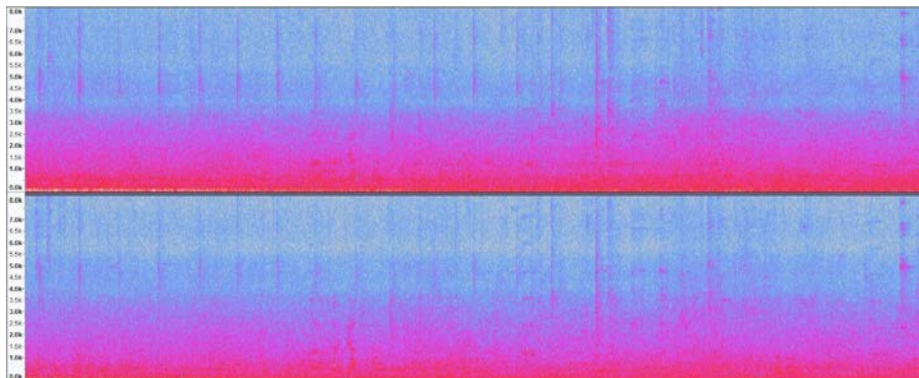
Figure 3. Spectrogram moment from Alex's shadowing where the blind stick can be noted.
Source: Authors' creation (2024).

Though the sound signal is not referenced to a calibrated sound meter, we can study the correlated dB(A)s among the frequencies of the case study, as shown in Figure 4.

We note a maximum of 34.7dB(A)fluctuation among the selected frequency spectrum (100Hz-16KHz). There is a band-pass filtering (BPF) character on the sound scene with even mid-range frequencies and with approximately 15dB (A) drop on the low frequencies and 30 dB(A) on the high-range frequencies.
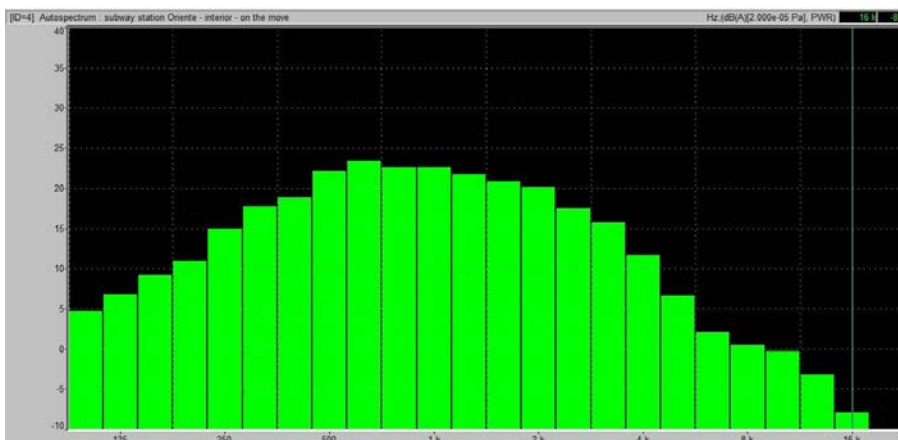
Figure 4. dB(a) frequencies of the total length interior field recording.
Source: Authors' creation (2024).

3.2.2 Static recordings

Figure 5 shows the second of the two recordings, in static modality, that we conducted in Oriente Station while shadowing Alex.
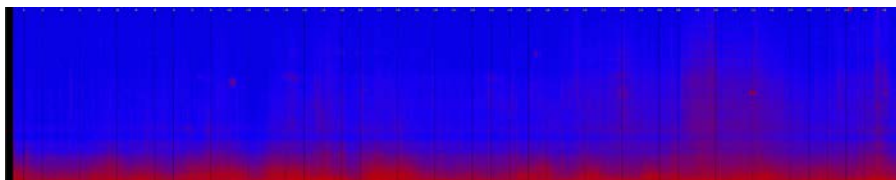
Figure 5. Static recording of Alex's itinerary within the Orient Station, duration 5.15 minutes.
Source: Authors' creation (2024).

In this recording frame, we listen to an exterior sound ambiance with periodic distance sounds moving from the background to the foreground.

At the same time, different sound marks exist between the foreground and background as the sound marks and the receiver move in space and shift places.

The sound marks of car horns, traffic, music from portable speakers, social interaction and people chatting, and luggage, are characterising the sound scene.

During the sound recording, we have the impression that we are in an exterior space, though from the reverberation of the background noises, we can understand that there is a ceiling structure/ canopy above. Similarly, the canopy works as a noise barrier for the rest of the urban environment giving the impression of the horizontal arrangement of the traffic and emphasis on the sound marks that take place under the canopy.

Though the sound signal is not referenced to a calibrated sound meter, we can study the correlated dB(A)s among the frequencies of the case study, as shown in Figure 6.
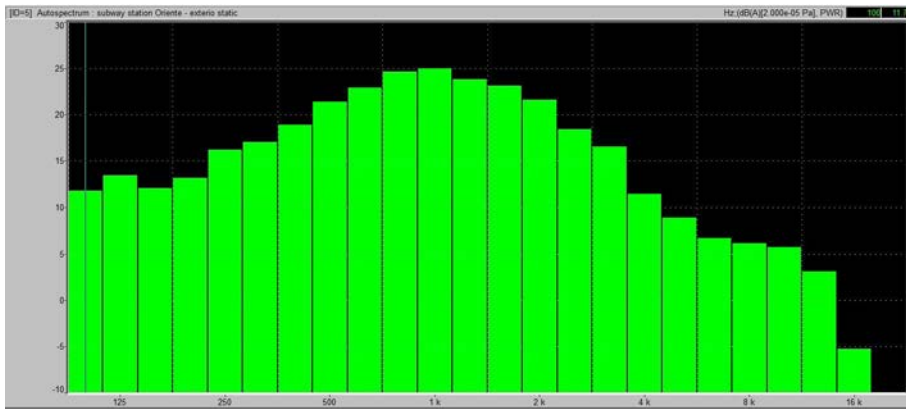
Figure 6. dB(a) frequencies of the total length exterior field recording
Source: Authors' creation (2024).

We note a maximum of 30.3dB(A)fluctuation among the selected frequency spectrum (100Hz-16KHz). There is a band-pass filtering (BPF) character on the sound scene with 2dB drop in each of the mid-range frequencies and with approximately 15dB (A) drop on the low frequencies and 15 dB(A) on the high-range frequencies.

3.2.3 Commonalities among sound scenes

In both recorded sound ambiances, some commonalities are alike even if the scenes are different due to the exterior/interior character and the traffic, as shown in Figure 7. Due to the large volume of the canopy on both sites, the sound events that take place are characterised by reverberation. Also, low frequencies have enough space (volume) to expand and create a low-frequency background "carpet" with short reverberation time but still with a constant character (subway, bus engines, etc). Once again, due to the large space and the endless possibilities for the users of the space to travel within the station, periodic sounds transitioning from the background to the foreground. Even if we compare an interior/exterior the dB(a) comparison has a minimal difference at the selected frequency spectrum more noticeable at the high frequencies.

Figure 7. Comparing the field recording dB(A)
Source: Authors' creation (2024).

4. CONCLUSIONS

We approached this case study with non-standard methodologies to adapt to the undetermined character of an uncertain architectural space. We believe that is common during the in situ study of a site to act impulsive and instinctive due to the rare/only chance of capturing an event that takes place suddenly. Through this paper, we argue the need to take the risk and explore the captured event, even if there is some or little data collected, rather than not studying the event at all. Greater use of these unconventional methodologies would most likely allow us to evaluate their contribution and limitations better and more pertinently.

What distinguishes the sensory research methods proposed here is the empathy of the researcher, who, with their body and senses, immerses themselves in the unexpected behaviors and events they encounter with the subject under investigation to understand the situations and context in which they find themselves together.

Regarding the soundscape of Oriente Station, we were surprised to observe that our subject moved with greater agility in outdoor spaces compared to indoor ones. This suggests that the indoor soundscape is cluttered, diminishing "natural" sounds and hindering orientation for blind individuals. Another possibility is that the ease of movement outdoors is due to the more pronounced sound of the stick's contact with the pavement outside compared to inside. However, it is important to note that neither indoor nor outdoor areas have dedicated signs for the visually impaired. Finally, it is interesting to note that the architecture of the space, with its intentional openings and closures designed by architect Calatrava, can be interpreted through the analysis of the cacophony of internal and external sounds that blend within its context.

5. BIBLIOGRAPHY

Auge, M. (2009). Nonluoghi. Introduzione a un'antropologia della surmodernità. Elèuthera.

Augoyard, J. F. (1998). Eléments pour une théorie des ambiances architecturales et urbaines. Les Cahiers de la recherche architecturale, 3ème trimestre 1998, n°42/43 Ambiances architecturales et urbaines, 7-23.

Augoyard, J. F. (2006). Sonic experience: A guide to the effects of sound. Montréal u.a.: McGill-Queen's Univ. Press u.a.

Cerulo, M. (2015). Gli equilibristi. La vita quotidiana del dirigente scolastico: uno studio etnografico, Soveria Mannelli, Rubbettino.

Czarniawska, B. (2007). Shadowing: And Other Techniques for Doing Fieldwork, in Modern Societies, Copenhagen, Copenhagen Business School Press DK.

Gato, A. M. (2012). Consumos, identidades e processos de diferenciação social no Parque das Nações. Paper presented at VII Congreso Português de Sociologia.

Pink, S. (2009). Doing sensory ethnography. University of Sydney, Australia

McDonald, S. (2005), Studying actions in context: a qualitative shadowing method for organizational research. Qualitative Research, 4, 455-473.

Quinlan, E. (2008). Conspicuous Invisibility: Shadowing as a Data Collection Strategy. Qualitative Inquiry, 14 (8), 1480-1499.

Sclavi, M. (2005). A una spanna da terra. Una giornata di scuola in Italia e negli Stati Uniti e i fondamenti di una metodologia umoristica, Milano, Bruno Mondadori.

Schaffer, P., North, C., Dack, J. (Eds.). (2017). Treatise on musical objects: An essay across disciplines. Oakland, CA: University of California Press.

Schafer, R.M. (1997). The soundscape: The tuning of the world. Rochester, Vt, United States: Destiny Books ; Distributed to the Book trade in the United States by American International Distribution CorpiN.

THE AMBIENCE IN THE REGULARIZED SECTION OF RIO DA COSTA - ODIVELAS

A AMBIÊNCIA NO TROÇO REGULARIZADO DO RIO DA COSTA - ODIVELAS

Coutinho, Paulo Miguel Cabeçadas Ataíde Ferreira
PhD Urbanismo
Universidade Lusófona
ferreiracoutinho07@gmail.com

ABSTRACT

The Ambience in the Regularized Section of the Rio da Costa characterizes an approach to the theme of the Ambience of Nature in the Urban Environment.

An intervention was carried out in a territory located between Rua Comandante Augusto Alexandre Jorge and IC 17 - CRIL (Circular Regional Interior de Lisboa), a fast road with a motorway profile and Estrada Nacional 8 (N 8) and the water line through its middle (Rio da Costa) in Odivelas.

By intervening in an area of approximately 20,000.00 m^2, the territory was opened up to people, where the aesthetically organized space brought various social, cultural and emotional activities, thus influencing the behavior of its users.

This work aims to present results on the environments of the areas that make up the Urban Ecological Structure (EEU) and verify how they relate to ecological, social, educational, sporting, cultural and structural elements present in the intervened area.

KEYWORDS: ambience. conducts. perceptions. users.

RESUMO

A Ambiência no Troço Regularizado do Rio da Costa, caracteriza uma abordagem à temática da Ambiência da Natureza no Meio Urbano.

Foi realizada uma intervenção num território encravado entre a Rua Comandante Augusto Alexandre Jorge com a IC 17 - CRIL (Circular Regional Interior de Lisboa), uma via rápida com perfil de autoestrada e a Estrada Nacional 8 (N 8) e a linha de água pelo seu meio (Rio da Costa) em Odivelas.

Ao se intervencionar uma área de aproximadamente 20.000,00 m^2, abriu-se o território às pessoas, onde o espaço organizado esteticamente trouxe várias atividades sociais, culturais e emocionais, influenciando assim o comportamento dos seus utilizadores.

Neste trabalho pretende-se apresentar resultados nas ambiências das áreas que integram a Estrutura Ecológica Urbana (EEU) e verificar como elas se relacionam com elementos ecológicos, sociais, educativos, desportivos, culturais e estruturais, presentes na área intervencionada.

PALAVRAS-CHAVE: ambiência. condutas. perceções. utilizadores.

1. LOCALIZAÇÃO

O Local de intervenção encontra-se entre a Rua Comandante Augusto Alexandre Jorge, a IC17 – CRIL (Circular Regional Interior de Lisboa), que é uma via rápida com perfil de autoestrada, a Estrada Nacional 8 (N 8) e com uma linha de água pelo seu meio (Rio da Costa) em Odivelas (Figura 1).

Figura 1 – Localização (Googlemaps, 2001).

2. PROJETO – PLANO GERAL

Os principais objetivos da implementação do parque são a regularização hidráulica do rio da Costa e áreas envolventes através da construção de zonas tampão a montante do parque para reduzir caudais (Figura 1), proteger contra riscos de cheias e conseguir a integração paisagística (Figura 2) através da instalação de vegetação ribeirinha que estabilize as margens dos rios e sustenta a avifauna. A função da flora ajuda a aumentar a biodiversidade da área.

Figura 2 - Execução do colchão Reno no leito do Rio da Costa (Autor, 2011).
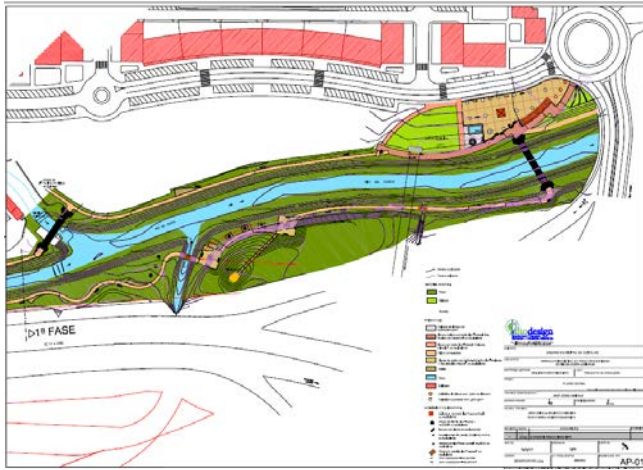
Figura 3 - Projeto da BioDesign – Arquitetura – Paisagista, Planeamento e Construção Ambiental, Lda. – Planta Geral do Arranjo Paisagístico do Troço Regularizado do Rio da Costa (Cancela, 2001).

Com esta intervenção paisagista, pretendeu-se minimizar os impactos causados pela presença da IC17 – CRIL (Circular Regional Interior de Lisboa), via com grande fluxo automóvel, promovendo uma melhoria Paisagista, através da introdução de vegetação, infraestruturas de lazer de forma a ser utilizadas como um local lúdico e pedagógico. Criação de percursos pedonais ao longo das margens, com construção de travessias ficando um circuito que se pretende de manutenção (Cancela, 2001)

2.1 Parque Urbano - Ambiências

No inicio da Rua Comandante Augusto Alexandre Jorge foi criada uma zona de estadia a servir de transição entre o arruamento e os caminhos pedonais (figura 3).

Na zona de estadia foi colocada uma pérgula em madeira com bancos por baixo da mesma (Figura 4)
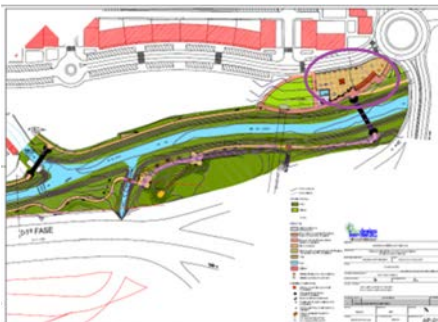
Figura 4 Zona de Estadia, Pérgula e Bancos (Cancela, 2001).   Figura 5 – Muros, Pérgula e Bancos, Fonte (Autor, 2024).

Após a execução da zona de estadia começou a ser utilizada por transeuntes que alimentam os pombos, começando a ficar um local onde a comunidade de pombos resolveu frequentar e que impede a utilização dos bancos que tinham sido colocados por baixo da pérgula (Figura 6).

Na presente data a Câmara Municipal de Odivelas vai transformar a zona de estadia num anfiteatro aberto para o Rio da Costa, retirando a pérgula, bancos e os muros de delimitação existente (Figura 7).

Figura 6 – Zona de Estadia com Pombos (Autor, 2024).
Figura 7 - Planta Geral da Requalificação da Frente Urbana do Rio da Costa - Odivelas, (Duarte & Brogueira ,2022).
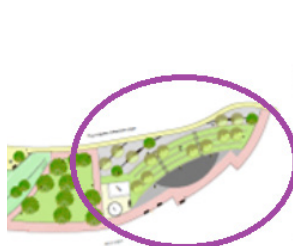
O tanque, o poço e a nora (Figura 8 e 9) foram recuperados de forma que possam ser um elemento didático para todos os utilizadores. A nora pode ser usada (roda manual) para visititas escolares onde os alunos podem observar a água retirado por pequenos reservatórios ou alcatruzes que despejam para um canal que conduz a água para o tanque.

Figura 8 - Localização do Tanque, Poço e Nora, (Cancela, 2001).   Figura 9 - Tanque, Poço e Nora, (Autor, 2024).
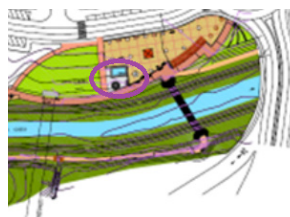
2.2 Zona de repouso e merendas - Ambiências

Na margem direita do rio da Costa, foram criadas duas áreas de merendas, com instalação de mesas, junto aos percursos pedonais (Figura 9 e 10). Colocação de diversos bancos, sendo essas áreas protegidas por um aterro em altura que na parte superior foi criado um miradouro (Figura 11 e 12) e colocada uma cortina arbórea. De forma a criar uma barreira sonora (Figura 13) que beneficia os utilizadores do espaço em questão como também serve de protecção acústica os edificios de habitação localizados na Rua Comandante Augusto Alexandre Jorge.
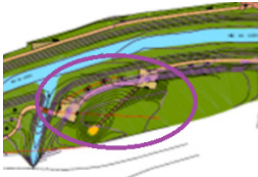
Figura 10 - Localização das áreas para merendas, bancas e miradouro. (Cancela,2001).

Figura 11 - Áreas de Merendas. (Autor, 2024).

Figura 12 - Aterro e Miradouro. (Autor, 2024).

Figura 13 - Vista do Miradouro. (Autor 2024).

Figura 14 - Cortina Arbórea. (Autor, 2024).

2.3 Circuito de manutenção - Ambiências

Foi criado um circuito de manutenção com 12 estações ao longo do percurso. Colocação de bancos, papeleiras e painéis informativos ao longo dos caminhos. Execução de três pontes revistadas a madeira.

Os utilizadores não estavam a tirar partido das estações perconizadas ao longo do percurso e como tal a C.M.O resolveu agrupar os equipamentos de fitnesse em dois locais (Figuras 15 e 16).

Figura 15 - Equipamento de Fitness. (Autor, 2024).

Figura 16 - Equipamento de Fitness. (Autor, 2024).

Relativamente ao revestimento das pontes em madeira (Figura 17) o mesmo teve de ser trocado por pavimento em pavê (Figura 18), devido a que começaram a usar bicicletes, trotinetes, skeites e outro tipo de viaturas sobre as pontes que originou uma grande degradação.

Figura 17 - Ponte com Revestimento a Madeira. (Autor, 2005).

Figura 18 - Ponte com Revetimento em Pavê. (Autor, 2024).

A colocação dos bancos ao longo dos caminhos também teve que sofrer alterações ao longo do tempo, de inicio na margem esquerda do Rio da Costa os bancos tinha sido colocados virados para o percurso (Figura 19), uma vez que o Rio da Costa apresentava uma água poluida e nos parecer ser a melhor orientação. O Rio da Costa começou a ter água de melhor qualidade e começaram a chegar patos, galinholas e outra fauna marinha que obrigou a alterar a posição dos bancos, ficando os utilizadores virados para apreciar o Rio da Costa e a sua fauna (Figura 20 e 21).

Figura 19 – Banco com as costas para o Rio da Costa. (Autor,2005).

Figura 20 – Banco virado para o Rio da Costa. (Autor, 2024).

Figura 21 - Utilizador a ler voltado para o Rio da Costa. (Autor, 2024)

Os caminhos ao longo das margens são muito utilizados por todo o tipo de população, tanto para corrida (Figura 22) como caminhada por pessoas com mais ou menos vunerabilidades (Figura 23).

Figura 22 - Utilizador do Circuito de Manutenção a Correr. (Autor, 2024).

Figura 23 - Utilizador do Circuito de Manutenção a Caminhar. (Autor, 2024).

Figura 24 - Elementos do Correr Lisboa em Odivelas. (Facebook, 2024).

"Sítios para correr (Figura 24) - Comecemos logo pela entrada de Odivelas, com o Parque do Rio da Costa que se estende desde o viaduto que vem do Senhor Roubado até ao Quartel dos Bombeiros Voluntários. Este é o um dos melhores sítios para se correr ou para passear os cães. Tem várias zonas verdes que acompanham o curso do rio, e tem também instalados aparelhos para fazer exercício".

2.4 Iluminação - Ambiências

As colunas de iluminação (Figura 25) instaladas são do tipo vertical, médio porte, com 3,5m de altura útil. Devido à proximidade à IC17-CRIL, a escolha das luminárias foi muito importante, de forma a não encadear os automobilistas, como tal as colunas foram euipadas com uma luminária em Led´s cuja projecção da Luz é diretamente para os caminhos.

Figura 25 - Candeeiro Utilizado nos Caminhos de Manutenção. (Autor, 2024).

2.5 Material Vegetal e Rega - Ambiências

Foi colocado material vegetal compativel com o existente, criando zonas mais compactas de mata (Figura 26).
Árvores: Amieiro,Frixo, Salgueiro e Choupo Negro.
Arbustos: Pilriteiro, Loureiro, Pereira brava, Sanguinho das sebes e Sabugueiro.

Criação de zonas de prado de sequeiro junto às margens do Rio da Costa e uma zona de estadia com relva, com um sistema automatizado de sistema de rega.
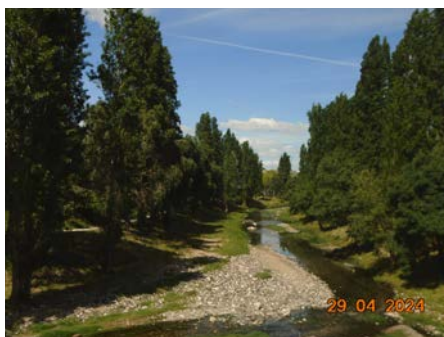
Figura 26 - Rio da Costa, Árvores, Arbustos e Prado de Sequeiro. Fonte: Autor, 2024.

3. ATUALIDADE

Hoje em dia a zona intervencionada (Figura 27) está com grande utilização. Assim, podemos observar como a intervenção da arquitetura no espaço podem melhorar a sua utilização. grande desenvolvimento ao nível ambiental, nomeadamente a fauna e flora. Estando o espaço com grande utilização.
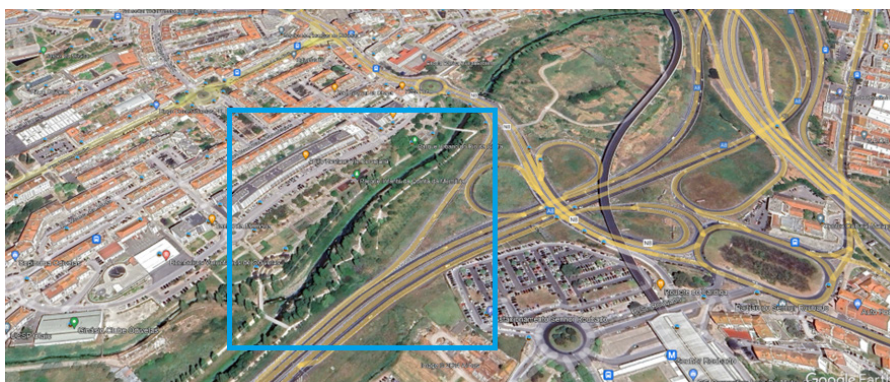
Figura 27 - Googlemaps,2024

A melhoria do espaço está relacionada ao nível de sua humanização, o que significa levar em consideração aspetos físicos, ambientais (melhoria da fauna e flora), funcionais e econômico.

Quando intervimos em um local para revitalizá-lo, é preciso entender as necessidades da população para quem se está projetando

4. BIBLIOGRAFIA

Cancela, J. (2001). Memória descritiva do Projeto de Execução – Arranjo Paisagístico do troço Regularizado do Rio da Costa em Odivelas.

Duarte & Brogueira (2022). Marta Duarte e Ana Brogueira, 2022 – Planta Geral do Projeto de Execução – Regularização da Frente Urbana do Rio da Costa em Odivelas.

Facebook, (2024). *https://www.nit.pt/fora-de-casa/03-11-2016-melhor-bairro-do-mundo-3-odivelas-e-o-melhor-sitio-para-morar-na-grande-lisboa/attachment/1987*]

L12

WHAT METROLOGY FOR SOUNDWALKS?

QUE METROLOGIA PARA OS SOUNDWALKS?

Mohammed Boubezari
Tenured Researcher
Universidade Lusófona, Portugal
Mohammed.boubezari@ulusofona.pt

Agata Gajdek
adjunct/Ph.D.
University of Rzeszów, Poland
agajdek@ur.edu.pl

Mersida Ndrevataj
Ph.D. Fellow
IUAV University of Venice, Italy
mndrevataj@iuav.it

Anna Sołtysik
Adjunct/ PhD, Master of Arts
University of Rzeszów, Poland
asoltysik@ur.edu.pl

Petros Flampouris
Ph.D. Fellow
University of Thessaly, Greece
flampouris@uth.gr

ABSTRACT

Acoustic measurement in ambiance studies often lacks precision, despite its recognized importance in methodologies like soundwalks. To address this, a method was tested during a 2022 Sensorial Workshop at Lisbon's Oriente Station to measure separate sound sources from their background. This method, previously used for static sources, was applied dynamically in a soundwalk, enabling precise identification and isolation of sounds as perceived by participants. Similar to Leonardo da Vinci's perspectograph, the method measures the "size" of sounds in decibels from the loudest to the softest at the listening point. It captures the most representative frequency of a sound, essential for identifying objects in a complex sound landscape. This approach allows for a comprehensive description of the perceived sound landscape and maintains a precise connection between (signal), sensory (sensation), and perceptual data (sense), making it transdisciplinary. The article explains the method and measurement protocol used.

KEYWORDS: Metrology. Sound walk composition. Synecdoche effect. Transdisciplinary.

RESUMO

A medição acústica em estudos de ambiências muitas vezes carece de precisão, apesar da sua importância reconhecida em metodologias como os "soundwalks". Para resolver isso, uma metodologia foi testada durante um Workshop Sensorial de 2022 na Estação do Oriente, em Lisboa, para medir fontes sonoras separadas do seu fundo. Esta metodologia, anteriormente utilizada para fontes estáticas, foi aplicada de forma dinâmica num "soundwalk", permitindo a identificação e isolamento precisos dos sons percebidos pelos participantes. Semelhante ao perspectógrafo de Leonardo da Vinci, a metodologia mede o "tamanho" dos sons em decibéis, do mais alto ao mais baixo, no ponto de escuta. Captura a frequência mais representativa de um som, essencial para identificar objetos num ambiente sonoro complexo. Esta abordagem permite uma descrição abrangente da paisagem sonora percebida e mantém uma ligação precisa entre os dados físicos (sinal), sensoriais (sensação) e percepcionais (sentido), tornando-a transdisciplinar. O artigo explica a metodologia e o protocolo de medição utilizados.

PALAVRAS-CHAVE: Metrologia. Composição de sound walk. Efeito de sinédoque. Transdisciplinaridade.

INTEGRATING PERCEPTUAL INSIGHTS WITH ADVANCED MEASUREMENT TECHNIQUES

In the field of ambiance studies, soundwalks represent a critical methodology for understanding the acoustic environment as it is experienced by humans. Traditional acoustic measurement techniques, however, have struggled with precision when applied to the dynamic and often subjective experiences of soundwalk participants. This article reviews an innovative approach to soundwalk metrology, tested during a 2022 Sensorial Workshop at Lisbon's Oriente Station, which seeks to improve how sounds are measured, analyzed, and understood in urban environments with the needed precision.

Bridging from these traditional methods to modern innovations, the foundational concepts introduced by R. Murray Schafer, Barry Truax in Canada, and Jean-François Augoyard along with the CRESSON team in France, though historical, still play a crucial role when integrated with contemporary technologies. These technologies, such as intelligent hearing aids and adaptive human-machine interfaces, enhance auditory experiences by selectively amplifying important sounds while suppressing background noise. This synergy between old and new is essential, as it enhances our ability to precisely measure and interpret sounds in a way that aligns more closely with human perception.

The science of sound measurement has evolved significantly since the introduction of the decibel unit in the early 20th century. Early methods focused on the objective measurements of sound levels but often overlooked the experiential aspects that define human responses to soundscapes. Although ISO 12913-1:2014 recognizes the importance of human perception in the study of soundscapes, it appears to lack depth in its understanding of situated human perception. This limited approach does not adequately consider the interactions between the individual and their environment, which are essential for grasping the immersive and contextual nature of soundscapes. As a result, the standard fails to propose methods that accurately measure sounds in a way that truly reflects the auditory experiences of individuals in their complex and context-specific realities. This shortfall could seriously hinder the development of truly effective and respectful acoustic solutions in diverse environments.

Recent advancements in digital technology have significantly advanced the technique of separating sound sources from their background, aligning with the pioneering work initiated in 2001 with a patent (Boubezari. 2001). This work focused on the isolation of "salient sounds" defined as the "acoustic size" of a sound determined by its emergent frequency, with the minimal 3 dB level required for human perception to identify and measure this "acoustic size". Salient sound extraction using deep neural networks predicting complex for example, addresses extracting sounds that are unexpected in an audio stream and stand out because of their spectrotemporal characteristics. It focuses on extracting unexpected sounds from an audio stream that stand out due to their spectrotemporal characteristics. It explores human auditory

scene analysis, where such sounds are referred to as "sensory salient." (Grzywalski, T & al. 2024). This still not clear how to measure a sound as it is perceived.

Environmental monitoring and security and surveillance systems, highlighted in studies by Martel et al. (2018) and Valenzise et al. (2007), use sound detection to monitor ecological changes or secure areas against unauthorized access. Additionally, speech recognition technologies improve communication in noisy settings, a focus of research by Li et al. (2014).

Technical innovations in sound processing such as source separation and noise reduction, essential for scientific analysis, have been demonstrated by Vincent et al. (2006) and Cohen & Berdugo (2001. Sound event detection and acoustic scene classification, explored by Stowell et al. (2015) and Barchiesi et al. (2015), automate the recognition and categorization of sounds in diverse environments. Furthermore, the use of deep neural networks in processing complex audio signals, as discussed by Hinton et al. (2012), offers sophisticated methods for analyzing and interpreting sound data, pushing the boundaries of acoustic environment understanding.

Despite the precision of these acoustic measurements, integrating objective and subjective data remains challenging and often merely indicative when combined with interdisciplinary approaches that include accounts of perception. To address this, we have introduced a technique in the method of commented walks that resembles Leonardo da Vinci's perspectograph. This integration of advanced technologies demonstrates a synergy between traditional and new methodologies, enriching our understanding and methodology in the field of environmental sound studies. The robust conceptual framework provided by earlier approaches, combined with the computational power and algorithms of modern techniques, will certainly allow for a comprehensive approach to soundscape analysis, bridging historical insights with contemporary technological capabilities. But this is not done yet.

The method tested here remains not only simpler to use but also much more precise and effective when it comes to measuring sounds that perception identifies as relevant during a soundwalk. The methodological use of this intersection of objective and subjective data remains at the discretion of the researcher and depends on what their hypotheses attempt to verify. This flexibility allows researchers to adapt the method to various environmental contexts and research objectives, thus optimizing the relevance and impact of their studies on soundwalks, as we have already shown earlier for soundscape mapping (Boubezari M. 2012).

METHODOLOGY

To address these challenges, the research team at the Universidade Lusófona adopted a novel metrological approach inspired by Leonardo da Vinci's perspectograph. The adapted methodology involves dynamically applying this concept to acoustic

measurements, capturing the 'size' of sounds in decibels from various sources as they are perceived at the listening point. This technique allows for the isolation of specific sounds from their background noise, enabling a precise analysis of their characteristics and impact.

The methodology was applied during a soundwalk conducted at Lisbon's Oriente Station, a bustling urban environment ideal for testing the technique's effectiveness. Participants were equipped with specialized recording equipment that captured detailed acoustic data as they moved through the station. The data were then analyzed to isolate individual sounds and measure their "size".

Acoustic size is defined as the predominant frequency that emerges from the background noise, measured in decibels (dB). According to the patent n° FR2831956A1, this measurement involves gradually introducing background white noise during the listening phase or recording of a soundwalk. As the white noise increasingly masks the target sound, the level at which the sound is completely obscured determines its "acoustic size." Calibration of this measurement is conducted just prior to the method to ensure accuracy and repeatability
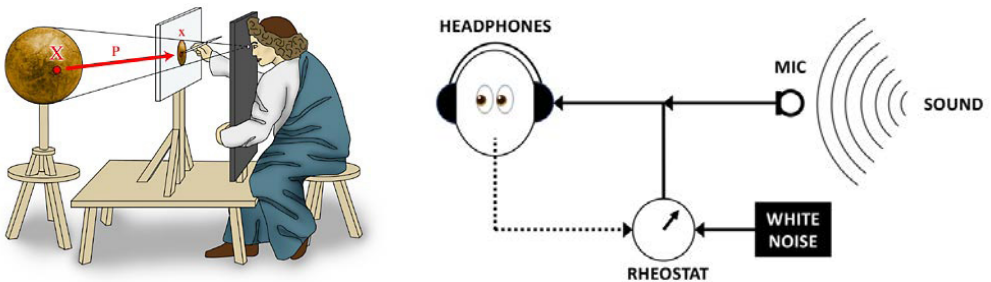
Figure 1.: Perspectographe versus Soundscope Brevet n° FR2831956A1.

Figure 2.: the recording of the soundwalk in Calatrava Station, Gare de Oriente, in Lisbon.

ANALYSIS AND FINDINGS

The application of this innovative metrological technique revealed several key findings about the sound environment at Oriente Station. First, the method successfully isolated specific sounds, such as announcements over the public address system, conversations among passengers, and the rumbling of trains, from the overall noise. This isolation allowed for a detailed analysis of how each sound contributed to the overall ambiance and affected the participants' perceptions.
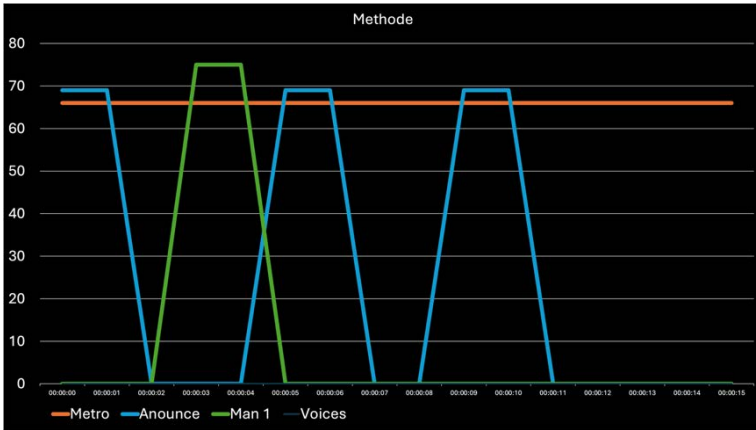
Figure 3.: Measurement by listening to sounds immersed in ambient noise.

Furthermore, the technique provided insights into the superposition of planes that compose the soundscape within the station, identifying which sounds were most dominant and which were relegated to the second, the third and so on until the background. This layering is essential for understanding the acoustic signature of a space and its effect on those who inhabit it (Figure 4.).
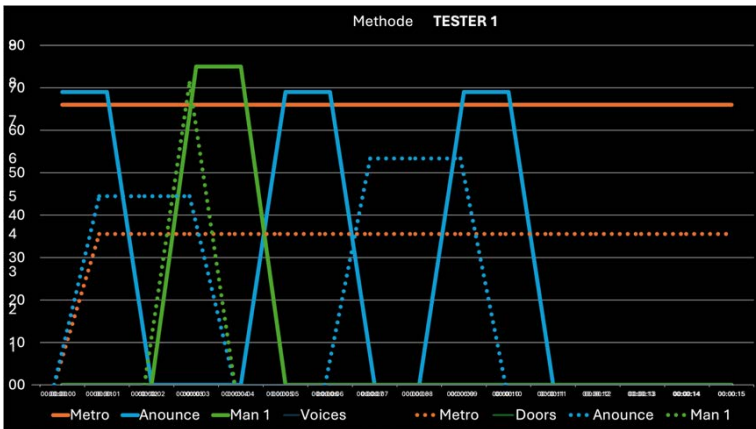
Figure 4.: Listener 1 (dashed lines)

In solid lines are represented the sounds of the soundwalk as measured by the masking method, which involves measurement through listening. In dashed lines, the same sounds are shown as they are identified and estimated by listening alone.
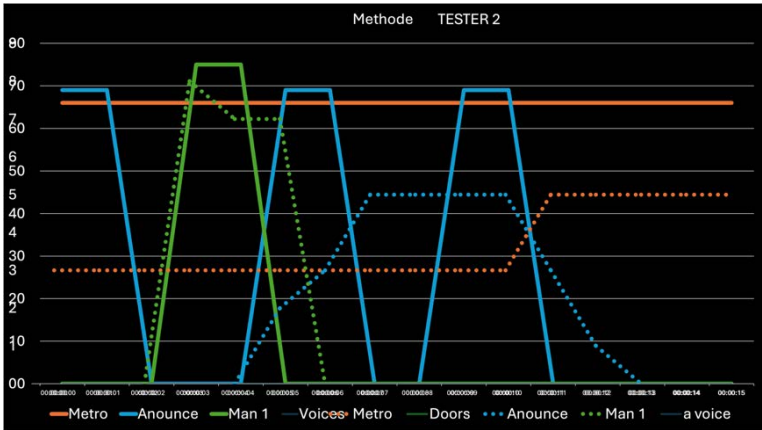
Figure 5.: Listener 2 (dashed lines)

In Figure 5., a second listener focuses on and interprets the same acoustic reality differently.

Figure 6.: Comparative Analysis of Perceptual Differences Between Two Listeners.

Figure 6. compares the differences in perceptions felt by the two listeners. The differences are as varied in timing as they are in the estimated levels of the perceived sounds.

This method and the results presented here do not intend to discredit human perception, but rather to highlight the interesting biases that different listeners have towards the same reality. This perceptual discrepancy is intriguing and warrants further analysis to understand the causes of this perceptual distortion, which may be related to known psychoacoustic effects such as Synecdoche effect, auditory masking and other sound effects (Augoyard, J.-F 1998).

Researchers will find this refined soundwalk metrology method to be an invaluable tool. It serves as a foundational standard for precisely analyzing the interplay between objective measurements and subjective perceptions within acoustic environments. By employing this method, researchers can rigorously test their initial hypotheses and explore deeper insights into how individuals perceive and react to different soundscapes. This approach not only enhances the accuracy of data collected but also enriches the understanding of complex auditory experiences, facilitating more informed conclusions about human auditory perception.

CONCLUSION

This study highlights the substantial advantages of adopting a perception-based approach in soundwalk metrology, marking a significant evolution from traditional quantitative methods towards a more nuanced analysis that integrates human sensory experiences. By meticulously capturing and isolating specific sounds within a soundscape, this methodology not only enhances the precision and applicability of sound measurements but also enables researchers to dissect the intricate relationship between acoustic elements and human perception. This detailed understanding is pivotal for accurately assessing how sounds influence individuals and environments, and it facilitates effective monitoring of sound landscapes.

The implications of this research extend beyond the academic realm, offering practical applications in urban planning, architectural design, and public health. This approach provides architects, urban planners, and policymakers with actionable insights, assisting them in creating more harmonious and responsive urban spaces that cater to the auditory experiences of their inhabitants.

Looking ahead, the focus of future research will be to further refine this innovative methodology and expand its application across diverse and complex environments. The continuous improvement in soundwalk metrology has the potential to significantly enhance how we measure, analyze, and comprehend soundscapes, contributing substantially to environmental studies and urban development.

In essence, leveraging perception as a tool to measure sounds not only refines the data collection process but also enriches our comprehension of the auditory world, establishing a new standard for how we interact with and shape our acoustic environments. This methodological enhancement is a step forward in the ongoing effort to understand and manage the acoustic dimensions of our surroundings. Meanwhile, the prospect remains that advancements in artificial intelligence might eventually exceed human sensory perception in this field.

REFERENCES

Augoyard, J.-F., & Torgue, H. (1998). *À l'écoute de l'environnement: Répertoire des effets sonores.* Parenthèses.

Boubezari, M., & Bento Coelho, J. L. (2012). La topographie du paysage sonore - Un outil descriptif et prédictif des ambiances sonores. *Ambiances in action / Ambiances en acte(s) - International Congress on Ambiances*, Montreal 2012, pp. 247-252. HAL Id: halshs-00745954.

Boubezari, M. (2001). Dispositif portatif de mesure des courbes d'isophonie d'une source de bruit par effet de masque acoustique et son procédé d'utilisation (Patente No. FR2831956A1). Institut National de la Propriété Industrielle, Grenoble, France.

Barchiesi, D., Giannoulis, D., Stowell, D., & Plumbley, M. D. (2015). Acoustic scene classification: Classifying environments from the sounds they produce. *IEEE Signal Processing Magazine, 32*(3), 16-34.

Cohen, I., & Berdugo, B. (2001). Noise reduction in speech processing using microphone arrays. *IEEE Transactions on Signal Processing, 49*(12), 2973-2984.

Davies, W. J., Adams, M. D., Bruce, N. S., Cain, R., Carlyle, A., Cusack, P., Hall, D. A., Hume, K. I., Irwin, A., & Jennings, P. (2013). Perception of soundscapes: An interdisciplinary approach. *Applied Acoustics, 74*(2), 224-231.

Gallagher, H. G., & Zahorik, P. (2010). Heightened loudness, reduced annoyance: The effect of coping strategies on the perception of urban noise. *Environment and Behavior, 42*(4), 443-458.

Grzywalski, T., Botteldooren, D., Song, Y., & Madhu, N. (2024). Salient sound extraction using deep neural networks predicting complex masks. In *Proceedings of the SPA 2024 Conference.*

Hellbrück, J., & Wrightson, K. (2016). Soundscape: An approach to rely on hearing when designing spaces. *Landscape Architecture Frontiers, 4*(4), 74-83.

Hinton, G., Deng, L., Yu, D., Dahl, G. E., Mohamed, A.-R., Jaitly, N., Senior, A., Vanhoucke, V., Nguyen, P., Sainath, T. N., & Kingsbury, B. (2012). Deep neural networks for acoustic modeling in speech recognition. *IEEE Signal Processing Magazine, 29*(6), 82-97.

ISO/TC 43/SC 1/WG 54. (2014). Acoustics — Soundscape — Part 1: Definition and conceptual framework (ISO 12913-1:2014). International Organization for Standardization.

Li, J., Deng, L., Haeb-Umbach, R., & Gong, Y. (2014). An overview of noise-robust automatic speech recognition. *IEEE/ACM Transactions on Audio, Speech, and Language Processing, 22*(4), 745-777.

Lyons, K., Starner, T., & Plaisted, D. (2000). Twiddler typing: One-handed chording text entry for mobile phones. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 99-106.

Martel, V., Dugan, P. J., & Clark, C. W. (2018). Passive acoustic monitoring in marine environments. *Annual Review of Marine Science, 10*, 267-291.

Payne, S. R. (2013). The production of a perceived restorativeness soundscape scale. *Applied Acoustics, 74*(2), 255-263.

Pijanowski, B. C., Villanueva-Rivera, L. J., Dumyahn, S. L., Farina, A., Krause, B. L., Napoletano, B. M., Gage, S. H., & Pieretti, N. (2011). Soundscape ecology: The science of sound in the landscape. *BioScience, 61*(3), 203-216.

Schafer, R. M. (1977). *The Tuning of the World*. New York: Knopf.

Stowell, D., Giannoulis, D., Benetos, E., Lagrange, M., & Plumbley, M. D. (2015). Detection and classification of acoustic scenes and events. *IEEE Transactions on Multimedia, 17*(10), 1733-1746.

Truax, B. (2001). *Acoustic Communication.* Ablex Publishing.

Valenzise, G., Gerosa, L., Tagliasacchi, M., & Antonacci, F. (2007). Scream and gunshot detection and localization for audio-surveillance systems. *IEEE Conference on Advanced Video and Signal Based Surveillance*, 21-26.

Vincent, E., Gribonval, R., & Fevotte, C. (2006). Performance measurement in blind audio source separation. *IEEE Transactions on Audio, Speech, and Language Processing, 14*(4), 1462-1469.

HOTEL ARCHITECTURE AS A SENSORY CONCEPT AND OF NEW AMBIENCE

ARQUITETURA HOTELEIRA COMO CONCEITO SENSORIAL E DE NOVOS AMBIENTES

Sílvia Gonçalves Suárez
Doutoranda em Urbanismo
Universidade Lusófona
silvia.gsuarez@yahoo.com

ABSTRACT

The choice of a tourist enterprise by a tourist goes beyond the simple desire to find a place for temporary leisure or rest; it is about seeking a specific spatial experience or a particular sensory experience. The growing aim of tourist enterprises to offer new spatial experiences based on differentiating concepts and unique sensations means that their architecture not only provides functionality and comfort but also evokes emotions and inspires. These offerings by tourist enterprises, with the aim of attracting customers, often result in urbanistic dichotomies that encompass not only the users of the tourist enterprises but also the entire architectural and sensory environment of the surrounding and pre-existing area where they are located. The question arises: Is the most valuable offering of a hotel enterprise precisely the experience of the opposite within the space it integrates?

KEYWORDS: Architecture. Tourism. Hotel. Sensory. Environment. Emotion

RESUMO

A escolha de um empreendimento turístico por parte de um turista vai além do simples desejo de encontrar um local para lazer ou descanso temporário; trata-se de buscar uma vivência espacial específica ou uma experiência sensorial particular.

O crescente objetivo dos Empreendimentos Turísticos de oferecer novas experiências espaciais baseadas em Conceitos diferenciadores e sensações únicas, faz com que a arquitetura dos mesmos não apenas proporcione funcionalidade e conforto, mas também evoque emoções e inspire.

Estas ofertas dos Empreendimentos Turísticos com a finalidade de captar clientes, resultam muitas vezes em Dicotomias Urbanísticas que abrangem não só os utilizadores dos Empreendimentos Turísticos mas todo o ambiente arquitetónico e sensorial do meio envolvente e pré-existente onde de insere.

Surge a questão: A oferta mais valiosa que Empreendimento Hoteleiro proporciona será precisamente o vivenciar o oposto no espaço onde se integra?

PALAVRAS-CHAVE: Arquitetura. Turismo. Hotel. Sensorial. Ambiente. Emoção

1. INTRODUÇÃO

Atualmente o Turismo é um dos setores mais marcantes, de carácter transversal a nível planetário, e move milhões de pessoas diariamente por todo o planeta.

A sua relevância abrange vários âmbitos, especialmente como um dos impulsionadores da economia mundial sendo que, de acordo com o Conselho Mundial de Viagens e Turismo (WTTC), (turismodeportugal, 2022) o setor das viagens e do turismo

contribuiu em 2019 sensivelmente com cerca de 10.3% do PIB global, verificando-se uma redução no ano de 2020 devido à pandemia mas com um aumento notório ao longo dos anos seguintes.

Em consequência, a Arquitetura hoteleira toma uma posição de relevo na nossa sociedade e contribui fortemente para a dinâmica da arquitetura e do urbanismo no interior das cidades bem como no exterior das cidades, marcando as zonas rurais e naturais.

A escolha de um empreendimento turístico por parte de um turista vai além do simples desejo de encontrar um local para lazer ou descanso temporário; trata-se de buscar uma vivência espacial específica ou uma experiência sensorial particular.

O crescente objetivo dos Empreendimentos Turísticos de oferecer novas experiências espaciais baseadas em Conceitos diferenciadores e sensações únicas, faz com que a arquitetura dos mesmos não apenas proporcione funcionalidade e conforto, mas também evoque emoções e inspire.

Estas ofertas dos Empreendimentos Turísticos com a finalidade de captar clientes, resultam muitas vezes em Dicotomias Urbanísticas que abrangem não só os utilizadores dos Empreendimentos Turísticos mas todo o ambiente arquitetónico e sensorial do meio envolvente e pré-existente onde de insere.

Surge a questão: A oferta mais valiosa que Empreendimento Hoteleiro proporciona será precisamente o vivenciar o oposto no espaço onde se integra?

Assim, este artigo é uma reflexão teórica sobre a relação das Dicotomias da oferta de experiência sensitiva proporcionada pelos Empreendimentos Hoteleiros Urbanos de elevada classificação em contraste com o meio ambiente onde se insere e à sua real localização urbana/rural.

2. EVOLUÇÃO DA ARQUITETURA HOTELEIRA, DA FUNÇÃO À SENSAÇÃO

A arquitetura hoteleira teve como origem o dar resposta à função básica e primordial de prestar serviço de alojamento temporário a quem o necessitasse.

Com o passar dos anos, e com o surgimento da revolução industrial, os edifícios dos hotéis evoluíram para características mais abrangentes e de qualidade mais elevada, também elas fruto do desenvolvimento social e cultural da sociedade da altura. Esses hotéis eram tendencialmente ligados aos aspetos do lazer e do descanso, inseridos em ambientes urbanos ou rurais, e usualmente associados à imagem da abastança e do luxo.

Presentemente constata-se uma evolução significativa na arquitetura hoteleira devido a diversos fatores, sejam eles as características próprias da atual sociedade e das novas exigências e expectativas ou a elevada concorrência existente por todos o mundo.

Este contexto obrigou os Empreendimento Turísticos a enveredar por novos caminhos para se evidenciar e captar hóspedes, obrigando-os a se reinventar e encontrar outros tipos de ofertas, estilos, abordagens e objetivos.

Criaram-se diferentes "Conceitos" de Empreendimentos Turísticos, fazendo que para além do serviço de alojamento, o hotel proporciona sensações, emoções e tipos de experiências diferenciadoras a quem os procura.

Atualmente quando um turista escolhe um determinado Empreendimento Turístico procura obter um determinado objetivo de vivência espacial ou de experiência sensorial, podendo diferir de pessoa para pessoa, de local, de época do ano, mas sempre baseado em expectativas e gostos muito próprios e individualizados.

Gabriela Botelho (Botelho, 2011), na introdução do seu livro, também aborda este ponto de vista:

> "As unidades hoteleiras aparecem como centro e atracção turística fundamental de uma região ou lugar turístico; É através de cada hotel selecionado que iremos descobrir a localidade, a vila, a cidade, a ilha, a região onde se insere. A partir do hotel iremos explicar um pouco a sua envolvência cultural, paisagística, histórica… (…)
>
> O boutique hotel caracteriza-se, basicamente, pelos seguintes aspectos: por um número limitado de quartos (normalmente menos de 100) em pequenos hotéis de luxo de 4 e 5 estrelas; por identidade forte graças a uma decoração de "assinatura" e única; por espaços comuns mais pequenos, mais intimistas, comparativamente a outro tipo de hotéis; por uma grande preocupação com o conforto dos quartos, inclusivamente do ponto de vista tecnológico; (…) por estar ligados a determinados estilos de vida e propor experiências diferenciadas (musicais, olfativas, etc.) (…);
>
> E finalmente, no casso do boutique hotel urbano, por se situar em locais cosmopolitas ou com carácter, de preferência em ruas paralelas às grandes avenidas ou ruas principais.
>
> O boutique hotel responde, desta forma, a uma necessidade de diferenciação quer pelo tratamento e carácter único quer pelo reencontro com os valores de autenticidade, da emoção, à necessidade de reconhecimento e uma fuga à solidão".

A tendência dos Hotéis em proporcionar experiências espaciais inovadoras, fundamentadas em conceitos distintos e sensações exclusivas, leva a uma arquitetura que tenha também como objetivo o despertar sentimentos nos utentes, ligando-os emocionalmente a essa atmosfera.

Tal como refere (Mendonça Pedro, 2019):

> "A experiência turística memorável é um processo interativo entre o turista e um destino/serviço/produto, inspirado nas suas expetativas, necessidades e desejos, fruto da perceção sensorial, da interpretação emocional e da vivência de momentos únicos e inesquecíveis que permaneçam na sua memória."

Algumas dessas intervenções, dadas as características e dimensão, para além de "abarcar" os utentes dos Empreendimentos Turísticos, também interagem com todos os que usufruem do local em redor, extrapolando a Imagem e o Conceito para toda a comunidade.

Esta conexão mergulha de uma forma profunda em todos os ambientes, originando adaptações e intervenções no conjunto do território urbano ou natural.

3. CONCEITO DO HOTEL COMO EXPERIÊNCIA SENSORIAL

Cada hotel está diretamente relacionado o Conceito próprio que o diferencia de qualquer outro estabelecimento hoteleiro, significativo no contexto da competitividade no setor hoteleiro sendo que o torna único, com a intenção de se tornar o mais possível atrativo para a sua primordial função que é de cativar utentes, somar valor à experiência do cliente e vender os seus serviços.

Assim também resulta na rentabilidade e sucesso do empreendimento hoteleiro, bem como fortalecimento da imagem do hotel.

Estes Conceitos podem abranger uma diversidade de aspetos, tal como a forma do edifício (s), o estilo de arquitetura, o design, a dimensão, o número de quartos, os tipos de serviços que dispõe ou as áreas verdes envolventes.

Um desses elementos também pode ser a sua integração com o ambiente ao redor, em termos de volumetria, circulações pedonais e viárias, bem como o relacionamento visual e espacial com o que o espaço que o rodeia.

Esses Conceitos também abrangem outro tipo de experiências sensoriais e inesquecíveis que os hóspedes dificilmente encontrarão em outros lugares, o que os levará a retornar aquele específico hotel e a fidelizarem-se à marca.

Existe uma infindável lista de diferentes Conceitos de Hotéis, que vão surgindo a cada dia que passa, quer estes estejam localizados em espaços urbanos ou em espaços rurais / naturais.

4. DICTOMIAS URBANÍSTICAS – O QUE O EMPREENDIMENTO HOTELEIRO PROPORCIONA SERÁ PRECISAMENTE O VIVENCIAR P OPOSTO NO ESPAÇO ONDE SE INTEGRA?

Dessa relação dos diferentes Conceitos que os Empreendimentos Turísticos oferecem com a envolvente e o ambiente em redor podemos encontrar algumas questões, as quais poderemos eventualmente designar como "Dicotomias" pela sua complexidade.

Definição de "dicotomia" in Dicionário Priberam da Língua Portuguesa, (Portuguesa, 2008)

"1. Divisão em dois.
2. Oposição entre duas coisas.
3. Partilha ilícita ou pouco ética de honorários, geralmente entre médicos.
4. [Astronomia] Fase da Lua, ou de outro planeta ou satélite, quando é visível com uma metade iluminada.
5. [Botânica] Modo de divisão de certas hastes em ramos bifurcados.
6.[Lógica] Divisão de um conceito em dois outros que abrangem toda a sua extensão.
Origem etimológica: grego dikhotomía, -as, divisão em dois. "

Os Empreendimentos Hoteleiros, nessa procura de oferecer vivências e sensações diferenciadoras, criam todo um conceito e toda uma construção baseada em opções que em alguns casos em nada tem a haver com o local onde se localizam.

Verifica-se a existência de hotéis de classificação de 5 estrelas, localizados em meios urbanos altamente densificados, nomeadamente em Lisboa, que oferecem a vivência calma do ambiente natural, com espaços verdes de relaxamento onde existem árvores frondosas e pássaros.

Mas também se verifica exatamente o inverso, ou seja, hotéis de classificação de 5 estrelas localizados em zonas rurais que face à sua dimensão, às suas infraestruturas e toda a zona construída e onde intervêm, formam pequenas bolhas urbanas onde antigamente seria a natureza pura.

Coloca-se a questão:
A oferta mais valiosa que o Empreendimento Hoteleiro proporciona será precisamente o vivenciar o oposto no espaço onde se integra?

A experiência sensorial mais enriquecedora que um Hotel poderá oferecer é exponenciar as sensações opostas ás sensações que seriam as usuais para aquele local?

Existem definições específicas para "Áreas rurais/campo", "Área Urbana" e "Paisagem" que referem as características mais evidentes de cada área, aplicando inevitávelmente as atuais características dos dias atuais, sendo que até nestas definições os conceitos se interligam, à imagem dos diferentes hoteis urbanos e rurais.

De acordo com as definições do Glossário do Desenvolvimento Territorial (Conferência Europeia dos Ministros Responsáveis pelo Ordenamento do Território (CEMAT) do Conselho da Europa, 2011):

Áreas rurais/campo:
"As áreas rurais são áreas com uma densidade demográfica relativamente baixa e sem cidades de dimensão significativa. O campo refere-se a certas formas de paisagem e de usos do solo, em que a agricultura e as áreas naturais desempenham um papel importante.

As áreas rurais têm uma base económica cada vez mais diversificada. Embora a agricultura ainda desempenhe um papel importante em numerosas áreas rurais, outras fontes de rendimento têm-se entretanto desenvolvido, como o turismo rural, (...)"

Área Urbana:
"Área fisicamente integrada numa cidade de grande ou média dimensão, caracterizada por uma importante percentagem de superfície construída, uma elevada densidade de população e de emprego e redes significativas de infra-estruturas de transportes e outras (por oposição às áreas rurais)."

Paisagem:
"De acordo com a Convenção Europeia da Paisagem, "paisagem" designa uma parte do território, tal como é apreendida pelas populações, cujo carácter resulta da ação e da interação de fatores naturais e ou humanos (Cf. Convenção Europeia da Paisagem do Conselho da Europa, em vigor desde 2004)."

4.1 Uma Experiência Sensorial Natural no interior de uma paisagem urbana?

Ao percorrer uma cidade encontramos diversos tipos de Empreendimentos hoteleiros/Hotéis que oferecem diferentes serviços e de vivências.

Os mais vulgarmente encontrados são os usualmente designados por "Hotéis de cidade", de dimensão variável consoante a categoria e o número de unidades

de alojamento. Esses hotéis são constituídos por edifícios de diversos pisos sobrepostos, cuja organização interior se baseia na divisão funcional em três zonas. Nomeadamente, os pisos subterrâneos destinam-se a serviços e estacionamento, o piso de entrada e, eventualmente, o primeiro piso são reservados para espaços comuns dos utentes, e nos restantes pisos superiores encontram-se as unidades de alojamento com as diferentes tipologias de quartos e suítes.

Esta forma de hotel deve-se, em grande parte, ao custo do terreno em zonas citadinas e à configuração da malha urbana existente.

Um Hotel localizado em espaço urbano poderá assumir a sua urbanidade e ser apenas mais um edifício inserido na malha urbana, sem qualquer distinção volumétrica face aos outros edifícios de habitação citadinos.

Mas o que também podemos encontrar, usualmente em Hotéis de classe alta (5 estrelas), como um reflexo do luxo e da diferenciação, são locais que oferecem a descompressão no centro dessa malha urbana, oferecem o espaço livre englobando uma área de verde natural no interior do perímetro desse Empreendimento hoteleiro.

Alguns Hotéis "vendem" como representação dessa classe elevada e uma mais valia de serviço os seus espaços livres/verdes, oferecendo locais de relax ajardinados usualmente associados a piscinas e/ou soluções ao ar livre, de forma a apelar aos sentidos dos utentes a sensação de estar na natureza, não obstante encontrarem-se num centro urbano.

Ao percorrer a cidade encontra-se este tipo de Empreendimentos hoteleiros, que abrangem áreas de dimensões algo elevadas, funcionalmente divididos em diversos corpos edificados, distribuídos pelo espaço e dotados de espaços verdes e espaços de recreio e lazer.

Funcionam como pequenos espaços de descompressão no meio urbano, oferecendo uma amostra de vegetação e da vivência da natureza, promovendo o conceito de um micro-rural de luxo dentro da cidade.

Estes hotéis completamente inseridos em aglomerados urbanos são pequenos oásis no centro da cidade que têm como propósito oferecer aos seus clientes características rurais e naturais, ou seja, a sua principal mais valia face à concorrência é oferecer o oposto do espaço onde se insere.

Claro que o valor imobiliário do m2 de terreno no centro da cidade está diretamente interligado com essa possibilidade de oferta e classificação de hotel, acrescentando um valor monetário e espacial ao Conceito, uma vez que esse fator também será do conhecimento do cliente e aumenta a perceção pessoal de exclusividade.

Ao observar estas fotografias (Figura 1, Figura 2) somos facilmente transportados para uma área de campo, sentimo-nos em contacto com a natureza e com o meio natural apesar de se localizar no centro da cidade de Lisboa, em pleno meio urbano.

O cliente ao optar por este hotel poderá exponenciar a sensação rara, quase única, de relaxamento e de calmaria do campo no centro urbano de uma capital Europeia.

Figura 1. Espaços verdes Hotel Olissipo Lapa Palace
Fonte: Sílvia Suárez (2024).

Figura 2. Espaços verdes Hotel Olissipo Lapa Palace
Fonte: Sílvia Suárez (2024).

4.2 Uma Experiência Sensorial Urbana no interior do ambiente natural?

Em comparação, quando nos deslocamos para uma zona rural, frequentemente encontramos os Empreendimentos Hoteleiros Rurais, dotados de uma área de terreno com alguma dimensão, cuja organização funcional resulta na implantação dispersa

de alguns conjuntos de edificações, com poucos pisos, usualmente agrupados por zonas.

Hotéis que possuem muitas vezes a bandeira da preservação da natureza, à imagem de diversas organizações e entidades mundiais com preocupações ecológicas e de salvaguardas ambientais.

Uma dessas será a Organização Mundial do Turismo (OMT) no código mundial de ética do Turismo (hoteis-portugal.pt, 2022) que refere relativamente à salvaguarda do ambiente nomeadamente "O conjunto dos actores do desenvolvimento turístico têm o dever de salvaguardar o ambiente e os recursos naturais (...)."

Assim é extremamente comum encontrar-se Hotéis construídos no ambiente natural que oferecem o conceito de viver no campo.

Esses hotéis apresentam dimensões muito variáveis, podendo ser constituídos apenas por um edifício ou por vários edifícios, rodeados por uma área verde de dimensões diversas, que formam o conjunto hoteleiro.

Nestas soluções, para além do facto inquestionável da existência de espaço livre para permitir distribuir estrategicamente todo o conjunto edificado do hotel pela área intervencionada, também existe o propósito de proporcionar uma vivência rural a quem o utiliza, ou seja, o utente na sua estadia é levado a exponenciar sensoriamente a forma de vida no campo, com espaços livres e o contacto direto com a natureza e com a terra. (Figura 3)

Figura 3. Área envolvente Hotel Dolce CampoReal
Fonte: Sílvia Suárez (2024).

Muitas vezes os designados por Resort também podem englobar conjuntos de habitações de diferentes tipologias (em edifícios ou moradias), com diversos tipos de equipamentos/espaços, usualmente com funções ligadas ao lazer e a todos os equipamentos imprescindíveis num Empreendimento Hoteleiro de 5 estrelas.

Este tipo de solução de empreendimento hoteleiro apresenta características semelhantes a um condomínio privado, onde a circulação interna entre os diferentes pontos e equipamentos é efetuada através de uma rede de vias de circulação constituída por arruamentos de características semi-públicas.

A densidade de unidades de alojamento, a área de construção e de implantação, bem como a área impermeabilizada formam um conjunto altamente denso.

Para além das características viárias também todas as infraestruturas de apoio abrangem todo o empreendimentos turístico, tal como redes de água, redes de esgotos, redes de drenagem pluviais, iluminação noturna, etc.

Tal como referido por (Pena) "a existência de um hotel fazenda ou um resort em uma zona afastada da cidade é um exemplo de prática urbana no meio rural".

Figura 3. Área envolvente Hotel Dolce CampoReal
Fonte: Sílvia Suárez (2024).

5. CONSIDERAÇÕES FINAIS

Estas vivências e diferentes ambientes referidos, todas eles relacionados com empreendimentos hoteleiros, colocam-nos a questão da relação sensitiva do utilizador com o local, mesmo que seja apenas durante um determinado período de tempo, enquanto utilizador temporário do hotel e as experiências sensoriais que, inevitavelmente, se relacionam com toda a envolvente, seja ela urbana ou natural.

A constante procura do ser humano pelas "sensações do diferente" e da "exclusividade" também se encontra nos Empreendimentos Hoteleiros originando interessantes Dicotomias Urbanísticas onde o Urbano e o Rural se confrontam e se interligam.

Sob a forma de possível captação de clientes, os empreendimentos hoteleiros oferecem um determinado tipo de conceito como fator diferenciador, vem oferecer exatamente as características opostas ao espaço onde se insere.

Ao observar estes exemplos de diferentes Empreendimentos Hoteleiros de alta classificação podemos concluir uma padronização baseada no contraste entre o que o Conceito do Hotel, ou seja, o que ele se propõe oferecer como mais-valia diferenciadora sensorial face ao contexto urbanístico que o envolve.

Se no espaço urbano o fator diferenciador e de maior captação de clientes é a oferta de uma experiência rural e natural, no espaço rural e captação de clientes é o proporcionar todos as comodidades urbanas de um hotel de luxo.

Estas experiências não se limitam apenas ao Empreendimentos Turísticos, oferecidas dentro do próprio hotel mas, face ás dimensões físicas e visuais dos mesmos, essa vivência dicotómica extrapola as fronteiras e abrangem o espaço e sociedade em seu redor.

6. BIBLIOGRAFIA

Botelho, G. (2011). Luxo e Charme na Hotelaria em Portugal. Póvoa de Santo Adrião: GB collection_Guide-Artes Gráficas.

Conferência Europeia dos Ministros Responsáveis pelo Ordenamento do Território (CEMAT) do Conselho da Europa. (Setembro de 2011). Glossário do Desenvolvimento Territorial (versão portuguesa).

hoteis-portugal.pt. (2022). hoteis-portugal.pt. Obtido de OMT_Código Mundial de Ética do Turismo: *https://www.hoteis-portugal.pt/content/824/5* OMT_Código Mundial de Ética do Turismo

Mendonça Pedro, R. (2019). (tese de doutorado)_ SENTIDOS, EMOÇÕES E MEMÓRIAS EM TURISMO. Algarve: Faculdade de Economia_Universidade do Algarve.

Pena, R. F. (s.d.). "Espaço urbano e rural". Obtido de Brasil Escola: *https://brasilescola. uol.com.br/geografia/espaco-urbano-rural.htm*

Portuguesa, i. P. (2008). Dicionário Priberam da Língua Portuguesa, 2008-2024. Obtido de *https://dicionario.priberam.org/dicotomia*

turismodeportugal. (2022). *https://travelbi.turismodeportugal.pt*. Obtido de *https:// travelbi.turismodeportugal.pt/tendências/wttc-global-economic-impact-2022-global-trends/*

L12

THE RE-USE OF MODERN ARCHITECTURE AND ITS ATMOSPHERES: HOUSE MEL BY PAUL MEEKELS

O RE-USO DA ARQUITETURA MODERNA E DAS SUAS ATMOSFERAS: A CASA MEL POR PAUL MEEKELS

Yuna Merckx
Master Student
University of Antwerp
yuna.merckx@student.uantwerpen.be

Chloë Bombeeck
Master Student
University of Antwerp
chloe.bombeeck@student.uantwer-pen.be

Luna Elst
Master Student
University of Antwerp
luna.elst@student.uantwerpen.be

Raphaëlle van Doormaal
Master Student
University of Antwerp
raphaelle.vandoormaal@student.uantwerpen.be

Sara Eloy
Associate Professor
University of Antwerp
sara.eloy@uantwerpen.be

Iris Van der Schueren
Principal tutor - Teaching assistant
University of Antwerp
iris.vanderschueren@uantwerpen.be
University of Thessaly, Greece
flampouris@uth.gr

ABSTRACT

The Modernist architectural movement in Belgium produced diverse and significant works. Preserving and adapting these structures to contemporary standards while maintaining their intrinsic value is challenging. The "Re-use of Modernist Buildings" course in Interior Architecture explores modernist heritage principles to create contemporary ambiences that respect original designs. Key modernist elements such as structure, materials, colours, and built-in furniture are studied through research and practical projects. This paper examines the re-use of House Mel by Belgian architect Paul Meekels, built in 1962-63. The house is a paradigmatic example of modernist design with its concrete skeleton and functional aesthetics. In-depth analysis was conducted through site visits, archival research, and literature review. Various visualisation tools captured the building's modernist solutions. Proposals for re-use explore how modernist interior features can create contemporary atmospheres, enhancing the architectural experience.

KEYWORDS: modernist architecture. re-use. materiality. colour. furniture

RESUMO

O movimento arquitetónico modernista na Bélgica produziu obras diversas e significativas. Preservar e adaptar essas estruturas aos padrões contemporâneos, mantendo o seu valor intrínseco, é desafiante. Na unidade curricular de "Reuso de Edifícios Modernistas", em Arquitetura de Interiores, criam-se ambientes contemporâneos que respeitem os princípios originais do movimento moderno. Elementos modernistas chave, como estrutura, materiais, cores e mobiliário, são investigados e alvo de experimentação prática. Este artigo examina o reuso da Casa Mel desenhada pelo arquiteto belga Paul Meekels e construída em 1962-63. Esta casa é um exemplo paradigmático da arquitetura modernista com a sua estrutura de betão armado e estética funcional. Foi realizado um estudo aprofundado através de visitas ao local, investigação em arquivos e revisão de literatura. Várias ferramentas de visualização capturaram as soluções modernistas do edifício. As propostas de reuso exploram como as características interiores modernistas podem criar atmosferas contemporâneas, aprimorando a experiência arquitetónica.

PALAVRAS-CHAVE: arquitetura moderna. reuso. materialidade. cor. mobiliário

1. INTRODUCTION

The Modernist architectural movement from 1920 to 1970 displayed great production and variety in Belgium. However rich this period was, the reality nowadays is that many of these modernist buildings have lost their original function, relevance and/or qualities (Vos & Storgaard, 2018). Today's pressure exists to preserve and sustain this architecture and its interiors and ambiances. Challenges arise about how we can

preserve and adapt these buildings to contemporary standards and execute skilled interventions while preserving and safeguarding the intrinsic value of the property and the modernist architectural atmospheres. Re-using these buildings while dealing with sustainability, resilience, demographic changes and new lifestyles is urgently needed. The underlying factors are the shift towards newer living forms, the demand for more contemporary living comfort, and changing quality standards regarding new technologies, sustainability, ecology, and insulation.

In the scope of the studio "Re-use of Modernist Buildings" in Interior Architecture at the University of Antwerp, we delve into the identity and diversity of modernist heritage, understanding the modernist principles and creating new ambiences that fit contemporary needs while also staying respectful to the modernist heritage. Modernist principles are identified and discussed along the course by developing research on three themes. Each theme contributes to a fundamental understanding of modernism and the exploration of its atmospheres.

Modernism principles become clear by focusing on structure and infill, circulation, materials, textures and colours, windows, and built-in furniture (Štěch, 2020). With this understanding of modernism, students can develop their design and explore diverse representation strategies to act with buildings from this period. Students work with several notable modernist buildings suggested at the beginning of the semester.

For this paper, we bring the case of House Mel and discuss current re-use needs, how modernist features and atmospheres can be reinterpreted today, and how these themes are exercised in the university. House Mel by the Belgian Architect Paul Meekels, built in 1962-63, is not just a house but a timeless piece of art. In its brutalist splendour, it exhibits the perfect harmony between form and function, where the visible concrete skeleton embodies not only the structure but also the soul of the house.

To study the assigned buildings and reinterpret them in light of contemporary standards, the methodology used includes, as a first step, an in-depth analysis developed by collecting data through site visits, photo reports, searching and obtaining relevant documents in archives and libraries, and studying relevant literature. This analysis aimed to assign value to the presence of modernism and the interest in maintenance or alteration. Students materialise this research by building a physical model of the buildings, orthogonal representations, drawings and photo narratives (see section 2). The second step compromises three themes - 'Concept - Open Plan', 'Materialisation and Colour', and 'Equipment and Techniques' (see section 3).

Various representation and visualisation tools such as physical models, hand drawings, photographs, collages, traditional floor plans, elevations, and sections were used in the study. These representations were essential to capture different and complementary aspects of the modernist solutions present in this building, such

as shape, colour, textures, and light, which are a paramount part of the modernist atmosphere and enable us to understand the sensitive quality of modernist spaces.

2. HOUSE MEL AND THE ARCHITECT PAUL MEEKELS

The 'Mel house', designed by architect Paul Meekels in 1962-1963, is a remarkable example of brutalist architecture. This corner house, commissioned by a client named Mel and built by contractor Wens & Zonen from Westmalle, clearly shows the influence of architects such as Le Corbusier and Léon Stynen. Meekels, who began his career after his internship at Léon Stynen's office in the 1950s, brought his design vision to life through rational minimalism, constructive logic, a thoughtful spatial layout that combines functionality and aesthetics and an efficient use of materials and resources. The house consists of three floors under a flat roof and is built of a concrete skeleton, which remains visible as a characteristic of the Brutalist style (Figure 1 and Figure 3) (Hooftman, 2015).

The load-bearing structure of house Mel consists of a concrete frame of columns and beams and is immediately visible from the exterior facades. The concrete structure supports the concept of plan libre from Le Corbusier, since non-load-bearing elements can be placed freely within this load-bearing skeleton (Figure 4).

Although originally, the facades of House Mel had a typically brutalist look due to the exposed concrete columns and beams and the bricks as an intermediate structure; currently, the façade has black-painted columns and beams, and the bricks are painted white.

Another characteristic feature of the design of house Mel is the large floor-to-ceiling high windows, made possible due to the concrete frame, providing the spaces with abundant daylight. Different materiality was used to explore visual and tactile stimuli, which impact interior functions and atmospheres. The several impacting built-in furniture designed for the house using diagonal positions and characteristic modernist materials create an inviting atmosphere.

The ground floor is characterised by special areas such as the entrance, a cloakroom, a bar and the staircase. The dark cloakroom, designed as a dividing element, sets diagonally in the space, acting as an automatic guide for visitors and creating an inviting atmosphere. Additionally, a bar and other fixed elements are designed following the architect's vision of architecture as a 'gesamtkunstwerk,' (literally 'total artwork') where the designer envisions the house's structure and its interior (Figure 2, left). Two voids establish a connection between the ground floor and the upper floors (Figure 2, right). All of the ground floor retains an authentic 1960s appearance that complements the interior's main colours of white and black. A spiral staircase with typical sixties plastic railing and retained woodwork connects the different levels.

The living room, office, dining room, and kitchen on the first floor are merged into one well-connected area. The living room offers a panoramic view of the outdoor terrace. These two spaces are interconnected by a small, straight staircase, creating the perception of a contiguous large space. The office is a particularly intimate space as it is partially enclosed by a special piece of built-in furniture that separates the living room and the office. Carefully designed wooden cabinets characterise the kitchen. A special piece of furniture is the designed cabinet that separates the kitchen from the dining area while simultaneously creating a connection through the serving hatch.

The second floor encompasses a hallway with a bathroom, toilet, and three bedrooms. The two children's rooms are separated by a wardrobe accessible from both sides, which can also be used from the hallway side. This furniture solution again illustrates the architect's logical and functional approach to designing various spaces. A notable feature is that all bedrooms exclusively have windows on the east side (see Figure 1, side façade).

SIDE FACADE
FRONT FACADE
BACK FACADE

LEVEL +0
LEVEL +1
LEVEL +2
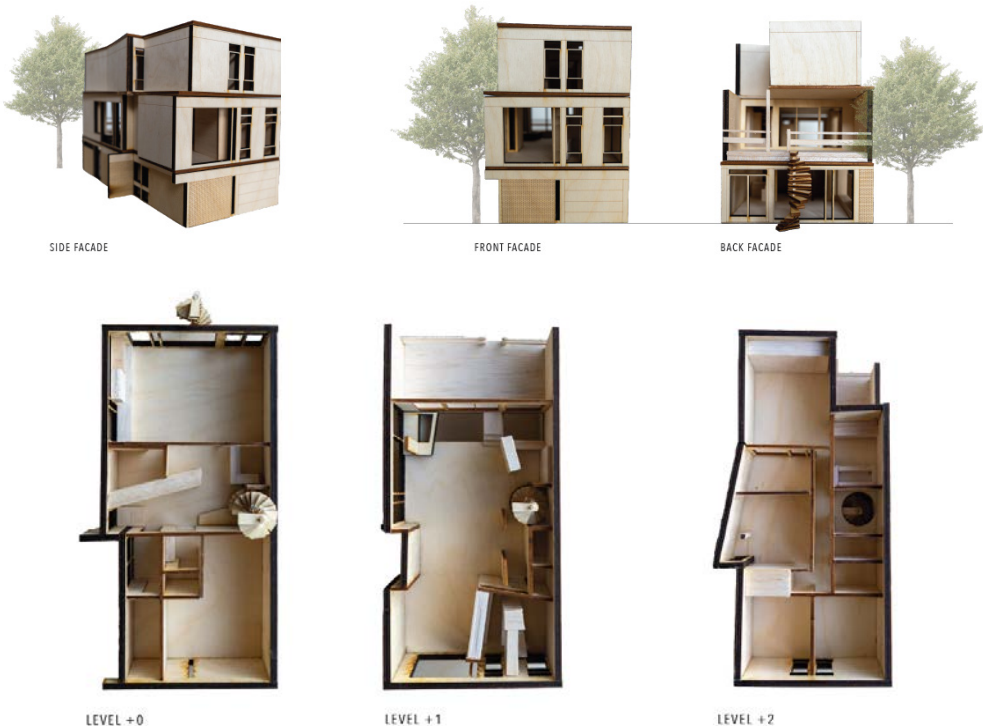
Figure 1. House Mel model building.

Figure 2. House Mel model building. Perspectives of the interior ambiances, left - Living area on the ground floor, right - Build-in planter, void, elevation.
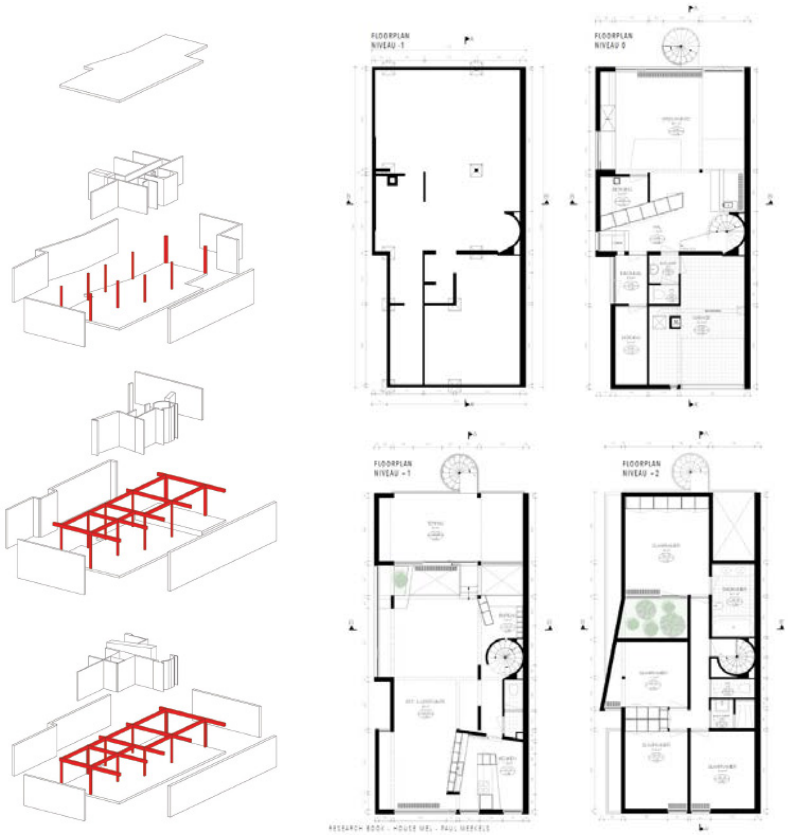
Figure 3. Identification of the loadbearing structure of House Mel. In white the brick masonry walls and in red the concrete structure.

Figure 4. House Mel floor plans.

3. EXPLORING THE RE-USE OF HOUSE MEL

Within the first theme, 'Concept - Open Plan' the concepts of 'open plan' and 'raumplan' (Risselada, 2008) are explored, and the building is decomposed into its basic structure, load-bearing parts, and non-load-bearing elements. Based on the analysis and established construction principles, students develop an alternative design for a new brief that reflects contemporary needs. Within this first theme, students are also introduced to space syntax theory (Hillier & Hanson, 1984). The use of the analytical model of space syntax is useful since it facilitates the comprehension of both the spatial structure of the building and how that structure impacts its users, namely their experience of moving in the building.

In House Mel Meekels used non-bearing walls and cabinets. The placement of these space-dividing elements is mostly based on the grid created by the skeleton, which creates a very readable floor plan. It then becomes clear what the possibilities of a plan libre are, which the architect used mainly on the ground and first floor. Solutions developed by students took advantage of the open plan concept and explored different layout solutions by removing several partition walls and exploring alternative ways of circulation (Figure 5). The spaciousness that characterises the house was further developed by the students' solutions and new cabinets and light partition walls acting as room dividers. The spatiality already enhanced by Meekels' attention to light was enhanced by the proposal of new patios, voids and the use of windows as central design elements (Figure 5 and Figure 6).

Ground floor (original)   First floor (original)

Ground floor (YM)   First floor (YM)   Ground floor (CB)   First floor (CB)

| Ground floor (LE) | First floor (LE) | Ground floor (RvD) | First floor (RvD) |

Figure 5. Current and proposed design for theme 1
(YM – Yuna Merckx, CB - Chloë Bombeeck, LE – Luna Elst, RvD - Raphaëlle van Doormaal).

Figure 6. Visualisations of the proposals for theme 1 by (top left) render by Yuna Merckx, (top right) computer enhanced colage Chloe Bombeeck, (bottom left) computer enhanced collage by Luna Elst, and (bottom right) photoshoped render by Raphaelle van Doormaal

With the second theme, 'Materialisation and Colour', we study modernism's characteristics focusing on the use of materials, finishing details and the associated use of colour (Barnstone, 2022). Students begin by identifying the purity, clarity, and innovative aspects of material use. The materials and colour schemes of original designs and proposals are represented through various graphic techniques, such as perspective drawings, collages, and unfolded plans. Based on the insights and knowledge acquired, students create new proposals using diverse graphic techniques and a graphic mood board, incorporating materials, colours, and textures that meet the contemporary needs explored in the previous theme (Figure 7 to Figure 9).

The goal was to capture the essence of brutalism and create a strong connection with Meekels' oeuvre. Brutalism is characterized by blocky, heavy shapes and minimalist functionality, using raw concrete, brick, and a monochromatic palette that emphasizes light and shadow. In this design, concrete was used for the floors and ceiling, bamboo panels for the walls, and red paint for a central element. The concrete establishes a brutalist aesthetic and unifies the space, while the raw wood dividers add warmth and visual coherence. The red central stair column respects Meekels' style and adds a striking detail (Figure 7).

Another approach used the colour theory of modernist architect Alfred Roth to create a more experimental and colourful design in contrast to the original black-and-white aesthetic (Figure 8). Still another approach aimed at again bring a lighter feeling inside complemented by the warm touch of the wood on the cabinets and the cerulean blue and ruby colours combined for a visually striking and appealing contrast (Figure 9). This harmony between preservation and innovation celebrates the retention of the original features and presents a timeless aesthetic in a modern context.

Figure 7. Theme 2 by Chloe Bombeeck, on the left is the original design and on the right the proposal. For this simulation the two points perspective was used.

COLUMNS & BEAMS
PRIMARY RED PAINT
(COLOR)

WALLS
BEIGE PAINT
(TONE)

STAIRS
AMBERGREEN STEEL
(COLOR TONE)

FLOOR
WHITE OAK PARQUET
(TONE)

BAR
OCHRE MELAMINE
(COLOR TONE)

CLOAKROOM
LIGHT BLUE
(COLOR TONE)

WINDOW FRAMES
LIGHT PINK COATED PVC
(COLOR TONE)

FLOOR
BROWN LINOLEUM
(COLOR TONE)
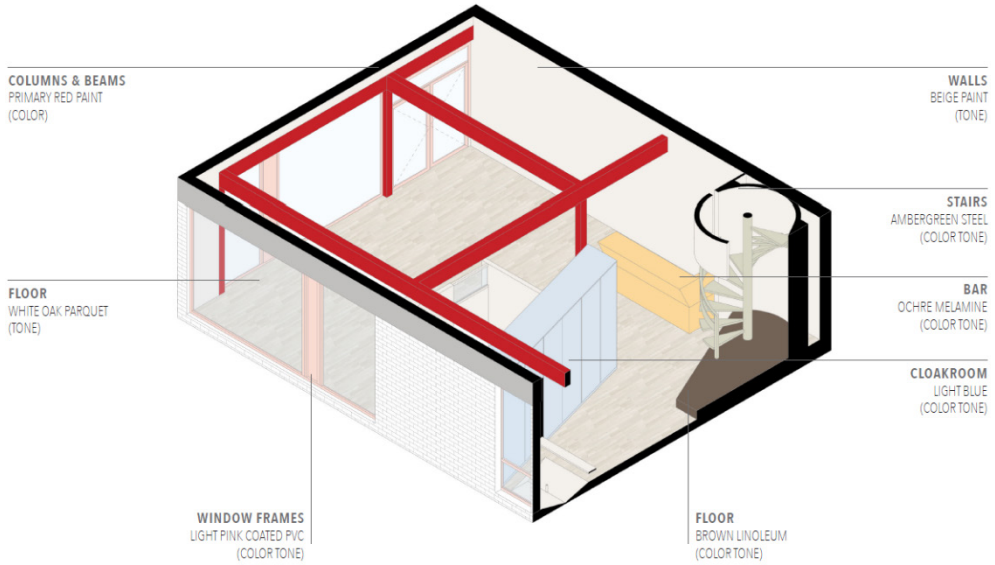
Figure 8. Proposal for theme 2 by Yuna Merckx. For this simulation the axonometry was used.

COLUMNS & BEAMS
WHITE PAINT
(BEAMS HIDDEN BEHIND
LOWERED CEILING)

VOIDS
PAINT
BLEU CÉRULÉEN

CABINET
OAK WOOD VENEER
LE RUBIS

WALLS
WHITE WALLPAPER

FLOOR
CAST FLOOR IN MORTEX

BAR
WHITE MELAMINE
LE RUBIS

CLOAKROOM
OAK WOOD VENEER

STAIRS
BLEU CÉRULÉEN
LE RUBIS

WINDOW FRAMES
WHITE PVC

FLOOR
GRAY FABRIC

Figure 9. Proposal for theme 2 by Raphaelle van Doormaal. For this simulation the technic of unfolded plans was used.

Within the modern movement there was noticeable innovation related to the incorporation of new infrastructure in the buildings as well as the design of beautiful and functionally driven furniture (Bradbury, 2022). The last theme 'Equipment and Techniques' introduces this topic and students rethink a part of the existing design and propose a contemporary interpretation to the modernist solution.

Proposals aimed to achieve the following: increase openness between the dining room and the living room by replacing the existing full-height cabinet with a kitchen island. This change not only created more openness but also allowed unhindered natural light to enter the rooms and improved circulation, promoting a more contemporary style of social interaction (Figure 11); adapt and reinvent the existing cabinet to make it accessible from both sides, providing the office with additional functionality and storage capacity (Figure 10); implement a new solution for the ground floor creating a seating area where both formal clients and informal visitors can be welcomed – this new furniture adopts the same design language as the original bar unit located in the same space ensuring that the new piece blends harmoniously with the home's original ambiance (Figure 12).

Figure 10. Proposal for theme 3 by Yuna Merckx.
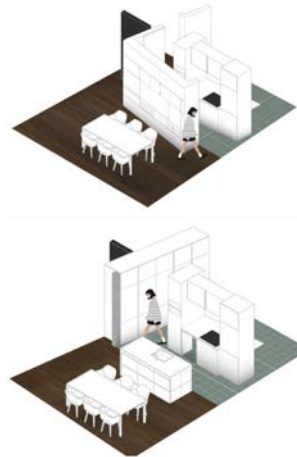
Figure 11. Theme 3 by Chloe Bombeeck, (top) original design, (bottom) proposal.
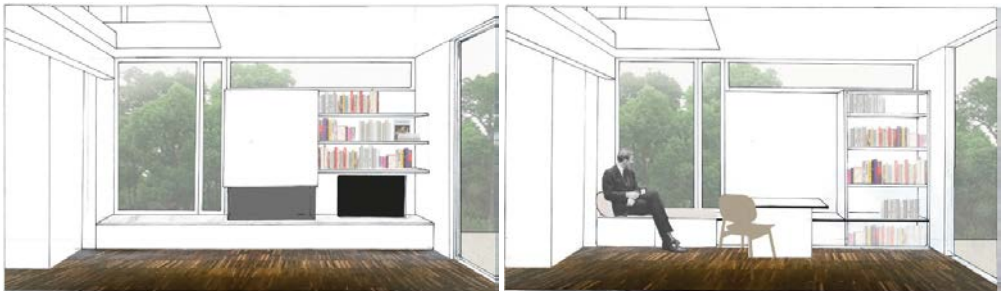
Figure 12. Theme 3 by Luna Elst, (left) original design, (right) proposal.

4. CLOSING REMARKS

While devising re-use proposals, we explored how the architectural experience in this modernist building redefines the notions of space and how the interior features of modernism can be further interpreted to create contemporary atmospheres.

The richness of the architecture of House Mel, served as an outstanding case study to explore re-use strategies focusing on creating contemporary atmospheres that respect the modern movement. Such work was possible due to the cooperation of the current house owners, allowing us to enter their world and explore the qualities of this remarkable house with them. The exploration of alternatives for the same house by different students along with the supervisors is very advantageous since it encourages the sharing of knowledge and skills among everyone and allows the identification of potential issues and challenges early on. Additionally, such a group work contributes to sharing a variety of aesthetic preferences and ideas, leading to more creative and unique interior designs.

REFERENCES

Barnstone, D. A. (2022). *The Color of Modernism. Paints, Pigments, and the Transformation of Modern Architecture in 1920's Germany.* Bloomsbury.

Bradbury, D. (2022). *Mid-Century Modern Furniture*. Thames & Hudson.

Hillier, B., & Hanson, J. (1984). *The Social Logic of Space*. Cambridge: Cambridge University Press.

Hooftman, T. (2015). Hoekhuis in brutalistische stijl. Retrieved October 15, 2024, from *https://inventaris.onroerenderfgoed.be/erfgoedobjecten/300470*

Risselada, M. (Ed.). (2008). *Raumplan Versus Plan Libre: Adolf Loos / Le Corbusier.* Rotterdam: 010 Publishers.

Štěch, A. (Ed.). (2020). *Modern Architecture and Interiors*. Prestel.

Vos, E. De, & Storgaard, E. (2018). Teaching Re-use Strategies for Modernist

Buildings. A Case Study Handbook for a Joint European Master in Architecture. *Joelho, 9,* 187–201.

L13

NEGATIVE URBAN ATMOSPHERES

CHAIR Rainer Kazig

In previous research on atmospheres, the problem of negative atmospheres in general and negative urban atmospheres in particular has not been systematically analysed. By focussing on negative urban atmospheres, this session aims to contribute to reducing this gap. The term urban atmospheres is used here to refer to the atmospheres of urban public spaces.

Negative urban atmospheres are characterised by the fact that they trigger a more or less clear feeling of discomfort when spending time in public spaces. They thus subtly restrict the accessibility of public spaces. They rarely affect all users of public spaces equally, but usually a certain category of people. It is possible to imagine various situations in which negative atmospheres can arise - listed here only as examples. For long-established residents, the gentrification or touristification of a neighbourhood can transform a previously given feeling of resonance when spending time in the public space of "their" neighbourhood into a feeling of dissonance. Negative urban atmospheres can also be deliberately created through microaggressions towards certain categories of people in public spaces. It is also conceivable that threatening events such as terrorist attacks create an oppressive mood in society that manifests itself as a negative atmosphere in certain situations and among certain people.

This session will discuss the broad spectrum of negative urban atmospheres – ideally on the basis of empirical studies. An important aspect here is a precise description and qualification of the subjective feelings that characterise negative atmospheres in order to understand the discomfort associated with the corresponding situation and the exclusionary character of negative urban atmospheres. Closely linked to this is the question of resistance to negative urban atmospheres. On the one hand, it concerns the possibility or impossibility of opposing negative urban atmospheres on an individual level. On the other hand, there is the question of whether and how collective resistance to negative atmospheres can be organised. Another important aspect is the question of how negative urban atmospheres arise, as mentioned at the beginning. It also involves dealing with changes in their intensity.

One challenge of empirical research into urban atmospheres lies in the precise description of the interplay between environmental qualities and subjective sensitivities. As the examples given at the beginning have indicated, moods, small gestures or memories can contribute to the creation of negative urban atmospheres. This session will therefore also address the question of how this complex interplay can be captured empirically and where there may be limits to empirical research into negative urban atmospheres.

In addition to papers dealing with these two overarching questions, contributions that focus on other aspects of the phenomenon of negative urban atmospheres and their research are also welcome.

L13

AFFECTIVE URBANISM AND ATMOSPHERIC JUSTICE

URBANISMO AFETIVO E JUSTIÇA ATMOSFÉRICA

Daniel Paiva
Investigador
Universidade de Lisboa
daniel.paiva@edu.ulisboa.pt

ABSTRACT

Affective urbanism – also referred to as sensory or experiential urbanism – primarily characterizes a range of urban interventions focused on enhancing experiences within urban spaces, particularly targeting the development of thriving shopping, tourism, and recreational districts. In recent years, a different kind of affective urbanism has been proposed – one that is concerned with how communities can create inclusive affective spaces in alternative to the consumption- and finance-oriented city. Within these movements, there is growing concern with issues of atmospheric justice. In this paper, I re-visit the clashing uses of atmosphere as a tool for affective urbanism in the contemporary city, to posit that atmospheric approaches in urbanism should center on safeguarding the rights of individuals and communities to participate in atmospherics. In this sense, atmospheric justice emerges as a core issue for the debates on the right to the city, although it has rarely figured as a relevant topic in this discussion.

KEYWORDS: Affective urbanism; Atmospheric justice; Right to the city; Urban Consumption; City.

RESUMO

O urbanismo afetivo – também referido como urbanismo sensorial ou experiencial – descreve uma série de intervenções urbanas focadas em melhorar as experiências dentro de espaços urbanos, tendo em vista o desenvolvimento de espaços vibrantes de consumo, turismo e lazer. Nos últimos anos, foi proposta uma abordagem diferente ao urbanismo afetivo que se foca na capacidade das comunidades para criar espaços afetivos inclusivos em alternativa à cidade orientada para o consumo e para a finança. Dentro desses movimentos, há uma preocupação crescente com questões de justiça atmosférica. Nesta comunicação, revisito os usos conflituantes da atmosfera enquanto ferramenta do urbanismo afetivo na cidade contemporânea, para argumentar que as abordagens atmosféricas no urbanismo se devem concentrar em salvaguardar os direitos de indivíduos e comunidades de participarem na produção atmosférica. Neste sentido, a justiça atmosférica surge como uma questão central para os debates sobre o direito à cidade, embora raramente tenha figurado como um tópico relevante nesta discussão.

PALAVRAS-CHAVE: Urbanismo afetivo; Justiça atmosférica; Direito à cidade; Consumo urbano; Cidade

L13

URBAN REGENERATION AND AFFECTIVE BLEACHING

REGENERAÇÃO URBANA E BRANQUEAMENTO AFETIVO

Dr Robert Shaw
Reader in Geography
Newcastle University, UK
robert.shaw2@ncl.ac.uk

ABSTRACT

Social scientists have argued that vitality and lively atmospheres can be found in all places, even 'non-places' subject to high levels of control, securitization, and homogenization under what can be broadly called neoliberalism. Despite this having productive insights, we must also highlight the damage to urban life where regeneration projects transform informal or vibrant spaces into those which lack liveliness. In this paper, I introduce the concept of 'affective bleaching' to describe what happens to atmospheres when neoliberal regeneration drains away their liveliness. This phrase draws deliberate parallels with coral bleaching, arguing that the reduction in affective intensity can have a wider damaging impact on the urban 'ecosystem'. Working through data from the early stages of a research project in Durham, UK, I will outline how affective bleaching has occurred in this site and it is encouraged by the nature of developer-led neoliberal regeneration projects.

KEYWORDS: Affect. Urban. Regeneration. Neoliberalism

RESUMO

Os cientistas sociais defendem que a vitalidade e as atmosferas vivas podem ser encontradas em todo o lado, mesmo em "não-lugares" sujeitos a elevados níveis de controlo, securitização e homogeneização sob o que pode ser amplamente chamado de neoliberalismo. Apesar de termos insights produtivos, devemos também destacar os danos na vida urbana onde os projetos de regeneração transformam espaços informais ou vibrantes em espaços sem vida. Neste artigo, apresento o conceito de "branqueamento afetivo" para descrever o que acontece às atmosferas quando a regeneração neoliberal esgota a sua vivacidade. Esta frase traça paralelos deliberados com o branqueamento de corais, argumentando que a redução da intensidade afetiva pode ter um impacto prejudicial mais amplo no "ecossistema" urbano. Trabalhando com dados das fases iniciais de um projecto de investigação em Durham, Reino Unido, descreverei como o branqueamento afectivo ocorreu neste local e é encorajado pela natureza dos projectos de regeneração neoliberal liderados pelos desenvolvedores.

PALAVRAS-CHAVE: Afeto. Urbano. Regeneração. Neoliberalismo
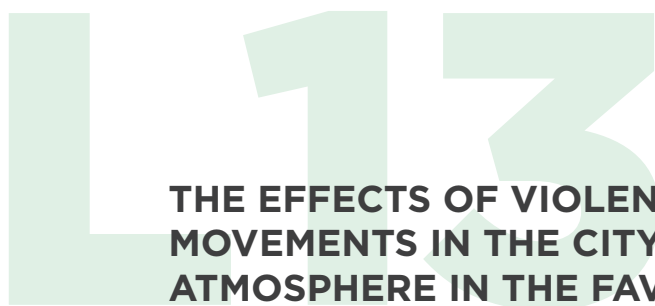
THE EFFECTS OF VIOLENCE ON WOMEN'S MOVEMENTS IN THE CITY: THE CIVIL WAR ATMOSPHERE IN THE FAVELAS OF THE HISTORIC CENTER OF JOÃO PESSOA, BRAZIL

OS EFEITOS DA VIOLÊNCIA NOS MOVIMENTOS FEMININOS PELA CIDADE: O CLIMA DE GUERRA CIVIL NAS FAVELAS DO CENTRO DE JOÃO PESSOA, BRASIL

Mirelli Albertha de Oliveira Gomes
Arquiteta e Urbanista | Doutoranda pelo PPGAU-UFPB
Universidade Federal da Paraíba
mirelligomes@gmail.com

Marcele Trigueiro de Araújo Morais
Doutora PhD pelo INSA Lyon (França) | EVS UMR 5600
Professora Associada DAU-CT-UFPB | Membro Permanente PPGAU-UFPB
marcele.trigueiro@academico.ufpb.br

ABSTRACT

The economic decline and progressive depopulation of the old center, coupled with the expansion of drug trafficking factions, have intensified the growth of violence and female homicide rates in the favelas of the historic core of João Pessoa, Brazil. The various experiences of violence create an atmosphere of fear in the daily life of the slums, determining the way how women shape their spatialities and temporalities in public spaces. This article discusses the influence of this atmosphere of violence on women's movements in the city, based on exploratory and semi-structured interviews with female workers and residents in the study area. The restrictions on social interaction and the development of urbanities experienced by women are not exclusively linked to confrontations between armed groups, but also a civil war climate, characterized by incivilities and citizen-to-citizen hostility, generating significant physical and psychological harms.

KEYWORDS: Violence. Gender. Civil War Climate. Appropriations. Public Space.

RESUMO

O declínio econômico e esvaziamento progressivo do centro antigo, acompanhado da expansão de facções de tráfico de drogas, intensificaram o crescimento da violência e das taxas de homicídios femininos nas favelas do núcleo histórico de João Pessoa, Brasil. As diversas experiências de violência criam uma atmosfera de medo no cotidiano das favelas, determinando a experiência e a forma segundo a qual as mulheres moldam suas espacialidades e temporalidades nos espaços públicos. O presente artigo discute sobre a influência dessa atmosfera de violência nos movimentos femininos na cidade, através de entrevistas exploratórias e semiestruturadas, realizadas com trabalhadoras e moradoras do gênero feminino, na área de estudo. As restrições de convívio social e no desenvolvimento das urbanidades, vivenciadas pelas mulheres, não estariam exclusivamente vinculadas aos confrontos entre os grupos armados, mas a um clima de guerra civil, que se conforma nas incivilidades e reações de ódio de cidadão contra cidadão, gerando impactos nocivos significativos de ordem física e psicológica.

PALAVRAS-CHAVE: Violência. Gênero. Clima de Guerra Civil. Apropriações. Espaço Público.

1. INTRODUÇÃO

O crime violento pode ser considerado uma consequência das desigualdades sociais e econômicas, que levam a diferentes oportunidades de vida entre os indivíduos (FBSP, 2020). O Brasil, como um dos países com as piores desigualdades de renda no ranking mundial, tem taxas oficiais de violência letal extremamente elevadas, notadamente entre indivíduos que vivem em áreas em que as classes socioeconomicamente mais baixas estão concentradas. As vítimas desses crimes são, em sua maioria, jovens,

negros e pobres, vivendo nas periferias e favelas das cidades (FBSP, 2020). Esse cenário tem suas origens na discriminação racial proveniente da colonização e da escravidão, em que os vazios de governança do poder público seguem uma divisão seletiva de classe e raça e perpetuam os profundos contrastes na distribuição de bens e serviços públicos entre as classes mais ricas e mais pobres, levando à formação de enclaves e assentamentos precários, habitados por grupos historicamente vulneráveis, que não possuem os recursos financeiros suficientes para ter acesso a moradias formais. A síndrome de longa data de pobreza urbana, desigualdade racial e exclusão social tem sido parte integrante dos padrões brasileiros de urbanização desde os séculos passados, e foi intensificada, nas últimas décadas, pelas políticas públicas de dispersão e fragmentação do território, que reafirmaram as conotações de gênero, classe e raça na relação entre insegurança e violência (Koonings & Kruijt, 2007; Maricato, 2015).

Com base no conceito de "interseccionalidade" (Crenshaw, 1991), a violência é entendida a partir de desigualdades múltiplas e variadas, que se combinam e se sobrepõem, pela interconexão de vários sistemas de opressão, determinadas pela localização do indivíduo nas estruturas sociais, em relação à raça, classe e, especialmente, ao gênero. A violência e o medo do crime influenciam significativamente o uso e a apropriação dos espaços públicos por diversos grupos sociais, sendo aqueles com múltiplas identidades marginalizadas os mais propensos a sofrer violência ou até mesmo diferentes tipos de danos, por integrarem desvantagens estruturais cumulativas (Painter, 1992). Para as mulheres periféricas moradoras de favelas ou comunidades de baixa renda, o gênero se combina e se sobrepõe a outros tipos de discriminações, evidenciando experiências diferenciadas, contextuais e situadas em que as desvantagens estruturais de ser mulher e as desvantagens de viver em uma favela se cruzam e se reforçam, impactando a liberdade espacial e a mobilidade urbana feminina.

Segundo Koonings e Kruijt (2007), os pobres muitas vezes são vistos e temidos como inerentemente perigosos, uma vez que não só as elites, mas também o Estado, os relacionam diretamente com a violência, sobretudo como agentes, em uma associação fortemente carregada de estigma, no sentido de Goffman (1963). Entretanto, são os moradores de áreas pobres, com escassos serviços urbanos e ausência de meios de proteção, aqueles que estariam mais expostos aos riscos e seriam mais desproporcionalmente afetados, notadamente como as principais vítimas da criminalidade violenta, a qual aparece como o principal problema de sua vida cotidiana, uma vez que não têm recursos políticos e econômicos que lhes garantam acesso à justiça e à segurança. No Estado da Paraíba, 94% dos casos de homicídios são de pessoas pretas e pardas, sendo a taxa de homicídios de mulheres negras 4 vezes maior do que aquelas de mulheres nãonegras. Os homicídios dolosos com vítimas mulheres estariam normalmente relacionados à dinâmica da violência urbana e do tráfico de drogas, cometidos com armas de fogo, nas vias públicas, com mais vítimas negras e jovens, por autores desconhecidos, reafirmando os elementos

de racismo que perpassam todas as modalidades criminosas no país e revela a situação de vulnerabilidade socioeconômica e o contexto de violência a que este grupo populacional está submetido (FBSP, 2020).

As condições de vida das classes de baixa renda e a falta de qualidade de infraestrutura e do desenho urbano aumentam o potencial para surgimento de conflitos, crimes e violência, criando-se um vácuo de lei e ordem para resolver disputas nas favelas e abrindo espaço para que grupos organizados e armados constituam esferas alternativas e informais de poder (Koonings & Kruijt, 2007; Leeds, 2006; Maricato, 2015). Estudos demonstraram que as variações das taxas de violência letal vêm sendo fortemente influenciadas pela dinâmica dos mercados ilegais e a ação de facções de tráfico de drogas que usam da violência para administrar conflitos que decorrem dos negócios (FBSP, 2020). Em João Pessoa, os territórios do tráfico de drogas passaram a se disseminar no tecido urbano de forma pulverizada, com uma estrutura organizacional diluída em vários bairros da cidade, que passaram a ser, pouco a pouco, dominados pelas facções.

O artigo aborda a influência da atmosfera de violência, decorrente do domínio exercido pelas facções, na apropriação dos espaços públicos pelas mulheres moradoras, e propõe uma discussão sobre as restrições dos movimentos femininos nos bairros que elas frequentam. Dividido em quatro partes, o texto traz informações sobre a dinâmica de evolução urbana e abandono pela qual passou o Centro de João Pessoa, assim como o processo de crescimento das facções. Em seguida, apresenta o aparato metodológico mobilizado no processo investigativo para, enfim, discutir os primeiros resultados da pesquisa.

2. DISPERSÃO URBANA DE JOÃO PESSOA E ABANDONO DO CENTRO ANTIGO

Na história da evolução urbana de João Pessoa, desde a conquista do território pelas forças coloniais em fins de 1585, a cidade foi organizada em dois setores segmentados pela topografia, a cidade alta e a cidade baixa, que representavam não somente uma divisão física, mas refletiam também uma estrutura funcional e racial. A sede da capitania da Parahyba seguiu um padrão comum do urbanismo colonial português: implantada no topo de uma colina relativamente plana, próxima ao Rio Sanhauá, a defesa da cidade foi colocada em posição elevada, de onde se permitia o controle visual dos arredores (Tinem, 2006). A Cidade Alta e as ruas centrais estavam vinculadas às atividades institucionais, como o espaço dos homens com estatutos mais elevados, a serviço do poder régio ou da Igreja; enquanto a Cidade Baixa correspondia às atividades marítimas e comerciais, onde circulavam os trabalhadores e onde viviam os mais pobres (Gonçalves, 2016). Sem alterações durante quase três séculos, a cidade da Parahyba permaneceu restrita a um aglomerado tipicamente colonial que, até o século XIX, se estendia apenas para dois núcleos habitacionais: o Tambiá, a leste, o núcleo mais populoso da cidade, com ricas e elegantes residências

de comerciantes e profissionais autônomos bem-sucedidos; e as Trincheiras, ao sul, onde ficavam as classes de menor poder aquisitivo e uma parcela da população que vivia da caridade da igreja (Maia, 2016).

No século XX, a expansão da malha urbana para o leste marca o processo de quebra das relações entre a cidade de João Pessoa e o Centro Antigo. As classes mais abastadas migraram para a região litorânea, abandonando pouco a pouco as mansões da área central, e iniciando o processo de desenvolvimento dos bairros da Orla Marítima, que se tornaria, nas décadas futuras, a área mais valorizada da cidade (Tinem, 2006). O uso residencial da Cidade Alta foi praticamente descartado pelas classes médias da população, ocasionando o esvaziamento progressivo dos imóveis. A Cidade Baixa perdeu então paulatinamente a sua força na dinâmica econômica, em razão da emergência de novas centralidades. Apesar de ter se tornado economicamente mais desinteressante para o resto da cidade, o Centro mantém ainda, contudo, uma vasta oferta de comércios e de serviços voltados às camadas mais populares; neste sentido, resistem comunidades de baixa renda, que ocupam tanto edificações históricas arruinadas quanto outros tipos de moradias precárias nos bairros da área central. Na Cidade Baixa, onde antes encontravam-se todas as atividades comerciais da cidade, observa-se a perda de diversidade no uso e funções, reunindo atualmente serviços de oficinas mecânicas, comércio de peças automotivas, materiais de construção e serralherias.

Nos últimos anos, enquanto a cidade de João Pessoa continua o processo de dispersão urbana, intensificando a ocupação das bordas da cidade, os bairros do Centro, Varadouro e Trincheiras reduziram ainda mais o número de moradores, emergindo problemas de violência e insegurança e a territorialização das comunidades da área central pelos grupos armados "Okaida" e "Estados Unidos" (Machado, 2019). A expansão dessas facções influenciou fortemente o crescimento da violência em João Pessoa nas últimas décadas, sendo as comunidades desta área central aquelas que, particularmente, apresentaram os maiores índices de homicídios femininos da cidade, segundo dados fornecidos pela Polícia Civil da Paraíba.

3. A EMERGÊNCIA DAS FACÇÕES DE TRÁFICO DE DROGAS E DO CLIMA DE GUERRA CIVIL

No Centro Antigo de João Pessoa, particularmente no bairro das Trincheiras, existem duas comunidades: a Saturnino de Brito, comandada pela facção Okaida; e a comunidade Renascer, dominada pela facção Estados Unidos (*cf*. Figura 1).
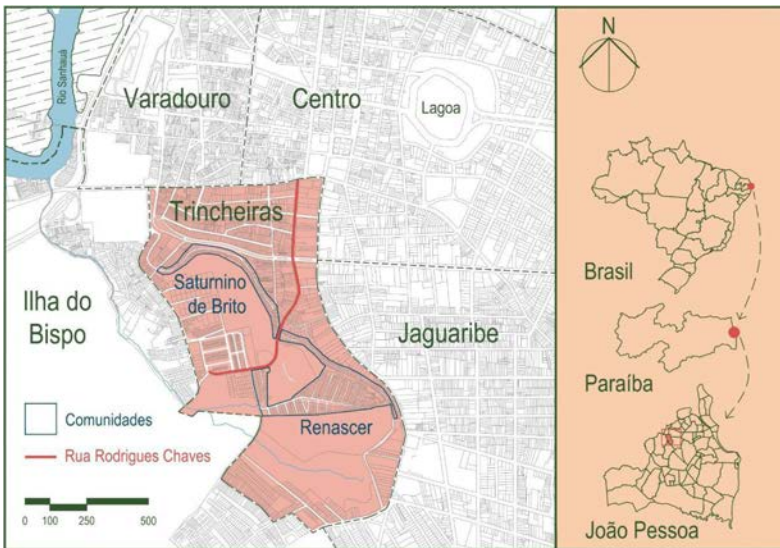
Figura 1 – Mapa de localização - Bairro das Trincheiras (em destaque).
João Pessoa, Paraíba, Brasil. Fonte: Mirelli Gomes (2024).

As duas comunidades estão fisicamente separadas pela rua Rodrigues Chaves, a via principal, e pela declividade natural do bairro, estando a Saturnino de Brito localizada na cota mais elevada e a Renascer, na cota mais baixa (*cf.* Figura 1). Nessa dinâmica, os moradores veem se desenrolar a guerra entre as facções e convivem frequentemente com tiroteios e balas perdidas decorrentes dos conflitos entre traficantes e diversas ações violentas que visam manter o comando do tráfico. Os traficantes impõem à comunidade seu próprio código, ditam novas "leis" e estabelecem sua própria forma de justiça, definindo qual forma de violência é permitida e quem pode praticá-la (Leeds, 2006). As favelas passaram a ser vistas como enclaves que obedecem a regras e códigos diferentes, onde grupos armados e poderes paralelos passam a fazer o papel de "dono" do território (Leeds, 2006) ou "gestor" da favela (Campos, 2005).

A conquista do território por uma organização criminosa vai além do lado comercial do tráfico e envolve, sobretudo, a determinação de um poder político sobre a localidade. A territorialidade de cada facção ou organização do tráfico de drogas é uma rede complexa, unindo nós articulados que pertencem a um mesmo comando e que se intercalam aos nós de outras redes, disputando a mesma área de influência (Souza, 2008). Há, inclusive, um controle da movimentação dos moradores que precisam transitar de um bairro dominado por uma facção a um bairro dominado por outra facção; quando há

disputa entre as facções dentro de um mesmo bairro, a divisão é feita por quarteirões e o controle dos territórios é observada por olheiros de cada um dos grupos.

As situações de violência que acontecem em bairros dominados por poderes paralelos não estariam resumidas apenas aos episódios criminais propriamente ditos, mas também pela existência de uma atmosfera de desordem que oportuniza, a qualquer momento, a ocorrência de delitos mais ou menos graves (Carrier, 2009). Nesse contexto, os termos "guerra", "guerra civil" ou "clima de guerra civil" foram introduzidos pela imprensa para designar a atmosfera de violência urbana que se conformou desde a emergência das organizações criminosas, como também para explicar o ambiente de conflito que se sucedeu em múltiplas circunstâncias da vida cotidiana nas favelas. Sendo assim, é possível compreender que existe uma atmosfera de violência que os sociólogos descreveriam como sendo multidimensional (Bourdieu, 1997): às vezes física, de fato, mas frequentemente simbólica.

Em outros termos, os moradores dessas comunidades estariam convivendo não somente com episódios criminais diretamente relacionados aos confrontos entre as facções, mas estariam inseridos cotidianamente em um contexto mais amplo de violência difusa, carregado de ações e reações de ódio de cidadão contra cidadão, que apresenta pontos compatíveis com um estado de guerra civil (Souza, 2008). O medo seria mais agudo nos grupos que sofrem mais opressão e se sentem mais marginalizados, em uma posição mais fraca na sociedade, como os moradores das favelas e conjuntos habitacionais populares que convivem diariamente com a arbitrariedade dos sistemas paralelos de poder, onde a ordem social é corroída pelos efeitos cumulativos e persistentes de incivilidades e comportamentos antissociais e, principalmente, onde a violência se faz sentir mais intensamente.

Assim sendo, para as mulheres moradoras de favelas, que têm poucos recursos e estão na periferia da sociedade, as diversas experiências de violência criam uma atmosfera de medo intrusivo e ameaçador e conformam um "clima de guerra civil" no cotidiano de seus espaços de moradia, determinando a experiência e a forma segundo a qual elas se apropriam da cidade e moldam suas espacialidades e temporalidades nos espaços públicos. Os impactos deste "clima de guerra civil" e da atividade das facções criminosas na mobilidade urbana feminina, em bairros com as maiores taxas de homicídios femininos de João Pessoa, estão à origem da pesquisa de doutorado, cujos dados são explorados aqui. O aparato metodológico mobilizado no intuito de esclarecer esses impactos no cotidiano feminino está descrito a seguir.

4. NOTAS METODOLÓGICAS

Os métodos mobilizados referem-se a um conjunto de 12 entrevistas curtas e 10 entrevistas longas, realizadas com trabalhadoras e moradoras do gênero feminino na área de estudo, que tiveram como ponto de partida metodológico a análise da vida cotidiana e das percepções subjetivas referentes às emoções geradas na apropriação

dos espaços públicos. Para o estudo de bairros dominados por facções de tráfico de drogas, os procedimentos metodológicos articulam-se a uma abordagem da cidade sensível, compreendendo a importância dos lugares através das associações emocionais que inspiram espanto, medo, preocupação ou amor (Bondi, Davidson & Smith, 2012). O corpus de dados foi explorado a partir da análise de conteúdo (Moraes, 1999) e especializados num conjunto cartográfico, elaborado a partir da base de dados da Prefeitura Municipal de João Pessoa (Filipéia, 2024).

As percepções e emoções referentes às avaliações subjetivas de um ambiente têm um efeito no comportamento de apropriação dos espaços públicos. Segundo Sweet & Escalante (2010), as mulheres reconhecem a cidade não só como espaço físico, mas também como espaço emocional, onde existem sentimentos de inclusão, acolhimento e segurança, mas também espaços de medo e ansiedade, vivenciando os aspectos físicos e emocionais intimamente conectados às "emoções urbanas"; *i.e.* a importância dos lugares deriva das emoções que estão intimamente ligadas ao lugar (Urry, 2005).

5. DISCUSSÃO

A relação das mulheres com o território da favela é cercada de sentimentos diversos e antagônicos, que perpassam a sensação de insegurança gerada pelas ações violentas das facções, assim como pelo sentimento de pertencimento e solidariedade provenientes das relações construídas entre os moradores do território. Para as mulheres entrevistadas, a noção de "comunidade" estaria retratada nos laços de convivência e afetividade entre as pessoas que compartilham da mesma realidade, dos momentos de cooperação e assistência entre os moradores nas situações cotidianas. De suas falas, emerge um sentimento de segurança dentro da favela vinculado ao conhecimento que possuem dos moradores, do território e dos lugares por onde devem ou não circular para evitarem situações de violência.

Apesar de, às vezes, relatarem estar habituadas ou mesmo acostumadas à dinâmica violenta das facções, as entrevistadas demonstraram majoritariamente que não há um processo de naturalização dessas atividades, nem mesmo que elas se sentem confortáveis com a existência de grupos armados. Este dado revela a sensação de cerceamento de suas possibilidades de atuação, frente ao poder bélico dos grupos armados, o que as impede de resistirem e de se protegerem da violência, quando o autor é integrante de uma facção ou possivelmente possui uma arma de fogo. Ademais, 40% das entrevistadas explicitaram a relação de distância que estabelecem entre elas e os integrantes das facções, mesmo os conhecendo desde a infância ou convivendo com eles há muitos anos, uma vez que uma relação de indiferença possibilitaria, quando necessário, estabelecer limites, mobilizar táticas de movimentação pelo território ou ainda resistir à dominação dos grupos armados e às leis impostas pelos seus integrantes.

Ao mesmo tempo, uma vez que são nascidas e criadas na comunidade, a maioria

das entrevistadas relatam estabelecer laços de convivência e de aproximação com os traficantes, sentindo-se respeitadas enquanto mulheres ou mesmo protegidas de alguma situação danosa que possa atingi-las, justamente por serem conhecidas desses homens. Os traficantes também são vistos como parte da rede de solidariedade e de apoio para as mulheres, prestando serviços que o Estado não fornece adequadamente, sendo alguém que poderia socorrê-las, por exemplo, quando precisam ir ao hospital ou quando precisam de dinheiro para comprar algum medicamento etc.

> Eu sei que, você sabe, a vida do crime é hoje, não é amanhã, mas eu acho que um bandido ajuda a gente mais rápido do que um SAMU chegar. Porque um caba [sic] errado na rua, independente do que ele esteja fazendo, é a única pessoa que socorre a gente dentro de uma favela. Um bandido socorre uma pessoa melhor do que um governador, um presidente, um prefeito faz, porque eu não acho que eles fazem nada. (Mulher 01)

A presença de grupos armados na favela influencia a maneira como as mulheres se movimentam pelo território. As entrevistadas desenvolvem múltiplas táticas para se proteger de situações de violência, tendo sido identificadas mudanças de trajeto para evitar encontrar integrantes de facções, ou ainda a escolha de caminhos, para evitar lugares onde já ocorreram situações anteriores de violência. Os episódios de violência, que ocorrem com vizinhos, familiares, moradores da comunidade, ou consigo mesmas, não se esgotam no momento em que acontecem, gerando medo e traumas físicos e psicológicos nas mulheres.

As moradoras das duas comunidades do bairro das Trincheiras elegeram a rua principal como sendo um lugar de medo, referindo-se à Rua Rodrigues Chaves, onde já ocorreram inúmeros "tiros" e "tiroteios" dos traficantes, onde elas já foram vítimas de "bala perdida", ou onde a maioria das histórias de violência se passaram, marcando fortemente o imaginário das moradoras. Elas explicaram que essa rua, sendo o limite entre territórios das duas comunidades e, portanto, das duas facções, seria o local onde os integrantes de uma facção passam atirando para chamar os rivais e incitar o confronto entre os grupos.

Os impactos da violência no cotidiano da comunidade envolvem as limitações das mulheres e o cerceamento de apropriações femininas nos espaços públicos no território da favela. As mulheres passam a orientar-se segundo o que acreditam ser um lugar permitido ou não, perigoso ou não, ficando condicionadas às fronteiras estabelecidas pelos grupos armados, evitando frequentar os territórios dominados pela facção rival àquela que comanda a área onde habitam. As moradoras da favela Renascer, localizada na parte mais baixa do setor de estudo, descrevem ter "medo da subida", "medo de subir para o Centro" e medo da favela Saturnino de Brito, localizada na cota mais alta. Da mesma forma, as moradoras da Saturnino de Brito expressam a impossibilidade de descer e caminhar pela favela Renascer com segurança.

O uso e a apropriação de praças e ruas foram modificados em razão do domínio de facções rivais em espaços públicos utilizados anteriormente pelas mulheres, assim como pelo medo de conflitos entre facções e suas ações violentas dentro da favela. Por exemplo, as mulheres entrevistadas relataram deixar de frequentar uma praça do bairro e de levar seus filhos para brincar no local, por estar localizado na fronteira entre duas comunidades comandadas por facções distintas. As mulheres também lamentaram não mais se sentar na calçada em frente às suas casas, para conversar à noite, ou ter que restringirem os locais de brincadeiras dos filhos, por medo de tiroteios e confrontos entre os grupos armados.

> A gente ficava sentada na porta de casa conversando, os meninos jogando bola, andando de bicicleta até tarde, a gente olhando, levando vento, até ir dormir. Hoje em dia a gente não faz isso, a gente parou de fazer por medo. (...) A praça que tem é muito perigosa. A gente ficava na Praça do Cemitério quando os meus filhos eram pequenininhos, a gente levava para andar de bicicleta, podia. Mas hoje em dia dá seis horas da tarde a gente não pode mais sair na rua. (Mulher 07)

> Aqui não tem, infelizmente, onde levar as crianças, porque é muito perigoso. Só tinha a Praça do Cemitério, que antigamente a gente levava, mas hoje em dia é sem condições, tem muito assalto, a gente não leva mais. (...) Aqui na rua eu me sinto segura, aqui nunca teve questão de assalto, mas nas outras ruas, a partir da esquina da praça, eu não costumo ir, já é outra comunidade, outra facção. (...) Na Praça do Cemitério, teve a morte de um primo que foi lá, assassinaram um primo meu lá na Praça do Cemitério. Eu não gosto de ir para lá. (Mulher 09)

As mulheres entrevistadas também expressam o medo por meio da imobilidade forçada no espaço público, restringindo seus movimentos e evitando programas ou atividades noturnas, inclusive renunciando a possibilidade de sair de casa à noite. Esse horário é entendido como uma barreira social invisível, sendo o momento de maior atuação dos traficantes, e, portanto, mais suscetível às ocorrências criminais, mais frequentes entre 18h da noite e 6h da manhã, segundo dados fornecidos pela Polícia Civil da Paraíba. As saídas que realizam à noite restringem-se à volta do trabalho ou da faculdade e algumas atividades religiosas; entretanto, as mulheres contam frequentemente com a companhia de familiares do sexo masculino para realizar os percursos a pé ou de carro, ou solicitam viagens em aplicativos de transporte privado semelhante ao táxi, a fim de evitarem situações de violência. A sensação de medo também exclui algumas opções, como voltar para casa a pé sozinha ou de bicicleta à noite, principalmente quando os trajetos passam por áreas consideradas perigosas.

O uso do solo do Centro, sendo predominantemente comercial, gera um completo esvaziamento do movimento de pessoas no horário da noite, de modo que as ruas ficam sem a vigilância natural e o controle informal das pessoas. Muitas mulheres elegem o horário das cinco e meia da tarde até às seis da noite como um limite seguro para voltar para casa, pois seria o horário do pôr do sol e o momento em que os comércios e lojas começam a encerrar suas atividades e fechar seus estabelecimentos.

A violência armada atravessa o corpo, o psicológico e o emocional das mulheres que entram em estado constante de alerta com o som dos tiroteios; segundo seus relatos, o corpo fica tenso, assustado, amedrontado, em desespero e, ao longo do tempo, torna-se doente, física e mentalmente. Diversos transtornos de saúde acometem as mulheres moradoras de favelas, como depressão, crises de ansiedade, ataques de pânico, episódios de insônia, estresse e dores no corpo, em virtude do contexto de violência no qual estão inseridas. O estado de insegurança permanece até mesmo dentro de casa, quando as mulheres ficam acordadas e vigilantes observando e escutando a movimentação das facções durante a noite para conferir se estão em segurança para dormir e relaxar seus corpos. A iminência e imprevisibilidade do confronto a qualquer hora causam medo e tensão constantes e têm consequências na saúde mental das moradoras da favela. As palavras que envolvem o medo de "tiro" e "tiroteio", são usadas pelas entrevistadas para falar do contexto dos conflitos entre as facções, sendo referidos como eventos recorrentes, mas, sobretudo, inesperados e imprevisíveis, acontecendo "de repente", quando surgem brigas, confusões entre traficantes ou outros vizinhos, em caso de alguém munido com arma de fogo.

Durante as entrevistas, algumas das mulheres moradoras das Trincheiras, em situações de discordância com os vizinhos, escolhem assumir uma postura pacífica para a resolução do conflito, mesmo que compulsoriamente, evitando "debater" e prolongar a discussão. Uma simples divergência envolvendo filhos e crianças geraria nas mulheres preocupações sobre os comportamentos e reações dos vizinhos, medo de uma possível vingança ou retaliação e, consequentemente, medo de um disparo com arma de fogo, como se a presença das facções criminosas na comunidade criasse uma *atmosfera de desordem* (Carrier, 2009), capaz de oportunizar, a qualquer momento, a ocorrência de delitos mais ou menos graves.

> Eu prefiro não me envolver, por exemplo, quando a pessoa quer brigar comigo. Eu procuro sair, para não debater com a pessoa, porque às vezes você está falando, falando, falando, termina acontecendo alguma coisa, a pessoa querendo vir para cima de você. (...) E procuro me dar bem com todo mundo para depois a pessoa não criar rixa sobre mim e vir para cima de mim. (Mulher 02)

Os dados mostram que a emergência do poder bélico do tráfico de drogas introduz mais um tipo de desigualdade social e territorial para os moradores da favela, em geral, e das moradoras, em particular, assim como gradações de risco, espaciais e temporais, e diferentes nuances de medo e violência. Neste contexto, os traficantes atuariam no controle de determinadas áreas do bairro, interferindo nas apropriações femininas do espaço público e, sobretudo, nas atividades cotidianas de trabalho reprodutivo e produtivo das mulheres.

6. CONCLUSÃO

O artigo indica que os movimentos de mulheres moradoras de favelas do Centro Antigo de João Pessoa baseiam-se não somente em fatores objetivos de tempo ou custo, mas envolvem a questão de segurança e do medo, como fatores primordiais na escolha dos trajetos urbanos. Mais particularmente, o medo do poder bélico das facções de tráfico de drogas cerceia as possibilidades de apropriação feminina dos espaços públicos, uma vez que as moradoras ponderam suas rotas de acordo com os limites dos territórios das facções de tráfico de drogas, bem como os locais marcados por situações anteriores de violência. Elas terminam por preferir os locais permitidos para circulação, assim como os horários adequados para saírem de casa, além de optarem por meios mais caros de transporte, como viagens por aplicativos privados, apesar dos orçamentos restritos, a fim de evitar situações de violência.

As entrevistadas insistiram sobre a mobilidade precária dentro do território da favela e a indicam esta questão como sendo potencializadora das relações desiguais de gênero, uma vez que, tendo menos acesso a veículos próprios, menos renda para serviços de transportes privados, e um sistema de transporte público não adequado em termos de horários e rotas, além de sentirem medo da violência ao se deslocarem a pé no espaço público, elas acabam enfrentando uma sobreposição de restrições que afetam amplamente suas atividades produtivas e reprodutivas, assim como sua capacidade de mover-se e de vivenciar uma liberdade espacial plena.

7. BIBLIOGRAFIA

Bondi, L., Davidson, J., & Smith, M. (2012). Introduction: Geography's Emotional Turn. In L. Bondi, J. Davidson, & M. Smith (Eds.). Emotional Geographies. 1-16. Ashgate Publishing.

Bourdieu, P. (1997). Meditações Pascalianas. Bertrand Brasil.

Campos, A. (2005). Do quilombo à favela: a produção do "espaço criminalizado" no Rio de Janeiro. Bertrand Brasil.

Carrier, L.P. (2009). Zone de non-droit, zone de conflit ? Réflexions sur les finalités et les outils de la démarche juridique. Jurisdoctoria, (2), 129-145.

Crenshaw, K. (1991). Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. Stanford Law Review, 43 (6), 1241-1299.

FBSP. Fórum Brasileiro De Segurança Pública. (2020). Anuário Brasileiro de Segurança Pública 2020. *https://forumseguranca.org.br/wp-content/uploads/2020/10/anuario-14-2020-v1-interativo.pdf*

Filipéia. Mapas da Cidade. (2024). *https://filipeia.joaopessoa.pb.gov.br/#fotogrametria*

Goffman, E. (1963). Estigma: Notas sobre a Manipulação da Identidade Deteriorada. LTC.

Gonçalves, R.C. (2016). Como e onde viviam os trabalhadores da Cidade da Parahyba (séculos XVI-XIX)? In: M.B. Moura Filha et al. (Eds.). Entre o rio e o mar: arquitetura residencial na cidade de João Pessoa. 64-89. Editora UFPB.

Koonings, K., & Kruijt, D. (2007). Introduction: The Duality of Latin American Cityscapes In K. Koonings, & D. Kruijt (Eds.) Fractured Cities: Social Exclusion, Urban Violence and Contested Spaces in Latin America. Zed Books.

Leeds, E. (2006). Cocaína e poderes paralelos na periferia urbana brasileira: ameaças à democratização em nível local. In: A. Zaluar, & M. Alvito (Eds.). Um século de Favela. Editora FGV.

Machado, L. (2019, 18 abril). A ascensão da Okaida, facção criminosa com 6 mil 'soldados' na Paraíba. BBC News Brasil. *https://www.bbc.com/portuguese/brasil-47942626*

Maia, D.S. (2016). A cidade em transformação: Primeiros sintomas da modernidade urbana no século XIX. In M.B. Moura Filha et al. (Eds.). Entre o rio e o mar: arquitetura residencial na cidade de João Pessoa. 90-111. Editora UFPB.

Maricato, E. (2015). Para Entender a Crise Urbana. Expressão Popular.

Moraes, R. (1999). Análise de Conteúdo. Revista Educação, 22 (37), 7-32.

Painter, K. (1992). Different worlds: the spatial, temporal, and social dimensions of female victimization. In D. Evans, N. Fyfe, & D. Herbert (Eds.). Crime, Policing and Place. Routledge.

Souza, M.L. (2008). Fobópole: o medo generalizado e a militarização da questão urbana. Bertrand Brasil.

Sweet, E., & Escalante, S. (2010). Planning Responds to Gender Violence: Evidence from Spain, Mexico, and the United States. Urban Studies, 47 (10).

Tinem, N. (Ed.). (2006). Fronteiras, Marcos e Sinais. Leituras das Ruas de João Pessoa. Editora UFPB.

Urry, J. (2005). The Place of Emotions within Place. In L. Bondi (Ed.). Emotional Geographies. 77-83. Routledge.
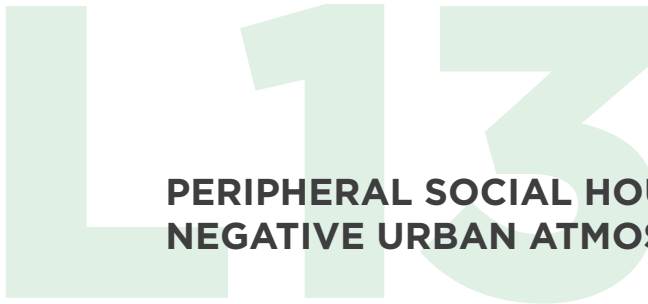
PERIPHERAL SOCIAL HOUSING AND NEGATIVE URBAN ATMOSPHERES

HABITAÇÃO SOCIAL PERIFÉRICA E ATMOSFERAS URBANAS NEGATIVAS

Elson Manoel Pereira
Doutor, Professor Titular
Centre de Recherche sur l'Espace Sonore
et l'environnement urbain (CRESSON)
Universidade Federal de Santa Catarina -UFSC
Pesquisador CNPq
Prof.elson.pereira@gmail.com

ABSTRACT

Space is more than a stage for society; it is a support for symbols, sensations, and exchanges, produced by humans and society, which in turn produce them. Studying the post-war housing complexes in France, Lefebvre (1968) points out that the materialistic production of housing does not satisfy all anthropological needs, aligning in part with Heidegger, who sees a crisis of dwelling, not just a housing crisis. For Lefebvre, dwelling implies social participation and urbanity or positive urban ambiance. The right to the city seeks to recover the city/citizenship relationship, hindered by quantitative and standardized urban actions. In Brazil, the housing complexes of the Minha Casa Minha Vida program largely replicated peripheralization, resulting in housing with negative ambiances. Between 2012 and 2015, the LabCS at the Federal University of Santa Catarina developed a methodology to evaluate these spaces in terms of urban ambiance. This article presents that methodology.

KEYWORDS: social housing. ambience. urbanity. right to the city. Florianópolis

RESUMO

O espaço é mais do que uma um palco para a sociedade; é um suporte de símbolos, sensações e trocas, produzido pelo homem e pela sociedade, que também os produz. Ao estudar os conjuntos habitacionais construídos na França no pós-guerra, Lefebvre (1968) aponta que a produção materialista da habitação não satisfaz todas as necessidades antropológicas, alinhando-se em parte a Heidegger, que vê uma crise do habitar, não apenas habitacional. Para Lefebvre, habitar implica participação social e urbanidade ou ambiência urbana positiva. O direito à cidade busca recuperar a relação cidade/cidadania, prejudicada por ações urbanísticas quantitativas e padronizadas. No Brasil, os conjuntos habitacionais do programa Minha Casa Minha Vida replicaram, em grande parte, a periferização, resultando em moradias com ambiências negativas. Entre 2012 e 2015, o LabCS da Universidade Federal de Santa Catarina desenvolveu uma metodologia para avaliar esses espaços em termos de ambiência urbana. Este artigo apresenta a referida metodologia.

PALAVRAS-CHAVE: habitação social. ambiência. urbanidade. direito à cidade. Florianópolis

1. INTRODUÇÃO

Para Lefebvre (1974), o espaço não é só um suporte ou uma ferramenta de produção, mas também um suporte de símbolos, sensações, linguagem, trocas. O espaço que é produzido pelo homem e pela sociedade, também os produz. O autor francês jamais separou seus estudos sobre a cidade dos estudos sobre a vida cotidiana. Suas reflexões urbanas analisaram os grandes conjuntos habitacionais franceses do pós-guerra que resultaram, segundo ele, no direito ao habitat, mas não ao habitar. Lefebvre (1968) demonstra as limitações dessa reflexão sobre a habitação e levanta

a questão do habitar. Paradoxalmente, de certa forma, ele tende a aproximar-se de alguns pontos do argumento de Martin Heidegger, segundo Hoyaux (2002). A produção puramente materialista da habitação não pode satisfazer todas as necessidades antropológicas. O problema contemporâneo, não seria uma crise habitacional. Seria mais uma crise do habitar, de não saber mais habitar, e de não saber mais construir para habitar. E seria, em última análise, uma crise do ser. Pois, de acordo com a fenomenologia heideggeriana, a construção territorial e a constituição ontológica estão intimamente ligadas (Hoyaux, 2002). Na reflexão de Lefebvre (1968), o habitar assume uma dimensão mais social e, de certa forma, mais política. Se Heidegger, em sua reflexão, não integrava diretamente a questão do outro, pois o ser estava em busca de um lar, principalmente em confronto com o espaço, para o pensador francês, "habitar" era participar de uma vida social, de uma comunidade, vilarejo ou cidade. A vida urbana possuía, entre outras coisas, essa qualidade, esse atributo. Ela proporcionava o habitar, permitia aos cidadãos habitarem (Lefebvre, 1968). O autor define um habitar que não pode existir sem sociabilidade, até mesmo sem urbanidade. Portanto, o direito à cidade constitui, entre outras coisas, uma tentativa de recuperar a histórica relação cidade/cidadania. Essa relação foi prejudicada por ações urbanísticas predominantemente quantitativas, onde também a habitação pareceu ser monumentalizada. Isso em detrimento de lugares e construções mais comunitárias, públicas (Pinson, 1997). Os grandes conjuntos habitacionais construídos na periferia das cidades brasileiras durante a ditadura militar (1964-85), de certa forma, resultaram numa experiência semelhante à experiência francesa, desprovidos em sua maioria de urbanidade e do direito à vida urbana. Paradoxalmente, o governo democrático de Dilma Rousselff, no Programa Minha Casa Minha Vida - PMCMV, mesmo conhecendo a produção acadêmica crítica em relação à experiência do governo militar em termos habitacionais, reproduziu, em muitos casos, a periferização da habitação social e todas as suas consequências. O resultado espacial foi a construção de milhões de moradias desprovidas de ambiência urbana positiva. Entre 2012 e 2015, o laboratório Cidade e Sociedade da Universidade Federal de Santa Catarina desenvolveu uma metodologia para avaliar os espaços produzidos pelos conjuntos habitacionais do PMCMV na região metropolitana de Florianópolis, a partir do conceito de urbanidade, considerando a hipótese de que a construção de habitações no limite das áreas urbanizadas, produziram atmosferas urbanas negativas. A pesquisa procurou quantificar a urbanidade de cada conjunto habitacional a partir de indicadores, divididos em a *priori* e a *posteriori*. O estudo desses indicadores, mostrado nesse artigo, permitiu à pesquisa definir elementos que concorreriam para a boa ambiência urbana.

2. A QUESTÃO HABITACIONAL NO BRASIL

O O PMCMV foi o maior programa desenvolvido no Brasil, após a extinção do Banco Nacional de Habitação (BNH), criado durante a ditadura militar para combater o déficit habitacional brasileiro. Se o BNH nasceu num contexto de tentativa de despolitizar o debate sobre o desigual crescimento das cidades brasileiras, argumentando que os

problemas habitacionais seriam mais o resultado de falta de planejamento do que de desigualdades sociais, o PMCMV nasceu num contexto democrático e após uma reflexão crítico-acadêmica que resultou no Movimento Nacional pela Reforma Urbana (MNRU).

No entanto, o PMCMV também nasceu num contexto de crise econômica mundial, que precisava ser combatida internamente no Brasil. Verificou-se então, uma contradição central, e que não foi enfrentada de modo satisfatório pelo PMCMV, que decorreu do privilégio concedido ao setor privado como agente fundamental para efetivar a produção habitacional, privilegiando a economia de escala e terrenos de baixo custo, localizados na periferia das grandes cidades e deixando em segundo plano a necessidade da inserção urbana defendida pelo MNRU.

A localização dos empreendimentos, então, foi inadequada em muitos dos casos: em áreas carentes de emprego, infraestrutura e equipamentos urbanos. A instalação dos empreendimentos sem uma política de controle articulada, e aplicada na esfera municipal, acabou ainda gerando impactos negativos, como a elevação do preço da terra, que representou a transferência do subsídio do programa para a especulação imobiliária.

Esse problema foi agravado pelas diferenças existentes entre os mais de 5.500 municípios brasileiros, que vão desde grandes cidades com estrutura institucional, técnica e financeira bem consolidada, e pequenas localidades, com histórico de administrações com pouca capacidade institucional e administrativa, com práticas políticas caracterizadas pelo clientelismo.

O PMCMV representou, no entanto, importante compromisso em relação à problemática habitacional: pela primeira vez destinaram-se subsídios consideráveis, a fundo perdido, para construir habitações sociais para as faixas de renda muito baixas. Porém, os obstáculos que ele enfrentou foram enormes. O maior deles, sem dúvida, está relacionado ao acesso à terra bem localizada que se reflete em duas situações: o processo de valorização fundiária que o programa promoveu, mesmo involuntariamente, que drenou os subsídios públicos ao pagamento dessa valorização, beneficiando o proprietário da terra, e não o morador e a implementação dos empreendimentos habitacionais em áreas cada vez mais distantes, com péssima inserção urbana (Ferreira, 2012, p. 54).

Outra característica marcante do referido programa diz respeito às tipologias arquitetônicas e urbanísticas assumidas por parte majoritária dos empreendimentos, que se caracterizavam por planos urbanísticos padronizados, geralmente dissociados do ambiente e da topografia, que adotavam soluções viárias, também padronizadas e sem estruturação hierárquica, acompanhando a disposição das quadras em malha xadrez. Neste caso, não se utilizavam critérios para a integração destes empreendimentos com a cidade existente, desconsiderando aspectos essenciais, como os de continuidade, integração, intensidade e diversidade dos usos, dos fluxos diversificados, das atividades geradoras de tráfego.

3. O PMCMV NA ÁREA CONURBADA DE FLORIANÓPOLIS

Em 2012, o Laboratório Cidade e Sociedade do departamento de Geociências da Universidade Federal de Santa Catarina desenvolveu uma pesquisa sobre o conjunto dos empreendimentos do Programa Minha Casa Minha Vida (PMCMV) construídos nos municípios conurbados da região metropolitana de Florianópolis[1] e buscou analisar "os atributos espaciais positivos e negativos dos empreendimentos", oferecendo "um conjunto de indicadores que colaborassem na análise crítica dos aspectos de desenho urbanístico e arquitetônico dos projetos habitacionais, possibilitando uma melhor percepção dos impactos urbanos e sociais por eles gerados" (Pereira, 2015).

A área conurbada de Florianópolis é formada pela integração das áreas urbanas de quatro diferentes municípios: Florianópolis, São José, Biguaçu e Palhoça.

Figura 1: localização dos empreendimentos do PMCMV na área conurbada de Florianópolis
Fonte: Pereira, 2015, p.33

A partir da figura 1, é possível perceber uma clara lógica de localização dos empreendimentos PMCMV, majoritariamente instalados na franja externa da mancha urbana, fortalecendo a dinâmica de urbanização desqualificada e dispersa: expansão urbana fragmentada e precária, geradora de problemas a curto, médio e longo prazo (custo de ampliação e manutenção de infraestrutura, segregação socioespacial, demanda por equipamentos e serviços públicos e privados, etc.). A periferização ocorreu através de urbanização extensiva em busca de terrenos mais baratos, distantes dos núcleos integradores da região metropolitana. Isso implicou um alto custo social, em função da necessidade de ampliação das redes de infraestrutura e serviços urbanos,

---

1 Projeto financiado pelo CNPq e Ministério das Cidades.

do aumento do custo de vida das famílias, em decorrência da dificuldade de acesso ao transporte coletivo e das grandes distâncias a se percorrer entre a moradia e o local de trabalho. A atuação do Poder Público não foi apenas o de flexibilizar as normas e o controle urbanístico, mas foi também o da inversão dos escassos recursos públicos de financiamento habitacional, que ao contrário de estimular a produção de moradia bem localizada, como reivindicava parte importante dos movimentos sociais ligadas ao ideário do Direito à Cidade, estimulou a produção periférica de habitação popular.

O PMCMV implantado na área conurbada de Florianópolis valorizou a produção da unidade habitacional, mas ignorou grande parte de aspectos relacionados à qualidade urbana onde tais moradias estavam inseridas.

Os aspectos urbanísticos foram deixados em segundo plano e o complexo equilíbrio entre quantidade e qualidade foi pouco trabalhado. A preocupação central em redução de custos, produção em série e quantidade acabou por tornar difícil a produção de boa arquitetura, de bom urbanismo e, consequentemente, de boas cidades.

O espraiamento urbano, a segregação socioespacial, a consolidação de grandes vazios urbanos, a formação de bairros monofuncionais, de áreas isoladas e desarticuladas da malha urbana, sem diversidade de usos e pessoas, caracterizam boa parte das áreas que receberam empreendimentos do PMCMV. Elas denotam um padrão de produção do espaço urbano que tem se mostrado amplamente prejudicial do ponto de vista ambiental, econômico e social.

Neste sentido, a análise do PMCMV estudada evidencia a recorrência de problemas estruturantes nas políticas públicas de provisão habitacional. Muito embora tenha surgido em um momento histórico específico - tendo sido contemporâneo de novos marcos institucionais e legais que pretendiam, em tese, combater a exclusão territorial (Estatuto da Cidade; o Ministério das Cidades; Sistema Nacional de Habitação de Interesse Social, Planos Diretores Participativos), o PMCMV pareceu não dialogar com tais instâncias, fazendo com que sua operacionalização resultasse na valorização do que Lefebvre (1968) chama de *habitat*, em detrimento da noção de *habitar* nas novas áreas urbanas, intensamente produzidas nas periferias da área conurbada e impulsionadas pelas ações do PMCMV. Assim como em décadas anteriores, a conformação territorial resultante tem pouco cuidado com a qualidade urbana.

3. O MÉTODO E A ANÁLISE

A pesquisa buscou tornar operacional o conceito de Urbanidade, a partir da construção de um método pautado em dez diferentes indicadores. Estes indicadores tiveram o objetivo de avaliar os principais atributos espaciais dos entorno imediato dos empreendimentos construídos na área conurbada de Florianópolis. A partir da análise empírica, procurou-se verificar a forma como estes empreendimentos se articulam à cidade existente, seja potencializando novas dinâmicas urbanas e

sinergias, qualificando ambiente vivido (através da oferta de melhores condições para a integração social, segurança, diversidade de usos, acessibilidade), seja incentivando um processo de degradação deste ambiente através da intensificação das dinâmicas de segregação socioespacial, de desvalorização dos espaços públicos, etc.

O objetivo final foi de, a partir da análise dos atributos espaciais do entorno imediato dos empreendimentos, oferecer um conjunto de indicadores que colaborassem na análise crítica dos aspectos de desenho urbanístico e arquitetônico dos projetos habitacionais, possibilitando uma melhor percepção dos impactos urbanos e sociais por eles gerados e colaborando no aperfeiçoamento das ações resultantes do PMCMV.

A urbanidade tem relação direta com a forma da cidade e das edificações, com o grau de homogeneização do espaço (exclusivamente residencial ou misto, por exemplo), com a acessibilidade aos espaços públicos, etc. Com base nesses pressupostos, Lévy (1999) faz uma análise do fenômeno urbano em seus aspectos espaciais e sociais (de objetos e relações), procurando reconhecer dentre a diversidade de formas adquiridas pela cidade, os elementos fundamentais que concorrem para a formação de uma maior urbanidade (que tomaremos aqui como equivalente a uma ambiência urbana positiva). Para este autor, as possibilidades de estruturação do espaço urbano são infinitas, o que implica em condições diferenciadas de urbanidade entre cidades e entre as partes de uma mesma cidade.

Panerai (1994) afirma que construir a cidade de hoje poderia significar uma vontade de reencontrar, com formas talvez diferentes, as qualidades da proximidade, da mistura, do improviso, proporcionadas pelo espaço público acessível a todos; atividades que se misturam, prédios que se adaptam e se transformam e vizinhanças não programadas.

Dentre as várias compreensões do conceito de urbanidade, a pesquisa se aproximou da ideia trazida por Lévy (1999), para quem as condições de urbanidade são espaciais e detectáveis, logo mensuráveis. Segundo o autor, existem duas formas de medição da urbanidade: 1) *a priori*, que privilegia aspectos morfológicos e da legislação urbana de determinado espaço - as relações entre objetos construídos e as normas urbanísticas e 2) *a posteriori*, que preocupa-se em pesquisar a percepção dos utilizadores em relação ao espaço construído. O autor afirma ser mais importante a medição da urbanidade *a priori* em detrimento da urbanidade *a posteriori*, tornando o conceito de urbanidade mais urbanístico do que sociológico.

Foram utilizadas 10 variáveis – indicadores – que buscaram dar conta de parcela importante das características de estruturação do ambiente construído. Este método ofereceu instrumentos de análise para diversos objetos espaciais, de diferentes escalas e complexidades (uma rua, um condomínio, um loteamento). Nestas variáveis foram sintetizadas diversas técnicas e estratégias disponibilizadas pelas referências no campo do estudo da urbanidade e dos atributos espaciais.

Após a realização do trabalho de campo preliminar, a pesquisa empreendeu uma revisão bibliográfica. Tendo por base os trabalhos de Lévy (1999) e Tenório (2012), foram

definidos os indicadores que seriam utilizados para a medição da urbanidade *a priori*, e a forma pela qual estes atributos colaboram para uma maior ou menor urbanidade no espaço. Para tanto foi proposto um conjunto com 10 indicadores de urbanidade: 1.Usos; 2.Atividades; 3.Mobilidade; 4.Organização associativa; 5.Espaço público; 6.Equipamentos coletivos; 7.Articulação Urbana; 8.Densidade; 9.Gente e 10.Segurança.

Para cada um dos indicadores, foram definidas dimensões mensuráveis. Pela extensão deste artigo não há espaço para apresentá-los em sua totalidade, como foi feito no relatório final da pesquisa (Pereira, 2015). Aqui, como exemplo, discorreremos sobre como foi construído o indicador "Densidade".

A densidade foi um parâmetro apreendido a partir de três sub-indicadores: 1) quantidade de unidades habitacionais existentes no interior do perímetro; 2) quantidade total de população residente no perímetro; e 3) quantidade de postos de trabalhos existentes no perímetro.

O quadro 1 apresenta uma síntese da definição, parâmetros e formas de operacionalização de cada um destes sub-indicadores.

DENSIDADES			
Sub-indicador	*Definição*	*Parâmetro*	*Operacionalização*
HABITAÇÃO	Número de unidades habitacionais	Quanto maior o índice, maior a urbanidade	Campo: contagem das unidades habitacionais
POPULAÇÃO	Número total de unidades habitacional x média municipal	Quanto maior o índice, maior a urbanidade	Laboratório: calcular o total de habitantes
TRABALHO	% das pessoas que afirmam trabalhar próximo da residência	Quanto maior a %, maior a urbanidade	Campo: aplicação de questionários. Laboratório: contagem

Quadro 1: Sub-indicadores e operacionalização do indicador "Densidades"
Fonte: Pereira, 2015, p. 131

Este indicador, apresentou-se como fundamental para a pesquisa, tanto em termos conceituais, já que a urbanidade tem íntima relação com os níveis de densidade demográfica alcançados pelos lugares, tanto em termos operacionais, já que a maior parte dos demais índices teria como parâmetro a quantidade de população residente em determinada área. Para o cálculo geral deste indicador, os três sub-indicadores foram colocados em relação através do gráfico radar, exemplificado pela figura 2.

Cada sub-item, após estudo individualizado de cada empreendimento, adquiriu um valor numérico final, na escala que inicia em 0 e termina em 1,4 (valor máximo identificado), tendo sido atribuído o valor 1 para a "área de calibragem"[2], tomada

---

2 Para a calibragem do modelo proposto, foi escolhida uma área da conurbação de Florianópolis considerada pelos pesquisadores como um referencial de boa urbanidade. Esta área recebeu o índice 1 para todos os indicadores e serviu de referência para todos os empreendimentos estudados. O ponto escolhido foi o Calçadão Central do bairro Kobrasol, situado no município de São José.

como referência de ambiência urbana positiva. Se a área analisada apresentasse desempenho superior à área tomada como referência, seu índice deveria ser superior a 1. Se a sua performance fosse inferior a área de referência, o seu sub-índice estaria entre 0 e 1. Os índices alcançados por cada sub-indicador seriam colocados nas escalas acima elencadas, sobre as linhas que partem do centro em direção aos sub-indicadores. Através da ligação destes pontos, seria formada uma área. O índice geral do indicador "Densidade" seria resultante do cálculo desta área. Isto significa dizer que quanto maior o desempenho em cada um dos sub-indicadores, maior a área gerada e maior o índice final do indicador. A seguir é mostrado um exemplo aplicado para a área de referência a esquerda e um empreendimento específico (empreendimento Villagio Campo Bello) a direita.
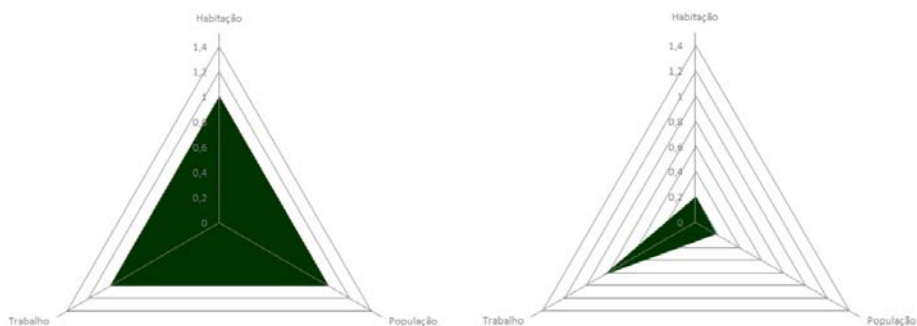
Figura 2: Gráfico Radar para o indicador "Densidade" para a área referência e empreendimento Villagio Campo Belo
Fonte: Pereira, 2015, p.178 e 201

Para a análise final da urbanidade, todos os 10 indicadores foram aplicados num único gráfico. A seguir, é apresentada a aplicação num empreendimento específico e
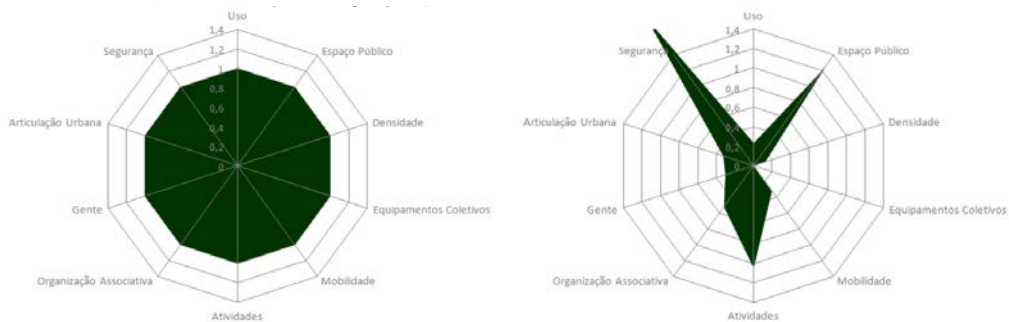
Figura 3: Gráfico Radar do índice global de urbanidade para a área referência e empreendimento Villagio Campo Belo
Fonte: Pereira, 2015, p. 197 e 217

Ao todo foram levantados 46 empreendimentos, mas em apenas 10 foram estudados todos os indicadores, além da área referência.

A análise considerou individualmente cada empreendimento, a análise por grupos homogêneos semelhantes de urbanidade e a análise da pertinência dos indicadores produzidos.

Destacamos a análise comparativa elaborada, onde se pode observar aspectos recorrentes e específicos entre áreas e grupos de empreendimentose e propiciar uma visão de conjunto dos empreendimentos nas áreas em que estão inseridos. A figura 4, de maneira sintética, representa a medição de urbanidade nos diferentes empreendimentos comparados com a área referência (Kobrassol):
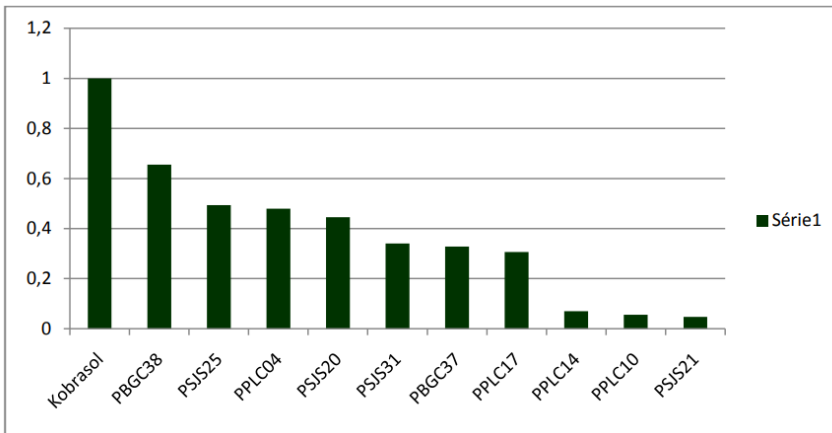
Figura 4: Índices de urbanidade dos dez empreendimentos analisados na Área Conurbada
Fonte: Pereira, 2015, p.396

Observa-se assim, a área do Bairro Kobrasol como referência para os demais; o PBGC38, destacado como um caso satisfatório que representa uma possibilidade concreta, seguido de seis empreendimentos intermediários, os quais por sua vez, apresentam índices de urbanidade intermediários e o terceiro grupo com índices de urbanidade bastante baixos.

4. CONSIDERAÇÕES FINAIS

A partir da análise empírica dos maiores empreendimentos habitacionais da área conurbada de Florianópolis, procurou-se verificar a forma pela qual os empreendimentos se articularam à cidade existente, seja potencializando novas dinâmicas urbanas e sinergias, qualificando o ambiente vivido (através da oferta de melhores condições para a integração social, segurança, diversidade de usos, acessibilidade), seja criando barreiras que impedem a estruturação mais equilibrada do tecido urbano, incentivando um processo de degradação do ambiente construído e das relações sociais, através da intensificação das dinâmicas de segregação socioespacial, de desvalorização dos espaços públicos e do aumento da sensação de insegurança.

Uma análise crítica da metodologia mostrou que ela possibilitou uma leitura refinada das formas de estruturação da nova periferia urbana: os resultados indicaram uma forte heterogeneidade entre os cenários contidos nestas novas fronteiras de urbanização. O desafio de qualificar a produção do espaço periférico foi, portanto, satisfatoriamente alcançado. A investigação proporcionou a compreensão da existência de fortes diferenciações e condicionantes entre as várias áreas: a periferia se faz de forma diferente e é preciso compreender esta diversidade para possibilitar o aprimoramento das análises e instrumentos de intervenção, sobretudo naquelas vinculadas as políticas habitacionais de grande escala.

Dos dez indicadores utilizados, foi possível constatar uma boa pertinência em oito deles (Densidade, Articulação Urbana, Mobilidade, Usos, Equipamentos Coletivos, Espaços Públicos, Gente eAtividades) enquanto que, outros dois apresentaram pertinência limitada (Segurança e Organizações Associativas). Embora os indicadores "Gente" e "Atividades" sejam fortemente coerentes com as premissas adotadas pela pesquisa, eles podem ser considerados, antes, como consequência de um bom desempenho do espaço urbano e não uma condicionante à urbanidade (urbanidade *à posteriori*).

Parece-nos fortemente pertinente propor uma hierarquia entre os diferentes indicadores: "Densidade", "Articulação Urbana" e "Mobilidade" aparecem como parâmetros fundamentais no desempenho das áreas urbanas no que tange a urbanidade e deveriam estar localizados em um primeiro escalão de importância. Já os indicadores "Espaços Públicos", "Equipamentos Públicos" e "Usos", embora sejam amplamente pertinentes, parecem não ter correlação tão direta com o índice global de urbanidade atingido pelas diferentes áreas analisadas.

5. BIBLIOGRAFIA

Lefebvre, H (1968). Le droit à la ville. Paris: Anthropos.

_____ (1974). La production de l'espace. Paris: Anthropos.

Lévy (1999). Le tournant géographique: penser l'espace pour lire le monde. Paris: Belin.

Hoyaux (2002). "Entre construction territoriale et constitution ontologique de l'habitant : Introduction epistémologique aux apports de la phénoménologie au concept d'habiter". Cybergeo: European Journal of Geography, Epistémologie, Histoire de la Géographie, Didactique.

Ferreira, JSW (2012). Produzir casas ou construir cidades? Desafios para um novo Brasil: parâmetros de qualidade para a implementação de projetos habitacionais e urbanos.

Panerai, P (1994). O retorno à cidade: o espaço público como desafio do projeto urbano. Projeto, São Paulo, n. 173, p. 78-82.

Pereira, EM (2015). Indicadores de urbanidade como aprimoramento do Programa Minha Casa Minha Vida. Relatório técnico-científico MCidades/CNPq/MCTI nº 11/2012. Florianópolis, Laboratório Cidade e Sociedade.

Pinson, D (1997). "La monumentalisation du logement : l'architecture des ZUP comme culture". Les Annales de la recherche architecturale, p. 51-62

TENORIO, GS (2012). Ao desocupado em cima da ponte. Brasília, Arquitetura e Vida pública. Tese de doutoramento pelo Programa de Pós-Graduação em Arquitetura e Urbanismo, FAU/UNB. 2005. 391p.

L14

OLFACTIVE DESIGN.
THE BIRTH OF A DISCIPLINE

CHAIR Anna Barbara

The relationship between the sense of smell and many disciplines of design and architecture is nothing new. Odours are in the materials that build architecture, in the rituals that take place within, in people's activities, in people themselves. The sense of smell, by its evocative nature, builds invisible architecture within visible architecture. Sometimes these two buildings are coherent, and this produces pleasure, narrative, comfort; sometimes they are not, and this creates discomfort, disorientation, and even illness.

Places have smells, cities have smells. Joseph Rykwert used to say that when one of his students mentioned, for example, types of Greek architecture, he would ask him what the Greeks did in the building: what happened on the altar, for example, where cows, bulls and other animals were sacrificed.

The great masters of architecture have designed considering the olfactory matrix of their buildings: Richard Neutra, Alvar Aalto, Peter Zumthor, Herzog and De Meuron, Gigon and Guyer, Diller and Scofidio, Philippe Rahm, to name but a few.

We are at the dawn of an important new design discipline, that of olfactory design, which not only takes us into a dimension that is still partly to be explored and presided over, but which requires new skills, offers new professions and markets. A discipline that requires transversal and vertical skills capable of exploring an aesthetic beyond sight, an ethic beyond consumption, a sustainability of materials, a healthiness of indoor and outdoor air, a knowledge of the neurological and physiological impact of certain substances on our actions and emotional reactions.

Olfactive Design, explores aspects related to spaces, products, services, behaviours, experiences, interfaces and air qualities. It is a discipline whose main objective is not the scenting of environments, but the knowledge of the nature of the materials that are chosen to furnish an environment, the movement of air in spaces, the temperature and humidity of these capable of conveying odours and volatile components. It is a discipline made up of the integration of multiple skills in design, energy, chemistry, mechanics, neuroscience, art, perfumery, history, anthropology, ethnography, marketing, behavioural psychology, etc.

Olfactive Design is about designing a dynamic olfactory composition that redesigns the invisible architecture. In fact, designing with the sense of smell means building forms of invisible architecture in space, but also in time, because odours move naturally and artificially and change constantly. It is therefore not a question of choosing a fragrance diffuser, but of choosing the materials to be used in the project also for their olfactory qualities, deciding how to make the air that carries them move.

Olfactive design offers unlimited opportunities. A design practice that, despite being present in human history since ancient Egypt, can now become a discipline. The shift from perfumery and decoration to design has transformed it into an area of research and design in the contemporary world, far removed from cosmetics and environmental perfumery, integrated with digital technologies and sensitive to people's physiology.

OSMOSPHERE AND OLFACTORY SURVEILLANCE: SMELL CONTROL IN THE AGE OF ATMOTERRORISM

OSMOSFERA E VIGILÂNCIA OLFACTIVA: O CONTROLO DO OLFACTO NA ERA DO ATMOTERRORISMO

Elena Giulia Abbiatici
Art Curator & Lecture at POLI.Design, Milano
elena.abbiatici@gmail.com

ABSTRACT

German philosopher Peter Sloterdijk in his book "Terror from the Air" (2002), speaks of the 20th century as a century in which physical wars were replaced by chemical wars, ushering in the era of terror from the air. Worldwide citizens live daily in the atmo-terrorism, present in the form of bacteriological and chemical hazards suspended in the air. Since the air we inhale is not neutral, nor is the breath we emit, the proposal is to explore the conflicts of air in the international political agenda through past and contemporary art projects that problematize the olfactory dimension of the climate crisis, opening environmental, economic and aesthetic short-circuits. The paper would like to consider the olfactory system, human and not, as 1-) a unit of measurement and monitoring of environmental toxicity and as 2-) a bio-political air analysis laboratory, starting with the amount of chemical data that can be extracted from it, at the service of surveillance capitalism.

KEYWORDS: Olfactive design. Environmental toxicity. Atmo-terrorism. Odour biometric control. Smell as biopolitical laboratory.

RESUMO

O filósofo alemão Peter Sloterdijk no seu livro "Terror do Ar" (2002), fala do século XX como um século em que guerras fisicas foram substuituídas por guerras químicas, inaugurando uma era do terror do ar. Cidadãos em todo o mundo vivem diariamente no atmo -(terrorismo), presente sob a forma de perigos bacteriológicos e químicos suspensos no ar. Como o ar que respiramos não é neutro, nem a respiração que emitimos, a proposta é explorar os conflitos do ar na agenda política internacional através de projetos artísticos passados e contemporâneos que problematizam a dimensão olfativa de crise climática, abrindo curtos-circuitos ambientais, econômicos e estéticos. O documento pretende considerar o sistema olfativo, humano e não, como 1-) uma unidade de medida e monitoramento da toxicidade ambiental e como 2-) um laboratório de análise do ar bio-político, a partir da quantidade de dados químicos que podem ser extraídos dele, a serviço do capitalismo de vigilância.

PALAVRAS-CHAVE: Desenho olfativo. Toxicidade ambiental. Terrorismo atmosférico. Controlo biométrico. O cheiro como laboratório biopolítico.

1. INTRODUCTION

At the beginning of the last century, ozone, gasoline, exhaust fumes were the odours that smelled of the future, chosen and shared by the Futurists because of their anti-bourgeois and anti-academic charge, embracing that sense so animalistic, crude, erotic, anti-moral, as it was expressly considered from Plato to Hegel, from Hegel to Kant, from Kant to Darwin, from Darwin to Freud. Quoting Carlo Carrà's Manifesto *La pittura dei suoni, rumori e odori*:

> If we enclose ourselves in a dark room (so that the sense of sight does not function) with flowers, gasoline, or other odoriferous matter, our plastic spirit [...] builds up some very special plastic ensembles in perfect correspondence of quality, weight and movement with the odors contained in the room (Carrà, 1913).

It is these smells of early 20th-century modernity that complement the plasticity of the sound environments created by the Futurists, considering that odors, like sounds, can be "concave, convex, triangular, ellipsoidal, oblong, conical, spherical, spiral".

Traveling nearly a century, the stance of aesthetic judgment toward these gaseous emissions has diametrically shifted, even in light of numerous scientific studies documenting their toxicity. We live, in what anthropologist Deborah Jackson calls olfactive displacement, that is, a profound sense of alienation that today's olfactory landscapes, covered in polluting nanoparticles, have brought about, distancing any relationship with the earth (Hsu, 2020).

2. SMOKE FLOWERS

In *Smoke Flowers* (2017, Figure 1), Belgian artist Peter de Cupere, through an advanced process of scent engineering, let real flowers, both large and small, regurgitate industrial air pollution by discharging smoke, as if taking revenge on human beings. Working with IFF (International Flavours and Fragrances), a leading company in fragrance engineering, he created smells of air pollution while clearly paying attention to the fact that they were not aggressive to the viewer. When we refer to olfactory deprivation, in fact, we must also refer to the reduction in the ability of flowers' scent to travel through the atmosphere. According to a mathematical model developed at the University of Virginia (USA) in 2008 and carried out by environmental health researcher Jose Fuentes, the odour molecules emanating from flowers in low-pollution environments travel up to 1000-1200 metres, while in more polluted places they travel only 200-300 metres (Samarrai, 2008).

Additionally, experiments conducted in the laboratory of the Max Planck Institute in Jena, directed by neuroethologist Bill Hansson, have shown how high ozone levels or the presence of gases, such as diesel exhaust or even pesticides like neonicotinoids, disorient insects - bees, bumblebees, moths and others - and interfere with pollination and reproduction cycles (Hansson, 2021; Girling et al., 2013). Similarly, increasing

temperatures caused by climate change also affect insects' sense of smell, which stops functioning accurately, as insects are not endowed with thermoregulation, and their physiological functions depend on the environmental temperature of the habitat in which they live.

So, no smell, no insects. No insects, no seeds. No seeds, no life. To encourage pollination, artist and designer Alexandra Daisy Ginsberg has developed a garden that promotes pollinating insects, choosing species to plant, according to criteria of ecosystemic and olfactory harmony, rather than formal and compositional considerations. In collaboration with horticulturists and pollinator experts, a botanical living sculpture was born: *Pollinator Pathmaker* (2021), in its first edition is presented as a 55-meter permanent installation at the Eden Project in Cornwall and eleven flower beds in Kensington Gardens in London, commissioned by the Serpentine Gallery. Beginning with the development of a database of plants suitable for different pollinators and specific locations, the nurtured and customized algorithm has developed a planting design to support as many pollinator species as possible between Cornwall and London, and is ready to serve other audiences and enthusiasts. Linking to the pollinator.art website helps in the process of selecting plants based on soil size, soil type and pH, the light they receive, exposure, and the flight paths preferred by insects. Flowers and colors proliferate at the service of an urbanism marked by environmental ecology that takes into account coexistence among species and reduces anthropogenic impact on the ecosystem.

Figure 1 . Peter De Cupere, *Smoke Flower,* 2017.

3. OLFACTORY POLLUTION

Smells, for better or worse, are incredibly influential on our psyche, establishing a deep connection between body and mind. Advances in cell biology and genetics in the mid-1990s, began to provide evidence that the ozone we breathe, which is present in the lower layers of the atmosphere, could damage DNA in alveolar macrophages - a type of white blood cell found on the surface of lung alveoli, which are responsible for eliminating all those potentially harmful substances - and in tracheal endothelial cells. It was Lilian Calderón-Garcidueñas, an environmental health scientist at the National Autonomous University of Mexico (now at the University of Montana), who began studying the relationship between ozone, other air pollutants and damage to the human olfactory epithelium (Arnold, 2018). In addition, according to researchers at Johns Hopkins University School of Medicine high concentrations of fine particulate matter (PM 2.5) can double the risk of anosmia (loss of smell), in exposed populations. The phenomenon of anosmia, sometimes in combination with loss of taste, was also a reaction to the coronavirus infection and often its only symptom. This loss could last for several months and was by no means of minor importance since the cells responsible for protecting and supporting the olfactory neurons have been damaged (Zhang, 2021). The nose and nostrils would not be so prominent on our faces, if the sense of smell were not essential to survival. With its 400 receptors, the sense of smell, continuously scans everything around it, analyzing chemical messages from the environment, and keeping us away from what is harmful. Olfactory dysfunction is often one of the earliest signs of neurodegenerative diseases. Loss of smell can precede other clinical symptoms by years, making it a potential early diagnostic marker. This dysfunction is linked to the degeneration of olfactory structures in the brain, which can be triggered or exacerbated by exposure to pollutants (Fatuzzo, 2023).

There are several art projects that aim to raise awareness on these topics, to create non-obvious and unusual short circuits, to deterritorialise the disciplines of art, biochemistry and environmental engineering, to develop parallel and provocative scenarios.

One of the most prolific artists in the field of olfactory pollution is the aforementioned Peter De Cupere, who is adept at making us experience the city from an olfactory sensory perspective and also adept at making us perceive the degree of human-made atmospheric manipulation, while inviting us, also, to read the concept of olfactory judgment in terms of cultural stigma. in his olfactory reconstruction of the world, in 2010 De Cupere developed a series of paradoxical holiday cities for the humans of the present, inundated with plastic and garbage, to the point of being able to build a *Garbage Holiday City* (2010). The misuse of plastic is evident and pervades our lives, as does the disregard for CO2 and dioxin-like compounds it releases on the living ecosystem. One of the consequences is the olfactory deception that plastic poured into the oceans recreates in many birds, seals, whales, and turtles a couple of months after being dumped. It indeed releases an odorous substance similar to the smell

of dimethyl sulfide, indicative of the abundance of food nearby, and tricks ours into swallowing it erroneously, choking and thus inevitably dying (Hansson, 2021).

Sean Raspet's installation *Micro-encapsulated Surface Coating*, presented at the Jessica Silverman Gallery in 2015, concretizes the olfactory background noise of the spaces we inhabit. The work literally scans the air in the gallery. A stainless steel container initially contains a vacuum and collects air from the surrounding environment over the course of a week. The accumulated air is then sent by the artist to a laboratory to determine its molecular composition and create a liquid mixture - a thousand-fold condensation of the gallery's chemical signature - that is later sprayed back onto the gallery's surfaces. Piero Manzoni's *Corpo d'Aria* (1959, literally "body of air") comes to mind, an attempt to contain, to stop the atmospheric ephemeral and, at the same time, the thinking body of the artist through breathing, an eschatological manifestation of life. Now threatened.

4. TERROR FROM THE AIR

German philosopher Peter Sloterdijk, in his book *Terror from the Air* (2002), speaks of the 20th century as one in which physical wars have been replaced by bacteriological and chemical wars, ushering in the era of terror from the air itself. The main idea is no longer to target the enemy's body but his environment, ushering in the era of *atmoterrorism.* The tear and vesicant gases used during World War I, including chlorine, phosgene, and mustard gas, or Zyklon B used in concentration camps during World War II, up to the horror of Hiroshima and Nagasaki, are nothing more than the evolution, sinking into human history, of the use of biological or chemical agents for the purpose of warfare. Just a few hints: during wars with enemies among the Greeks and Romans, it was common to use foul-smelling dead animals to contaminate the food supplies and drinking water of opposing groups. Later, in 1763, during the war for the domination of North America, the British army gave the Ottawa American Indians military blankets, which later turned out to be a bacteriological weapon because they were contaminated with smallpox.

In 2018, the curse of smallpox blankets became the inspiring subject of Italian artist Luca Vitone's work, *A Tale of Forked Tongues* (2018-2022). For the exhibition *Odor. Immaterial Sculptures* at the Ferdinandeum Museum in Innsbruck in 2023, the artist resorted to an olfactory sculpture developed in collaboration with master perfumer Maria Candida Gentile. Fresh, pungent, woody notes-U.S. cedar, cypress, lavender, and camphor crystal-to narrate a disturbing and dangerous woodland atmosphere and visualize a power situation that traveled by air. Vitone is not new to these themes: back in 2013, he presented *Per l'Eternità,* an achromatic mono-olfactory sculpture, an odorous portrait of Eternit, the versatile and odorless construction material whose name is inspired by the Latin *aeternitas* (for its resistance), which caused, through the inhalation of its fibrous mineral particles, too much death, in Italy especially in Casale Monferrato, where the Eternit factory was located. Three olfactory notes for a

dynamic and ambivalent smell: Swiss rhubarb essence as top note, Belgian rhubarb essence as middle note, and French rhubarb essence as base note. *Per l'Eternità* was also created in collaboration with Maria Candida Gentile and permeated the air of the Italian pavilion, sometimes announcing itself outside its perimeter. The artist narrates the terror of the air, that is, the terror of inhaling deadly substances by the relatives of the Eternit workers, through an olfactory sculpture capable of subtly and invisibly penetrating visitors' lungs. If Eternit, according to the workers who worked there, had no smell but an almost tactile, bodily component because of its splintered particles, the artist delegates to three olfactory notes the power to evoke the limbo to which many workers were condemned, in order to have an income: inhabiting atmospherically cursed environments. The ability of the olfactory notes of Vitone's sculptures to permeate the surrounding space and transcend the confines of the exhibition emulates the intrinsic nature of gases (and thus of power itself), to creep, impalpable and penetrating, everywhere, eluding any impossible aerial delimitation.

Eleven years later, Eternit returns to the Biennale Arte, specifically to the German Pavilion, where artist Ersan Mondtag in *Monument to an unknown man* (2024) plunges us into the olfactory and working hell faced by his grandfather, who migrated from Anatolia to Germany to work for decades in an Eternit factory. In the German Pavilion, Mondtag constructs a three-story building that recreates his grandfather's working (first floor) and domestic (second floor) environments, covered in earthen dust to simulate asbestos dust. The ascent to the third level, is a ritual toward liberation and recognition that so many invisible workers can finally receive. Disarming is the letter the grandfather receives announcing his sudden dismissal after working for so many years at that company, with only two weeks off each year "to relax from everyday life and gather new strength for your future work." Moving is the testimonial letter written by the artist in memory of his grandfather and the atmospheric conditions he experienced and breathed: "When we inhale normal dust, it is expelled through coughing, but asbestos dust gets stuck and stays inside for 10, 20, 25 years. Then it causes inability to breathe and water accumulates in the body." The working and domestic environment sought by the artist unfolds in layers, and as one ascends, one is literally assaulted and invaded by the smell of workshop, tar, and dust—much like the environments one would imagine in a Dantean circle of hell.

The atmosphere is where environmental and financial conflicts are fought, with social and political implications related to its use. Already in 1990, Felix Gonzalez-Torres warned us of bacteriological warfare in the air with his decomposable and distributable paper sculpture, whose message dispersed like atmospheric particles. Gonzalez-Torres printed a stack of sheets bearing on one side an article published on May 13, 1988, in the *New York Times,* reassuring readers that germ warfare was not harmful to the environment and people, and on the other side, the artist's warning: "Give a city child a break. Give to the Fresh Air Fund." Visitors were invited to take the sheets with them, interacting with the size and potential of the ephemeral sculpture to impact collective consciousness.

Air is a common good and a public right, a true natural heritage of humanity. This is the reason why Amy Balkin, an artist living and working in San Francisco, in 2006 submitted a bid to UNESCO to qualify the entire atmosphere as a World Heritage Site. *Public Smog* is more than a work of art: it is a project involving the purchase and retention of greenhouse gas emission credits from international commercial markets to create a temporary clean air park. *Public Smog* raises the complexities and contradictions of current environmental protocols regarding control and public entitlement of clean air and ownership of related sites. It contrasts with the current landscape in which large corporations determine mostly the totalizing abuse of a public good, compromising its quality for profit. The art project calls out the need for greater awareness on the part of citizens in participating in environmental management, rather than delegating this responsibility completely to governments and institutions.

Peter de Cupere's installation *Smoke Cloud* (2014, Figure 2), again, poetically makes us experience the atmospheric price that an urbanized lifestyle makes our organisms pay. It allows the viewers to put their heads in the clouds through a hole, in the centre of the installation, reached by a ladder. Once up, the viewer encounters a repulsive smell, in contrast to the fluffiness that sight had suggested: the smell of air pollution in our cities. The intensity of the smell changes to correspond with the location of the exhibit. For example, in the Netherlands, it reflects the filtered exhaust of automobiles, while in Havana, it reflects the intense smell of old American cars.

At the sight of the clouds part of Alberto Sinigaglia's *MicrowaveCity* series (2016, Figure 3), a similarly stark contrast of sensations is evoked upon recognizing that beyond the clouds are atomic explosions from which the shaft has been taken. Inquietude and wonder: one encounters the Kantian sublime. The series draws from the reworking of photographs held at the Los Alamos Labs photo archive, taken during the 1950s and 1960s in Las Vegas. One of the main attractions of Las Vegas in those years was the opportunity to observe and photograph, from hotel terraces the bomb tests, which were taking place a hundred miles away. Photographs taken by tourists (and non-tourists) incorporated the mystifying power of being reduced to postcards, souvenirs for some escapist dream, enough to chase away violence and drama and, manifest a devious innocence. The radiation is there, the tragedy is historically not far away, but a simple camera makes it easy to confuse America's dream with its shadow, the awe of progress with its terror.

Figure 2. Peter De Cupere, Smoke Cloud, 2013. Installation, White synthetic cotton, polyester, epoxy resin, wood, metal, ladder, iron cables, smell of air pollution and smoke, 2013. Edition for the exhibition The Importance of Being, at Museo de Arte Contemporáneo, Buenos Aires, 2015.
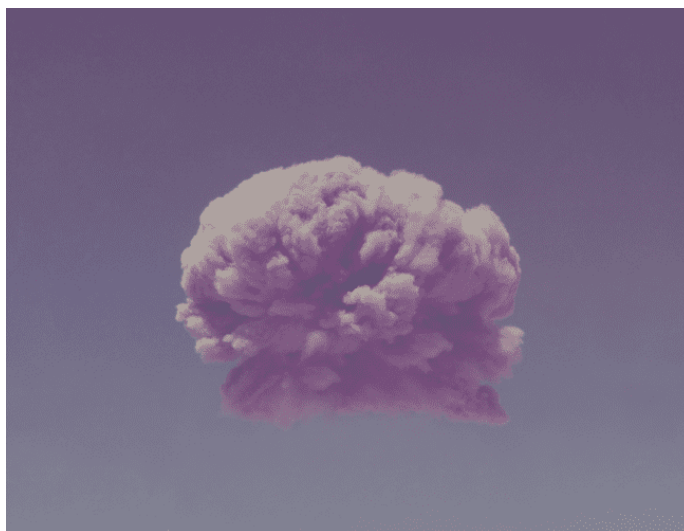
Figure 3. Alberto Sinigalia, Teapot Injekt, 2016

5. SMELL OF SURVEILLANCE

In Stanislaw Lem's science fiction novel *The Futurology Congress* (1971), he imagines a dystopian future in which sensory and chemical manipulation becomes an instrument of political and social power. The government uses a wide range of chemicals and odours to alter citizens' perceptions and behaviour. This use of odours for psychotropic control of the masses highlights the ability of smell to alter consciousness, bypassing

slower and more complex rational and cognitive processes. The direct link between smells and the brain is such that major entrepreneurs and brands have figured out how to direct the economy through invisible, inhalable substances that can be silently and deceptively directed to the neural circuits responsible for making choices, encouraging purchases by even the most undecided. This is called olfactory neuromarketing.
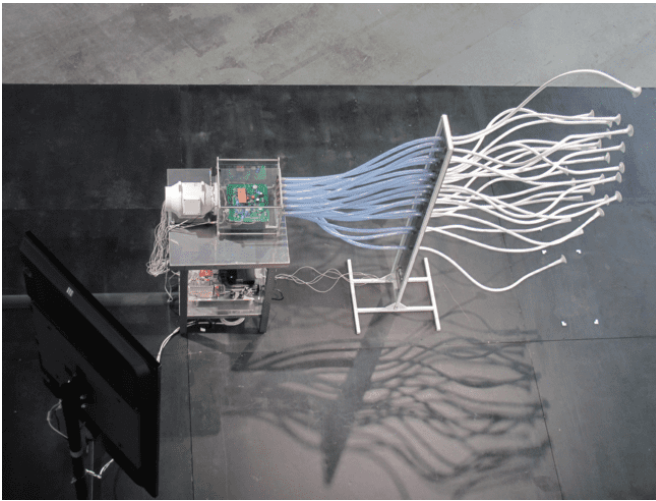
Figure 4. Where Dogs Run, Faces of Smell, 2012. Interactive Installation, software, metal, plastic, glass, stainless steel, aluminium, silicone, gas sensors, photo detector, electronic components, fan, microcontrollers, computer, plasma screen, stand, cutting table, rangefinder.

Moreover, if in the past the management of atmospheres passed through ethnic discrimination and regulation (during colonialism) and the rejection of scents far from Christian morality (in the Middle Ages), today the application of machine learning in the olfactory field makes it possible to artistically simulate how smells can serve the biometric control of individuals. Identifying individuals by their smell is a technique long used by the police, particularly the Stasi in East Germany in the 1970s, which secretly collected odor samples. Currently, computerized olfactory recognition with high-tech sensors is still in its infancy, but it is feared that it will flank facial recognition and fingerprints. The method of electronic recognition by odors does not seem to be far from the most current reality, in many airports there is already an electronic "nose" capable of picking up traces of TNT and other molecules, although not yet as sensitive and accurate as the noses found in nature. This is the reason why Ph.D. student Melanie Anderson and her team at the University of Washington have developed an olfactory drone by exploiting the high olfactory performance of the bird kingdom. *Smellicopter* is, in fact, a drone that uses a living antenna of a moth to orient itself to odors, even moving against the wind and following them to their source. The team remedies the difficulty for artificial olfactory systems to perfectly recognize and distinguish odors, creating a hybrid of natural and artificial that is useful for detecting, for example, unexploded hidden explosives, gas leaks, or monitoring agricultural crops (Anderson et al., 2020).

If electronic noses are very advanced in recognizing possible diseases, test for the presence of pesticides on agricultural products or assessing the degree of spoilage of a food (de facto quality control), so far no software has been developed that is accurate enough to identify a human being. Simultaneous with academic and scientific research in this direction (Rodríguez Luján et al., 2013; Chaiyanut et al., 2022), the Russian collective, Where Dogs Run, conceived the installation *Faces of Smell* (2012, Figure 4). In the installation, gas detectors and analyzers are placed to collect information about people, their location, and their biology at a specific time through their smell and breath. When a person approaches the gas analyzer and sniffs the tubes, the tubes in turn smell. After processing the data on the composition of the air, they produce a face - a record of the logistical and biological information captured through breath and smell. Curiously enough, in a subversion of control, the database from which faces are created was fed with police sketches. In short, a person sees a face that conforms to his or her smell, exactly in line with today's constant tracking requirements. Will our scent signature effectively serve the monitoring and security industry? For now, it seems that Amazon in 2021 has already issued patents to use smells and skin texture to identify a suspicious person at the intercom. Varied and little explored is the complexity of contemporary olfactory environments. Between toxic chemical compounds, aseptic spaces, and olfactory systems of biometric recognition, smells open up questions of biopolitics related to issues of class, ethnicity, socio-labor status, and surveillance capitalism and unfolding an analysis of the atmospheric and socio-cultural toxicity we inhabit.

6. BIBLIOGRAPHY

Anderson, M. J., Sullivan, J. G., Horiuchi, T. K., Fuller, S. B. & Daniel, T. L. (2020). A bio-hybrid odor-guided autonomous palm-sized air vehicle. Bioinspiration & Biomimetics. 16(2). DOI 10.1088/1748-3190/abbd81.

Arnold, C. (2019). Sensory Overload? Air Pollution and Impaired Olfaction. Environ Health Perspect. 127(6):62001. DOI 10.1289/EHP3621. PMID: 31190551; PMCID: PMC6791585.

Ajmani, G. S., Suh H. H. & Pinto J. M. (2016). Effects of Ambient Air Pollution Exposure on Olfaction: A Review. Environ Health Perspect. 124(11), 1683-1693. DOI: 10.1289/EHP136. PMID: 27285588; PMCID: PMC5089874.

Brann, D. H., Tsukahara, T,, Weinreb, C. (2020). Non-neuronal expression of SARS-CoV-2 entry genes in the olfactory system suggests mechanisms underlying COVID-19-associated anosmia. **Sci Adv. 6(31):eabc5801. DOI: 10.1126/sciadv.abc5801.**

Carrà, C., (1913). Il Manifesto dei suoni, rumori, odori. Direzione del Movimento Futurista.

Carulli, M., Bordegoni, M., & Cugini, U. (2016). Integrating Scents Simulation in Virtual Reality Multisensory Environment for Industrial Products Evaluation. Computer-Aided Design and Applications. 13(3), 320-328, DOI: 10.1080/16864.

Chaiyanut, J., Kazuki, N., Takuro, H., Tsunaki, T., Benjarong, S., Yosuke, H., Atsuo, N., Masaya, N., Jiangyang, L., Guozhu, Z., Wataru, T., Masaki, K., Takao, Y., Yoshinobu, B., Takeshi, Y., (2022). Breath odor-based individual authentication by an artificial olfactory sensor system and machine learning. Chemical Communications, 58(44), 6377-6380. DOI: 10.1039/d1cc06384g.

Fatuzzo, I.; Niccolini, G.F.; Zoccali, F.; Cavalcanti, L.; Bellizzi, M.G.; Riccardi, G.; de Vincentiis, M.; Fiore, M.; Petrella, C.; Minni, A.; et al. (2023). Neurons, Nose, and Neurodegenerative Diseases: Olfactory Function and Cognitive Impairment. Int. J. Mol. Sci. 24 (3), 2117. DOI: 10.3390/ijms24032117.

Girling, R. Lusebrink, I., Farthing, E. et al (2013). Diesel exhausts rapidly degrades floral odours used by honeybees, Scientific Reports. 3, 2779. DOI: **10.1038/srep02779.**

Hansson, B. (2022). Smelling to Survive: The Amazing World of Our Sense of Smell. Hero.

Hsu, H.L. (2020), The Smell of Risk: Environmental Disparities and Olfactory Aesthetics, NYU Press.

Lem, Stanislaw. (1974) The futurological Congress. Seabury Press (1st English edition).

Oyeleye, C. A., Fagbola, T. M., Babatunde, R. S. & Adigun, A. A. (2012). An Exploratory Study Of Odor Biometrics Modality For Human Recognition, International Journal Of Engineering Research & Technology (Ijert). 1(9).

Parma, V., et al. (2020). More than smell. COVID-19 is associated with severe impairment of smell, taste, and chemesthesis. Chemical Senses. 45(7). 609-622. DOI: 10.1093/chemse/bjaa041.

Pichersky, E. & Dudareva, N. (2007). Scent engineering: toward the goal of controlling how flowers smell. 25(3), 105-110. DOI: 10.1016/j.tibtech.2007.01.002

Rodriguez-Lujan, I., Bailador, G., Sanchez-Avila, C., Herrero, A. & Vidal-de-Miguel, G. (2013). Analysis of pattern recognition and dimensionality reduction techniques for odor biometrics. Knowledge-Based Systems, ScienceDirect, Volume 52. 279-289. ISSN 0950-7051. DOI: 10.1016/j.knosys.2013.08.002.

Samarrai, F. (2008) Flowers' Fragrance Diminished By Air Pollution, University Of Virginia Study Indicates. Journal of University of Virginia. *https://news.virginia.edu/content/flowers-fragrance-diminished-air-pollution-university-virginia-study-indicates*.

Sloterdijk P. (2002). Luftbeben: An den Quellen des Terrors. Frankfurt: Suhrkamp Verlag. Tr. En (2009). Terror from the Air. Mit Press.

Society of NeuroScience. (2020). Snffing COVID-19 Out: Studying the Nose to Understand the Coronavirus Neuroscience Quarterly. *https://www.sfn.org/publications/neuroscience-quarterly/fall-2020/sniffing-covid-19-out-studying-the-nose-to-understand-the-coronavirus*

Upadhyay, U.D. & Holbrook, E.H. (2004). Olfactory loss as a result of toxic exposure. Otolaryngol Clin North Am. 37(6). 1185-207. DOI: 10.1016/j.otc.2004.05.003. PMID: 15563910.

Zhang, Z., Rowan, N.R., Pinto, J.M., London, N.R., Lane, A.P., Biswal, S. & Ramanathan, M. Jr. (2021). Exposure to Particulate Matter Air Pollution and Anosmia. JAMA Netw Open. 4(5):e2111606. DOI: 10.1001/jamanetworkopen. PMID: 34042992; PMCID: PMC8160589.

SPATIAL SMELL DESIGN STRATEGIES BY SCALES

ESTRATÉGIAS DE DESIGN DE OLFATO ESPACIAL POR ESCALAS

Suzel Balez
Professor at the École Nationale Supérieure d'Architecture de Grenoble
Searcher AAU, Cresson team
suzel.balez@grenoble.archi.fr

ABSTRACT

This paper explores the integration of smell in architectural and urban design, highlighting its importance in everyday experiences of built spaces. It examines the role of olfaction through various spatial scales, with unique characteristics and implications. The role of spatiolfaction in urban planning, public spaces, and enclosed areas is delved into, proposing environmentally coherent approaches for odor management. Some challenges of incorporating odors into design are also discussed. Drawing from fieldwork and research, how diffused odors can influence spatial perception and the challenges of incorporating olfaction into design are explored. By examining the interplay between human activities and biotic odor sources, the paper proposes strategies for creating distinctive olfactory identities in urban environments. To advance the operationalization of olfactory thinking in architectural and urban projects, an integrated sensory design is advocated, offering insights into enhancing user experience and environmental identity through thoughtful space-olfactory design.

KEYWORDS: Spatiolfaction. Olfactory design. Sensory experience. Smellscape. Odor management

RESUMO

Este trabalho explora a integração do olfato no desenho arquitetônico e urbano, destacando sua importância nas experiências cotidianas dos espaços construídos. Examina o papel do olfato através de várias escalas espaciais, com características e implicações únicas. O papel da espacialização no planejamento urbano, espaços públicos e áreas fechadas é aprofundado, propondo abordagens ambientalmente coerentes para o gerenciamento de odores. Alguns desafios de incorporar odores no design também são discutidos. A partir do trabalho de campo e da pesquisa, são explorados como os odores difusos podem influenciar a percepção espacial e os desafios de incorporar o olfato no design. Ao examinar a interação entre as atividades humanas e as fontes de odor biótico, o artigo propõe estratégias para a criação de identidades olfativas distintas em ambientes urbanos. Para avançar a operacionalização do pensamento olfativo em projetos arquitetônicos e urbanos, um design sensorial integrado é defendido, oferecendo insights sobre a melhoria da experiência do usuário e da identidade ambiental através do design espaço-olfativo pensativo.

PALAVRAS-CHAVE: Spatiolfaction. Design olfativo. Experiência sensorial. Smellscape

1. INTRODUCTION / INTRODUÇÃO

In recent years, various fieldworks (Henshaw, 2014; Xiao et al., 2018; Balez, 2021b) have highlighted the essential role of smell in the everyday experience places. Nowadays artists often encounter the properties of diffused scents in museum spaces. An

odorous artwork can invade all other exhibits[1], challenging the primary function of architecture: delimitation. But, despite its significance, models for incorporating olfaction into spatial design remain largely inaccessible. The development of such models can rest on various approaches, from the discourse accompanying the project to the integration of the olfactory dimension into a sensory ensemble. In this whole, this paper aims to explore the stakes of the operationalization of olfactory thinking in architectural and urban projects. Such an approach involves attempting to influence odor elements, not only considering their sources, as it is ordinary in the Western contemporary thinking of odors, but also the ways they are encountered. Mild to low intensities will be considered here, as outside of strong odor intensities, the pleasure-related component of olfactory evaluation is largely context-dependent (Köster, 1991).

Diverse disciplines and my field works on spatialized interpretation of odor – that I call spatiolfaction, will be used and different spatial scales of odor design and their potential materializations will be considered. Even if the classical mental divisions of spatial thought are ill-suited to think of smell, the examples of urban and architectural programs studied under its aegis will be ordered in a growing zoom. It corresponds to the three large spatial scales used by Lucienne Roubin (1989) and later by Victoria Henshaw (2014), nuanced by temporal dimensions. A proximity fourth spatial scale will be explored using the olfactory effects (Balez, 2021a).

What Roubin calls "odorous territory" and Henshaw "macro-level smellscape" correspond to the widest spatial scale, for olfactory durations if not permanent, at least long. This is the dimension of almost continuous immersion, which leads to what I have called over-habituation effect, namely the difficulty in perceiving odor compounds in which one is immersed for very long durations. Closest to the sniffing[2] bodies, the level of proximity that Henshaw calls micro-level smellscape corresponds to odorous events accessible, at least potentially, by sight, in any case that are «within reach» of the body sniffing. Between the odorous territory and this micro-level is a medium level, or midi-level smellscape, which articulates these two spatiolfactive scales. If such a spatial division makes it possible to refer to olfactory thoughts of our living environments, specific in scalar terms, such as urbanism or architecture, it must be stressed that these scales are intertwined, and that spatial thinking of odors cannot remain focused on a single spatial or even temporal scale.

2. MACRO-LEVEL SPATIOLFACTION

Designing an olfactory program for a territory involves a geography that considers the combined olfactory impacts of biological, geological, and human characteristics. At such spatial scales, it is more about integrating into the local odor movement than trying to control it—a goal that is largely illusory.

---

[1] Many examples in (Castel, 2018; Jaquet, 2015).

[2] Whenever needed, to avoid confusion around the mirror term "smelling" I will use "sniffing".

2.1 Smell Patterns

Beyond the management of the odor sources themselves, their spatial and temporal arrangements are key design tools. The patterns of odor sources—points, lines, or surfaces—determine how they are encountered. Due to long-term habituation, the more an odor molecule is generalized in time and space, the less likely it is to be perceived by those continuously exposed to it (Dalton et al., 2006). At the territorial scale, odor surfaces (or networks of points) act as instruments of olfactory immersion, defining both the identity of large areas and ordinary *inolfactibility* relative to their temporalities.

Odor lines, such as shorelines with rotting seaweed or odorous waterways[3], can provide directionality in movement. As olfaction occurs in stereo (Porter et al., 2005) when following such an odor-emitting line in calm weather, it can help the "observer", or rather the "sniffer", locate the odor spatially, for example, "the smell is coming from my right," or determine their position relative to the odor, "I am moving to the left of the odorous zone." If such an odor line is crossed rather than followed, it serves as a point of reference. Territorial planning might incorporate the distribution of odor sources accordingly.

A territory dotted with fish canneries will have a different olfactory identity than one where the same activities are concentrated in a smaller area. The former contributes to generalized habituation, while the latter creates contrasts based on individual movements and air flows. Territorial management strategies can thus aim for either homogenization or heterogenization of the olfactory landscape.

2.2 Adding new odor sources

Considering all odor sources within a given territory, without falling into the nature/culture distinction, could also make certain smells more tolerable[4]. At low to medium intensities, when odors are assessed negatively, the addition of new sources that have similar characteristics but are more positive in storytelling might increase their acceptability. For example, large plantings of vegetation emitting odors similar to those produced by industrial activities could have a dual impact. First, the common odor compounds would reduce smell contrasts, due to habituation phenomena. Second, positive mental images associated with plant odors could make industrial odors more acceptable.

An attempt to replace rancid butter odors from a dairy[5] with chocolate fragrances in the 1990s was abandoned due to economic costs. Today, environmental costs would also be a factor. Macro-level spatiolfaction would be more about accompanying odor compound production than costly technical additions. In territorial and urban planning, to have an impact, active odorization (continuous odors emissions from biological or physical processes) should be preferred. Then, for large-scale odorization, planting appropriate vegetation seems to be the most environmentally

---

3 Examples of smelly running water that have been reported in scientific literature so far have all been linked to discharges from human activities, industrial processes, or sewers.

4 The subject here pertains to medium to low smell intensities.

5 Interview with José Martin, founder of Sigmacom (odorization of places for cultural or marketing events), December 1996.

coherent choice. Typically, the rhythms of the biotope and human activities can be harnessed to enhance or establish temporal olfactory identities. Planting odorous species requires considering their emission rhythms and the atmospheric degradation timelines of the odors they emit, as the concentration of plants odor compounds varies not only according to circadian and seasonal rhythms but also according to the composition of the atmosphere (for a review see Conchou et al., 2019)

Odor encounters are also influenced by the speed of movement: the faster the movement, the more abrupt the odor encounter. Spaces dedicated to territorial connections should receive specific spatiolfactory care. This can range from architectural scales, like managing the indoor and outdoor air transition of an airport, to landscape scales, like designing a toll plaza smell area[6].

3. FROM TERRITORY TO CITY: MID-LEVEL SPATIOLFACTION
3.1 Territories and cities smell connections anchors places in time

The interaction between human activities and local biotopes creates a concentrated expression of odors. Food plays a central role in connecting territories (often production sites) and cities (consumption sites). Despite globalization processes like "Coca-Colonization" (Hannerz, 1992, p. 217), locally consumed foods remain linked to local cultural and biological contexts. The olfactory rhythms of food are a blend of natural and constructed time. Natural time reflects the seasonal availability of foods, sometimes tied to specific practice. Constructed time is seen in traditional preparation and consumption methods, distinguishing the ordinary from the festive.

Cooking processes, with their local and temporal characteristics, contribute to urban identities in both spatial and temporal dimensions. When the same dishes are cooked or transported throughout a city, their odors leave a mark on specific places and moments. This phenomenon can be illustrated with events like the barbecue festival in Chicago, the feria in Nimes with its paellas and grills, the Daegu Chimaek festival, South Korea, or its Chinese equivalent in Ningbo, where hundreds of thousands gather to consume fried chicken and beer.

The olfactory expression of the interplay of biotopes and human activities could also be harnessed in urban projects, according to their durations. For plants, odorous emissions are typically time-limited, varying from a brief ten-day fragrance from Tea olive[7] to a few weeks of blooming for bitter orange trees, as seen in Athens. These fleeting timescales may overlap and intertwine, potentially creating a background of continuous emissions with more ephemeral ones layered on top. Xiao et al. (2018)

---

6 As an example, a toll plaza marking the entrance into Provence territory was pointed out during a field work (Balez, 2024).

7 Osmanthus fragrans.

describe how different plant species with varying periods and durations of fragrance combine along an avenue in Kunming[8], China.

Other aspects of urban management also influence the city's olfactory characteristics. As an example, human waste odors, while largely eliminated from contemporary western urban spaces, remain in many areas in the world and may see a resurgence[9] with evolving sanitation approaches. Managing dry toilets, for example, may involves handling odors.

3.2 Public spaces odor management
Publicly frequented spaces are critical as they bridge the large-scale territorial odors and the intimate, sometimes crowded, human proximity. Thus, public space odor management must be carefully considered.

The olfactory identities of European cities contrast with those of American or Chinese cities not only because the sources of odors differ but also because the ways of managing them vary significantly. Management of public space can thus greatly impact its olfactory identity. Local regulations concerning the placement of ventilation outlets, – especially odorous businesses – as well as those allowing the extension of indoor activities to the outdoors—such as market stalls, restaurant terraces, or even smoking areas—imprint public spaces with their distinct olfactory, spatial, and temporal identities.

The public space is also – and above all – the place of confrontation with otherness. Others smell[10] and its odor is all the more noticed that it goes beyond the usual[11], not only in intensity but also in quality. A design of public spaces taking smell into account should therefore consider the modalities of frequentations of public spaces in order, for example, to allow interpersonal distance management, or even the implementation of «avoidance strategies».

4 FROM URBAN SPACES TO ENCLOSED COLLECTIVE AREAS: PROXIMITY SPATIO-OLFACTION
4.1 Air Renewal and Odor Compounds: Ventilated Places
In highly ventilated places, either due to technical systems or because they are open to the outside, olfactory scenarios depend on the spatial scale of odorization. The intensity and renewal potential of odor molecules are crucial. The spatial scale of odorization

---

8 The city of Kunming is implementing a plant policy focused on the olfactory properties of plants (Xiao et al., 2018).

9 In 2017, 713 million people worldwide defecated in the open (United Nations Children's Fund (UNICEF) & World Health Organization (WHO), 2019). Almost only olfactory concerns can justify the use of water in sanitary facilities. The overall ecological costs of flush toilets, not only in terms of water management but also in infrastructure, calls into question their generalization and alternative devices are a subject of serious study.

10 These smells are also the expression of biological and cultural intermingling since they depend at the same time on the characteristics of the bodies, their food consumption, care rituals...

11 Because of habituation phenomena it increases differences. The relative olfactory homogeneity of a human group must be considered from a genetic, biological (particularly food) and cultural point of view.

depends on the power of the point source. With passive[12] odor emissions, the gradual fading or absence of the scent occurs quickly, due to accelerated evaporation of odor compounds, as no stable state is achieved. This is the case with Japanese temples rebuilt with new hinoki wood every 30 years. These temples are highly fragrant for only about three months - but this scent remains a reference for habitual visitors (Fraigneau, 2020).

In such ventilated spaces, stationary or mobile sources in an airflow make it easier to perceive localized scent plumes. This phenomenon is common in streets with odorous shops, where scents are perceived before or after the source, depending on airflow direction and pedestrian movement.

4.2 Single Source in Minimal Air Renewal

In well-defined aerodynamically enclosed spaces, scents can unify or fragment an otherwise (visually, acoustically, thermally) homogeneous space. In minimally renewed or stagnant air, a single odor source creates what I call a halo effect[13], with scent gradients forming around the source. The intensity and depth of the odor determine its gradients. Active[14] emissions typically cover a broader volatility spectrum, with distant, medium, and close zones presenting different notes (top, heart, bottom).

In spaces dedicated to intimacy, like personal care areas, scent gradients can serve hierarchical functions in privacy and intimacy. Scents may also help address the limitations of sight. Specific locations, like infectious disease wards, could benefit from olfactory marking to signal potential hazards and help detect unwanted air movements. To do so, these odor molecules should mimic[15] the physical-chemical propagation of the reference infectious agent.

4.3 Multiple Sources in Minimal Air Renewal

When multiple sources with equivalent intensities coexist in calm air, distinct odor zones (layout effect) or overlapping scents (blur effect) can occur, leading to an indistinct "white smell." If one source is particularly intense, it can dominate, creating a masking effect. When odor emissions exceed air renewal capacity, a stationary physical-chemical regime can lead to invasiveness and over- invasiveness olfactory effects[16].

Such invasiveness scenarios can cause delocalization or ubiquity effects, making it impossible to pinpoint the scent source. The olfactory identity of indoor places can arise from diverse, intertwined sources, creating simultaneous generic and specific

---

12 I describe odor emission as passive when the odor compounds are not renewed (as during a biological process).

13 Precise location of an odorous area around a source of unique odorous compounds (Balez, 2021a, 2024).

14 An emission can be called active when a process of generating odorous molecules exists. It can be a biosynthetic process (such as bacterial evolution, fungal or plant growth) or physicochemical (such as drying, oxidation, cooking or burning).

15 Since the modelling of viral propagation or odorous propagation can implement reference gases with properties comparable to what must be traced (viruses or odors) (Lim et al., 2010).

16 In the first the sniffer has the feeling that the entire spatial volume where it is located is odorized and, for the second, it considers that this invasion has reached its apex in terms of intensity.

identities. For example, the scent identity of a railway station can be common worldwide or unique to specific regions or stations. Similarly, shared functionalities lead to common olfactory identities for supermarkets, airports, or malls, with local nuances perceived by experienced sniffers.

4.4 Inside-Out: Minimal Air Renewal vs. Free Air

Spatial-olfactory proximity involves connections between spaces with contrasting air flow regimes. Movement of odor molecules or sniffers across different air volumes restores normal olfactory sensitivity. New odors arrivals or transitions to different scented air depend on the relative mobilities of sniffers and odor molecules. This classic architectural theme, the sensory articulation between different spaces, can be re-examined through olfactory perspectives, considering aerodynamic and chemical connections between spaces, particularly between indoors and outdoors. Sensory exchanges with the local biotope and anthropic environment should be considered by contemporary architecture.

If cultural spaces with territorialized functions would be likely to benefit from such a thought of inscription in a local odorous territory, others on the contrary could be thought of in the mode of the most complete break, with the creation of their own internal smellscape[17], when the function of the building consists precisely in generating a change of scenery, typically in certain leisure spaces.

5. SPATIOLFACTION IN ENCLOSED SPACES
5.1 Semantics interpretations of in situ odors

Air with relatively controlled odor qualities presents spatial challenges because it can both define the identity of places and moments and influence behavior. It is likely that the way perceived odors are implicitly or explicitly interpreted affects individual attitudes, including the sense of belonging to a group, as well as proxemic behavior regimes.

The ordinary experiences of spatial olfaction heavily rely on individuals' previous encounters, shaping their physical engagements with odors. These sensory learning processes, whether mnemonic or psychomotor, are not uncommon. However, olfactory learning has unique characteristics because it often remains implicit and can establish itself in just one occurrence when emotions are involved (Zucco, 2013). Both individual and collective learning play significant roles in the semantic interpretations of odors. While these interpretations may not always have a direct spatial dimension, they contribute to the identities of specific places and times, serving as crucial reference points for individuals and groups.

5.2 Olfactory Identity of Places and Moments

Every space can possess an olfactory identity, even a silent one (e.g Stenslund, 2015). This identity, whether intentional or not, can distinguish a place and serve various purposes.

---

17 What Sloterdijk calls *offensive design of air* (2006, p. 156-157).

Spaces that combine well-being with identity display, such as retail stores, hotels, hospitals, and restaurants, can benefit from thoughtful olfactory design. However, caution is needed to avoid a global rejection due to sensory incongruity (Köster et al., 2014). The exclusivity of an odor must be rooted in familiarity to prevent negative reactions. What I call olfactory reference images (Balez, 2024), shared to varying degrees, can convey feelings of appropriateness or inappropriateness. Designers must consider the olfactory references of their target audience. For instance, a "pharmacy smell" might be associated with different sets of odor molecules in China and France. Therefore, designers must align their choices with the sensory frameworks of their intended users.

5.3 Odor as a Spatial and Temporal Marker

Once integrated into the identity of a collectively frequented space, odors can serve as spatial and temporal markers. As a temporal marker it may have cyclic variations, marking different times of the day or week. Just as food odors signal mealtimes, programmed scent changes could denote specific days or seasons. These programmed scents could revive past olfactory experiences or transport individuals through associative imagery. The evocative power of odor can also enhance leisure spaces, supporting narratives intended for escapism. For example, in theater, odors contribute to setting the scene and transporting the audience to different times and places.

Theses olfactory temporal markers could be beneficial in environments lacking natural light, such as underground spaces. Repeated olfactory events, whether naturally occurring or artificially added, could substitute for the role of natural light in indicating the passage of time. Workers in such environments could benefit from these olfactory cues to maintain a sense of time, which might otherwise be lost due to the absence of natural light.

Programming a series of olfactory sequences, including "olfactory silences," could provide new sensory anchors for individuals deprived of natural cues. The specific nature of the odors would be less important than their cyclical and melodic character, offering temporal markers that recreate elements of surprise and mimic natural variations.

5.4 Behavioral extensions of the presence of odors

Apart from the evaluative conditioning (Zucco, 2013), the behavioral extensions of the presence of odors appear to be linked to both the reference olfactory images, their hedonic interpretations—whether negative or positive—and the ability of added odors to mask the presence of other smells. Odors can thus be used to create an atmosphere conducive to specific behaviors. For example, the solemn or sacred nature of a place may require appropriate bodily attitudes, and the odor, by evoking certain images, can contribute to this.

In spaces where it is unavoidable to smell others, the addition of scents could also serve to mask personal odors. For instance, in transportation spaces, where interpersonal distances cannot always be maintained due to lack of space, a general scenting,

through the pleasure it provides by evoking familiar olfactory images and its masking function, could help people tolerate the proximity of others. During the post covid 19 time, the public transportation company in Grenoble scented some of its trams to emphasize its commitment to sanitary safety. Such an olfactory atmosphere, explicitly presented without manipulative intent, could influence passenger behavior if accepted by users. By highlighting efforts to maintain cleanliness and partially masking others' odors, the scented ambiance of these tramways could reduce "exposure anxiety" and consequently decrease aggressive behaviors linked to overcrowding.

Scenting commonly used spaces could also encourage people to leave with odors interpreted negatively. Without being as violent as odor weapon[18], in cases where and when occupancy rates in a publics places pose safety concerns, and provided there are less densely occupied spaces available, the diffusion of such odors could help regulate crowd densities. Modern scenting devices allow for precise temporal control of diffusion, could be monitored in real-time. The diffusion of dispersion-targeted odors would function similarly to certain alert devices that often remain at the edge of consciousness, like tactile paving along subway or train station platforms. These "negative" odorizing raise ethical questions not much different from those posed by positive hedonistic scenting. From an ethical perspective, the primary focus should be the intended outcome of the behavior modification.

Other ethical questions regarding potential manipulation arise in educational settings. Works of Rachel Herz (1999) and Simon Chu (2007) on the role of infra-liminary odors in motivating children engaged in learning tasks, raises potential applications for designing learning spaces. As in marketing, great caution is needed because there is always the risk of achieving the opposite of the intended conditioning. The overall care given to the sensory design of schools, including olfactory aspects, still needs to be addressed. In such places, the call for olfactory silence by those concerned with air quality should be reconsidered. Sensory awakening and senses conditions are essential functions of learning spaces. The sensory design of schools, including olfactory aspects, remains an area for further exploration.

Using odors to influence behavior raises ethical questions. For example, in spaces where interpersonal proximity is unavoidable, such as public transport, pleasant odors could mask personal smells and reduce stress, as demonstrated by recent experiments in Grenoble's trams. Conversely, odors could be used negatively to encourage dispersal in overcrowded areas, similar to how tactile warning strips function in metro stations.

6. CONCLUSION

Due to its unique nature, scent plays a distinct role among the sensory elements used to enhance the functionality, safety, and beauty of a project. It can influence behavior while remaining on the fringe of the influenced individuals' consciousness.

---

18 "Skunk" is a particularly smelly liquid used by Israeli police to disperse crowds.

The integration of sensory perceptions is also crucial: the narrative of odorizing, woven into a broader sensory experience, significantly shapes how it is perceived. Therefore, when considering odor as a component in creating an environment's ambiance, it is essential to view it within the context of other sensory factors.

In most places, odor cannot then be completely mastered. However, it can be influenced and regulated. Three essential elements structure the odorous environment: space (size of the odorous zone), time (duration of the smell, its evolution) and the status of the sniffer vis-à-vis the place, in other words the scale of its displacement (since the further a sniffer moves away from its odorous territory, the more it can feel the sensitive differences, even if it loses keys of interpretation). Thus, managing spatial olfaction involves understanding and integrating various odor sources within a place. This includes considering the spatial and temporal dynamics of odors, their acceptability, and the environmental impacts of odor management strategies.

At territory scales, it involves understanding and managing the interweaving of human activities and biotic odors. Recognizing the temporal and spatial dynamics of odors, along with their social implications, can enhance urban planning and the overall olfactory identity of cities. Such odor management may enhance the olfactory identity and overall experience of a given area. In architectural design it offers ways to connect buildings with their environment, enhance user experience, and redefine indoor-outdoor relationships.

Spatiolfaction in enclosed spaces involves a complex interplay of sensory learning, identity formation, and behavioral influence. By understanding and utilizing these dynamics, designers can create environments that enhance well-being, orientation, and overall user experience, while being mindful of the diverse sensory references of their audiences and of ethical considerations.

7. BIBLIOGRAPHY

Balez, S. (2021a). Art pieces in olfactory effects. In X. Bonnaud & V. Fraigneau (Eds.), Nouveaux territoires de l'expérience olfactive (Infolio).

Balez, S. (2021b). Smell walks. In B. E. A. Piga, D. Siret, & J.-P. Thibaud (Eds.), Experiential Walks, Experiencing, interpreting, representing the (multisensory) environment. Routledge, Taylor & Francis Group.

Balez, S. (2024). Fragrances architecturales. L'expérience olfactive des lieux. Hermann.

Castel, M. (Ed.). (2018). Les dispositifs olfactifs au musée. Le Contrepoint.

Chu, S. (2007). Olfactory conditioning of positive performance in humans. Chemical Senses, 33(1), 65–71.

Conchou, L., Lucas, P., Meslin, C., Proffit, M., Staudt, M., & Renou, M. (2019). Insect odorscapes: From plant volatiles to natural olfactory scenes. Frontiers in Physiology, 10, 972.

Dalton, P., Dilks, D., & Hummel, T. (2006). Effects of long-term exposure to volatile irritants on sensory thresholds, negative mucosal potentials, and event-related potentials. Behavioral Neuroscience, 120(1), 180–187.

Epple, G., & Herz, R. S. (1999). Ambient odors associated to failure influence cognitive performance in children. Developmental Psychobiology, 35(2), 103–107.

Fraigneau, V. (2020). L'architecture au sens olfactif, Penser les sensibilités, les milieux, les communs, depuis les agentivités olfactives [Doctorat en architecture]. Paris 8-Vincennes-Saint Denis.

Henshaw, V. (2014). Urban smellscapes: Understanding and designing city smell environments. Routledge.

Jaquet, C. (Ed.). (2015). L'art olfactif contemporain. Classiques Garnier.

Köster, E. (1991). Tonalité affective et maîtrise de la pollution odorante. In G. Martin & P. Laffort (Eds.), Odeurs et désodorisation dans l'environnement (pp. 61–78). Tec & Doc, Lavoisier.

Köster, E., Møller, P., & Mojet, J. (2014). A "Misfit" Theory of Spontaneous Conscious Odor Perception (MITSCOP): Reflections on the role and function of odor memory in everyday life. Frontiers in Psychology, 5, 64.

Lim, T., Cho, J., & Kim, B. S. (2010). The predictions of infection risk of indoor airborne transmission of diseases in high-rise hospitals: Tracer gas simulation. Energy and Buildings, 42(8), 1172–1181.

Porter, J., Anand, T., Johnson, B., Khan, R. M., & Sobel, N. (2005). Brain Mechanisms for Extracting Spatial Information from Smell. Neuron, 47(4), 581–592.

Roubin, L. A. (1989). Le monde des odeurs: Dynamique et fonctions du champ odorant. Méridiens Klincksieck.

Sloterdijk, P. (2006). Écumes sphérologie plurielle -Sphères III (O. Mannoni, Trans.). Hachette Littératures.

Stenslund, A. (2015). A Whiff of Nothing: The Atmospheric Absence of Smell. The Senses and Society, 10(3), 341–360.

United Nations Children's Fund (UNICEF), & World Health Organization (WHO). (2019). Progress on household drinking water, sanitation and hygiene 2000-2017: Special focus on inequalities.

Xiao, J., Tait, M., & Kang, J. (2018). The design of urban smellscapes with fragrant plants and water features. In V. Henshaw, K. McLean, D. Medway, C. Perkins, & G. Warnaby (Eds.), Designing with smell: Practices, techniques and challenges (pp. 83–95). Routledge.

Zucco, G. M. (2013). Quand les odeurs deviennent des émotions: Le conditionnement olfactif évaluatif. In B. Schaal, C. Ferdenzi, & O. Wathelet (Eds.), Odeurs et émotions: Le nez a ses raisons (pp. 115–142). Éditions Universitaires de Dijon.

OLFACTIVE DESIGN. THE BIRTH OF A DISCIPLINE

DESIGN OLFACTIVO. QUANDO NASCE UMA DISCIPLINA

Anna BARBARA / Anna BARBARA
Associate Professor / Associate Professor
Politecnico di Milano- Design Department
/ Politecnico di Milano - Departamento de Design
anna.barbara@polimi.it

ABSTRACT

The relationship between the sense of smell and many disciplines of design and architecture is nothing new. Odors are in the materials that build architecture, in the rituals that take place within, in people's activities, in people themselves.

We are at the dawn of an important new design discipline, that requires transversal and vertical skills capable of exploring an aesthetic beyond sight, an ethic beyond consumption, a sustainability of materials, a healthiness of indoor and outdoor air, a knowledge of the neurological and physiological impact of certain substances on our actions and emotional reactions.

Olfactive Design explores aspects related to spaces, products, services, behaviors, experiences, interfaces, and air qualities.

It is a discipline made up of the integration of multiple skills in design, energy, chemistry, mechanics, neuroscience, art, perfumery, history, anthropology, ethnography, marketing, behavioural psychology, etc.

KEYWORDS: olfactive. design. behaviors. spaces. architecture. ambiances.

RESUMO

A relação entre o sentido do olfato e muitas disciplinas do design e da arquitetura não é nova. Os odores estão nos materiais que constroem a arquitetura, nos rituais que nela se desenrolam, nas actividades das pessoas, nas próprias pessoas.

Estamos no início de uma nova e importante disciplina de design, que requer competências transversais e verticais capazes de explorar uma estética para além da visão, uma ética para além do consumo, uma sustentabilidade dos materiais, uma salubridade do ar interior e exterior, um conhecimento do impacto neurológico e fisiológico de certas substâncias nas nossas acções e reacções emocionais.

O Design Olfativo explora aspectos relacionados com espaços, produtos, serviços, comportamentos, experiências, interfaces e qualidades do ar.

É uma disciplina composta pela integração de múltiplas competências em design, energia, química, mecânica, neurociência, arte, perfumaria, história, antropologia, etnografia, marketing, psicologia comportamental, etc.

PALAVRAS-CHAVE: design. olfativo. comportamentos. espaços. arquitetura. ambientes.

1. INTRODUCTION / INTRODUÇÃO

When, at the end of the 1980s, was born the idea that design could design light rather than just lamps, a new discipline was born, which is now considered one of the most important one in space design. Designers began to design what environmental conditions they wanted to achieve in the spaces and from there go back to the light sources, the temperature of the light, the intensity, etc.

We can consider two milestones that led to a greater focus on smell: the awarding of the Nobel Prize in Physiology or Medicine to Richard Axel and Linda Buck in 2004 for their discoveries on odor receptors and the organization of the olfactory system, and the Covid 19 pandemic, which has affected the sense of smell as never before in the history of mankind, and which has had as it were the temporary or permanent loss of smell.

The signs were all there before, but these two events helped to lay the foundations of what is becoming a full-fledged discipline of design.

Product, service, and space designers, as well as other disciplines, deal with smell on an ongoing basis.

Recent discoveries related to neuroscience allow us to interpret the effects of smells on our brain and consequently on the way we behave, react, and get excited.

Behavioral psychology, linked to olfactory studies, has allowed some sectors more related to marketing and commerce to experiment and exploit this additional channel to convey new experiences and further products.

But also, to sectors related to hospitality, well-being, health and to learning to start new research and experimentation to understand where this sense and its explorations can lead us. Technologies have also opened to exploring olfactory retention materials; mechanical, chemical, thermal, hydraulic diffusers; digital devices capable of detecting, analyzing, recognizing, and reproducing odors present in a space or emanating from a person. (Milotic, 2003; Henshaw et al., 2018)

The sectors in which olfactory skills are increasingly required are those related to the commercial world of retail to increase the emotional impact of branding and the experience in stores; that of hospitality to make the experience more memorable and, that of museums.

The latter are currently the places of greatest experimentation with the aim of making the experience immersive, but also of exposing the invisible that is part of the experience of art places and of art itself. (Ischer et al., 2012; Lupton and Lipps, 2018)

Invisible Qualities

Compared to the other senses, smell is the only sense that we cannot turn off: we can close our eyes, plug our ears, not touch, refuse food, but we cannot stop breathing. (Levi, 2012)

For this reason, there is an increasing interest in smell in the areas of product design, services, and spaces.

In the book *The Perfume* by Patrick Süskind, the protagonist expresses how the breath is relative of the perfume and as such it is impossible to resist it.

Breathing, therefore, is a vital action but also a vehicle of emotions, memory, and as such increasingly cardinal in the analysis of human behavior. (Nestor, 2020)

In addition, breathing means bringing an intangible and primary world into our body. (Gorman, 1964; Fuso, 2022; Levi, 2012)

Therefore, if we consider that there are no places without smells, even when the threshold of perception is below the sensible, it is evident that the physical experience of places is strongly connected to smell.

There are therefore air qualities, whether they are perfumed, neutral or malodorous, that make up an olfactory landscape that requires design education so that these are conceived, designed, governed.

The gradual loss of smell produced by a society devoted to anosmia is a very serious cognitive loss for human beings as well as for the next generation of designers.

The historian Joseph Rykwert questioned his students asking them not only to describe the visual qualities of Greek temples, but also the olfactory, ones with the clear intention of making a generation of future designers understand that spaces are composed of essential sensory qualities such as smells.

The olfaction has for centuries been associated almost exclusively with the world of perfumes and aromas with applications limited to perfumery, pharmacy and other luxury or health goods, but the powerful connections between smell and mental and emotional states, as well as the impact on behaviors and psychological conditions make it absolutely a strategic sense to design for humans and animals. (Morrin and Ratneshwar, 2000)

The most recent research in the field of neuroscience also shows how some olfactory stimulations increase productivity, learning and concentration, so they are extremely important in places of training, education, work, and care. (Ruzzon, 2022; Bitner, 1992; Barwich, 2020)

The quality of the air, as well as ventilation, smell, humidity of the air in places is therefore not a matter of healthiness, but also of olfactory stimulation.

Some research shows a positive impact on productivity and relationships with others in offices where there is air exchange and fragrances, compared to places where no attention is paid to air quality. (Baron, 1990)

A positive impact has also been found in the therapeutic field, such as in the case of senile pathologies, where olfactory disorders reach up to 85%. Patients usually have disorders that involve the loss of the ability to detect, recognize, identify, remember-persists but retains the ability to make qualitative judgments of odors such as intensity, hedonic, familiarity, edibility, etc. (Brand, 2019)

According to research carried out by the Alzheimer's Society, some patients react to certain smells with an increase in certain cognitive functions, such as visual-motor responses, working memory and attention span, but also induces more sociable behaviors that can bring them out of depression and isolation. (Albrecht et al., 2009)

An important part of the research is aimed at the commercial sectors and disciplines of retail, hospitality, fashion, food, sports, cosmetics, entertainment, exhibition, tourism, and experience design in general. (Spangenburg et al., 1996)

In the 90s, the impact of smells on consumers began to be investigated, and today fragrance diffusers are massively introduced in stores to induce proactive behavior and to create atmospheres to increase sales or make the experience memorable by creating *ambient scent.* (Gulas and Bloch, 1990; Morrin and Ratneshwar, 2000; Zemke and Shoemaker, 2007; Bouzaabia, 2014)

Research has generally focused on the proposal of odors *in situ* (Gulas and Bloch, 1990), or of scented objects for promotional purposes (Morrin and Ratneshwar, 2000) and rarely on simulated environments. (Spangenburg et al, 1996)

Experiments show that consumers' evaluations of the quality of spaces are better where the environment is scented. (Baron, 1997; Chebat, Michon, 2003)

Olfactive design is about the design of spaces and experiences that can convey experiences and emotions that are consistent with places. (Bone and Jantranis, 1992)

Often these experiences are accompanied by other sensory and environmental stimuli, which when acted consistently produce greater satisfaction and make consumer decision-making more efficient and increase brand recognition. (Mattila and Wirtz, 2001; Mitchell et al.,1995; Morrin and Ratneshwar, 2003)

The Big Bet

The identity of places, people, animals, materials, is inscribed in smells and can hardly be removed from memory.

Olfactory memory is in fact a long-term memory: while visual memory loses more than 50% of its intensity after 3 months, memories related to the olfactory sphere lose only 20% of their intensity only after a year. (Barwich, 2020)

Museums, in fact, are showing great attention to the narrative that the sense of smell is able to convey to tell the story of exhibitions, works of art or artistic heritage. (Nieuwhof, 2014; Levent and Pascual-Leone, 2014)

Olfactory identity regulates proximity or distance, attraction, or repulsion. It induces us to increase it by buying seductive perfumes and fragrances and to deodorize spaces so that they are more pleasant. (Baron, 1981)

But from an anthropological and ethnographic perspective, the sense of smell also regulates the relationships between different food cultures, between peoples that migrations bring together despite their extreme odorous diversity. (Allen et al., 2015)

Everyone emits scent in a different way, based on their diet, age, physical activity, health, making the world of smells a vehicle of approach, but also an insurmountable barrier. (Brand, 2019; Sutherland, 2016)

The spaces and the people who inhabit them bring a historical theme to architecture, ranging from the miasmas of the Middle Ages and the XVII century, passing through the hygienist theories of the XIX century and the health theories proclaimed by the X CIAM (International Congress of Modern Architecture of 1953) which proclaimed the right to light and clean air for all. (Colomina, 2019; Hamblin, 2020)

The invisible qualities of smell are also linked to materials, those that impregnate the air and are released as VOCs (Volatile Organic Compounds) from carpets, furniture, upholstery, and other materials used in the buildings we live in. (Henshaw et al., 2018)

With the pandemic, sensitivity has become an obsession not only against bad smells, but against the odorless of viruses: masks, distances, less crowded spaces, and more efficient ventilation. (Nestor, 2020)

The relationship between virtual, augmented, artificial technologies and smell is a big bet.

Increasing urbanization continually reduces the relationship with nature and produces an "olfactory plain" that could lead to the loss of smell and the extinction of humankind.

So, some research finds that in the face of this latent anosmia, more than 56% of people interviewed hope that technologies such as augmented reality, or IoT technologies, can allow the inclusion of odors in videos by 2030. (Ischer et al., 2012)

Olfactive Design
All places have smells, cities have smells, the people who live there produce smells.

Literature is full of olfactory references, and an increasing number of artists are producing olfactory works to increase the sense of place. (Henshaw et al., 2018)

Architecture is not new to olfactory design that unites Egyptian architecture, passing through vernacular architecture to the great masters of the modern and contemporary architecture (Richard Neutra, Alvar Aalto, Peter Zumthor, Herzog and De Meuron, Charles Jencks, Diller and Scofidio, Gigon and Guyer, Philippe Rahm, etc.).

The growing attention paid by designers to the theme makes it clear that this immaterial and profound dimension must be designed.

We are at the dawn of an important new discipline of design, that of Olfactive Design, which introduces a new dimension to the project, but which also requires the training of new design competences. (Barbara, 2023)

These skills, which go beyond sight, explore a new aesthetic sensitive to the origin of materials, the healthiness of the air, the knowledge of the neurological and physiological impact of odors and our actions and emotional reactions. (Bonnaud and Fraigneau, 2021)

Olfactive Design is a discipline whose main objective is not the fragrance of the rooms, but the design of the relationship between this extraordinary sense and the world around us.

It is a discipline composed of the integration of several skills that serves to design a dynamic olfactory composition that redesigns spaces over time, that builds invisible architectures within the visible ones.

Designing spaces with the sense of smell is like writing a musical score, because it is not a matter of comprising immovable matter, but of transformation. The market, trivialized by candles, incense and diffusers, is emancipating itself by including olfactory qualities in the DNA of places and much less by limiting itself to a decorative dimension at the end of the project.

Olfaction have fully entered the research and project of contemporary design, integrating with digital technologies and with the sensibilities of users.

It is a new discipline, which still allows ample room for development, and which will become more and more pivotal in design.

2. BIBLIOGRAPHY

Barbara, A. (2024). Insivible Architecture. Experiencing the space through the sense of smell. ed. Franco Angeli

Ruzzon, D. (2022). Tuning Architecture with Humans. ed. Mimesis International

Fuso, S. (2022). Sensi Chimici. The Science of Smells and Flavors. Carrocci editore, Sfere

Bonnaud, X., Fraigneau, V., (2021). New Territories of the Olfactory Experience. Infolio ed.

Nestor, J. (2020). Breath: The New Science of a Lost Art. Riverhead Books, New York

Hamblin, J. (2020). Clean. The New Science of Skin. Riverhead Books, New York

Barwich, A.S. (2020). Smellosophy. What the Nose Tells the Mind. Harvard University Press

Colomina, B. (2019). X-Ray Architecture. Lars Müller Publisher

Brand, G. (2019). Discovering odors. Wiley (p.141)

Lupton, E., Lipps, A. (2018). The Senses: Design Beyond Vision. Princeton Architectural Press, NY

Henshaw, V., McLean, K., Medway, D., Perkins, C., Warnaby, G. (2018). Designing wit Smell. Practices, Techniques and Challenges. Routhledge, New York and London

Sutherland, J. (2016). Orwell's Nose. A pathological Biography. Reaktion Books, London, UK

Allen, C., Havlicek, J., Roberts, S. C. (2015). Effect of fragrance use on discrimination of individual body odor. Frontiers in Psychology, 6 (pp.11-15).

Nieuwhof, A. (2014). Olfactory Experiences in Museums of Modern and Contemporary Art. Smell as A New Curatorial Strategy. Research Master Leiden University.

Levent, N., Pascual-Leone, A. (2014). The Multisensory Museum. Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, And Space. Rowman & Littlefield

Bouzaabia, R. (2014). The effect of ambient scents on consumer responses: Consumer type and his accompaniment state as moderating variables. International Journal of Marketing Studies, 6 (pp.155–167).

Levi, J. (2012). Engraved in the Mind: The Significance of Smell. The London Consortium

Ischer, M., Baron, N., Mermoud, C., Cayeux, I., Porcherot, C., Sander, D., Delplanque, S. (2012). How incorporation of scents could enhance immersive virtual experiences, Methods Article

Albrecht, J., Schreder, T., Kleemann, A. M., Schöpf, V., Kopietz, R., Anzinger, A., Demmel, M., Linn, J., Kettenmann, B., and Wiesmann, M. (2009). Olfactory detection thresholds and pleasantness of a food-related and a non-food odor in hunger and satiety. Rhinology, 47 (pp. 160–165).

Zemke, D. M. V., Shoemaker, S. (2007). Scent across a crowded room: Exploring the effect of ambient scent on social interactions Hospitality Management 26 (pp. 927-940, 939)

Morrin, M., Ratneshwar, S. (2003). Does it make sense to use scents to enhance brand memory? Journal of Marketing Research 40 (pp.10–25).

Milotic, D. (2003). The impact of fragrance on consumer choice. Journal of Consumer Behavior 3 (pp.179–191).

Chebat, J.-C., Michon, R. (2003). Impact of ambient odors on mall shoppers' emotions, cognition, and spending. A test of competitive causal theories, Journal of Business Research 56 (pp.529– 539)

Mattila, A.S., Wirtz, J. (2001). Congruency of scent and music as a driver of in-store evaluations and behavior. Journal of Retailing 77 (pp.273–289).

Morrin, M., Ratneshwar, S. (2000). The impact of ambient scent on evaluation, attention, and memory for familiar and unfamiliar brands, Journal of Business Research 49 (pp.157–165).

Baron, R.A. (1997). The sweet smell of helping: effects of pleasant ambient fragrance on prosocial behavior in shopping malls. Personality and Social Psychology Bulletin 23 (498–503).

Spangenberg, E.R., Crowley, A.E., Henderson, P.W. (1996). Improving the store environment: do olfactory cues affect evaluations and behaviors? Journal of Marketing 60 (pp.67–80).

Mitchell, D.J., Kahn, B.E., Knasko, S.C. (1995). There's something in the air: effects of congruent or incongruent ambient odor on consumer decision making. Journal of Consumer Research 22 (pp.229–238).

Bone, P.F., Jantranis, S. (1992). Olfaction as a cue for product quality. Marketing Letters 3 (pp.289–296).

Bitner, M.J. (1992). Servicescapes: the impact of physical surroundings on customers and employees. Journal of Marketing 56 (pp.57–71).

Gulas, C.S., Bloch, P.H. (1990). Right under our noses: ambient scent and consumer responses. Journal of Business and Psychology 10 (pp.87–98).

Baron, R.A. (1990). Environmentally induced positive affect: its impact on self-efficacy, task performance, negotiation, and conflict. Journal of Applied Social Psychology 20 (pp.368–384).

Baron, R.A. (1981). Olfaction and human social behavior: effects of a pleasant scent on attraction and social perception, Personality and Social Psychology Bulletin 7, (pp.611–616).

Gorman, W., Thomas, C. C. (1964). Flavor, Taste and the Psychology of Smell, Springfield, Ill.

LISBON:

https://drive.google.com/drive/folders/1FE5h1xAcVAqD7kqoddolbhzooJ3nDZlb

OLFACTIVE DESIGN AS A TOOL FOR IMPROVING SPATIAL ORIENTATION THROUGH NON-VISUAL ARCHITECTURAL LANDMARKS

O DESIGN OLFATIVO COMO FERRAMENTA PARA MELHORAR A ORIENTAÇÃO NO ESPAÇO MEDIANTE A UTILIZAÇÃO DE MARCOS

Nastazja Niedziela
M.F.A. in Design, Master of Neuroscience
Applied to Architectural Design student
IUAV University of Venice
nastazjaniedziela@gmail.com

ABSTRACT

This paper aims to explore the potential use of Olfactive Design in the process of creation of non-visual architectural landmarks in order to facilitate spatial orientation. The relatively new discipline of Olfactive Design focuses on the intentional use of scents within architecture and its impact on the well-being of its users. This paper aims to discuss whether architects and urban planners have the possibility of using smells intentionally in order to create more points of reference that could facilitate the creation of long-lasting mental maps.

KEYWORDS: olfactive. wayfinding. architecture. memory. orientation

RESUMO

Com este trabalho se tenciona explorar o uso potencial do Design Olfativo no processo de criação de marcos arquitetónicos não visuais com o objetivo de facilitar a orientação espacial. A relativamente nova disciplina do Design Olfativo, foca-se no uso intencional de cheiros na arquitetura e no impacto das mesmas no bem-estar dos seus utentes. Este trabalho, portanto, tem como objetivo discutir a possibilidade que arquitetos e planificadores urbanos tenham a possibilidade de utilizar cheiros com a intenção de criar mais pontos de referência que possam facilitar a criação de mapas mentais persistentes.

PALAVRAS-CHAVE: olfativo. wayfinding. arquitetura. memória. Orientação

1.1 INTRODUCTION

The architectural profession is entering a new, exciting era of technological development- new computational methods, sustainable materials and immersive presentation techniques allow us to gradually transform our buildings and cities into efficient, functional systems, with increasingly rapid construction time. However, the current growth in the field of architecture is marked not only by its technological advancements. Parallelly, the humanistic aspects of architecture and its influence on its users is being studied with more accuracy than ever before. The recent advances in neuroscience and medical technology have become a basis for understanding the impact of built environment on individual and collective health and wellbeing. A collaboration between architects and neuroscientists has resulted in the birth of a new discipline, Neuroarchitecture. This new discipline tends to promote a conscious consideration of the sensorial aspects of our experience of architecture, both conscious and unconscious.

Interestingly, in the past few decades there has also been an increased interest in architecture of one sense in particular - that of smell. Perhaps the least explored and formalised aspect of architecture, it has been largely omitted in architectural curriculum, despite the profound impact of scents on our lives. However, the opening

of a dedicated course in Scent Design at Politecnico di Milano is a starting point when it comes to both educating trained designers and bringing visibility to the ongoing debate on the potential use of scents in interior, architectural and urban design.

Currently, this largely unexplored study focuses on fascinating aspects of scents in architecture, their cultural and emotional impact on inhabitants of buildings and cities, their importance for our identity, the way we relate to places and form our memories of them. Evolutionary processes in cities were largely dependent on smells, although it is worth noting that our cultural associations of smells have changed over time. As our relationship with nature has been changing, so has our perception of smells and sensitivity, resulting in changes in the ways that houses and cities were built (Barbara & Perliss, 2023). The study of scents in architecture highlights different olfactive properties of building materials and encourages their conscious selection in the design process. Elements such as natural and artificial ventilation, temperature and humidity, are considered key factors in a purposeful direction of smells, enhancing those that are commonly regarded as pleasant and filtering out unpleasant odours. Another interesting topic is the question of territory and invisible borders established when olfactory input stimulates an emotional and physical reaction. Those could be either negative (stench, provoking our natural instinct resulting in avoiding the affected area) or positive, inviting us to come closer. Olfactory experiences, as opposed to visual ones, are not always initially distinguishable- we might be able to smell a certain scent, without being able to identify its source. That mechanism could potentially be used to inspire curiosity and direct people towards a desired area, therefore addressing one of the smell's initial evolutionary functions - that of navigation.

Although it is commonly agreed that humans rely mostly on the visual cues, with as much as 35% of the human brain being dedicated to processing visual input (Kelts, 2010), there is a considerable body of research suggesting that humans, like animals, might be able to navigate considerably well using their sense of smell (Hamburger & Knauff, 2019; Bao et al., 2019). It is worth noting that humans rely on the sense of smell predominantly in the early infancy, with newborns using olfactory inputs to find their mother's breast. A gradual shift towards visually-oriented navigation follows in subsequent years (Myjkowski, 2023).

To analyse the potential use of olfactory cues for spatial orientation, we will first discuss the concepts that are studied in the context of vision-based navigation and try to apply them to smells.

2.1 NAVIGATION VS. WAYFINDING
According to D. R. Montello and C. Sas (2006), navigation can be described as "coordinated and goal-directed movement through the environment". It is often used in the context of transportation, suggesting a certain degree of precision and use of navigation tools. Wayfinding, on the other hand, along with locomotion, is thought to be one of the elements that constitute navigation as a cognitive process. While locomotion

is the physical movement of the body that is necessary to reach one's destination, wayfinding is the planning process behind it. That process often involves the use of elements such as landmarks, segments and other characteristic environmental cues in order to form a mental map of a given route and facilitate finding one's destination in the most efficient way, in accordance to the specific goal of one's journey.

Wayfinding is a highly individual process that includes the use of different, sometimes complex, strategies. While some situations require a simple retrieval of memorised information (response strategy), others may involve abstract processes such as determining shortcuts or detours based on pre-existing spatial knowledge (place strategy). Recent experiments suggest that the use of different wayfinding strategies depends largely on the age, sex and hormonal state of the test subjects, with young men being more inclined to use the place strategy and use more shortcuts, regardless of whether or not they are instructed to take the shortest possible path (Boone et al., 2019; Hegarty et al., 2022).

2.2 COGNITIVE MAPS

Cognitive maps are a concept that was first introduced by Edward Tolman (1948) following his studies on rats' behaviour in different maze configurations. According to Tolman, a cognitive map is "a tentative map, indicating routes and paths and environmental relationships, which finally determines what responses, if any, the animal will finally release". Toleman's experiments prove that even animals are capable of not only orienting themselves in space, but also determining the best possible route for a specific purpose.

Although rat studies might not seem particularly relevant when it comes urban design, Toleman's observations have become an important starting point for further studies on human cognition in architectural context. The 1960 book "The Image of the City" by Kevin Lynch has become an essential part of the architectural and urban design curriculum, due to its focus on the so called "legibility" of a city, that is, the ease of creating cognitive maps based on specific features of urban environments. Lynch points out five key elements that contribute to the process of establishing a mental map of a city: paths, edges, districts, nodes and landmarks (Lynch, 1960). The latter, landmarks, will become the subject of our speculations in this paper.
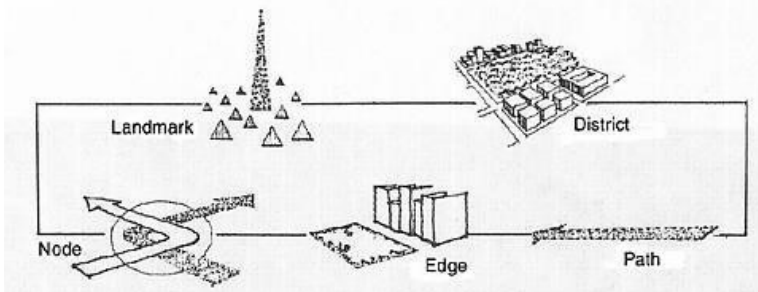
Figure 1. Five elements of the city according to Kevin Lynch.
Source: Adapted from Lescop, L. (2017).

Interestingly, a series of studies performed on children aged 10-17 in A Coruña, Spain, has shown that the structure of cognitive maps might have changed over time and depends heavily on the mode of transportation used while exploring urban environments. Children who grow up commuting to school by car or bus not only show a distorted perception of distance, but also manifest a tendency to form more fragmented cognitive maps, with space perceived as a series of independent places, rather than a spatial continuum (Garcia-Mira & Dumitru, 2014).
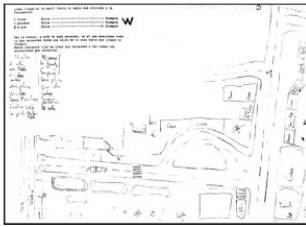
Figure 1. Drawing of a subject who walks to school (1)
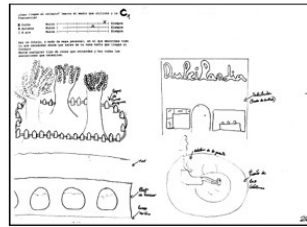
Figure 3. Drawing of a subject who goes to school by car
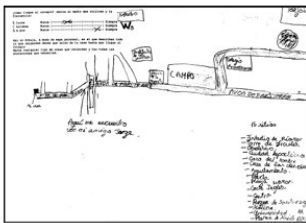
Figure 2. Drawing of a subject who walks to school (2)
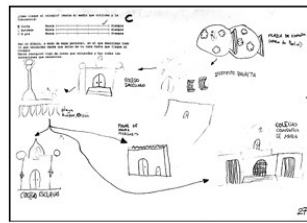
Figure 4. Drawing of a subject who goes to school by car

Figure 2. Drawings of children illustrating their journey to school, on foot (left) and by car (right). Source: Adapted from Garcia-Mira & Dumitru, (2014).

Additionally, the capacity of forming cognitive maps seems to be age dependent, with some research suggesting that adults have a stronger capacity of judging a potential value of landmarks as spatial cues (Allen et al., 1979). The experience factor might also play an important role in forming mental maps, with repetition serving as a reinforcing factor. On the other hand, however, elderly people tend to manifest lower spatial orientation capacities, which might coincide with the general decline in cognitive capacities. Research suggests that elderly population tends to base their spatial orientation on procedural memory, predominantly following habitual routes, as a coping strategy, resulting from their limited capacity to form cognitive maps (Iaria et al., 2009).

An important attempt to standardise visual representation of olfactive cognitive maps is represented in the work of dr Kate McLean, whose Sensory Maps document olfactory identity of cities with the help of their residents. Data obtained through Smellwalks is then used for mapping Smellscape in the urban context.

2.3 LANDMARKS

Architectural landmarks have been described by Lynch as external reference points used as guides when navigating around the city. They stand out due to their unique

characteristics, breaking the continuity of other elements. It is not necessarily their size that makes them noticeable - it is their *singularity,* their contrast with their environmental context. The location of such a landmark could also work in its favour as a memorable point. According to the author, a landmark might be strengthened if it's located at a point where route decisions are made, such as at intersections (Lynch, 1960).

Lynch, similarly to numerous other scholars, tends to discuss landmarks in a strictly visual sense, distinguishing between distant and local elements. Distant landmarks are primarily tall structures that can be seen from different spots in the city and are used for "radial references". Natural elements, such as the sun, or mountains, could also be considered. Local landmarks, on the other hand, tend to be smaller in scale and closer to the navigating person. They become important cues when the journey becomes more familiar.

While Lynch briefly considers the possibility of using sounds and smells as spatial reference points, he dismisses their capacity to act as stand-alone landmarks and instead expresses his belief that they might be used as a reinforcement of a visual one (Lynch, 1960).

We will now analyse this statement in the light of recent scientific findings involving human navigation based on olfactory queues, as explored through a number of experiments.

3.1 EXPERIMENTAL EVIDENCE FOR OLFACTORY-BASED NAVIGATION IN HUMANS

Recent findings in the field of the neuroscientific basis of spatial navigation have been linked to previous discoveries of odour-related navigation in animals. An olfactory map system in pigeons was suggested by Floriano Papi (1992). The 2013 experiments on rats have demonstrated that the animals' hippocampal place cells correspond to the position of olfactory cues located in the corners of the experimental space and respond accordingly when the cues are rotated, suggesting that the rats' spatial orientation is related to odours and organised in a grid-like fashion (Zhang & Manahan-Vaughan, 2013).

In the first experiment, conducted at the University of California, Berkley in 2015, the researchers tried to test human ability to orient in space using olfactory cues only. It was not a task of locating the origin of the smell, but of finding a particular point placed on a grid (the starting point) based on *the smell of that particular place*. The smell was a mixture of two essential oils located in different spots along the walls of the room, allowing the navigation based on the perceived strength of each smell. The participants brought to the initial spot blindfolded and with sound-reducing headphones. They were then instructed to focus on the smell of that particular spot and brought to another location. Next, their blindfold and headphones were removed and they were instructed to point to the starting point based on smell. In the Task

Validation condition, the participants were asked to perform the same task based on visual cues only and in the Control condition, they were asked to do it with no visual, auditory or olfactory cues at all. The participants demonstrated a significantly higher accuracy in finding a location while using olfactory cues as compared to the control condition. Additionally, they reported higher confidence in regard to the accuracy of what they were pointing to when their orientation was aided by scents. Remarkably, the participants were not performing any better when their starting point was located closer to the source of smell, suggesting that they were integrating sensory information as a mixture of odours rather than a singular strong scent (Jacobs et al., 2015).
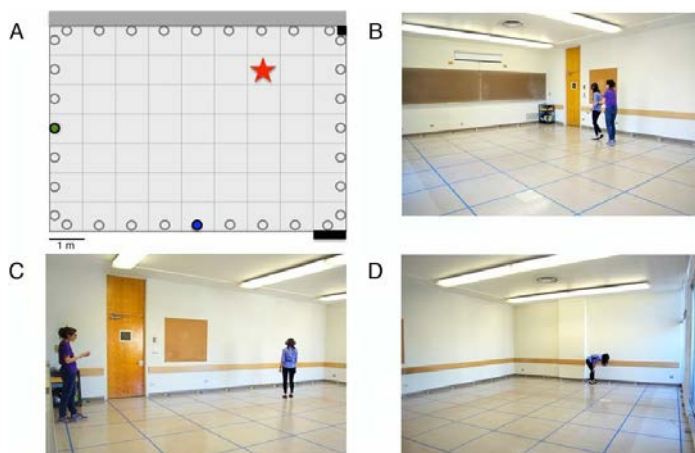
Figure 3. The experiment testing odour-based navigation using a grid system.
Source: Adapted from Jacobs et al., (2015).

Another experiment, performed at the Justus Liebig University in 2019, tested the potential effectiveness of 24 different odours when used as a landmark at the decision point. The experiment was done using virtual environments, with participants being presented videos of randomised routes on a computer screen. In the learning phase, at each one of the 12 intersections, the video was paused for 15 seconds and different olfactory cues were provided. In the wayfinding phase, the participants were asked to recall the right directions, navigating through the virtual maze.

The results of the experiment suggested that the provision of olfactory cues significantly improved the amount of correct route decisions (64%) as compared to the expected chance rate. The accuracy associated with different scents proved to be drastically different, with mandarin smell being "effective" only in 49% of cases and the strawberry scent accounting for as much as 83%. While this experiment provides an interesting insight for odour-based navigation, it raises questions regarding whether the recognisability of a scent influences its effectiveness as a landmark (Hamburger & Knauff, 2019).

The 2023 experiment, carried out at the University of Pennsylvania, focused on the processes involved in memorising routes between olfactory landmarks in a virtual environment, using virtual reality and fMRI brain imaging. Participants were

transported to a generic, circular virtual environment in which the only directional cues were scentbased. Eight different odours, which relative positions were indicated as generic clouds, were distributed around the area. Participants were asked to navigate to specific scents. The experiment lasted a total of four days, with the position of individual spots remaining constant for the entire duration of the experiment. It was noted that the participants' capacity to navigate to different locations based entirely on olfactory cues has improved over time. The paths they were taking in order to reach each area were more direct, with less tortuosity and therefore completing their tasks faster. The increasing path taking efficiency was attributed to a gradual development of a mental map-based navigation. Additionally, an analysis of the alignment between trajectories and grid-like responses registered during fMRI tests was performed. It was determined that the grid-like responses in piriform and entorhinal cortices were aligned to the same grid orientation, suggesting the existence of a dedicated olfactory grid network, responsible for spatial navigation based on olfactory landmarks (Raithel et al., 2023).

An interesting approach to studying odour-based navigation is by examining sensory cues used by visually impaired or fully blind persons. A questionnaire-based study performed by A. Koutsoklenis and K. Papadopoulos in 2011 aimed to examine what urban odours are being used in everyday navigation by those whose cognitive maps are not vision-based, or in some cases - only partially, but not to the extent observed in sighted persons. The participants were given a list of scents present in that particular urban context and asked to rate them based on their frequency and their usefulness for navigation. Some of the scents were important as indicators of reaching one's destination- places such as restaurants or food stores could be identified and reached easier due to their specific odour. Other olfactory cues proved helpful as warning signs for avoiding collision with objects, such as garbage cans. A significant amount of participants suggested that the smell of the sea can serve as a directional reference in the urban context. Places with a strong and distinct smell, such as churches and gas stations, could serve as general reference points (Koutsoklenis & Papadopoulos, 2011).

4.1 WHY WE SHOULD USE OLFACTORY LANDMARKS

Considering the aforementioned evidence for the potential effectiveness of olfactory cues as landmarks used in spatial navigation in humans, it is important to examine their potential benefits when applied in urban context.

It is worth noting that odour-based memories have different characteristics than those formed through vision. As shown in fMRI studies, the brain regions activated by scents, hippocampus and amygdala, correspond to those responsible for emotional processing. As a result, memories associated with scents tend to have a stronger emotional meaning (Herz et al., 2004). It is also said that the presence of odours might facilitate memory retrieval and constitute powerful mnemonic cues (Hackländer & Bermeitinger, 2017). Therefore, a person noticing and responding to an olfactory landmark might attribute more emotional meaning to a particular place, as we often do when describing our memories of new, exotic locations we once visited.

Additionally, when using odour-based landmarks, we would be placing them in a wider context, essentially adding another profound sensory dimension to an existing setting. If used intentionally and placed carefully, those invisible signals could become not only useful for navigation, but also serve as a pleasant stimulus, improving the overall quality of the sensory experience of the city.

Lastly, an effective implementation of a greater amount of non-visual stimuli in the urban context could help us transform our cities into more inclusive spaces for all of those who do not primarily rely on sight when exploring spaces. Such user group includes not only blind or otherwise visually impaired persons. Age-related vision deterioration includes changes in local geometrical perception, influencing processing of factors such as orientation, parallelism and collinearity (Meng et al., 2019), as well as changes in colour and depth perception (Wuerger et al., 2017; Holmin & Nawrot, 2016). While often neglected in the design process, we should not forget about the animal population of our cities and how their, often predominantly scent-based orientation, might be influenced in the built environment.

5.1 HOW WE COULD IMPLEMENT OLFACTORY LANDMARKS IN URBAN ENVIRONMENT

The fascinating quality of scent design in the urban context stems from its dependency on natural elements and their relative dynamic factors, such as climate, weather and seasonal changes. With factors such as air humidity and temperature impacting the odour distribution, we will never be able to fully control the extent of our interventions and how they change over time. Our goal in this case should be to increase the intentional placement of specific smells through careful spatial planning, possibly involving adequate positioning of selected smell sources and using urban ventilation corridors to control the scent directionality as much as possible.

The decisive factor for the effectiveness of a landmark is its saliency, or in other words - how much it stands out from its relative context. In case of visual landmarks, their particularity can be manifested through their size or their visual complexity. When we talk about olfactory landmarks, their distinctiveness will lie in their originality, that is- how unusual they seem in a particular context. A street marked with a continuous presence of plants, however different from one another, will doubtfully provide enough odour contrast to be perceived as a landmark. A single fig tree positioned between buildings, however, is likely to stand out from its olfactory context, especially during the summer. Placing plants not typically found in a certain urban setting could be another way of ensuring scent saliency.

For the sake of our analysis, urban odours could be divided into artificial (such as smells of building materials or perfumes), natural (produced by plants, sea etc.) and commercial, meaning that they could be associated with the function of a place, such as the smell of a bakery, or of a flower shop.

The advantage of using artificial scents is the ease of controlling their intensity and availability throughout the year. However, if we consider the biophilic ideas of a universal human preference for natural settings, artificial scents might prove inefficient. Some of the artificial odours of the city are linked to the building materials which are generally not deemed pleasant, such as the smell of concrete linked to construction sites, or an intense smell of asphalt during hot summer days. Artificial scents are often used in marketing, with stores using their "brand smell" to attract customers. Such landmarks could be particularly useful for those who can't see, as they are associated with a particular store and brand scents are typically highly recognisable.

The use of natural elements, on the other hand, is more challenging due to their changing characteristics, so the temporal aspect of such interventions should be taken into consideration. Blooming calendars could help us predict when certain plants could be most effective as space markers. Some elements, such as pine trees or the sea, remain fairly constant throughout the year and could be considered more reliable as landmarks.

Additionally, we could consider how the spatial distribution of different services could be based on their olfactory saliency. If the decision-making spots were to be characterised by a mix of characteristic scents, we could try to recreate the grid navigation experiment in a real-life urban setting. Let's imagine a crossroad where four highly salient shops, restaurants and natural elements were positioned on each corner. The intensity of those smells, alone or combined, could be enough for a blind person to orient themselves and determine which street to follow next. For sighted persons, it could work as an additional reinforcement of the visual information. While more difficult to implement on an urban scale, this design could easily be implemented inside shopping centres, with more salient shops concentrated in the decision-making points and more generic ones moved to the middle of each alley.

Lastly, we could consider the potential that planned olfactory urban settings could have for sensory tourism. Some destinations are already famous due to their climate, nature and food. Others could benefit from being marketed as such in the future. With harsh changes resulting from global warming, we are increasingly looking for cities that offer liveable conditions during the hottest months of the year. Orienting architectural planning towards our bodily responses, using landscape design and urban ventilation techniques to cool down our cities, are all inevitably related to the increase in the olfactory qualities of urban settings.

To sum up, there is convincing scientific evidence that scents may serve as standalone architectural landmarks and humans are able to navigate based entirely on the sense of smell. Lab experiments, although not intuitively associated with architecture and urban planning, may help us understand the mechanisms behind human scent-based navigation and what spatial distribution of scents might prove most effective in the urban context. By using olfactory landmarks in our cities, we can not only facilitate

efficient spatial orientation, minimising anxiety and frustration accompanying navigation, but also improve the general sensory quality of our experience as pedestrians and city dwellers.

BIBLIOGRAPHY:

Allen, G. L., Kirasic, K. C., Siegel, A. W., & Herman, J. F. (1979). Developmental issues in cognitive mapping: the selection and utilization of environmental landmarks. Child development, 50(4), 1062–1070.

https://doi.org/10.2307/1129332

Bao, X., Gjorgieva, E., Shanahan, L. K., Howard, J. D., Kahnt, T., & Gottfried, J. A. (2019). Grid-like Neural

Representations Support Olfactory Navigation of a Two-Dimensional Odor Space. Neuron,102(5), 1066– 1075.e5. https://doi.org/10.1016/j.neuron.2019.03.034

Barbara, A. & Perliss, A. (2023). Invisible Architecture: The experience of place through smell. FrancoAngeli.

Boone, A.P., Maghen, B. & Hegarty, M. (2019) Instructions matter: Individual differences in navigation strategy and ability. Mem Cogn, 47, 1401–1414. https://doi.org/10.3758/s13421-019-00941-5

Garcia-Mira, R. & Dumitru, A. (2014). Experiencing the Urban Space - A Cognitive Mapping Approach. Journal of the Korean housing association. https://doi.org/10.6107/jkha.2014.25.2.063

Hackländer, R. P. M., & Bermeitinger, C. (2017). Olfactory Context-Dependent Memory and the Effects of Affective Congruency. Chemical senses, 42(9), 777–788. https://doi.org/10.1093/chemse/bjx057

Hamburger, K., & Knauff, M. (2019). Odors Can Serve as Landmarks in Human Wayfinding. *Cognitive Science*, 43 (11), https://doi.org/10.1111/cogs.12798

Hegarty, M., He, C., Boone, A. P., Yu, S., Jacobs, E. G., & Chrastil, E. R. (2023). Understanding Differences in Wayfinding Strategies. Topics in cognitive science, 15(1), 102–119. https://doi.org/10.1111/tops.12592

Herz, R. S., Eliassen, J., Beland, S., & Souza, T. (2004). Neuroimaging evidence for the emotional potency of odor-evoked memory. Neuropsychologia, 42(3), 371–378. https://doi.org/10.1016/j.neuropsychologia.2003.08.009

Holmin, J., & Nawrot, M. (2016). The effects of aging on the perception of depth from motion parallax. Attention, perception & psychophysics, 78(6), 1681–1691. https://doi.org/10.3758/s13414-016-1134-3

Iaria, G., Palermo, L., Committeri, G., & Barton, J. J. (2009). Age differences in the formation and use of cognitive maps. Behavioural brain research, 196(2), 187–191. https://doi.org/10.1016/j.bbr.2008.08.040

Jacobs, L. F., Arter, J., Cook, A., & Sulloway, F. J. (2015). Olfactory Orientation and Navigation in Humans. PloS one, 10(6), e0129387. *https://doi.org/10.1371/journal.pone.0129387*

Johnson, A. & Crowe D.A. (2009). Cognitive Critique Revisiting Tolman, His Theories and Cognitive Maps. Cog Crit, 1. *http://www.cogcrit.umn.edu/about.shtml*

Kelts, E. A. (2010). The basic anatomy of the optic nerve and visual system (or, why Thoreau was wrong). NeuroRehabilitation, 27(3):217-22. *https://doi.org/10.3233/NRE-2010-0600*

Koutsoklenis, A., & Papadopoulos, K. (2011). Olfactory Cues Used for Wayfinding in Urban Environments by Individuals with Visual Impairments. *Journal of Visual Impairment & Blindness, 105*(10), 692-702.

https://doi.org/10.1177/0145482X1110501015

Lynch, K. (1960). The Image of the City. The M.I.T. Press.

Meng, Q., Wang, B., Cui, D., Liu, N., Huang, Y., Chen, L., & Ma, Y. (2019). Age-related changes in local and global visual perception. Journal of vision, 19(1), 10. *https://doi.org/10.1167/19.1.10*

Montello, D. R., & Sas C. (2006). Human Factors of Wayfinding in Navigation. International Encyclopedia of Ergonomics and Human Factors. *https//doi.org/10.1201/9780849375477.ch394*

Myjkowski, J. (2023). Notes on the Theory of Smell. Ann Clin Med Case Rep, 12(4), 1–4.

https://dx.doi.org/10.47829/ACMCR

Papi, Floriano. (2010). Pigeons use olfactory cues to navigate. Ethology Ecology & Evolution. November 1989. 219-231. 10.1080/08927014.1989.9525511

Raithel, C. U., Miller, A. J., Epstein, R. A., Kahnt, T., & Gottfried, J. A. (2023). Recruitment of grid-like responses in human entorhinal and piriform cortices by odor landmark-based navigation. Current biology : CB, 33(17), 3561–3570.e4. *https://doi.org/10.1016/j.cub.2023.06.087*

Sensory Maps. (2024). *https://sensorymaps.com/research/*

Wuerger S., Xiao K. & Chauhan T. (2017). Colour vision across the life span: effect of age, ambient illumination and individual differences. Journal of Vision, 17(7):26. *https://doi.org/10.1167/17.7.26*

Zhang, S., & Manahan-Vaughan, D. (2015). Spatial olfactory learning contributes to place field formation in the hippocampus. Cerebral cortex (New York, N.Y. : 1991), 25(2), 423–432. *https://doi.org/10.1093/cercor/bht239*

L14

SCENT(ED) MATERIALS: BRINGING THE MATERIAL CULTURE OF SCENTS TO ARCHITECTURAL DESIGN.

MATERIAIS AROMÁTICOS: TRAZENDO A CULTURA MATERIAL DOS AROMAS PARA O PROJETO ARQUITETÔNICO

Jieling Xiao
Associate Professor and doctorate
Birmingham City University
jieling.xiao@bcu.ac.uk

Sarah King
Senior Technician
Birmingham City University
sarah.king2@bcu.ac.uk

Rui Lebre
Lecturer and doctorate
Birmingham City University
rui.lebre@bcu.ac.uk

ABSTRACT

Scents can have strong impact on human experiences in architecture. The impact can be multifaced. Certain scents are used in therapy practices to reduce anxiety and stress. Scent interventions are also used in museums to evoke imaginations of history and stories embedded in text, objects and paintings. Embedding scents in architecture has however stayed as non-physical interventions, meaning through scenting devices. Rather than taking scents as intangible and invisible elements, this paper explores the material culture of scents in architectural practices. Taking the "Pepper Chamber" in China as an example, a series of prototypes of the peppery wall material is made by authors. Reflecting on the process and outcomes, we suggest a framework to appraise and explore scent(ed) materials through scentability, aroma-profiles and scentonics. We also suggest scentboard as a tool to facilitate the material practice of scents in architecture. The discussion suggests future research into wider cultural uses of scented materials for therapeutic purposes for responsible room scenting solutions.

KEYWORDS: scented materials. architecture. cultural uses. design. olfactory art. indigenous knowledge.

RESUMO

Os aromas podem ter um forte impacto na experiência humana de arquitetura. Esse impacto pode ser multifacetado. Certos aromas são usados em práticas terapêuticas para reduzir a ansiedade e o stress. Intervenções olfativas também são utilizadas em museus para evocar a imaginação da história e de estórias incorporadas em textos, objetos e pinturas. A incorporação de aromas na prática arquitetónica, no entanto, tem-se reduzido a intervenções não físicas, ou seja, através de dispositivos aromatizantes. Em vez de considerar os aromas como elementos intangíveis e invisíveis, este artigo explora a cultura material dos aromas em práticas arquitetônicas. Tomando como exemplo a "Câmara de Pimenta" na China, os autores criaram uma série de protótipos de materiais de parede apimentados. Refletindo sobre o processo e os resultados, sugerimos que aparelhos de materiais perfumados devam inclir aromatização, perfis aromáticos e scentonics. Um quadro de aromas pode ser usado para facilitar o uso de aromas em arquitetura através de práticas materiais inovadoras. A discussão sugere uma pesquisa futura sobre usos culturais mais amplos de materiais perfumados para fins terapêuticos para soluções responsáveis de aromatização de ambientes.

PALAVRAS-CHAVE: materiais aromatizados. arquitetura. usos culturais. projeto. arte olfativa. conhecimento autoctone.

1. INTRODUCTION / INTRODUÇÃO

In his Royal Gold Medal lecture at the RIBA in London, Peter Zumthor said that the form is the easiest to control whilst architecture should create emotional spaces through light, shadow, smell and so on. Postmodern architects and architectural theorists

have written and talked about the significance of smells in creating atmosphere and recalling memories in spaces. For example, Juhani Pallasmaa wrote:

> "The scent sphere of a candy store makes one think of the innocence and curiosity of childhood; the dense smell of a shoemaker's workshop makes one imagine horses, saddles and harness straps and the excitement of riding; the fragrance of a bread shop projects images of health, sustenance and physical strength, whereas the perfume of a pastry hop makes one think of bourgeois felicity."(Pallasmaa, 2005: 54)

The power of smells on one's memories of places and emotions is incredible. Porteous (1985) commented that the sense of smell is an arousal sense, that is, the physiological and psychological state of being awoken or stimulated. The well-known laboratory study by Engen and Rose (1973) has shown olfactory memories are much more long-lasting and accurate than retinal memories. There is an overlap between odour memory and visual memory, which indicates that "odour-evoked" memories may stimulate "odour imagery" which brings cross-modal experiences enhancing the emotional experiences. Aromatherapy studies reveal that natural scents such as lavender and chamomile can reduce stress, improve mood, enhance cognitive performance, and promote relaxation and sleep (Herz, 2009). The cultural associations with scents is critical in building sense of place and lense into different ethic cultures (Classen, et al., 1994). Yet, the architectural field has not fully integrated these findings into design practices.

Although there is an increasing interest in designing scents within the built environment, particularly with the concept of smellscapes (see Henshaw et al., 2017; Xiao, 2018), this interest remains largely hypothetical and theoretical. One of the challenges identified is the lack of understanding of the material culture of scents in architecture, meaning knowing what materials naturally emit noticeable scents, what odorants are emitted from these materials, their impacts on humans, the cultural meanings of these materials, and how materials are constructed to release or capture scents (Xiao et al., 2021). Creative practices using smells in museums and galleries (see Verbeek, 2016), as well as in retail spaces (see Ward et al., 2007), to enhance user experiences and evoke imaginations, also remain at an interventional level through scenting devices based on essential oil consumption. Olfactory art, which takes scent as an art medium, is a burgeoning field that primarily follows two streams: one led by perfumers (e.g., Chandler Burr, Sissel Tolaas) focusing on molecules rather than physical forms; the other linked to visual art involving odor imaginations and memories (e.g., Peter de Cupere, Clara Ursitti). Nevertheless, the material culture is mostly absent.

Working with students, Kapur (2020) experimented with smells as a medium of interaction between the body and the space. This work draws attention to the haptic interaction with smells, creating temporal cross-modal correspondences between smells and textures. Some attempts were made to experiment with adding scent

ingredients, such as orange peels, freshly ground coffee, and soap detergent, into gypsum to create a brick that could integrate lighting to facilitate the release of the scent. Although the rationale behind selecting these ingredients and the making processes were not explained, the experiment initiates further thinking around materializing scents in architecture.

Historically, there are examples from different cultures that incorporate material practices to scent spaces. For example, the wall in the Pepper Chambers for empresses during the Han Dynasty in China (202 BC – 9 AD, 25–220 AD) was paved with mud mixed with grounded Sichuan pepper to scent the space, making the body feel warm by breathing in the peppery air. The Japanese use cedar in bathrooms not only for its antiseptic properties but also for the clean, citrus-like scents that promote meditation and relaxation. Arab builders mixed rose water and musk into the mortar of mosques, which released the scent when the walls were heated by the midday sun (Lupton & Lipps, 2018). In these cases, the scents, the architecture, and the external environment work in synergy, responding to the local climate. We are curious to explore what can be learned about scented materials through experimenting with these historical examples.

We aim to seek a material solution to design the immateriality of scents in architecture. As Barbara and Perliss (2006, p. 18) suggest, "this immaterial and profound dimension must be designed." Taking the Pepper Chambers as an inspiration, we explored the peppery wall material to understand dimensions of scent(ed) materials and how the process makes a difference in the mateiral finish, including scents, colour and texture.

2. THE EXPLORATION
2.1 The process

The two rounds of exploration (see Fig. 1) were conducted in Feburary (Round 1) and March 2024 (Round 2). We took an explorative and action-based approach, learning through making.

Historical sources indicate the walls in the 'Pepper Chambers' had a subtle pink finish with a noticeable and durable fragrance. They also claim the peppery mix increase the insulation properties of the wall. Apart from identifying Red Sichuan Pepper as the scent's main ingredient, no detailed information was found about the recipe and making process. For the exploration, we decided to add ground Red Sichuan Pepper (sourced from a Chinese supermarket) to plaster powder (Plaster of Paris made of heating gypsum) and cold water with a default proportion of 15ml, 30ml and 15ml which is modefied during the process alongside observations.

For comparison, we developed a second sample with turmeric (equally sourced from a Chinese supermarket), and ground rose petals and leaves (sourced from a local supermarket and dried at home) to a similar Paris plaster base.

Figure 1. The scent(ed) materials prototype process experimented.
Source: Authors.

2.2 Results

Natural drying in the molds during the first round was unsuccessful. The scent ingredients slowed the drying process, and most samples developed mold after a week. In the second round, drying in a dehumidifier for 24 hours removed all the moisture but caused cracking in samples. We also took thermal images of selected samples and found no significant difference between them, as an indication of heat absorbption and transmission. The natural drying process made the essential oils in the scent ingredients rise to the surface of the sample and thus create a "terrazzo" finish. Soaking made a significant difference in the material finish, resulting in a deeper and more even color. However, when mixing the soaked ingredients with the plaster powder, more water was needed.

With the same amount of scent ingredient (15 ml) mixed with 30 ml of plaster powder, the grounded pepper sample released a much more intense scent than the turmeric and rose leaves (white rose, and red rose) samples. However, all samples smelt much subtle than the raw ingredients. In particular, termic smelt a bit sweet and citrus. The sample of the rose leaves smelt leafy and very subtle. The finishing of the sample is the most 'terrazzo' like with a subtle tone of olive green. Texture wise, the sampe with fine tumeric power has a clean and mat surface, the rose leave sample had a 'porcelain' like finish whilst the sample with rose patels and grounded sichuan pepper have a rough textured surface.

3. DESIGN WITH SCENT(ED) MATERIALS

Reflecting on the process and results, the samples suggested a scented material framework that could be applied to architecture. Based on the analysis of the sample results, we established the framework around three different parameters: scentability, scentonics and aroma-profiles. Each parameter refers to a different aspect of working towards a fully developed and workable scented material in an architectural context, scentability standing for the capacity to store scents, scentonics for construction methods to help release scents and aromaprofiles for chemical and perceptual characteristics. All three could then inform a scentboard from which design could draw inspiration.

3.1 Scentability

Scent(ed) materials in architecture may either be materials that naturally emit a noticeable scent or materials that are made to scent through a purposeful process. Plain plaster does not have a noticeable smell so in the sample it worked as a binding material that captures and stores scents while providing structural properties to create forms. However, many architectural materials naturally have a scent, such as bamboo, cedar wood, pine wood, strawbale, etc. Scentability can perhaps be discussed in two ways: the ability to scent and the ability to be scented.

Materials that are porous or have a high water absorption rate are potentially more easily scented. For example, in the Olfactory Labyrinth ver.2 exhibition, olfactory artist Maki Ueda embedded scents into plywood partition panels to create a scent journey indoors with different types of wood (see Fig. 2). Uncoated plywood is a hygroscopic material that absorbs moisture from the air, making it easier to be scented. Softwoods, in general, may be easier to be scented and some may also carry a natural scent. However, in other cases, it is not only about the scent(ed) materials but also about considering how to retain the scent for its detection threshold. For example, in Therme Vals, Peter Zumthor used Valser Quarzite slabs, which have a low water absorption rate of 0.5%. The stone surfaces help retain the scents from the aromatic spa water within the space.

Figure 2. The Olfactory Labyrinth ver.2 exhibition by Maki Ueda
Source: Maki Ueda (2015).

3.2 Aroma-profiles

Developing an aroma profile is essential to advance the concept of scent(ed) materials in architecture. One longstanding challenge is the lack of a database and knowledge archive on what odorants are emitted from scent(ed) materials. While developing aroma profiles of scent ingredients is common in the food and perfume industries, materials are often scanned for harmful Volatile Organic Compounds indoors such as Formaldehyde, Acetone, Butanal, Butane, Plasticizers, Benzenes, Toluene, and Urea-formaldehyde that are often found from cleaning products, paints, building materials and furnishings (according to American Environmental Protection Agency). There is a standard process in industry to run GCMS tests of aroma compounds released from materials (see EN 13725). However, it is not required by regulations to have aroma compounds analysis for material products.

The prototyped peppery material serves as a starting point for reflecting on aroma profiles. The historical text of Chinese herbal medicine, Bencao Gangmu, known as the Great Pharmacopoeia, suggests that Red Sichuan Pepper can warm the body and is useful in treating colds. There are many cultural uses of Red Sichuan Pepper. For example, people use it to keep insects and bacteria away from rice, and steamed pear with Red Sichuan Pepper can treat sore throat. Recent studies (see Li et al., 2019; Ni et al., 2022) reveal the aroma profile of Red Sichuan Pepper grown in China, containing five dominant odorants: linalool (anti-anxiety and antimicrobial), α-terpineol (immune system stimulant), β-myrcene (anxiolytic, antioxidant, anti-aging, anti-inflammatory, and analgesic), 1,8-cineole (anti-inflammatory), limonene (reduces triglycerides and lowers blood sugar levels), and geraniol (antimicrobial and antibacterial). These findings suggest that inhaling the peppery air in the Pepper Chamber has more benefits than merely providing fragrance, which could be further explored in the future.

Understanding the aroma profiles of scent(ed) materials could support the scientific and meaningful design of scented environments, particularly by understanding their impacts on human health and how they are perceived in different cultural contexts. Hsuan L. Hsu (2020) susggests "the subjective and uncertain nature of olfactory perception- the difficulty of defining a bad smell or of documenting the toxicity of specific airborne particulates- makes smell a fuzzy medium for determining what counts as a public nuisance or environmental hazard"(p.113). The aroma profiles are perhaps not only essential for positives, but also, for identifying negatives. Chemical reactions might also need to be considered when creating a scent(ed) material from several scent ingredients and when introducing scents into an environment with an existing scent environment.

3.3 Scentonics

The science and art of construction to help the scent(ed) materials release the scent in space or scent the space is equally important and we define it as scentonics. For example, in the case of the Pepper Chamber, the peppery material can be applied

as a wet mortar on the wall structure to dry. It is also possible that the material can be made into tiles to apply to the surface. The heating system under the floor in the Chinese Palace, like a stove, warm up the whole building structure that could also help to release the pepper scent from the wall. The incidental smoky scent engraved into the concrete surface in Bruder Klaus Field Chapel by Peter Zumthor (fig.3) as a result of burning the molding pine logs is also a very good example to explore through scentonics.

Figure 3. The interior surface of the Bruder Klaus Field Chapel.
Source: Peter Zumthor (2007).

3.4 Scentboard as a design tool

Representing scents has always been a challenge, however, communicating scents in a design-oriented manner is critical for introducing scents into architecture. Existing efforts on smell maps by Kate McLean (2017) and Sissel Tolaas (2010) offer good examples of describing scents (what they are and where they are located) in urban environments. However, there are limited efforts in dealing with indoor smellscapes (Torriani et al., 2024). In fact, the cross-modal interactions between the visual appearance of a space can significantly influence the perception and expectations of scents. Pioneers in marketing research have explored the associations between smell, shape, and color (Spence, 2020). For example, a bell pepper wine aroma sniff would associate with angular shapes rather than round shapes. Furthermore, Jaquot et al. (2016) found that chromatic colors are more effective in evoking appropriate odor experiences than individual colors.

Interior designers work with mood boards to show how the materials and colours are used in a project to create a designed atmosphere. Scents, often candles and diffusers, are increasingly added to the mood boards to show the integration of olfactory experiences, particularly in hospitality designs such as hotels and spas

(see Fig.4) as a branding strategy. Having scent(ed) material products would mean that designers can specify materials to meet the design aspirations for interior atmospheres with scents. Inspired by this idea, we can develop a scent board in addition to the moodboard to show how the scent and scent(ed) materials can fit into a holistic design vision for a space (see Fig. 5 as an example), including information of scent ingredients, scentonics and characteristics of scents.

Figure 5. An example of a marketing visual of a hotel integrating a designed woody scent to sell the experience.
Source: Clark (2015).
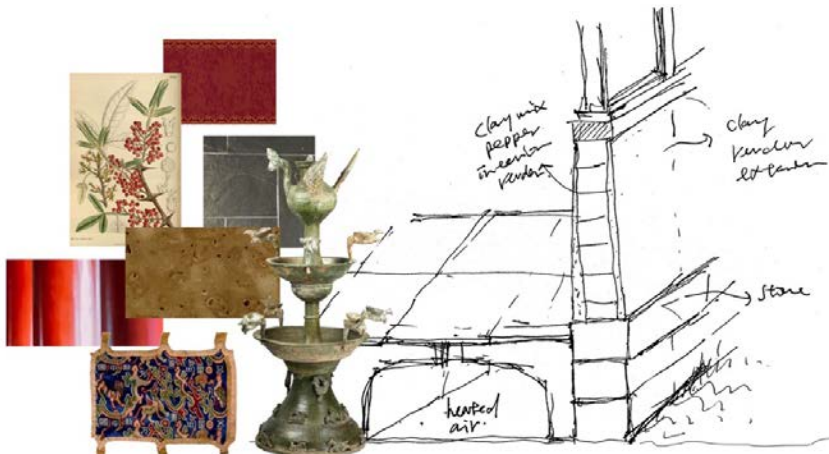
purpose		scent characteristics			intensity
relaxation	resinous	spicy	fruity	minty	light
medical	musky	creamy	floral	leafy	medium
refreshing	herbal	earthy	powdery	citrus	strong

Figure 5. The scentboard of the Pepper Chamber as an example outlining the scent characteristics, scentonics and purpose.
Source: Authors.

4. LIMITATIONS AND FUTURE DIRECTIONS

This experimental work is not aiming to tackle material science challenges associated with scent(ed) materials. Instead, it aims to observe how creative practices in making can innovate the use of scents in design via tangible means, focussing on material culture explorations. We've not examined how long the scent lasts in the presented samples. We've also not examined the aroma compounds released from the samples. These will need further laboratory explorations with support from chemists and material scientists.

Future directions exploring scent(ed) materials in the architectural context could consider: understanding the life cycle of materials that naturally emit a scent; exploring material recipes that create environmental-friendly and responsible scent(ed) materials; documenting aromaprofiles of scent(ed) materials, cultural uses of scents and scent(ed) materials that are available; understanding impacts of odourants on human health and behaviours; creating protocol to describe and measure durability of scent(ed) materials.

There is an on-going debate whether it is ethical to scent spaces given the fact scents can be manipulative and subjective to individual experiences (Henshaw, 2014). Scent, as long as non-harmful, would be as the colours in the space selected by someone to impose an experience. Learning from aromatherapies, scents could be used to our advantage to explore the potential of architecture for emotional support and wellbeing. The ethics of using scented design solutions for positive impacts raise a series of questions to ask in future research: who makes those decisions, who is accountable for that, what questions does this pose to architectural design and the use of smell design?

5. ACKNOWLEDGEMENT

6. BIBLIOGRAPHY

Barbara, A., & Perliss, A. (2006). *Invisibile Architecure. Experiencing Places through the Sense of Smell*. Skira.

Clark, C. (2015).Why do fancy hotels use such powerful fragrances. Available from : *https://www.bloomberg.com/news/articles/2015-09-18/scent-branding-101-why-do-fancy-hotels-use-such-powerful-fragances-*

Engen, T., & Ross, B. M. (1973). Long-term memory of odors with and without verbal descriptions. *Journal of experimental psychology, 100*(2), 221. *https://doi.org/10.1037/h0035492*

Herz, R. S. (2009). Aromatherapy facts and fictions: A scientific analysis of olfactory effects on mood, physiology and behavior. International Journal of Neuroscience, 119(2), 263-290. *https://doi.org/10.1080/00207450802333953*

Henshaw, V. (2014). *Urban smellscapes: Understanding and designing city smell environments*. Routledge.

Henshaw, V., McLean, K., Medway, D., Perkins, C., & Warnaby, G. (Eds.). (2017). *Designing with smell: Practices, techniques and challenges*. Routledge.

Jacquot, M., Noel, F., Velasco, C., & Spence, C. (2016). On the colours of odours. Chemosensory Perception, 9, 79-93. *https://doi.org/10.1007/s12078-016-9209-z*

Hsu, H. L. (2020). The smell of risk: environmental disparities and olfactory aesthetics. In *The Smell of Risk.* New York University Press.

Kapur, J. (2020, July). Smells as an Interactive Material for Spatial Designing. In International Conference on Human-Computer Interaction (pp. 69-84). Cham: Springer International Publishing.

Lupton, E., & Lipps, A. (Eds.). (2018). *The senses: Design beyond vision.* Cooper Hewitt, Smithsonian Design Museum & Princeton Architectural Press.

Li, Z., Jeon, J., Kwon, S. Y., Huang, R., & Baek, H. H. (2019). Characterization and evaluation of changes in the aroma-active components in Szechuan pepper (Zanthoxylum bungeanum Maxim) under different cooking temperatures using gas chromatography-olfactometry. *Chemosensory Perception, 12*, 32-39. *https://doi.org/10.1007/s12078-018-9249-7*

McLean, K. (2017). Mapping the invisible and the ephemeral. In *The Routledge handbook of mapping and cartography* (pp. 500-515). Routledge.

Ni, R., Yan, H., Tian, H., Zhan, P., & Zhang, Y. (2022). Characterization of key odorants in fried red and green huajiao (Zanthoxylum bungeanum maxim. and Zanthoxylum schinifolium sieb. et Zucc.) oils. *Food Chemistry, 377*, 131984.
https://doi.org/10.1016/j.foodchem.2021.131984
https://s100.copyright.compatc
hServlet?publisherName=ELS&contentID=S0308814621029903&orderBeanReset=true

Pallasmaa, J. (2005). *The eyes of the skin: Architecture and the senses*. John Wiley & Sons.

Perras, J. A., & Wicky, É. (Eds.). (2021). *Mediality of Smells/Médialité Des Odeurs*. Peter Lang Limited International Academic Publishers.

Porteous, J. D. (1985). Smellscape. *Progress in Physical Geography, 9*(3), 356-378. https://doi.org/10.1177/030913338500900303

Spence, C. (2020). Olfactory-colour crossmodal correspondences in art, science, and design. *Cognitive Research: Principles and Implications, 5*(1), 52. https://doi.org/10.1186/s41235-020-00246-1

Tolaas, S. (2010). The city from the perspective of the nose. *Ecological urbanism*(pp. 146-155). Lars Müller Publishers.

Torriani, G., Torresin, S., Lara-Ibeas, I., Albatici, R., & Babich, F. (2024). Perceived air quality (PAQ) assessment methods in office buildings: a systematic review towards an indoor smellscape approach. *Building and Environment*, 111645. https://doi.org/10.1016/j.buildenv.2024.111645

Ueda, M. (2015). The Olfactory Labyrinth ver.2 Exhibition http://www.ueda.nl/index.php?option=com_content&view=article&id=288&Itemid=847&lang=en

Verbeek, C. (2016). Presenting Volatile Heritage: Two Case Studies on Olfactory Reconstructions in the Museum. *Future Anterior: Journal of Historic Preservation, History, Theory, and Criticism, 13*(2), 33-42. https://doi.org/10.5749/futuante.13.2.0033.

Ward, P., Davies, B. J., & Kooijman, D. (2007). Olfaction and the retail environment: examining the influence of ambient scent. *Service Business, 1*, 295-316. https://doi.org/10.1007/s11628-006-0018-3

Xiao, J. (2018). Smell, smellscape, and place-making: a review of approaches to study smellscape. *Handbook of research on perception-driven approaches to urban assessment and design* (pp. 240-258). IGI Global.

Xiao, J., Aletta, F., Radicchi, A., McLean, K., Shiner, L. E., & Verbeek, C. (2021). Recent advances in smellscape research for the built environment. *Frontiers in psychology, 12*, 700514. https://doi.org/10.3389/fpsyg.2021.700514

Zumthor, P. (2017) The Bruder Klaus Field Church. Available from https://zumt

THE SMELLS OF THINGS: THE THINGS OF SMELLS

OS CHEIROS DAS COISAS: AS COISAS DE CHEIRO

Paraguai Luisa
Pontifícia Universidade Católica de Campinas
luisaparaguai@gmail.com

ABSTRACT

This text addresses the site-specific installaCon "The Smells of Things: The Things of Smell" (2019), installed at the Casa Cora Coralina Museum on the banks of the Vermelho River in the city of Goiás, Brazil. The proposal was to arCculate the sense of smell as an operator of the dialogue with the poems of Brazilian writer Cora Coralina in the consCtuCon of encounters with/between objects and spaces. The ways of inhabiCng the house are revealed through the olfactory cartography of everyday life, while the smells are loaded with memories that persist in us. They consCtute subjecCvely. The impossibility of containing them in defined and controlled contexts and our ability to adapt structure the poeCc intenCon at the same Cme as they challenge the creaCon of realiCes.

KEYWORDS: art and technology. art and design. olfactory landscape. affecCve memory.

RESUMO

Este texto aborda a instalação site specific "Os cheiros das coisas: as coisas de cheiro" (2019), instaurada no Museu Casa Cora Coralina, às margens do rio Vermelho na cidade de Goiás, Brasil. A proposta foi arCcular o senCdo do olfato como operador do diálogo com os poemas da escritora brasileira Cora Coralina, na consCtuição de encontros com/ entre objetos e espaços. Os modos de habitar a casa desvelam-se pela cartografia olfaCva da coCdianidade, enquanto os cheiros são carregados de memórias, que persistem e nos consCtuem subjeCvamente. A impossibilidade de contê-los em contextos definidos e controlados e a nossa capacidade de adaptação estruturam a intenção poéCca ao mesmo tempo que desafiam o fazer criar realidades.

PALAVRAS CHAVE: arte e tecnologia. arte e design. paisagem olfaCva. memória afeCva.

1. INTRODUÇÃO

Este texto aborda a ação arhsCca "Os cheiros das coisas: as coisas de cheiro" (2019), realizada no Museu Casa Cora Coralina, às margens do rio Vermelho na cidade de Goiás, estado de Goiás, Brasil, que buscou arCcular o senCdo do olfato como operador dos diálogos entre a ambiência da casa e os poemas da poeCsa brasileira Cora Coralina na evocação de possíveis encontros percepCvos com/entre objetos e lugares. O Museu Casa de Cora Coralina (figura 1) foi inaugurado em 20 de agosto de 1989, data comemoraCva dos 100 anos de nascimento da brasileira Ana Lins dos Guimarães Peixoto Bretas, que nasceu em 20 de agosto de 1889, na anCga Vila Boa de Goyaz, e começou a escrever desde muito cedo nos jornais locais (Museu Casa de Cora Coralina, 2016).

Figura 1. Museu Casa de Cora Coralina. Goiás, Go, Brasil. Fotografia: Da autora.

Na instalação *site specific* "Os cheiros das coisas: as coisas de cheiro" (2019), os cheiros são conformados pelas descrições literárias de Cora Coralina para evocar uma paisagem olfaCva , que se caracteriza de forma "não conhnua, fragmentada e episódica no tempo" (Porteous, 1990, p. 25), conforme nossa percepção e condição olfaCva. Na casa, alguns cômodos foram escolhidos: cozinha, escritório, quarto e sótão, para respecCvamente conterem composições aromáCcas: misturas de laranja com baunilha, louro com cânfora, jasmim e aroeira. E para consCtuir essa ambiência tomaram-se específicos objetos do coCdiano (frasqueira de mão, compoteira de doce, tacho de cobre) – que sugerem testemunho, lembrança, nostalgia, evasão (Baudrillard, 2002), enquanto operacionalizam intenções poéCcas.

Assim, contextualiza-se primeiramente os modos de habitar como uma cartografia olfaCva da coCdianidade, na medida em que os cheiros são carregados de memórias, que persistem e nos consCtuem subjeCvamente. Em seguida ressaltam-se brevemente duas caracterísCcas do senCdo do olfato: a quase impossibilidade de conter os odores enquanto situações definidas e controladas e a nossa capacidade de adaptação. Para por fim reconhecer a potencialidade da ação arhsCca que qualifica e designa lugaridades olfaCvas, conformadas e consCtuídas pelas aCvações singulares das pessoas que por ali transitaram.

2. CARTOGRAFIAS DO COTIDIANO: ENTRE OBJETOS E MEMÓRIAS

A proposta arhsCca desvela a dimensão percepCva do habitar, cartografada pelas memórias de Cora Coralina em suas práCcas da escrita, que reafirmam conforme

Bachelard (2000, p. 25) escreve "[...] todo espaço realmente habitado traz a essência da noção de casa". Reconhece-se nos textos da poeCsa a intensidade do coCdiano vivido na casa velha da ponte, que modela, ordena e singulariza os objetos e os ambientes para nomear os vínculos afeCvos – um léxico de formas e senCdos (Paraguai, 2021).

> Mas, na sala, o que havia de novo cada ano era a folhinha-cromo da parede, oferta da Casa Garnier que minha mãe no começo de cada janeiro suspendia no infalível prego, no mesmo lugar e que eu fazia questão de desfolhar, não para a certeza dos dias da semana ou do mês que isso não me importava e sim pelas quadrinhas que traziam no verso e que eu incorporava ao meu cabedal de conhecimentos. O resto da casa afinava pelo figurino da sala. Os móveis, coisas e pertences, inclusive vasilhame e até os pilões de cepa de aroeira e trempes de pedra onde viviam os tachos de cobre, Cnham vindo dos anCgos. Tudo era sólido, pesado, furnido e feito para não ter fim (Coralina, 2006, p. 50).

Para Segaud (2016, p. 103) "as significações e localizações dos objetos e móveis nos cômodos, ou acompanhando as mais simples aCvidades domésCcas, como o preparo e o consumo de alimentos" ultrapassam a perspecCva funcional da casa como abrigo para então consCtuí-la culturalmente como ação de habitar. Assim, Coralina afirma que

> Pequenino doce... Doce doce de criança, doce delicado feito de alvuras e doçuras, de purezas e transformações tão primiCvas. A cana do canavial para o engenho. Das moendas pra os tachos. Dos tachos para os gamelões. Destes para as fôrmas recobertas de barro moreno vivo, na solene transformação do mel escuro no branco, decantação pausada, lenta. Turgando suas escórias na simples alquimia de um passado tempo. Todas as purezas no alfenim. [...] Alfenin... doce, gosto de saudade (Coralina, 2009, p. 88).

As arCculações entre objetos e usos do coCdiano indicam práCcas historicamente condicionadas e vinculadas aos padrões sociopolíCcos – modelos insCtucionalizados pela sociedade. Portanto, os objetos, assim como as ideias, devem ser compreendidos como o resultado da integração de diversos códigos – comportamentos culturais situados historicamente. O primeiro contato com um objeto, de qualquer natureza, é feito a parCr dos senCdos e das materialidades, ou seja, a parCr de sua forma, aparência, textura, odores, conformando as nossas expectaCvas. Por outro lado, os objetos atuam como mediadores entre dimensões disCntas – visível e invisível, concreto e simbólico, material e imaterial, consCtuindo as narraCvas oriundas do coCdiano em lugares de memória. Para além do valor funcional ou uClitário, os objetos terminam por conformar indícios, marcas, sinais do experienciado pelas pessoas. Os objetos e suas materialidades, portanto, testemunham e são sintomas da cultura.

A frasqueira (figura 2), com cheiro de coisa guardada em cima do armário indica tempos distantes de viagem, mas quando composta com o adocicado do jasmin e da lavanda, transforma-se pela recuperação de uma memória afeCva destes outros

lugares. Vale apontar que nas tardes ensolaradas da cidade de Goiás o quarto de Cora se aquece e destaca as notas desta mistura olfaCva, pois a volaClidade dos componentes químicos com o aumento da temperatura implica em uma maior captação dos quimioreceptores olfaCvos, invadindo o espaço ínCmo do quarto e dos visitantes quando por ali transitam (Paraguai, 2021).

A compoteira de doce (figura 3), por conta de sua materialidade, atua como difusor ainda que se apresente vazia aos olhos dos visitantes. Diferente das trocas químicas realizadas pelo couro, que se deixa marcar pelos cheiros, a transparência do vidro potencializa a capacidade de contê-los, enquanto sugere ao visitante o destampar para somente então absorver o cheiro do doce de figo verde. Este objeto, que reina na cristaleira da sala entre vários outros, consCtui um lugar de memória, recordações do fazer doces, que contam sobre a Cora doceira e cozinheira, cuja venda de compotas, cristalizados, licores e bolos era sua fonte de renda. Para abordar esta relação entre objetos e hábitos do coCdiano retomo Baudrillard (2002, p. 101) quando afirma "cada objeto está a meio caminho entre uma especificidade práCca, sua função, que é como seu discurso manifesto, e a absorção em uma série/coleção, onde se torna termo de um discurso latente, repeCCvo, o mais elementar e o mais tenaz dos discursos".

O gosto pelos tachos de cobre (figura 4) não é infundado, pois a conduCvidade do material permite o rápido aquecimento, retendo o calor, que se libera aos poucos. Na práCca, os alimentos esquentam lentamente. É como se a quentura fosse, aos poucos, envolvendo a comida e culturalmente definindo Cora Coralina – uma "mulher primária, roceira, operária, afeita à cozinha, ao curral, ao coalho, ao barreleiro, ao tacho" (Coralina, 1997, p. 111).

Figura 2. Frasqueira pessoal para viagem. Fotografia: Da autora.

Figura 3. Compoteira de cristal. Fotografia: Da autora.

Figura 4. Tacho de cobre no fogão a lenha. Fotografia: Da autora.

Desta compreensão sobre uma troca constante e recíproca entre o mundo objeCvo das coisas e o mundo subjeCvo das individualidades, Baudrillard (2002, p. 102), coloca o exercício corriqueiro de "nossos esquemas 'habituais'" para solucionar "o que pode ter de angusCante sua conCnuidade e a singularidade absoluta dos eventos" que regem os arranjos espaciais.

3. MAPA OLFATIVO HUMANO

Ao reconhecer o senCdo do olfato como organizador de lugares fenomênicos da nossa consciência percepCva, reforça-se o potencial estéCco da proposta arhsCca na medida em que se vale das caracterísCcas específicas dos receptores olfaCvos humanos: cada neurônio olfaCvo é aCvado por um odorante e sua dada configuração química. Neste senCdo os cheiros, "não são tanto sobre objetos e percepção estável de objetos, mas também sobre mudanças na composição química do ambiente e flexibilidade quanto à avaliação contextual. No processo percepCvo, a entrada sensorial é filtrada e estruturada por diferentes processos antecipatórios" (Barwich, 2018, p. 338).

Bom, sabemos que os cheiros dissipam-se no espaço }sico pela dispersão das moléculas voláteis em colisão livre com outras substâncias do ar – energia cinéCca, e um retardamento de suas trajetórias em zigue-zague termina por favorecer a percepção dos cheiros pelas nossas células olfaCvas. Estas condições }sico-químicas tornam-se uma conCngência explorada na instalação arhsCca, pois os cheiros "escapam e ultrapassam fronteiras, compondo diferentes enCdades em totalidades olfaCvas" (Classen et al., 1994, p. 4-5). Citase por exemplo, que durante o horário de almoço e jantar a composição aromáCca definida na instalação misturava-se com os cheiros do restaurante ao lado, configurando uma outra ambiência química contextual não projetada.

Entendemos que os nossos receptores olfaCvos, situados no epitélio nasal, detectam inicialmente os odorantes, coletados e organizados conforme a expressão dos mesmos receptores pela aCvação de áreas específicas (glomérulos) do bulbo olfaCvo. Mas, esta organização topográfica não se mantém na etapa seguinte, pois os estudos descrevem os sinais chegando ao córtex piriforme e respondendo conforme diferentes e variáveis Cpos de regulação organizacional (Barwich, 2018; Malnic, 2008).

Esta instável condição neuroquímica é referenciada por Barwich (2018, p. 345), que afirma "o córtex piriforme pode ser treinado a formar padrões mais ou menos estáveis temporalmente através de comportamentos inatos e aprendidos (cheiros associados)". Embora não exista consenso sobre as teorias do cérebro até o momento, afirma a autora, há convergência de pesquisas que reconhecem uma estrutura conceitual genuinamente alternaCva para o processamento neural baseado em "*bias* e revisões processuais" cíclicas (Ibid., p. 346). As "*bias*" expressam as formações de antecipações e preferências moduladas por experiências anteriores em movimentos *top-down,* que são conCnuamente adaptadas durante as "revisões processuais", enquanto intervenções *bo0om-up.*

Nesta perspecCva, assume-se a experiência estéCca como ação potente formaCva, que ressoa "com mecanismos neurais, os quais constantemente alimentam domínios sensoriais e, assim, influenciam os efeitos bioquímicos que produzem nossas impressões percepCvas" (*Ibid.,* p. 347). Conforme a autora, é preciso reforçar que não se descarta o eshmulo externo enquanto dado estruturante de nossa experiência percepCva, mas sua arCculação dá-se conforme os processos nos quais parCcipa. Esta condição implica na produção de regularidades sensoriais temporais, a parCr de padrões

percepCvos, que se apresentam dinâmicos, iteraCvamente adaptados e flexíveis para abarcar nossas antecipações, experiências vividas e informações contextuais.

4. CONSIDERAÇÕES FINAIS

Ao reconhecer as mediações entre ações e objetos, sujeitos e modos de uso como constructos socioculturais e políCcos, contextualizamos a práCca arhsCca – métodos, processos e práCcas – como exercício de um pensamento críCco. Reconhece-se nesse processo a capacidade de organizar e apresentar narraCvas, de correlacionar o espaço e o tempo e de mediar a percepção humana para criar realidades de si e do mundo. Evocam-se, assim, agenciamentos entre objetos e espaços como dimensão da experiência. Neste senCdo, a operação poéCca potencializa atributos e qualidades olfaCvas da ambiência domésCca, um arrebatamento mulCsensorial, que associa memórias e consequentes redes semânCcas (Paraguai, 2021).

5. BIBLIOGRAFIA

Bachelard, G (2000). A poéCca do espaço. MarCns Fontes.

Baudrillard, J (2002). O sistema dos objetos. Editora PerspecCva.

Barwich, A-S (2018). Measuring the World: OlfacCon as a Process Model of PercepCon. Em Nicholson, DJ & Dupré, J (editors). Everything Flows: Towards a Processual Philosophy of Biology. (p. 337-356). Oxford University Press.

Classen, C & Howes, D & Synno , A (1994). Aroma: the cultural history of smell. Routledge.

Coralina, C (2009). Doceira e poeta. Global.

Coralina, C (2006). Estórias da Casa Velha da Ponte. Global.

Coralina, C (1997). Vintém de Cobre: meias confissões de Aninha. Global Editora.

Malnic, B (2008). O cheiro das coisas. O senCdo do olfato: paladar, emoções e comportamentos. Vieira & Lent.

Museu Casa de Cora Coralina. (2016). Cora Coralina. h ps://www.museucoracoralina.com.br/site/a-vida/.

Paraguai, L. (2021). Os cheiros das coisas, as coisas de cheiros. Em Olira Rodrigues (org.), Conecta cultura, Connect Culture. (p. 87-100). Universidade do Porto.

Paraguai, L (2019). Sensescape: narraCvas flutuantes. ARS (São Paulo), 17(35), 215-224. h ps://doi.org/ 10.11606/issn.2178-0447.ars.2019.152455.

Porteous, JD (1990). Landscapes of the mind: worlds of sense and metaphor. University of Toronto Press.

Santos, M (1999). A natureza do espaço: técnica e tempo, razão e emoção. Hucitec.

Segaud, M (2016). Antropologia do espaço: habitar, fundar, distribuir, transformar. Edições Sesc São Paulo.

Tuan, YF (2011). Space and Place. The PerspecCve of Experience. University of Minnesota Press.

PHYTOTHERAPEUTIC LANDSCAPE: AN OLFACTORY ARCHITECTURAL DESIGN TOOL

PAISAGISMO FITOTERÁPICO: UMA FERRAMENTA DO PROJETO DE ARQUITETURA OLFATIVO

Patrícia Cristina Cunha Nunes de Oliveira Fontoura
Researcher and Post-Doctorate in Architecture CEAU FAUP / Investigadora e Pós Doutoranda em Arquitetura. CEAU FAUP
University of Porto / Universidade do Porto
pfontoura@arq.up.pt
patriciacunha.arquitetura@gmail.com

ABSTRACT

The Olfactory Project in architecture combines aromachology, phytotherapy, and neuroscience applied to create aesthetically pleasing spaces that also promote the emotional and cognitive well-being of occupants through strategic aromas. Aromas influence sensory experience and mental state, improving mood, reducing stress, and increasing concentration. Data from WHO (2022) highlight that one in twenty-four people worldwide faces emotional disorders like depression, which can be mitigated with appropriate stimuli. Integrating phytotherapy species into landscaping, the project aims to create healthy environments. Neuroarchitecture provides strategies to understand how aromas affect the brain and shape spatial experiences. This article presents a case study of medicinal landscaping in a residence in Brasília.

KEYWORDS: Olfactory Project, Medicinal Landscaping Project, Neuroarchitecture, Smell, Brasilia

RESUMO

O Projeto Olfativo na arquitetura combina aromacologia, fitoterapia e neurociência aplicada para criar espaços esteticamente atraentes e que promovam o bem-estar emocional e cognitivo dos ocupantes através de aromas estratégicos. Aromas influenciam a experiência sensorial e o estado mental, melhorando o humor, reduzindo o estresse e aumentando a concentração. Dados das Nações Unidas (WHO, 2022) destacam que uma em cada vinte e quatro pessoas no mundo enfrenta distúrbios emocionais como a depressão, que podem ser mitigados com estímulos adequados. Integrando espécies da fitoterapia ao paisagismo, o projeto visa criar ambientes salutares. A Neuroarquitetura fornece estratégias para entender como aromas afetam o cérebro e moldam a experiência dos espaços. Este artigo apresenta um estudo de caso de paisagismo medicinal em uma residência em Brasília.

PALAVRAS-CHAVE: Projeto Olfativo, Projeto de Paisagismo Medicinal, Neuroarquitetura, Olfato, Brasília

1. INTRODUÇÃO

Na interseção da Arquitetura com diversos campos de conhecimento, como a Aromacologia e a Neurociência aplicada à Arquitetura, emerge um paradigma renovado: o Projeto Olfativo. Embora os estímulos sensoriais pelo olfato sejam utilizados desde os primórdios da civilização, este conceito é resinificado na contemporaneidade. Neste estudo, é proposta uma abordagem convergente que combina sensações olfativas com a criação de espaços arquitetónicos, considerando o impacto dos aromas no bem-estar e na experiência espacial dos ocupantes. Este artigo apresenta a metodologia utilizada ao longo das últimas duas décadas na elaboração do Paisagismo Residencial Medicinal, que emprega espécies fitoterápicas em espaços internos e externos, destacando os benefícios alcançados com essa abordagem.

O design olfativo vai além da estética tradicional da Arquitetura ao incorporar a dimensão sensorial do olfato como um fator determinante na qualidade do ambiente construído: tem o objetivo maior do alcance e/ou manutenção de um estado de a saúde. Com isso, a incorporação de elementos aromáticos nos projetos arquitetónicos não busca apenas criar espaços visualmente atraentes – já que as espécies que mais exalam seu perfume são chamativas, mas também influenciar positivamente o estado emocional e cognitivo das pessoas que os habitam. Herz (2007) destaca que o olfato, um dos sentidos mais primitivos e emocionalmente impactantes, possui a capacidade de evocar memórias e emoções profundas, tornando-se um componente vital no design sensorial do espaço e contribuindo para uma melhora da saúde humana.

Dados alarmantes da Organização Pan-Americana da Saúde indicam que uma em cada vinte e quatro pessoas no mundo sofre de distúrbios emocionais causados pela depressão (WHO, 2022). Na prática profissional da Arquitetura, observa-se que esta condição pode ser impactada direta e positivamente por estímulos olfativos. Para tanto, a aplicação de princípios científicos interdisciplinares torna-se essencial neste contexto. Estudos recentes em aromacologia evidenciam que os aromas têm efeitos significativos na saúde mental e física, sendo capazes de influenciar o humor, reduzir o estresse e melhorar a concentração (Ke, Hsieh, & Hsieh, 2022). A lavanda, por exemplo, é conhecida por suas propriedades calmantes, enquanto o alecrim pode aumentar a vigilância e a memória. No Projeto de Paisagismo estas espécies podem ser utilizadas, com segurança, de forma a contribuir na manutenção da saúde das pessoas que usufruem desse espaço.

Compreender como os aromas interagem com o sistema nervoso central é crucial para que os arquitetos possam integrar efetivamente essa prática em seus projetos. Este entendimento abre um diálogo com a Neurociência e oferece perspetivas valiosas sobre como o cérebro humano processa estímulos sensoriais, incluindo o olfato na interação com o espaço criado. Ulrich (1984) foi pioneiro ao demonstrar que elementos naturais nos ambientes físicos influenciam a atividade neural e, consequentemente, o bem-estar dos ocupantes. Estudos nessa área destacam que a estimulação olfativa pode modular respostas emocionais e cognitivas, moldando a experiência subjetiva dos espaços construídos.

O objetivo deste trabalho é apresentar uma experiência na área do Projeto de Paisagismo Residencial, demonstrando os benefícios diretos da criação de uma ambiência que fomenta a qualidade de vida: ao integrar plantas medicinais e aromáticas no paisagismo residencial, os espaços criados não só promovem a saúde e o bem-estar, mas também proporcionam uma conexão mais profunda e significativa com a Natureza.

2. A SINESTESIA EM PROJETOS DE ARQUITETURA

São apresentados alguns tópicos de interesse para o perfeito entendimento deste artigo.

2.1 Integração de Estímulos Olfativos na Arquitetura: Melhorando Experiências Multissensoriais e Bem-Estar

Estudos recentes sobre a sinestesia na arquitetura, especialmente no que se refere a estímulos olfativos, destacam uma tendência crescente para o design multissensorial com o objetivo de melhorar a perceção espacial e o bem-estar. Uma revisão abrangente sobre o tema sublinha a importância de integrar todos os sentidos humanos na prática arquitetónica. Esta revisão aponta que uma abordagem multissensorial, incluindo a dimensão olfativa, pode melhorar significativamente o desenvolvimento social, cognitivo e emocional, criando ambientes mais envolventes e promotores de saúde. E, por outro lado, a negligência desses aspetos, particularmente dos estímulos olfativos, pode levar a resultados adversos como a síndrome do edifício doente, enfatizando a necessidade de uma perspetiva de design holística (Spence, 2020).

Uma aplicação adicional ao tema desse artigo reside no uso de pistas olfativas para a orientação espacial, ou seja, o processamento implícito de marcos olfativos pode melhorar o desempenho na navegação. Este estudo revela que as pessoas podem usar cheiros para se orientar de forma mais eficaz em espaços complexos, sugerindo aplicações práticas em grandes edifícios e espaços públicos como hospitais (Schwarz & Hamburger, 2023).

Em outra vertente de discussões sobre sinestesia olfativo-visual mostram como os cheiros podem desencadear experiências visuais, oferecendo aos arquitetos oportunidades para criar espaços únicos e memoráveis. Por exemplo, certos cheiros podem evocar cores ou formas, enriquecendo a experiência sensorial e tornando os espaços mais distintos e impactantes: uma pessoa com sinestesia olfativo-visual pode sentir o cheiro de lavanda e visualizar a cor roxa ou formas suaves e onduladas. Outro exemplo é o cheiro de hortelã, que pode evocar uma sensação visual de cor verde brilhante ou formas pontiagudas e frescas. O cheiro de canela associado a formas circulares de cor vermelha ou laranja quente, evocando uma sensação de calor e conforto e, por último, o cheiro de limão ser associado a formas amarelas brilhantes, muitas vezes descritas como formas radiantes ou explosivas, que transmitem frescura e energia Esta associação entre cheiros e perceções visuais é única para cada sinestesia, mas geralmente segue padrões consistentes para cada indivíduo (Ramachandran & Hubbard, 2001).

2.2 Projeto Olfativo: uma tendência da Arquitetura Biofílica Integração de Estímulos Olfativos na Arquitetura: Melhorando Experiências Multissensoriais e Bem-Estar

O projeto olfativo é uma vertente dentro da arquitetura biofílica, integrando elementos naturais para promover o bem-estar dos ocupantes dos espaços construídos. A arquitetura biofílica é fundamentada no princípio de que a reconexão com a natureza é essencial para a saúde e a produtividade humana e, já há alguns anos percebem-se inúmeros projetos de arquitetura e de urbanismo sendo realizados sob essa égide e agora, mais que em voga por conta das alterações climáticas que chama à razão o modo de pensar e de construir os edifícios e as cidades. Esta abordagem considera não apenas elementos visuais e táteis, mas também a incorporação de estímulos olfativos, que desempenham um papel crucial na perceção e na experiência sensorial dos ambientes.

De acordo com Kellert et al. (2013), a arquitetura biofílica busca criar ambientes que imitem a natureza, promovendo um vínculo intrínseco entre os seres humanos e o mundo natural. O olfato, como um dos sentidos mais primitivos e emocionalmente impactantes, torna-se um componente vital nesta abordagem. Estudos demonstram que a presença de aromas naturais em ambientes construídos pode reduzir os níveis de estresse e aumentar a sensação de bem-estar, alinhando-se com os princípios da biofilia (Bratman, Hamilton, & Daily, 2012).

2.3 A Aromacologia associada ao espaço arquitetónico

A aromacologia como estudo dos efeitos dos aromas no comportamento humano (Thangaleela, et al., 2022) é uma disciplina emergente que se alinha perfeitamente com as novas diretrizes da arquitetura sensorial. Este campo investiga como diferentes fragrâncias podem influenciar a saúde mental, o humor e a performance cognitiva dos indivíduos. A integração desta no design arquitetónico visa criar ambientes que não apenas sejam visualmente atraentes, mas que também promovam uma sensação de bem-estar e conforto através dos sentidos olfativos.

Sattayakhom et al. (2023) evidenciam que aromas específicos, como lavanda e hortelã-pimenta, possuem propriedades calmantes e estimulantes, respetivamente. A aplicação desses princípios na arquitetura pode resultar em espaços que melhoram a concentração, reduzem a ansiedade e promovem a recuperação física e emocional. Segundo Herz (2007), os aromas naturais podem evocar respostas emocionais profundas, que são fundamentais para a criação de ambientes sensorialmente enriquecidos.

2.4 Neurociência aplicada à Arquitetura

A Neuroarquitetura é uma área interdisciplinar que explora como o ambiente construído pode influenciar a atividade neural e o bem-estar dos indivíduos. Baseada em descobertas da neurociência, esta disciplina busca entender as interações entre os espaços arquitetónicos e o cérebro humano, visando otimizar os ambientes para promover a saúde mental e emocional.

Ulrich (1984) foi pioneiro ao demonstrar que a visão de elementos naturais pode acelerar a recuperação de pacientes hospitalizados. Este conceito foi expandido para incluir outros estímulos sensoriais, como os olfativos, que podem modular respostas emocionais e cognitivas. De acordo com Sternberg (2010), ambientes projetados com base em princípios neurocientíficos podem reduzir os níveis de estresse e melhorar o bem-estar geral, evidenciando a profunda ligação entre o olfato e o sistema límbico – que desempenha múltiplas funções que são essenciais para a manutenção da saúde do ser humano, regulando aspectos emocionais, comportamentais, autonômicos e cognitivos, portanto, completamente associado à ideia de lugar na Arquitetura.

2.5 As espécies fitoterápicas associadas ao Paisagismo Residencial: benefícios à saúde humana

O uso de espécies fitoterápicas no paisagismo residencial vai além da estética e da funcionalidade, promovendo benefícios significativos à saúde humana. Plantas como a lavanda, o alecrim e a hortelã-pimenta são reconhecidas por suas propriedades medicinais e aromáticas, proporcionando uma gama de efeitos terapêuticos que podem ser incorporados de maneira estratégica no design paisagístico.

Herz (2007) argumenta que os aromas naturais dessas plantas têm a capacidade de influenciar positivamente o humor e reduzir o estresse. Além disso, Dönmez (2016) destaca que a presença dessas espécies em jardins residenciais não só embeleza o ambiente, mas também contribui para a criação de espaços de bem-estar, onde os ocupantes podem experimentar uma melhoria na qualidade do sono, no relaxamento e na recuperação de condições emocionais adversas. A aplicação de plantas fitoterápicas no paisagismo residencial representa uma abordagem holística que integra a saúde física e mental através do design ambiental.

3. PAISAGISMO RESIDENCIAL

Nesta seção, tem-se a descrição da experiência prática da aplicação dos conhecimentos aqui discutidos no Projeto de Arquitetura Paisagística Residencial realizado no ano de 2023 em Brasília, Brasil.

3.1 Descrição do Projeto

O Projeto aqui apresentado como estudo de caso fora denominado "CASA IN VERDI". O Projeto da Casa "In Verdi" da família foi além de organizar as espécies e cuidados: consolidou o prazer de estar imerso "no verde" e criar para a família a experiência do acolhimento com a organização mantendo "o tom variegata" da família, ou seja, essa diversidade de expertises e modos de ser e viver. Transformar um lote vazio, "o papel em branco na prancheta" (como era dito o início de um Projeto de Arquitetura) numa experiência "verde" , e portanto dado o nome "CASA IN VERDI". A ênfase da Arquitetura Sinestésica desse projeto se deu por meio do uso da diretrizes do Design Biofílico com a criação de espaços estimulantes a todos os sentidos humanos com o uso adequado da combinação de cores, texturas, cheiros e sabores, contribuindo para a alteração positiva das emoções de quem permanece nos quatorze espaços elaborados para o terreno do casal, conforme mostra a Figura 1.

Figura 1. Planta Baixa do Projeto de Arquitetura de Paisagismo Residencial, com área total de 1.343,20m^2.
Fonte: acervo pessoal. (2023)

Cada um dos ambientes evoca o acolhimento e a sensação do bem-estar no frescor e perfume natural das espécies selecionadas. Como trata-se de uma família do interior do país cuja tradição é o estar junto no quintal ou na cozinha, o estímulo olfativo é muito simbólico, logo isso fora uma das premissas do Projeto.

3.2 Seleção das espécies

A especificação técnica das espécies definitivas para os espaços contemplativos e de meditação foi meticulosamente elaborada, considerando não apenas as características emocionais dos proprietários, mas também a ambiência que o Projeto de Arquitetura Paisagística visava imprimir ao espaço e, no caso, que as notas olfativas exaladas por essas espécies dessem esse "tempero" ao ambiente. Neste contexto, a seleção botânica foi fundamentada em uma compreensão profunda das interações entre elementos naturais e as respostas neurais dos indivíduos, alinhando-se aos princípios de biofilia e Neuroarquitetura.

Para tanto, as expertises em Fitoterapia brasileira, Perceção Ambiental, Neurociência aplicada à Arquitetura e iridologia comportamental, dentre outras formações, contribuíram para um diagnóstico abrangente e fecundo, possibilitando a criação de um Memorial Botânico e de um Manual de Cuidados Básicos que garantissem o desenvolvimento pleno das plantas. Esse processo criativo e técnico assegurou que cada espécie selecionada não só atendesse aos requisitos estéticos e funcionais, mas também promovesse estímulos neurais benéficos, proporcionando um espaço de harmonia e bem-estar. Um exemplo da especificação de um dos quatorze ambientes encontra-se na Figura 2 e espécies que exalam suavemente seu princípio ativo ativando positivamente o sistema olfatório e o sistema límbico, dando à entrada principal da casa um estímulo adocicado e conhecidamente acolhedor. O jardim de inspiração da cultura japonesa estava também logo em frente às janelas da suíte master estaria implantado abaixo do nível da calçada resguardava um ambiente de contemplação e relaxamento. As cores e textura dos materiais corroboravam para essa ambiência.
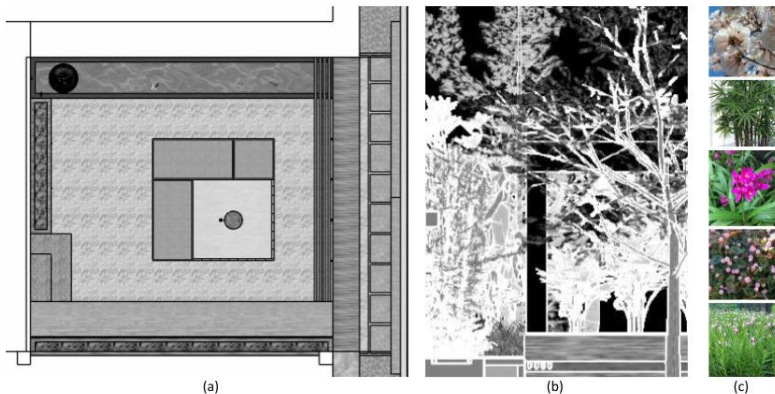
Figura 2. Jardim japonês projetado: a) Planta Baixa esquemática; b) Corte esquemático; c) Espécies botânicas (de cima para baixo): Ipê Branco (Tabebuia Roseoalba), Palmeira Raphis (Rhapis excelsa), Orquídea Grape (Spathoglottis Unguiculata), Tapete inglês (Persicaria capitata), Orquídea Bambu (Arundina Graminifolia).
Fonte: Arquivo pessoal (2023).

A importância de integrar elementos naturais nos ambientes construídos, conforme defendido pela teoria da biofilia é corroborada por estudos recentes em Neuroarquitetura que destacam como a presença de vegetação pode influenciar positivamente o estado emocional e cognitivo dos habitantes (Browning, Ryan, & Clancy, 2014).

3.3 Integração sensorial

Este projeto de arquitetura paisagística foi concebido para proporcionar aos usuários uma profunda conexão com a natureza circundante criada, tanto dentro quanto fora da residência. As amplas aberturas foram projetadas como verdadeiras molduras para o ambiente, convidando os moradores a encontrar equilíbrio através do contato visual, reconhecendo o poder estimulante da visão. A composição rítmica do espaço buscou harmonizar a elaboração formal com a espontaneidade das formas naturais, criando um dinamismo entre complexidade e ordem.

A água foi integrada em todos os ambientes, seja através de lagos artificiais ou de jatos de aspersores que criam padrões aéreos para contemplação. Os materiais utilizados são predominantemente naturais, com pisos escolhidos pela textura e cores que se harmonizam com os padrões encontrados na natureza. Espaços foram projetados com recuos, diferentes alturas e dinâmicas para proporcionar surpresa e um senso de refúgio, mesmo em ambientes urbanos.

A perspetiva elaborada para as visuais dos ambientes projetados fora pensada para ser convidativa e instigar a curiosidade durante todas as estações do ano, destacando a vegetação como protagonista. As massas de ar foram que adentravam a casa foram resfriadas – principalmente as da porção oeste (fundo do terreno) garantindo sempre temperaturas amenas e umidade nos meses mais quentes do ano na cidade. Ainda foi levado em conta os ventos predominantes e os materiais circundantes que ajudam a manter as superfícies agradáveis ao toque e sem ofuscamento. A iluminação foi cuidadosamente planejada para criar uma perceção ambiental desejável, indo além da simples acuidade visual estabelecida nas normas brasileiras. Com esse contexto, buscou-se no design biofílico o especto crucial para promoção da saúde e do bem-estar dos ocupantes, integrando elementos naturais de maneira harmoniosa e funcional (Beatley, 2010).

4. RESULTADOS E DISCUSSÃO
4.1 Estudos Similares
Os projetos paisagísticos que incorporam espécies fitoterápicas têm ganhado destaque devido aos múltiplos benefícios que proporcionam, tanto estéticos quanto terapêuticos. Este segmento do artigo visa explorar estudos similares, detalhando projetos exemplares e os relatos de arquitetos paisagistas e usuários sobre os impactos dessas intervenções no bem-estar e na qualidade de vida.

Um exemplo notável é o Jardim Sensorial do Parque das Nações, em Lisboa, projetado para proporcionar uma experiência multissensorial, onde plantas aromáticas e medicinais desempenham um papel central. Espécies como a lavanda, o alecrim e a menta foram escolhidas por suas propriedades relaxantes e revitalizantes. Os visitantes relatam uma sensação de calma e rejuvenescimento ao percorrerem o espaço, destacando a importância dos aromas naturais para o alívio do estresse (Zajadacz & Lubarska, 2023).

Outro projeto significativo é o Jardim Botânico de Chicago, que possui uma seção dedicada a plantas medicinais e aromáticas. Este jardim tem como objetivo educar o público sobre os usos terapêuticos das plantas, além de oferecer um refúgio verde em meio à cidade. Segundo Marcus & Barnes (1999), os frequentadores do jardim relatam melhorias na saúde mental e emocional, destacando a conexão profunda entre natureza e bem-estar.

Arquitetos paisagistas frequentemente mencionam os desafios e as recompensas de integrar espécies fitoterápicas em projetos urbanos e residenciais. Dushkova D. & Ignatieva M. (2020), em seu estudo sobre jardins terapêuticos, ressalta que a escolha das espécies deve considerar não apenas as condições climáticas, mas também as necessidades sensoriais e terapêuticas dos usuários. A colaboração com especialistas em fitoterapia é essencial para garantir que as plantas escolhidas ofereçam os benefícios desejados.

Usuários desses espaços relatam uma variedade de benefícios. Um estudo conduzido Callanghan et al. (2020) em jardins comunitários com plantas medicinais mostrou que os participantes experimentaram uma redução significativa nos sintomas de ansiedade e depressão após interagirem com as plantas aromáticas. Além disso, muitos destacam a importância do contato regular com a natureza para a manutenção da saúde mental.

4.2 Desafios e limitações

A principal limitação deste projeto de paisagismo residencial foi o ceticismo em relação aos estímulos espaciais positivos, capazes de alterar o estado interior diariamente. Embora a esposa estivesse determinada a prosseguir, o marido não compartilhava dessa visão, resultando na não consolidação do jardim conforme previsto em todas as suas etapas e espécies. Cada uma dessas espécies foi idealizada com o intuito de proporcionar ao cérebro estímulos de novos gatilhos para o bem-estar cotidiano e harmonia, em uma nova casa e novas rotinas (Kaplan, 1995). Essa é a grande diferença de um projeto onde a especificação é realizada com o propósito claro de manter a saúde física e emocional. Conforme evidenciado ao longo desse artigo tem-se que a grande motivação do projeto foi alterar assertivamente a perceção ambiental que tem um papel crucial nesse contexto, influenciando diretamente o bem-estar e a qualidade de vida dos indivíduos (Gifford, 2014). Até o momento ainda não fora concluído pois o cronograma das obras da nova casa atrasou.

5. CONSIDERAÇÕES FINAIS

Os estudos e relatos analisados evidenciam que os projetos paisagísticos com espécies fitoterápicas oferecem benefícios significativos tanto para os projetistas quanto para os usuários. Estes espaços não só melhoram a estética e a funcionalidade dos ambientes urbanos e residenciais, mas também promovem a saúde e o bem-estar. A integração de plantas medicinais e aromáticas no paisagismo representa uma abordagem holística e sustentável, alinhada com as tendências contemporâneas de arquitetura biofílica e design sensorial.

6. BIBLIOGRAFIA

Beatley, T. (2010). *Biophilic Cities: Integrating Nature into Urban Design and Planning.* Washington: Island Pr. doi:1597267155

Bratman, G. N., Hamilton, P., & Daily, C. (09 de February de 2012). The impacts of nature experience on human cognitive function and mental health: Nature Neuroscience. *Annals of the New York Academy of Sciences, 1249*(1), 118-136. doi:*https://doi.org/10.1111/j.1749-6632*

Browning, W. D., Ryan, C. O., & Clancy, J. O. (2014). *14 Patterns of Biophilic Design: Improving Health & Well-Being in the Built Environment.* New York: Terrapin Bright Green LLC. Fonte: *https://www.terrapinbrightgreen.com/reports/14-patterns/*

Callaghan, A., McCombe, G., Harrold, A., McMeel, C., Mills, G., Moore-Cherry, N., & Cullen, W. (April de 2020). The impact of green spaces on mental health in urban settings: a scoping review. *Journal of Mental Health, 30*(1), 1-15. doi:*http://dx.doi.org/10.1080/09638237.2020.1755027*

Dönmez, Ş. (01 de 08 de 2016). USES OF SOME MEDICINAL AND AROMATIC PLANTS IN THE LANDSCAPE ARCHITECTURE GROWN IN THE LAKES DISTRICT. *International Journal of Advanced Research, 4*(8), 30-36. doi:10.21474/IJAR01/1182

Dushkova, D., & Ignatieva, M. (2020). New trends in urban environmental health research: from geography of diseases to therapeutic landscapes and healing gardens. *GEOGRAPHY, ENVIRONMENT, SUSTAINABILITY, 13*(1), 159-171. doi:*https://doi.org/10.24057/2071-9388-2019-99*

Gifford, R. (January de 2014). Environmental psychology matters. *Annual Review of Psychology, 65,* 541-579. doi:*https://doi.org/10.1146/annurev-psych-010213-115048*

Herz, R. (2007). *The Scent of Desire: Discovering Our Enigmatic Sense of Smell.* New York: William Morrow. doi: 9781437974492

Kaplan, S. (September de 1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 15*(3), 169-182. doi:*https://doi.org/10.1016/0272-4944(95)90001-2*

Ke, M.-H., Hsieh, K.-T., & Hsieh, W.-Y. (10 de may de 2022). Effects of Aromatherapy on the Physical and Mental Health and Pressure of the Middle-Aged and Elderly in the Community. *Applied Sciences, 12*(10), 4823. doi:*https://doi.org/10.3390/app12104823*

Kellert, S. R., Heerwagen, J., & Mador, M. (2013). *Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life.* New Jersey: John Wiley & Sons. doi:978-0470163344

Marcus, C. C., & Barnes, M. (1999). Healing gardens: Therapeutic benefits and design recommendations. *Landscape Journal, 20*(2). doi:*https://doi.org/10.3368/lj.20.2.192*

Ramachandran, V., & Hubbard, E. (01 de July de 2001). Journal of Consciousness Studies. *Synaesthesia - A Window Into Perception, Thought and Language, 8*(12), pp. 3-34. doi:9781845400279

Sattayakhom, A., Wichit, S., & Koomhin, P. (27 de April de 2023). The Effects of Essential Oils on the Nervous System: A Scoping Review. *National Library of Medicine, 28*(9), 1-23. doi:*https://doi.org/10.3390/molecules28093771*

Schwarz, M., & Hamburger, K. (15 de November de 2023). Frontiers in Psychology. *Implicit versus explicit processing of visual, olfactory, and multimodal landmark information in human wayfinding, 14*. doi:*https://doi.org/10.3389/fpsyg.2023.1285034*

Spence, C. (18 de September de 2020). Cognitive Research: Principles and Implications. *Senses of place: architectural design for the multisensory mind, 5*(1), pp. 46-72. doi:10.1186/s41235-020-00243-4

Sternberg, E. M. (2010). *Healing Spaces: The Science of Place and Well-Being.* Cambrige: Belknap Press: An Imprint of Harvard University Press. doi:0674057481

Thangaleela, S., Sivamaruthi, B. S., Kesika, P., Bharathi, M., Kunaviktikul, W., Klunklin, A., . . . Chaiyasut, C. (28 de April de 2022). Applied Sciences. *Essential Oils, Phytoncides, Aromachology, and Aromatherapy—A Review, 12*(4495), pp. 1-20. doi:*https://doi.org/10.3390/app12094495*

Ulrich, R. S. (27 de 04 de 1984). Science. *View through a window may influence recovery from surgery, 224*(4647), pp. 420-421. doi:*https://doi.org/10.1126/science.6143402*

WHO. (2022). *World mental health report: Transforming mental health for all.* Geneva: World Health Organization. doi: *https://www.who.int/publications/i/item/9789240049338*

Zajadacz, A., & Lubarska, A. (May de 2023). Sensory gardens as a new form of urban green space in smart sustainable cities. *Czasopismo Geograficzne, 94*, 125-145. doi:10.12657/czageo-94-06**.**

L16

POLITICISINGAMBIANCES IN A TURBULENT WORLD

CHAIRS Damien Masson
Rachel Thomas

In a world marked by multiple concerns and disrupted by recurring crises – pollution of inhabited environments, threats to biodiversity, social and moral panics, terrorism, natural disasters, the growing weight of technology, etc. – the question arises of their effects on the ways of being and living together, and on ordinary urban atmospheres. These new and more frequent changes affects mundane urban life, altering our states of body and arousing different affects and emotions. How do atmospheres witness these changes, and how are they also used, engendered, and even politically employed, as forces and powers, for their capacity to include or exclude, to seduce or repel? How can we describe ambiances whose powers exceeds atmospheric phenomenality? How can we grasp and understand the forces that drive them? How can we think ambiances as social and political constructs?

As well as describing real-life situations, atmospheres convey the social, historical and cultural climate in which they are embedded. The aim of this session is to discuss the methodological, theoretical and practical issues arising from the politicisation of atmospheres. How can we capture and describe the changes at work, most of which are long, ongoing and unfinished processes that also involve complex socio-political issues? How can paying attention to the socio-political dimension of ambiances contribute to a critical reflection on the sensory future of the urban world?

We invite papers that address the above points within themes (non-exhaustive list) including:

What are the effects of the power of ambiance on bodies and sensibilities?

Which role(s) play ambiances in creating situations of unrest, symbolic violence and marginalization? How do they contribute to the creation of "sidelining?

What are the political uses of ambiances/atmospheres?

How are contemporary upheavals (social, ecological, technological, etc.) contributing to redefining the issues and methods involved in research on ambiances?

What research methods can be used to conduct sensitive and political investigations?

What could be an ambiance/atmosphere-based critique? What could be the objects of this ambiance/atmosphere-based critique?

AMBIENCES OF OTHERNESS. TRANSCENDING NEOLIBERAL URBAN ENCLOSURES THROUGH AFFECTIVE ATMOSPHERES IN THESSALONIKI METROPOLITAN AREA

AMBIENTES DE ALTERIDADE. TRANSCENDER OS RECINTOS URBANOS NEOLIBERAIS ATRAVÉS DE ATMOSFERAS AFECTIVAS NA ÁREA METROPOLITANA DE SALÓNICA

Zacharias Valiantzas
Phd student in human geography
Department of Spatial Planning and Development,
Aristotle University of Thessaloniki, Greece
zvaliantz@auth.gr

ABSTRACT

This paper aims to highlight the transformative potentialities that the embodied experiences of subjects of otherness create through emerging urban ambiences in the city of Thessaloniki. The notion of urban ambience concerns the aesthetic experiences, sensory perceptions, and social practices grounded to the urban terrain. Focusing on the practices that are enacted in the urban field, the aim of our study is to explore and highlight an affective ambience of care and solidarity unfolding in various places of the city. The aforementioned issues are explored through an ethnographic case study in the first pier of Thessaloniki's port. By looking at migration-related questions in current exclusionary border and migration regimes, as well as critically standing towards neoliberal gentrification policies, our research aims to bring into light all those politicized and transformative aspects of urban ambiences of the subjects of otherness that reclaim the right to the city.

KEYWORDS: Urban ambience, Affective atmospheres, Neoliberal urban enclosures, Otherness, Right to the city

RESUMO

Este artigo busca destacar os potenciais transformativos que as experiências corpóreas dos sujeitos da alteridade criam através das ambiências urbanas na cidade de Salônica [Tessalônica]. Focando nas práticas constituídas no espaço urbano, o objetivo do nosso estudo é explorar e destacar as ambiências afetivas de cuidado e solidariedade que se desdobram em vários lugares da cidade. Os assuntos mencionados acima são explorados através de um estudo de caso etnográfico no primeiro píer do porto de Salônica [Tessalônica]. Observando as questões relacionadas relacionadas à migração na atual fronteira excludente e as políticas migratórias, bem como posicionando criticamente frente às políticas neoliberais gentrificantes, nossa pesquisa busca elucidar todos estes aspectos transformativos e politizados das ambiências urbanas recuperam o direito à cidade.

PALAVRAS-CHAVE: Ambiência urbana, Atmosferas afectivas, Recintos urbanos neoliberais, Alteridade, Direito à cidade

1. INTRODUCTION

Main object of this paper is the exploration of emerging places where collective spatial practices of newly arrived and settled migrants rise as well as the potentialities, and transformative dynamics they bring about.

It aims to explore (with an empirical focus on the city of Thessaloniki) the development of the creative and transformative potentialities that communities of otherness (migrants, newcomers) can enact in the everyday life of the city, making it possible to overcome their state of exclusion and marginalization, through practices of coexistence, solidarity and a collectively experienced atmosphere, redefining the

ways and conditions of inhabitation in the city. The main research question of the paper is the right of migrants and newcomers to create, transform and reconfigure the lived ambience of the city.

Its methodological approach, through ethnographic field research in the first pier of the port of Thessaloniki, combines qualitative methods and ethnographic tools, making possible the communication of the research process with the subjects/actors concerned. The aim of (our ongoing) ethnographic research is to synthesize experiences from the study field, as much as to provide further critical feedback on theoretical tools.

2. LIVED AMBIENCES OF OTHERNESS - BEYOND NEOLIBERAL URBAN ENCLOSURES AND ATMOSPHERIC BORDERS

The theoretical approach of our paper is inspired by the debates on the right to the city, starting from Lefebvre's definition (1977[1968]) where it is inscribed as a right both to the experience of the city as a use-value in everyday life and to the set of possibilities of creativity in general in urban space. Drawing on the genealogy of Lefebvrian thought regarding its three forms of social production, space is understood both as perceived, as conceived and as experienced (Lefebvre 1991). An approach adopted and extended by contemporary researchers of urban space (Dadusc et. al., 2019; De Angelis, 2019) referring to everyday processes and social relations that are rooted in the collective practices of city dwellers across the whole range of uses and functions of urban space (appropriation of public space, buildings for housing purposes, etc.).

Nevertheless, there are several studies from the fields of architecture and urban studies as well as geography and anthropology that emphasize the interconnections between the material built environment and its symbolic (through signs), sensory (through the senses of the atmosphere of the urban space) and affective (through emotions in relation to others) aspects through interpersonal, social, embodied influences and relationships that emerge through and across space (Augoyard, 2020; Amin, 2008; Anderson, 2009; Böhme, 2013; Stavridis 1990; 2010; Thibaud 2015; 2020; Thrift 2008). According to Thibaud (2020) the ambience of the city does not constitute a static and fixed state but a "process in motion that involves both the actions of its "inhabitants" and its "designers", a position with which Anderson (2009) agrees, emphasizing the embodied dimension of the creation of atmosphere within the spatial field and its interdependence with elements (aesthetic, spatial, objective) of the built environment. Therefore, the lived ambience of urban space refers both to urban experiences through the senses and social practices from its "users" within it.

Urban ambience is a synthesis of subjective social practices, experiences and symbolic representations in a time-space (urban in our case) that bears its own symbols and representations, influencing the emerging atmospheres. The focus and deepening of our study in the city of Thessaloniki is a prism through which aspects of the debates on migration/otherness and practices of inhabitation/living in the city are illuminated. The recent conjuncture brings Thessaloniki (as has historically happened in the past) (Lambrianidis and Chatziprokopiou 2008) as a place of transit or even (temporary or permanent) settlement of refugees and migrants as a result of geopolitical turbulence and wars in the Middle East and Africa. This particular turning point is an important parameter, as it goes beyond European and Greek state policies for housing and integration of migrants, throughout an extensive and diverse solidarity movement developed within the urban fabric with a significant number of initiatives based on communal and caring practices (Dicker 2017; Tsavdaroglou et al., 2019).

Highlighting the places where lived spatial practices of appropriation and inhabitation of the city have emerged will help us to adequately substantiate the creative and transformative potential that practices of commoning, care and the collectively (by migrants, newcomers or already settled) lived ambience of the city can create. An experienced atmosphere that will challenge in practice the neoliberal enclosures and the logics of surveillance and commodification of urban spaces.

According to scholars of critical urban theory and geography (Hodkinson 2012; Harvey 2020), neoliberalism is described as the organizational, political and ideological reorganization of capitalism imposed through the attempt to institutionalize the 'free market' doctrine in specific historical and geographical contexts from the 1980s onwards. Neoliberal policies include a mix of policies involving accumulation through dispossession, privatization (of public and community resources and infrastructure), financialization, as well as the consequent degradation of citizens' everyday urban life (lack of affordable housing and welfare benefits) for the shake of profit of business elites.

Pettas (2018:125-130) describes the specific neoliberal transformations in the urban field as changes in the production, use and management of urban space as a result of economic transformations, encompassing within them changes in the use and exchange value of urban factors, in the processes of capital concentration, in the organization of production and consumption (in terms of urban planning), as well as in city-marketing and city-branding policies. Tsavdaroglou (2015) also points out that the processes of neoliberal urban enclosures beyond privatizing public spaces and commodify the space and functions of the city, they also target and influence residents on the basis of gender, class, culture, bringing social, relational and intersectional articulations.

As Belabas.et.al (2020) mention, the boundaries between "city branders" and urban planners become blurred as the former tend to largely define the role of the latter in the current neoliberal political-social status quo of modern cities. In particular, they state that

'spatial planning is used selectively by city branders in the processes of 'city branding'' (Belabas.et.al 2020: 1329) promoting the city as a product. Processes in which the city must be created and 'wrapped' as a commodity, as a product ready for consumption. As a product that must satisfy and excite all the senses of potential consumers, visitors and users. It is obvious that functions and uses of social practices in the time-spaces of everyday life in the city are forcibly displaced or interrupted or intensely monitored during gentrification and more general commercializational processes of space.

As Thörn (2011: 998), mentions regarding the policies of neoliberal exclusion "it becomes conflated with the neoliberal perception of public space as a commodity and the importance of creating consumer-friendly environments. Therefore, public spaces are not primarily regarded as spaces for strangers but rather as spaces for friends". It is so highlighted that who or what is seen, heard, touched, tasted and smelled is connected to questions about who is included and excluded in the experience of public space. In addition, migrants are facing multiple exclusionary practices and atmospheric borders in the urban terrain which according to Fregonese & Laketa (2022) can include experiences of violence and conflict that travels between different sites and bodies, shaping and re-shaping the affective atmospheres of terror/security as well as memories of conflict that affect the experience of the city, so that the migrant subjectivity is re-assembled in and through an affective atmosphere.

In this context, according to Anderson (2016) "neoliberal affects" refer to the atmospheres that surround and animate neoliberal discourse as it emerges, circulates and changes and refer to the structures of the co-feeling that cryptically accompanies the translation of neoliberal discourse into policies and projects. Furthermore, specific atmospheres are part of the actual conditions of the formation of neoliberal discourse and are therefore central to understanding the dynamics of policies, projects and so on.

3. THE CASE OF THE FIRST PIER OF THESSALONIKI'S PORT

Zooming into our exact case study, this includes the first pier of the port of Thessaloniki and its "new" uses. Being historically a place of trade and arrivals, the pier area has been subject to a series of redevelopments in the wake of Thessaloniki's vote to become the cultural capital of Europe in 1997 and various other urban development interventions in the following decades. Since 2011, the spaces of the first pier have been reconfigured to cover mainly commercial and entertainment uses as, in addition to the open public space, it now houses halls of the Thessaloniki Film Festival, the museum of photography, a high gastronomy restaurant, a cafeteria and spaces of the Thessaloniki Port Authority. It is thus obvious according to Karaliotas that those development processes in the first pier created "an urban public space that invites certain citizens as a space of cultural consumption, while prohibiting the presence and appearance of "undesirables" (migrants), unattractive activities or expressions of dissent and competition, excluding the re-emergence of society as a dissenting

democratic subject, assigning certain uses to specific spaces and imposing the corresponding conditions of visibility." (Karaliotas 2014:135)

Figure SEQ Figure * ARABIC 1.
View of the first pier of Thessaloniki's port .
Source: thpa.gr

Figure SEQ Figure * ARABIC 2. View of the museum of photography (with an exhibition slogan "curate your trauma") and the gourmet restaurant in the first pier after the recent development processes.
Source: personal archive

Our ethnographic field research there highlights the embodied lived everyday experiences and practices of inhabiting urban space. Alongside the theoretical strand of the work, but also reinforcing it. The method of ethnographic research and field observation in the field is an extremely useful methodological approach (Avdikos 2010; Vaiou-Kaladidis 2009; Vrasti & Dayal 2016). According to Herbert, "ethnography explores the dimensions of everyday life to reveal the processes and meanings that underlie social action and which enable the reproduction of order and sometimes its contestation. Ethnography uniquely explores lived experience in all its complexity." (Herbert,2000:551) Ethnographic observation will therefore help us to highlight the connections between the lived experience of migrants and newcomers and their geographical-spatial representation in the area of the first pier of Thessaloniki's port.

Figure SEQ Figure * ARABIC 3. Map 1 of the ethnographic field in the first pier. Source : Google maps

4. THE OPEN AND ACCESSIBLE AREA OF THE FIRST PIER OF THE PORT OF THESSALONIKI THE EDGE OF THE CITY CENTRE

Our first ethnographic field study was conducted between May and September 2022 in six visits of approximately two hours each along the entire first pier of the port of Thessaloniki, with particular emphasis on the southern end of the pier, i.e. between the crane and warehouse D (figure 1, 3, map 1). The visits followed the model of observing and capturing audiovisual material while being part of the respective experienced atmosphere. Our presence there due to its visibility in the field, its free access as well as the heterogeneous nature of the hundreds of visitors to the pier daily, did not create any exception to the daily uses nevertheless according to (Avdikos,2010) our presence there probably also created new processes in the space he is investigating, as well as we believe that it also influenced to some extent the creation and perception of the symbolic impressions of space and its lived ambience. The exact spatial point of our study consists of the open space on the southern side of the first pier with the western boundary of the passenger pier's wire mesh and the eastern boundary of the abandoned crane (Figures 1,3 and 4). The set of spatial, symbolic and social practices we identified as well as the lived ambience of the area under study were studied in the spatial framework of it.

We would argue here that the specificity of the built environment in our study area is important. As the whole of the southern side is the boundary of the sea and at the same time the buildings (Warehouse D, and the ThPA [1] building) near it are on a weekly basis rarely in intensive operation, therefore it creates a space that is both open and protected. We could view it as a by its multinational everyday users (migrants, newcomers, students, locals, tourists) More specifically regarding the permeability properties of threshold spaces Stavridis 2010:107-108 points out that they constitute the variables of the public and private and those that may indicate intermediate cases such as e.g. community space (in our case the space of the southern part of the pier appropriated by migrant communities), i.e. a space of a community that is public to its members and private to the rest of the community.

---

1 Thessaloniki's Port Authority

Moving into our field notes from the period of the research we noticed That in the open air you could hear different languages speaking to each other or talking on the phone (mainly Arabic and French), while others were posing for a photo towards the white tower or asking for directions to the city center. In the space under the old crane (Figures 4, 5), on the other hand, you could see migrant newcomers hanging out drinking refreshments and doing informal gymnastics with loud Arabic hip-hop sounds coming out of their portable speakers. Then one could notice another multinational group arriving with their bicycles at the edge of the pier and loudly played English- language pop from a mobile device. (Figure 5) You could feel that the way they moved through space showed confidence and calmness. Nevertheless, the presence of the CCTV network as well as some rare ThPA security patrols made everybody in the edge more fearful and cautious.

In other words, threshold spaces succeed in providing an articulation that equips the forms of space with value content The sound of the wave on the pier, the intensity of the air, the invisibility it gives to the people visiting it being at a considerable distance from the bustling Nikis Avenue and the city center, as well as the very human presence of specific subjects of otherness (migrants, Roma) opens the spatial field for the creation of the experienced ambience.

Figure SEQ Figure * ARABIC 5. Migrants and locals hanging out at the edge of the pier.
Source : Personal archive

It is a place that encourages exchanges in the aesthetic field (sounds, smells, visions) as well as practices of appropriation of the open and therefore claimable open public space of the first pier against neoliberal enclosures, atmospheric borders and surveillance.

The way the space is appropriated by its aforementioned users was similar to what some scholars (Gehl 2011, Banerjee & Southworth, 1990) call "the edge effect". It is when people chose to hang out on the edge of an open public space, in order to be

at the edge of action, so in a way are both visible and invisible. For Kevin Lynch those areas are preferred because its inhabitants need a place "at the edge of the action and close to food, where they can be seen but not directly in public view " Banerjee & Southworth 1990: 595.

5. CONCLUSION

Our paper illustrated the various interconnections between migrant inhabitance of open urban areas and the rise of lived ambience in them. Furthermore, highlighted the importance of the collective use-value of the city center in contrary to the neoliberal logic and the processes of gentrification and commodification.

Recalling the theoretical positions of Massey (1994) and Stavridis (2010) regarding the processes that define the continuous openness of the time-spaces of everyday life, we can argue that embodied and collective practices of appropriation of the first pier of the port of Thessaloniki by subjects of otherness, particularly pronounced in the threshold edge space of the southern side of the port, highlight the everyday socio- spatial practices of the emergence of the lived ambience. An experienced atmosphere created through practices of urban commoning and the redefinition of the appropriation of the city center by migrant newcomers or already settled in the city. An experienced atmosphere that in practice transcends neoliberal enclosures and logics of commercialization of urban spaces and defines a common space beyond 'atmospheric walls', border regimes and exclusions. Thinking of it as a "meteoric space of otherness" in general would support Stavridis' position that (2010:54) "its experienced reality introduces the other and involves its potential to shape possible worlds".

REFERENCES

Amin, A. (2008). Collective culture and urban public space. City, 12(1), 5–24. doi:10.1080/13604810801933495

Anderson, B. (2009). Affective atmospheres. Emotion, Space and Society, 2(2), 77–81. doi:10.1016/j.emospa.2009.08.005

Anderson, B. (2016). Neoliberal affects. Progress in Human Geography, 40(6), 734-753. *https://doi.org/10.1177/0309132515613167*

Augoyard, J. (2020). For an aesthetics of ambiance. στο *https://journals.openedition.org/ambiances/3136 doi.org/10.4000/ambiances.3136*

Αυδίκος, Β. (2010). Ο χώρος ως σχέση: Qεθοδολογικές προσεγγίσεις και πλαίσιο έρευνας- Space as relation: methodological approaches and research framework. Geographies-Γεωγραφίες. 17. 33-47.

Βαΐου Ν., Καλαντίδης Α. (2009) Πόλεις των «άλλων». Καθημερινές πρακτικές και συγκρότηση

του δημόσιου χώρου. Στο: Μετασχηματισμοί του χώρου –Κοινωνικές και πολιτισμικές διαστάσεις επιμ. Σπυριδάκης Μ., Αθήνα, Νήσος

Banerjee, T. & Southworth, M. (Eds) (1990) City Sense and City Design: Writings and Projects of Kevin Lynch (Cambridge, MA: The MIT Press).

Belabas, W., Eshuis, J., & Scholten, P. (2020). Re-imagining the city: branding migration-related diversity. European Planning Studies, 28:7, 1315-1332, doi:10.1080/0 9654313.2019.1701290

Böhme, G. (2013) The art of the stage set as a paradigm for an aesthetics of atmospheres », Ambiances[Online], Rediscovering, DOI : *https://doi.org/10.4000/ ambiances.315*.

Dadusc, D., Grazioli, M., & Martínez, M. A. (2019). Introduction: citizenship as inhabitance? Migrant housing squats versus institutional accommodation. Citizenship Studies, 1–19.

De Angelis, M. (2019). Migrants' inhabiting through commoning and state enclosures. A postface. Citizenship Studies, 1–10.

Dicker, S. 2017. "Solidarity in the City: Platforms for Refugee Self-Support in Thessaloniki." In Making Lives: Refugee Self-Reliance and Humanitarian Action in Cities, edited by J. Fiori, and A. Rigon, 73–103. London: Humanitarian Affairs Team, Save the Children

Fregonese, S., & Laketa, S. (2022). Urban atmospheres of terror. Political Geography, 96, Article 102569. *https://doi.org/10.1016/j.polgeo.2021.102569*

Gehl, J. (2011). Life between buildings : using public space. Island Press.

Griffero, T., Tedeschini, M. (2019). Introduction. In: Griffero, T., Tedeschini, M. (eds) Atmosphere and Aesthetics. Palgrave Macmillan, Cham. *https://doi.org/10.1007/978-3-030-24942-7_1*

Harvey D. (2020) Χώροι του νεοφιλελευθερισμού –Μια θεωρία της άνισης γεωγραφικής ανάπτυξης, μτφ. Καλοφωλιάς Α., Αθήνα, εκδόσεις ΕΑΠ

Herbert S (2000) For ethnography. Progress in Human Geography 24(4): 550–568
Hodkinson S. (2012) The new urban enclosures, City, 16(5), pp. 500-518

Karaliotas, L. (2014). The post-democratic city? : urban politics and governance in Thessaloniki's port restructuring. ,Phd Thesis, The University of Manchester

Λαμπριανίδης, Λ., Χατζηπροκοπίου, Π. (2008). "Μετανάστευση και κοινωνική αλλαγή στη Θεσσαλονίκη: η ένταξη των μεταναστών και η νέα πολυπολιτισμική πραγματικότητα της πόλης", στο Η Θεσσαλονίκη στο μεταίχμιο: η πόλη ως διαδικασία αλλαγων, επιμ. Γρ. Καυκαλάς, Λ. Λαμπριανίδης και Ν. Παπαμίχος. Αθήνα: Κριτική, σσ.217-264

Lefebvre H. (1977[1968]) Δικαίωμα στην πόλη: Χώρος και Πολιτική (μτφρ. Τουρνικιώτης Π., Λωράν Κ.). Αθήνα: Παπαζήση.

Lefebvre H. (1991) The Production of Space, Oxford, Blackwell

Massey, D. (1994). Space, place, and gender. Minneapolis: University of Minnesota Press.

Pettas D. (2018) Public space, cities & power. Athens: The Colleagues' Publications. ISBN: 9789609797702 (In Greek)

Σταυρίδης Σ. (1990). Η συμβολική σχέση με το χώρο-Πως οι κοινωνικές αξίες διαμορφώνουν και ερμηνεύουν τον χώρο, Αθήνα, Κάλβος

Σταυρίδης Σ. (2010). Μετέωροι χώροι της ετερότητας, Αθήνα, Αλεξάνδρεια

Glick Schiller N. & Çağlar A. (2016) Displacement, emplacement and migrant newcomers: rethinking urban sociabilities within multiscalar power, Identities, 23:1, 17-34,

Thibaud, J.-P. (2015). The backstage of urban ambiances: When atmospheres pervade everyday experience. Emotion, Space and Society, 15, 39–46. doi:10.1016/j.emospa.2014.07.001

Thibaud, J-P. (2020). A brief archaeology of the notion of ambiance, Hyper Article en Ligne - Sciences de l'Homme et de la Société, ID : 10670/1.t493nz

Thörn, C. (2011). Soft Policies of Exclusion: Entrepreneurial Strategies of Ambience and Control of Public Space in Gothenburg, Sweden. Urban Geography, 32(7), 989–1008. doi:10.2747/0272-3638.32.7.989

Thrift, N. J. (2008). Non-Representational Theory: Space, Politics, Affect. London: Routledge

Tsavdaroglou, C. (2015). The contested common space in Athens, Istanbul, Thessaloniki andIzmir: from the neoliberal creative city to the rebel city and vice versa, Conference: International Conference on Changing Cities II: Spatial, Design, Landscape & Socioeconomic DimensionsAt: Porto Heli, GreeceVolume: 1

Tsavdaroglou, C., Giannopoulou, C., Petropoulou, C., and Pistikos, I. (2019). Acts for refugees' right to the city and commoning practices of care-tizenship in Athens, Mytilene and Thessaloniki. Soc. Inclusion 7, 119-30.doi: 10.17645/si.v7i4.2332

Vrasti, W., & Dayal, S. (2016). Cityzenship: rightful presence and the urban commons. Citizenship Studies, 20(8), 994–1011. doi:10.1080/13621025.2016.1229196

L16
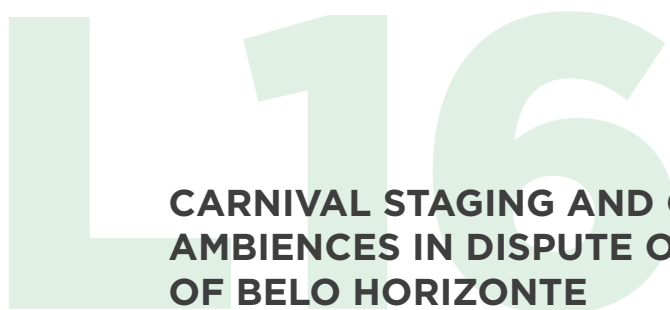
CARNIVAL STAGING AND ON STAGE: AMBIENCES IN DISPUTE ON THE STREETS OF BELO HORIZONTE

CARNAVAL ENCENA E EM CENA: AMBIÊNCIAS EM DISPUTA NAS RUAS DE BELO HORIZONTE

Isabella Pontello Bahia 1,
isabellapont.bahia@gmail.com

Edson José Rezende 1,
edson.carpintero@gmail.com

1 Universidade do Estado de Minas Gerais

ABSTRACT

This article presents an analysis of the atmospheres of Belo Horizonte's street carnival based on the aesthetics of ambiences in the process of appeasement of the party. Therefore, it highlights a brief history of the movement, in order to elucidate the roots of the struggle and the developments of the celebration in the last years. The proposal, which looks like criticism, takes shape from the contrasting situation that highlights the playful, creative and didactic power of carnival ambiences simultaneously with the risks of its commodification. The construction was based on a literature review, triangulated through interviews and collection of official information from the municipal public authorities. As a result, points of attention stand out for the next carnivals, as well as questions about the future of cultural events in the city of Belo Horizonte.

KEYWORDS: aesthetics of ambiences. appasement urbanity. street carnival. Belo Horizonte.

RESUMO: O presente artigo apresenta uma análise das ambiências do carnaval de rua de Belo Horizonte a partir da estética das ambiências em processo de apaziguamento da festa. Para tal, evidencia um breve histórico do movimento, de modo a elucidar as raízes de rua e de luta e os desdobramentos do festejo nos últimos anos. A proposta, que tem ares de crítica, toma forma a partir da situação contrastante que evidencia uma potência lúdica, criativa e didática das ambiências carnavalescas simultaneamente aos riscos de sua mercantilização. A construção se deu a partir da revisão de literatura, triangulada por meio da realização de entrevistas e coleta de informações oficiais do poder público municipal. Como resultados evidenciam-se pontos de atenção para os próximos carnavais além de questionamentos sobre o futuro da manifestação cultural na cidade de Belo Horizonte.

PALAVRAS-CHAVE: estética das ambiências. apaziguamento das cidades. carnaval de rua. Belo Horizonte.

1. INTRODUÇÃO

Capital do estado de Minas Gerais, no interior do extenso território brasileiro e cercada por montanhas, a cidade de Belo Horizonte vem criando uma história recente em relação à manifestação popular mais tradicional do país. Além do desejo coletivo e cidadão acertado de festa e do lazer, o carnaval da capital mineira ganhou força e adeptos a partir da adesão às pautas em defesa dos direitos humanos e à favor do direito à cidade. Para tal, "de rua e de luta" foi, por muitos anos, o bordão do carnaval da cidade de Belo Horizonte que em suas ocorrências partilhava práticas autogestionadas e criativamente livres e lúdicas de expressão pelas ruas e nas ruas. Uma festa que pouco se assemelhava com o imaginário de carnaval do Brasil pois de uma maneira orgânica existia além da festa, ainda que nas frestas, e a partir de um pano de fundo de mobilização pelas lutas urbanas. Entretanto, com o passar do

tempo a manifestação cultural ganhou também uma roupagem neoliberal e suas ambiências se transformaram em um importante instrumento político em disputa - de uma luta que agora extrapola o território e diz, principalmente, dos aspectos sensíveis partilhados durante a festa. Onde ocorria-se o flâneur e uma estética das ambiências em prol da ampliação da permissividade dos corpos com a cidade, tem-se hoje um apaziguamento desta realidade e o controle da festa a partir de duros trajetos pré-definidos e enfáticas orientações e ordenações do poder público.

Dessa forma, o presente artigo almeja apresentar um panorama sócio-político do carnaval de rua da cidade de Belo Horizonte nos últimos quinze anos com o intuito de evidenciar uma crítica acerca das mudanças e permanências ocorridas nas práticas de uso e ocupação do tecido urbano. Parte do pressuposto que as ambiências testemunham as mudanças no território e, além disso, podem ser utilizadas como estratégia política sedutora à favor do capital em um processo de *marketing* da metrópole.

O jogo simbólico em questão será apresentado a partir da revisão de literatura, visto o volume recente de publicações sobre o tema, de maneira triangulada a partir de dados coletados por meio de entrevistas e utilização de informações oficiais do poder público municipal. A proposta de comparar o que está em cena e o que tem sido encenado a partir das ambiências nos permite criticar as formas de experimentação da vida urbana neste período festivo mas, principalmente, recuperar os lampejos criativos, coletivos e potentes, que talvez tenham sido mais efetivos no campo das ideias, e que nos permitem imaginar e criar espaços urbanos sensoriais e materiais.

2. A CRISE É ESTÉTICA: AMBIÊNCIAS E O PROCESSO DE APAZIGUAMENTO DAS CIDADES

A partir de Ranciére (2009) tem-se que a existência humana intrinsicamente empreende a imersão em uma experiência sensível. Esta ação, entretanto, não é perene e não pode ser lida como um dado formal e estático, mas, como o resultado de uma soma de processos, de conflitos, das realidades sócio-históricas testemunhadas, das sensações percebidas e do pensamento analítico. Nogueira (2018, p.7) explicita que "este sensível não é um dado imutável, mas fruto de uma partilha em disputa, atravessada por uma série de vetores históricos e sociais que definem os regimes daquilo que é visível e não visível". E é somente a partir da imersão nessas experiências que vislumbra-se o entendimento de estética. Para tal, além da percepção através dos sentidos, a estética, a partir da *aesthesis,* diz de uma percepção por meio dos sentidos em um tempo e espaço definidos (Thibaud, 2012). Conforme as questões públicas dos ambientes urbanos se metamorfoseiam e põem-se em xeque o direito ao uso, nos faz necessário embarcar em reflexões que têm como objetivo um olhar sensível das cidades. Para tal, a partir de Thibaud (2012) a proposta de perceber por meio dos sentidos emerge como uma alternativa para a crise das cidades. Crise esta, que se estrutura como desdobramento de uma padronização, da

utilização de denominadores comuns como resposta para situações diferentes que, desconsideram as particularidades do coletivo. Uma crise que é, portanto, estética e retrata o enrijecimento das formas construídas e das modalidades de uso dos ambientes para atender exclusivamente às funções práticas da vida em sociedade. Nessa dinâmica, apresentada por Thomas (2020) como o "apaziguamento das cidades", a espontaneidade perde espaço, assim como ricas manifestações culturais de um povo. Outro risco diz-se do apagamento de movimentos sociais e/ou a cooptação destes por poderes públicos que se posicionam de modo a desorientar as autorias e geri-las como produtos, objetivando a lucratividade da metrópole.

Assim, a presença de um corpo permeável nessa realidade nos parece, simultaneamente, um arriscado e potente instrumento de denúncia e mudança social. Para tal, partiremos da estética das ambiências, e da proposta de imergir na "atmosfera material e moral" (Augoyard, 2002; Thibaud, 2012) que envolve as pessoas nas cidades de modo compreender os impactos do processo de apaziguamento (Thomas, 2018). Em outras palavras, almeja-se o entendimento de como essa atmosfera tem sido percebida na modernidade e, o mais grave, empregada em prol dos interesses neoliberais a partir de uma prática de controle dos ambientes urbanos.

A partir de Thibaud (2012, p.6) tem-se que as ambiências podem ser definidas como "o espaço-tempo experimentado em termos sensíveis". Pensar em ambiências empreende, portanto, atenção à dimensão estética, da *aesthesis,* de uma proposta de integração da percepção humana com tudo aquilo que interfere na qualidade de um ambiente vivido. Para Augoyard (2008, p.21) a noção de ambiência está distante de uma "prática acessório" relacionada ao embelezamento e/ou à decoração dos espaços mas, próxima de uma "natureza profunda do ambiente". Thomas (2008, p.39), em complemento, apresenta que "as ambiências não podem ser reduzidas a um conjunto de fatores físicos e observáveis" pois elas empreendem a articulação entre "as formas e as escalas espaciais, a emergência das formas sensíveis e sociais da vida urbana e a evidência de uma dinâmica temporal e cultural".

É importante destacar que a ambiência não pode ser descrita a não ser por meio da experiência. Nesse sentido, não se percebe a ambiência, mas, se percebe de acordo com a ambiência. Não se cria a ambiência, mas cria-se e descrevem-se realidades na ambiência, que também passam a (re)existir e podem ser reformuladas a partir destas modificações. Trata-se de um conceito que parte de uma dimensão sensível, de constituição (e/ou reconhecimento) de identidades de modo a permitir a apropriação por meio de experiências espaciais. A estética da ambiência é, portanto, importante no auxílio à criação de espaços urbanos pois permite evidenciar as maneiras de habitar, de existir e de criar em coletividade na atualidade.

Mas, acompanhar as profundas mudanças nas cidades contemporâneas não trata-se de uma dinâmica simples ou mesmo facilmente perceptível. Uma postura a partir das ambiências orienta certa permissividade dos corpos ao espaço que além de

cuidadosa não pode ser ingênua, visto o emprego estratégico de ações e dinâmicas que enternecem as sensibilidades, mas almejam apenas um *marketing* da cidade. Vê-se, portanto, desde o último século o crescimento exponencial de uma massificação dos ambientes habitados que se desdobram em maneiras de ser também massificadas. Para Thomas (2020) a multiplicação dos dispositivos de regulação de fluxos, a redução das estimulações sensoriais nos percursos e o distanciamento das situações de tensão nas práticas ordinárias de caminhabilidade pelas cidades posiciona os cidadãos em um "espaço-tempo ambíguo e desconectado da vida cotidiana". É nesse contexto que vislumbra-se uma estética da modernidade e os perigos de uma sensibilização dessensibilizante.

Para Thibaud (2012) os estudos acerca dos impactos de uma ideia de modernidade nas cidades não são recentes, vide as reflexões empreendidas ainda no século passado por Siegfried Kracauer e Walter Benjamin a partir de uma abordagem crítica dos fenômenos do cotidiano. Essas análises evidenciavam como nas grandes metrópoles já se instaurava um apaziguamento da vida cotidiana. Via-se, portanto, pessoas que se deslocavam pela cidade de maneira reservada, distraída, evitativa às experiências ao redor. Postura que permanece até os dias de hoje e, talvez, seja ainda mais intensa vide os projetos recentes de urbanização e renovação que propõem trajetos exclusivos aos fluxos em detrimento aos espaços de parada, vivência e experimentação, sem mencionar ainda, a alteração de áreas coletivas, como praças e parques, de modo a atenderem às iniciativas privadas. Nessa lógica, o bem público é reformado não para o coletivo, mas de modo a transformar-se em um econômico e lucrativo espaço para a promoção de eventos privados de grandes empresas.

No processo de apaziguamento das cidades há, além de uma apatia das pessoas com o espaço urbano, a utilização de um mecanismo de controle que orienta sobre os trajetos a serem percorridos, a velocidade dos percursos e até mesmo sobre o estabelecimento de parada (e como, onde e por quem esta pode ser realizada). O risco da apatia e do controle, empregado como uma polícia do espaço urbano, impacta toda uma dinâmica de uso dos ambientes coletivos e, ocorre não somente nas práticas do dia a dia, mas também influencia e interfere em manifestações culturais, em práticas autogestionadas e, até mesmo em situações de protesto e expressão cidadã (Thomas, 2018). É, a partir desse olhar e com essa inquietação que almeja-se melhor compreender o carnaval de rua da cidade de Belo Horizonte e, como tem sido feito uso de uma polícia das ambiências para benefícios neoliberais.

3. DO IMAGINÁRIO DE CARNAVAL NO BRASIL AO CARNAVAL DE RUA DE BELO HORIZONTE

A cena a seguir pode nos parecer familiar: um grupo de pessoas que anda pelas ruas de uma cidade brasileira durante o verão, fantasiados ou apenas com poucas roupas e alternando em suas mãos bebidas alcoólicas e instrumentos musicais. Ao fundo uma música bem ritmada, risos, vozes que se sobressaem, um carro de som. Até

mesmo as fachadas fazem parte do momento ao portarem outras pessoas também em sorrisos, cantorias emocionadas e até mesmo banhos de mangueira ao grupo que caminha pela rua. À frente, uma multidão se reúne e também se dispersa no tecido urbano visto que todo o espaço é preenchido por pessoas.

Nessa cena, os carros não têm muito espaço, os pontos de ônibus se encontram desativados e sevem de abrigo para alguns foliões que desejam fazer uma pausa. Longos trajetos são desenvolvidos à pé e a caminhada tem um ritmo lento, contemplativo, embriagado e sedutor. Com o passar do dia a multidão se dispersa e à noite, as ruas quase desertas, deixam à mostra brilhos, odores e ecos de uma vigorosa festa. A cena se repete por vários dias.

O breve relato em questão nos mostra um dia de carnaval de rua em uma cidade brasileira. O festejo, que tem suas raízes no velho continente, ganhou força, fama e adeptos em terras tropiciais e, na atualidade globalizada tem-se o hábito de ao pensar em carnaval, direcionar os esforços ao Brasil (Perez, 2011; Simas, 2020). Entretanto, assim como existem carnavais, é necessário compreender que existem carnavais no Brasil. Nessa lógica, faremos um mergulho na cena acima para, a partir de um minucioso olhar das frestas da festa (Simas, 2020), compreender as particularidades do carnaval da cidade de Belo Horizonte e evidenciar suas raízes de "rua e de luta".

Primeira cidade planejada do Brasil, Belo Horizonte é a capital do estado de Minas Gerais na região sudeste, em fronteira com os estados de São Paulo e Rio de Janeiro. Destino mais procurado por brasileiros que por estrangeiros, Belo Horizonte é conhecida por sua gastronomia (eleita pela UNESCO no ano de 2019 como "Cidade Criativa da Gastronomia") e por seus muitos bares bem distribuídos em todo território (capital mundial dos bares de acordo com a Lei nº 9714, de 24 de junho de 2009). Conhecida por seu acolhimento e fala mansa Belo Horizonte abriga também museus, espaços culturais, importantes universidades e centros de pesquisa, além de ser referência na realização de eventos a partir da organização de grandes feiras, congressos e festivais. De maneira adversa aos muitos destinos turísticos do país, Belo Horizonte está distante da costa e, assim como todo estado não é banhada pelo mar. Outra particularidade diz do festejo do carnaval que, apesar de ao longo de toda história da cidade ter existido, tomou proporções nacionais (e internacionais) nos últimos quinze anos. Mas, quais as razões e os motivos para o crescimento exponencial dessa festa? Quais as particularidades do carnaval de Belo Horizonte?

A história do carnaval de rua de Belo Horizonte é também a história da reprodução da cidade. Diz-se reprodução pois, por ser planejada, parte de sua estrutura já existia e enfatiza-se aqui a cidade após a cidade: aquela que foi e é criada diariamente a partir das vivências que se estabelecem com e no espaço. Para tal, é importante evidenciar que, como muitas outras realidades, Belo Horizonte foi pensada em prol do automóvel e de uma controlada vida urbana. Desde os primeiros anos as situações de permanência coletivas no espaço público eram desestimuladas, principalmente

àquelas adversas ao ideal de modernidade e civilidade pensados para o projeto da cidade. Nessa dinâmica eram frequentes repressões, ações as quais ora restringiam as manifestações, ora as destinavam às margens da cidade mantendo assim um centro urbano "limpo, polido e bem frequentado".

Essas orientações (e ordenações) do poder público cercearam as pequenas manifestações culturais do carnaval por muitos anos na capital mineira. Um carnaval que sempre existiu em pequena escala, no que diz sobre práticas coletivas no espaço público, e em luxuosas comemorações, no âmbito comercial e em clubes privados. Assim, apesar de o carnaval de rua marcar mudanças importantes na descoberta autogestionada do espaço público de Belo Horizonte, suas primeiras ocorrências foram apenas uma parte da equação de uma soma de outros movimentos que inflaram o desejo coletivo de cidade para pessoas.

Na cidade de Belo Horizonte historicamente existiram diversas lutas urbanas que se hibridizaram e se transformaram em uma lógica rizomática de resistência (Oliveira, 2012). Destacam-se entre elas a luta pela moradia a partir da criação de ocupações, a luta pelo transporte a partir de manifestações e proposições mediante assembleias populares, a luta pela cultura e meio ambiente a partir da criação de locais autogetionados de expressão popular, entre outras. Pensar na cena urbana de Belo Horizonte demanda, portanto, jogar luz a ações distintas, desenhadas com o intuito de lutar por espaço e voz no que diz respeito ao uso dos espaços públicos, dar visibilidade a minorias e a adotar políticas humanizadas. Podemos citar, como exemplos, o processo de ocupação-comunidade Dandara em oposição ao Programa nacional Minha Casa Minha Vida[1], o movimento Tarifa Zero BH[2] e a ocorrência das Jornadas de Junho de 2013, além do retorno à capital mineira de estudantes universitários beneficiados por políticas públicas de intercâmbio, principalmente em países europeus, revelando-lhes o espaço público local como território a ser conquistado (Canuto, 2016).

Evidencia-se, portanto, que uma parcela desses movimentos foi um desdobramento da crise da cidade dos anos 1990 ocasionada pela guinada neoliberal e promoção de políticas públicas destinadas a uma suposta modernização das cidades brasileiras. Outro ponto relevante foi a capilaridade das redes sociais no início dos anos 2000 e a difusão de informações e fóruns de discussão que permitiram levantar e debater pautas em escalas nacionais e até globais. Essas lutas pelo e no território urbano foram resguardadas pela Constituição Nacional de 1988 e, ocasionaram forte expressão popular nas ruas de Belo Horizonte. Pode-se dizer que houve, ainda que para muitos de maneira inconsciente, práticas que reposicionam os cidadãos no espaço de maneira física (permitindo-os ocupar as ruas e também outros espaços de maneira diversa do habitual) e simbólica (colocando-os na posição de planejadores urbanos ao reivindicar

---

1 O Programa Minha Casa Minha Vida (PMCMV) é um programa habitacional em aliança Capital-Estado enquanto a Ocupação Dandara é uma comunidade auto-organizada com planejamento popular.

2 O movimento Tarifa Zero BH busca por uma mudança na forma do financiamento do transporte público.

espaços públicos, bem como, propor alternativas para espaços ociosos).

Nesse cenário, a retomada do carnaval de rua de Belo Horizonte nos anos 2000 despontou como consequência dessas práticas autogestionadas de ocupação do espaço público na qual a festa empreendia uma forma de revolução, um meio de estar nas ruas (objeto em debate) e fazer barulho. Assim, entre os anos de 2009 e 2010, destaca-se um marco da realidade festiva a partir da criação de blocos desassociados do poder público, geridos pela sociedade civil, tanto no período do pré-carnaval como no feriado oficial (Canuto, 2016; Dias, 2015). Aqui é importante destacar que, as diferenças entre os carnavais do Brasil que se iniciam pela distância do mar são exatamente as que nos levam a ele, pois, o marco temporal do carnaval de Belo Horizonte foi exatamente a criação de uma praia.

O movimento Praia da Estação, na Praça da Estação simbolizou um importante cenário sociopolítico de Belo Horizonte que contribuiu para a ampliação do desfile dos blocos de rua na capital mineira. Em 16 de janeiro de 2010, como uma reação da instauração de um decreto (Nº 13.798 de 9 de dezembro de 2009) que proibia a produção de eventos de qualquer natureza na Praça da Estação ocorreu a primeira Praia da Estação. Articulada majoritariamente pela internet, a partir de um grupo de e-mail anônimo, cidadãos belohorizontinos agendaram um momento de diálogo para o desenho de um protesto contrário às práticas de cooptação previstas pela então gestão municipal para o uso do espaço público. Com a convocatória "Praia na praça da Estação, vá de roupa de banho e leve instrumentos" a "Praia da Estação" propôs uma nova forma de manifestação política da sociedade civil, uma intervenção urbana, performática e festiva que levou cidadãos às ruas e transformou a praça em uma espécie de praia (Migliano, 2018).

O uso atípico do espaço causou, em um primeiro momento, estranhamento, principalmente pela ocorrência em uma cidade com enorme pudor em relação ao corpo e aos "bons costumes" e coação histórica de situações de protesto. Dezenas de pessoas em trajes de banho tomaram sol, dançaram, cantaram, tocaram instrumentos musicais e até financiaram um caminhão pipa para refrescá-las. A Praia, como ficou conhecida entre os banhistas, se caracterizava como um movimento de autogestão que ocupava a Praça da Estação como protesto alegre, musical e que fazia o uso da água como um imã para o encontro social. Teve um impacto visual e performático pois reunia pessoas em trajes de banho em um território pouco hospitaleiro à permanência durante o verão, em virtude da aridez e da ausência de áreas de sombreamento, além de um impacto festivo e cultural a partir da concentração de artistas do teatro e da percussão.

Coletivamente, os impactos da Praia foram positivos e, esse espaço aproximou afetos e gerou curiosidade e aceitação por parte dos cidadãos que inflaram o movimento ao passar dos anos. A Praia passou a existir semanalmente como um evento que antecedia o feriado do carnaval, momento no qual vários blocos de rua ensaiavam seus repertórios e, talvez por isso, se desdobrou também em um bloco

de rua com ocorrência no sábado do feriado (Migliano, 2018; Veloso, 2022). Dessa forma, a Praia tem ocupado a Praça por vários verões e tornou-se espaço de luta, lazer e, principalmente, a centelha para a produção de novas relações socioespaciais na cidade de Belo Horizonte.

Assim como a Praia e, para muitos a partir da Praia, outras iniciativas de festejo do carnaval ganharam força e, no intervalo de poucos anos Belo Horizonte já apresentava diversas opções para o feriado. Os blocos, em um primeiro momento autogestionados, tinham autonomia para definir seus nomes, hinos, bandeiras e até mesmo os trajetos a serem percorridos. Isso garantia certa manutenção dos valores e estandartes levantados quando vislumbrava-se, por exemplo, blocos em prol da diversidade e em defesa dos direitos LGBTQIAP+ transitando em áreas conhecidas por estabelecimentos de vida noturna majoritariamente homossexual ou mesmo, blocos em proteção ao meio ambiente traçando trajetos de denúncia sobre os rios invisíveis da cidade (hoje, a grande maioria tamponados), entre inúmeros outros cortejos.

Assim, revisitar a cena que dá início a este tópico nos aproxima de um ideal de experimentação e planejamento urbano. Ainda que utópica, a proposta de ocupar os espaços a partir da festa foi e é potente pois além de inclusiva, divertida e lúdica é didática pois reivindica-se àquilo que se vive. Entender as possibilidades de uso e enriquecimento do espaço no ato de vivenciálo permite cartografias do imaginário feitas por corpos que estão permeáveis à experiência urbana. Infelizmente, entretanto, a emoção e a experiência têm sido transformados em produtos na lógica neoliberal e, o carnaval de rua de Belo Horizonte não tem escapado dessa prática. Para tal, algumas situações recentes serão observadas com cautela e a partir dos pontos de vista que as orientem.

4. DE RUA, DE LUTA E À PRONTA ENTREGA

Em meados dos anos 2015, quando o carnaval de rua da cidade de Belo Horizonte atingiu altos índices de adesão e de turismo, o poder público passou a intervir de maneira mais ativa no festejo. Postura que foi acertada, em um primeiro momento, visto que foram necessárias medidas básicas de segurança e logística para a efetividade da festa. Determinações como a instalação de banheiros públicos, ampliação dos pontos de apoio médico e novas posturas e rotas de policiamento foram implementadas. Houve também intervenção nas rotas a serem percorridas pelos blocos de modo a estabelecer áreas a serem preservados os fluxos de trânsito próximos a hospitais e a estipulação de rotas de fuga para bombeiros. A questão é que elas não pararam por aí e, com o passar dos anos a manifestação cultural orgânica e autogestionada passou a ter, cada vez mais, um ar de evento privado.

A fim de evidenciar as situações recentes e os desdobramentos do carnaval de rua da cidade de Belo Horizonte foram realizadas entrevistas com cidadãos ativos na cena cultural local, bem como, com integrantes de blocos do carnaval. Além

das entrevistas, buscou-se informações do poder público municipal e produções acadêmicas recentes, de modo a apresentar um panorama triangulado da realidade "de rua, de luta e à pronta entrega" pela qual o carnaval de rua da cidade de Belo Horizonte tem se encontrado.

Observa-se, portanto, que na atualidade, os blocos do carnaval de rua da cidade de Belo Horizonte, em sua grande maioria, não têm seu cortejo como uma prática insurgente. De acordo com a Prefeitura de Belo Horizonte, que hoje possui em seu site um portal específico para informações do carnaval, todos os blocos devem ser cadastrados para poderem desfilar. O cadastro, que deve seguir orientações pré-estabelecidas, já apresenta limitações no que diz respeito à duração, ao trajeto e à dimensão do bloco. Observa-se ainda, que próximas às informações dos cadastros dos blocos são sinalizados editais de financiamento coletivo destinadas à grandes empresas privadas. Estas, que podem arcar com valores em contrapartida de cotas de divulgação, também possuem suas moedas de troca cedidas pelos blocos e, obrigatoriamente visíveis no momento dos cortejos financiados.

Ainda sobre a intervenção da iniciativa privada, foram descritos por integrantes de blocos a frequente presença de propostas de financiamento privado por empresas do ramo de bebidas. Para os entrevistados, além do problema ético do financiamento privado a um movimento de cunho autogestionado em prol do uso do espaço público, as empresas demandam exclusividade na venda dos produtos. Venda esta, que deixa de ser realizada por pequenos empreendedores ambulantes locais e passa a ser feita por terceirizados das empresas. Além disso, a exclusividade cerceia a liberdade dos foliões, principalmente em uma cidade que apresenta rica diversidade no que tange a alimentação e o consumo de bebidas.

Um ponto que foi unânime aos entrevistados foi a percepção de uma mercantilização do carnaval. Nota-se, portanto, certa desconexão do festejo com iniciativas em prol do direito à cidade, assim como, o quase desaparecimento de blocos autogestionados por receio de coação da polícia, assim como, de possíveis problemas logísticos visto ao volume inflado de pessoas nas ruas (principalmente vindas a partir dos incentivos turísticos ofertados pelo poder público municipal e estadual). Esse receio foi ainda mais latente ao ser apontado por blocos afro e em defesa dos direitos LGBTQIAP+, evidenciando uma manutenção histórica das práticas de exclusão.

Outra questão observada foi o fechamento da Praça da Estação, ícone do carnaval de rua da capital mineira, nos últimos festejos (2023-2024). Ora a partir da instalação de grandes palcos, ora para reformas, a ocupação da praça pelo poder público impediu o uso intensivo das pessoas e, principalmente, não permitiu a ocorrência da Praia da Estação durante o carnaval. Quanto a isso, foram observadas ações à margem e nas tangentes da praça evidenciando a relevância do movimento, bem como, a ainda presente resistência.

Por fim, foram relatadas práticas de cooptação do carnaval de rua pelo poder público que, vistas aos olhos de leigos à história do movimento, dão o entendimento de que trata-se de uma festa da cidade (em um âmbito formal e legislativo) e não uma festa do povo (com seu caráter orgânico e insurgente). No ano de 2022, a Praia da Estação foi divulgada como uma atração do evento "Virada Cultural" promovido pela Prefeitura de Belo Horizonte. A Virada, que acontece anualmente a partir da Lei Municipal 10.446/2012, é uma jornada de 24h de programação artística e cultural pela cidade nos instrumentos culturais municipais. Apesar da relevância do evento, ele é gerido pelo poder público e como tal, define data, horário de início e duração das atividades.

Outra situação que ilustra tais práticas de cooptação diz da divulgação extensiva realizada pelo poder público municipal e estadual do carnaval do ano de 2024. Foram investidos milhões de reais em ações publicitárias espalhadas por todo estado de Minas Gerais e até mesmo em outros estados e cidades (dados informados pela Empresa Municipal de Turismo e pela Confederação Nacional de Comércio Bens, Serviços e Turismo). Imagens compartilhadas em redes sociais e em portais de notícias ilustram propagandas do carnaval de Belo Horizonte na cidade do Rio de Janeiro e nos fazem questionar sobre a dimensão, as leituras e os desdobramentos futuros do evento.

5. CONSIDERAÇÕES FINAIS

É evidente que pelo caráter de artigo o texto em questão não consegue apresentar todo o panorama da realidade do carnaval de rua na capital mineira, nem mesmo esgotar as análises acerca dos desdobramentos mais recentes dessa realidade. Serve, entretanto, como um espaço para lançar inquietações e memoriar práticas culturais ricas e potentes da cidade de Belo Horizonte.

A cena carnavalesca de outrora foi responsável por uma mudança território-cultural na cidade. O imaginário da festa somado ao desejo de uso do espaço público ganhou força, capilaridade e adesão ao ponto de ser cooptado pelo poder público e então encenado. Nessa dinâmica a espontaneidade perdeu força e deu lugar ao ordenamento e a práticas e políticas de controle. Entretanto, existem carnavais e pela própria subjetividade lúdica da existência o movimento se transforma a cada ocorrência e evidencia novas pautas e novos embates com o Estado.

Observa-se, portanto, que as ambiências do carnaval de rua de Belo Horizonte são um complexo ecossistema sedutor. Se estruturam a partir de um pano de fundo de lutas urbanas mas são vivenciadas no lazer e na ludicidade. O carnaval de rua espontâneo constrói lugares, inventa novos territórios e provoca mudanças em espaços físicos e não-físicos. Simultaneamente, o carnaval de rua pode ser um lucrativo e rentável produto que, como tantos outros na modernidade tem sido harmonizados e apaziguados para atender anseios do capital. Nos cabe, portanto, analisar criticamente as mudanças e acompanhá-las de perto e em atenção para evitar os riscos da perda das raízes de luta e de rua.

6. BIBLIOGRAFIA

Augoyard, J.F. (2002) Esthétique des ambiances. Communication orale enregistrée et transcrite lors du Séminaire Ambiance tenue au Cresson en 2001-2002, Grenoble. https://hal.science/hal-00993707v1

Augoyard, JF. (Eds.). (2008). Faire une ambiance. Actes du colloque international. Éditions À la croisée.

Canuto, F. (2016). Da carnavalização do planejamento urbano para Belo Horizonte-para-a-guerra: da política ao político e vice-versa. Revista Brasileira de Estudos Urbanos e Regionais, 18(1). https://www.scielo.br/j/rbeur/a/tYMh7Z3zmMPMG6SP7v6vmkQ/abstract/?lang=pt

Dias, PLC. (2015) Sob a "lente do espaço vivido" a apropriação das ruas pelos blocos de carnaval na Belo Horizonte contemporânea (dissertação de mestrado). Universidade Federal de Minas Gerais, Belo Horizonte.

Migliano, M (2018). Entre a praça e a internet: a potência narrativa na criação de outros Imaginários políticos na

Praia da Estação, em Belo Horizonte (tese de doutorado). Universidade Federal de Minas Gerais, Belo Horizonte.

Nogueira, PC (2018). Notas sobre uma política da estética voltada para o design. Educação Gráfica, 22(1), 06-17. https://www.educacaografica.inf.br/wp-content/uploads/2018/05/4_NOTAS-SOBRE-UMAPOL%C3%8DTICA.pdf

Oliveira, I. T. M. (2012) Uma "Praia" nas Alterosas, uma "antena parabólica" ativista: configurações contemporâneas da contestação social de jovens em Belo Horizonte (dissertação de mestrado). Universidade Federal de Minas Gerais, Belo Horizonte.

Perez, LF (2011). Festa, religião e cidade: corpo e alma do Brasil. Medianiz.

Rancière, J (2009). A partilha do sensível: estética e política. Editora 34.

Simas, LA. (2020). O corpo encantado das ruas. Civilização Brasileira.

Thibaud, JP (2012). A cidade através dos sentidos. Cadernos Proarq, 18(1), 1-16. https://hal.science/hal00980748

Thomas, R (2020). Les mises en ambiance de la ville apaisée. Paradoxes et risques d'une aseptisation programmée. Revue Neuchâteloise de Géographie, 13(1), 179-194. https://hal.science/hal-03174902

Thomas, R (2008). Qualifier les ambiances architecturales et urbaines. Em Augoyard, JF. (Eds.). Faire une ambiance. Actes du colloque international. Éditions À la croisée.

Thomas, R (2018). Une critique sensible de l'urbain. Architecture, aménagement de l'espace. Communauté Université Grenoble Alpes : Ecole Doctorale 454 Sciences de l'homme, du politique et du territoire.

Veloso, A (2022). Sobre praias e marés: como uma tarde na praça formou uma geração belo-horizontina com protagonismo político. Quatro Cinco Um. https://quatrocincoum.com.br/artigos/as-cidades-e-as-coisas/sobrepraias-e-mares/

POLITICISING AMBIANCES IN A TURBULENT WORLD

POLITIZAR AMBIÊNCIAS NUM MUNDO TURBULENTO

Damien Masson 1, 2, ,
damien.masson@u-cergy.fr

Rachel Thomas 3,
rachel.thomas@grenoble.archi.fr

1: Université de Cergy-Pontoise
Université de Cergy Pontoise, Université de Cergy-Pontoise
2: PLACES - Laboratoire de géographie et d'aménagement
CY Cergy Paris Université
3: École nationale supérieure d'architecture de Grenoble
Equipe CRESSON, laboratoire Ambiances Architecture Urbanités

ABSTRACT

In a world marked by multiple concerns and disrupted by recurring crises – pollution of inhabited environments, threats to biodiversity, social and moral panics, terrorism, natural disasters, the growing weight of technology, etc. – the question arises of their effects on the ways of being and living together, and on ordinary urban atmospheres. These new and more frequent changes affect mundane urban life, altering our states of body and arousing different affects and emotions. How do atmospheres witness these changes, and how are they also used, engendered, and even politically employed, as forces and powers, for their capacity to include or exclude, to seduce or repel, count among the many questions we intend to discuss in this panel.

KEYWORDS: Ambiances. Social, environmental and political change.

RESUMO

Num mundo marcado por múltiplas preocupações e perturbado por crises recorrentes - poluição dos meios habitados, ameaças à biodiversidade, pânicos sociais e morais, terrorismo, catástrofes naturais, peso crescente da tecnologia, etc. - coloca-se a questão dos seus efeitos sobre os modos de ser e de viver em conjunto, e sobre as atmosferas urbanas comuns. Estas novas e mais frequentes mudanças afectam a vida urbana quotidiana, alterando os nossos estados de corpo e suscitando diferentes afectos e emoções. Como é que os ambientes testemunham estas mudanças, e como é que são também usados, engendrados, e até politicamente empregues, como forças e poderes, pela sua capacidade de incluir ou excluir, de seduzir ou repelir, são algumas das muitas questões que pretendemos discutir neste painel.

PALAVRAS CHAVE: Ambiêcias. Mudança social, ambiental e política.

1. ATMOSPHERES IN A CHANGING WORLD

In a world marked by multiple concerns and disrupted by recurring crises – global climate change, pollution of inhabited environments, threats to biodiversity, social and moral panics, terrorism, natural disasters, the growing weight of technology and the social concerns it raises, etc. – the question arises of their effects on mundane life. These changes are of many kinds and operate on different scales. Whether they are changes on a global scale, such as global warming or the loss of biodiversity, regional upheavals, such as the rise of authoritarian political regimes, the multiplication of conflicts and wars, terrorism, or local problems, such as the marginalisation of certain groups, natural disasters, etc., we are all affected by them.

These changes and upheavals have a range of effects on the production and management of inhabited spaces, on distributed affects and emotions, on social practices and representations, on the ways of being and living together on the feeling of uncertainty and the ability to live in a world where ordinary life is no longer necessarily a matter of given neither a guarantee.

These changes have as much to do with the ordinary lives of the inhabitants and users of these spaces as with the practices of the stakeholders responsible for their production and management. They have many implications:

Firstly, in the materiality of built spaces, which aim to absorb these new constraints, and propose more resistant or more resilient solutions (Coaffee, 2020; Coaffee et al., 2009; Madden, 2023), with regard to natural disasters for example, or even in the ways of channelling crowds in urban space to avoid friction and tension (Klauser, 2013; Landauer, 2009).

Secondly, in the symbolic register, political and media discourse, but also information campaigns (visual and auditory in particular), urban spaces are the medium for a whole range of information, aimed at regulating ordinary behaviour (such as simple information panels, like the advice not to forget your luggage when using transport), but also at knowing how to react in the event of an emergency, and to always remain vigilant and able to report any abnormal or worrying phenomena to the authorities (Drongiti & Masson, 2023). What was historically a feature of sensitive areas (e.g. seismic zones) has now spread to a wide range of areas open to the public.

Thirdly, in the sensory world, where smells, sounds, lights and ways of using the body appear, disappear and are reconfigured. The biodiversity crisis is reflected in the disappearance of birdsong in some places, while the Covid-19 epidemic was accompanied by the return of a certain amount of wildlife to urban spaces (Masson & Thomas, 2020). In some places, urban security injunctions limit the capacity to stand still in public spaces (Scott, 1990), and the gathering of groups where, at other times or places, these ways of using the body are characteristic of a certain quality of urban spaces.

Fourthly, in the register of interactions and social ecology, which is an underlying theme of the three previous registers. The material, symbolic and sensitive reconfigurations of our lived worlds in the face of the changes mentioned above have the effect of reconfiguring the forms of encounters in the public space, and the modes of ordinary interaction, as the previous examples demonstrate.

Fifthly, and lastly, they concern affects and emotions. When these changes result in the loss, or the feeling of loss, of something, for example, of a past situation or mode of existence, idealized or actualized, or of a living world that is changing in an undesired direction, they are accompanied by feelings and states such as nostalgia, solastalgia (Albrecht, 2019), anxiety (Laketa, 2021) and even trauma (Gensburger, 2017), but also by collective emotions of commemoration, remembrance and resilience (Closs Stephens et al., 2017). These situations are also accompanied by political affects (Anderson, 2014), which reflect the way in which the uncertainty associated with these changes translates into a specific climate that weighs on people's minds and potentially catalyses forms of action.

Because they are distributed at the material, symbolic, sensitive and interaction levels, as well as in terms of affects and emotions, these manifestations contribute to ambiances. The various theorizations of ambiance (Augoyard, 1995; Thibaud, 2015) and atmosphere (Anderson, 2009; Griffero, 2017; McCormack, 2008) emphasize their intermediary position, between the manifestation of phenomena in a situation, and modes of relating to them that are reflected in experience and action. They also show that they cannot be limited to a set of 'objective' material conditions, and that we should not limit them to strictly phenomenological apprehension. Ambiances are in fact, on the one hand, a condition of possibility of experience, and are a way of accessing ordinary situations. As well as being a sensory quality of certain situations, it is through them that these situations are encountered: experiencing crowds or heat implies experiencing them bodily, so they are not just felt as a quality external to the body, but as a condition of its use. But the same is true of a-phenomenal atmospheres, such as political climates or affects, which are experienced and acted upon at the deepest level of the body (Breviglieri, 2021). On the other hand, ambiances unfold in situations rooted in historical, geographical, cultural, social and legal contexts, which are not indifferent to the ways in which they can be interpreted. For example, a signal such as a siren in an urban setting will not have the same meaning depending on the context in which it occurs. Lastly, they are always experienced by subjects who are situated, gendered, racialized, able-bodied or impaired, hyper- or hypo-sensitive, benefiting from certain capitals, and so on. Put differently, atmospheres are always 'angled' (Ahmed, 2010), experienced from a certain position, or even a certain 'point of life'[1].

2. RESEARCHING ATMOSPHERES POLITICALLY

The upheavals mentioned above imply the use of a political understanding of atmospheres (Thomas, 2021). On the one hand, this kind of apprehension can mean focusing research on the political uses to which ambiances are put (Masson & Thomas, 2020), as is done in works that examine the place of the sensory in the control of ordinary practices (Bonicco-Donato, 2016), the 'powers' placed into atmospheres (Allen, 2006) and the atmospheric manipulation of moods and emotions (Albertsen, 2016), or of conducts (Masson, 2024). But beyond these cases, which illustrate the ways in which political intentions are translated into action on the ambient world, a political apprehension of atmospheres also takes account of the fact that every ordinary situation is intrinsically political, as illustrated by the presentation of the three preceding arguments (atmospheres are experienced bodily, even if they are not necessarily translated at the phenomenal level; they unfold in the contexts of societies; they are experienced from a situated perspective.)

The challenge then is to implement methods of investigation that can maintain such a perspective in order to answer questions such as the following: How do atmospheres witness the changes evoked above? How atmospheres are they used, engendered, and even politically employed, as forces and powers, for their capacity to include or exclude,

---

1 This expression refers to the title of a column by the philosopher Emanuele Coccia in the newspaper Libération.

to seduce or repel? How can we describe ambiances whose powers exceed atmospheric phenomenality? How can we grasp and understand the forces that drive them? How can we think ambiances as historical, social and cultural constructs? And so on.

By addressing these challenges, this session aims at laying a critical reflection to discuss the methodological, theoretical and practical issues arising from the politicization of atmospheres. How can we capture and describe the changes at work, most of which are long, ongoing and unfinished processes that also involve complex socio-political issues? How can paying attention to the socio-political dimension of ambiances contribute to a critical reflection on the sensory future of the urban world? All the papers of this session question atmospheres as a spatial, affective, social and sensory problem. Based on theoretical reflections and case studies set in a wide variety of contexts, they take account of the non-neutral nature of ambiances, their effects on bodies and the intentional uses that can be made of them.

3. POLITICIZING ATMOSPHERES IN PRACTICE

This session will be organized as follows. It opens with three papers looking at significant changes in sensory urban contexts, for very different reasons: one linked to urban planning policies, the second to a festive event, and the third to war. By developing phenomenological and aesthetic approaches to ambiances, these contributions help to show how the grasp of sensory environments is linked in many ways to an understanding of the underlying political contexts. Ambiances thus take on a variety of statuses: sensitive witnesses, aesthetic instruments, enabling or disabling devices.

The first communication stems from an urban planning agenda. Transformed by a "revitalization" project of the harbour, an urban development program of a favela a "police pacification" policy, Rio de Janeiro's port area has been the scene of numerous urban struggles. David Almaric describes the related atmospheres and ordinary sensitive experiences of contestation, ultimately drawing up a phenomenology of a challenged right to the city.

Secondly, Isabella Pontello Bahia paints a historical portrait of the carnival of Belo Horizonte (Minas Gerais state, Brazil), which use to be a carnival of struggles, and slightly turned into a vehicle of urban marketing policies developed by local authorities. She shows how carnival scenography is a twofold tool that is used by some inhabitants to denounce inequalities, while it is aimed by officials at glorifying power.

In a third time, Perrine Poupin proposes to highlight the work of Ukrainian artists and sound engineers with whom she collaborates and who have been documenting the daily life of the war since February 2022. While this work provides a sound archive of a war in progress, this soundscape also documents a – not so mundane – everyday life, and the sensory experiences associated with it.

Following these three papers, which are based on a substantial body of sensitive ethnographic work, the session continues with two papers looking at the uses of ambiances from the perspective of controlling bodies and affects, in the wake of work examining the sensory dimensions of government techniques (Little, 2015), 'atmotechnics' (Wall, 2019) and, more broadly, 'atmospheric politics' (Sloterdijk, 2005).

Emmanuel Doutriaux's proposal is part of a reflection on the political stakes of architecture and ambiance, in a context of ecological emergency. He aims at focusing on the disruptive dimension of ambiance, i.e. the possible modulations to which it can be subjected by architects and users. In this way, he proposes to open an approach in terms of a "cooperative empowerment" around ambiances, which could serve as a source of emancipation.

Then, Maoli Xing's paper questions the links between political ideology and the production of atmospheres in the age of atmospheric engineering. In doing so, he aims at developing a Lefebvrian approach to political atmospheres, to show how and at what level atmospheres, though diffuse, conditions our affects and experiences.

After hearing papers on the evolution of sensitive contexts and on the ideological use of atmospheres, the third part of this session focuses on the effects of ambiances on situated bodies, encounters and interactions. By documenting processes of social marginalization and exclusion, these papers reflect the enabling and/or disabling powers of atmospheres in practice.

Zacharias Valiantzas' paper interrogates ambiances of care. Based on an ethnography of practices of (in)visibilization and appropriation of spaces developed by migrant and refugee populations in Thessaloniki (Greece), he shows how forms of attention to the other and solidarity are created, and experimented with, the transformation of ordinary ambiances that challenges current regimes of exclusion.

Then, mobilizing a feminist approach, Diogo Mello Jeremias explores the daily lives of migrants in Berlin through two distinct paths: on the one hand, the way they are subjected to forms of control and racialization that undermine their sense of belonging; on the other, the way they construct forms of collective life based on practices of resistance, activism and sense of belonging.

Finally, Tanguy Sandré and Louise-Marie Jouault conclude the session by exploring the political and critical potential of sensory cartography. They show, on the one hand, that sensory mapping is the tool through which "marginalized voices" such as that of the Tunumiut, inhabitants of East Greenland, become intelligible. On the other hand, this tool is also the one through which allows us to understand the complexity of ordinary inhabitant experiences, made up of exclusion, isolation and attachment to the territory.

4. BIBLIOGRAPHY

Ahmed, S. (2010). 1 Happy Objects. In *1 Happy Objects* (pp. 29–51). Duke University Press.

https://doi.org/10.1515/9780822393047-003

Albertsen, N. (2016). Atmosphere: Power, Critique, Politics. A conceptual analysis. In N. Remy (dir) ; N. Tixier (dir.) (Ed.), *Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances. Septembre 2016, Volos, Greece* (Vol. 2, pp. 573–578). International Network Ambiances. *https://hal.science/hal-01414027*

Albrecht, G. (2019). *Earth emotions: New words for a new world.* Cornell University Press.

Allen, J. (2006). Ambient Power: Berlin's Potsdamer Platz and the Seductive Logic of Public Spaces. *Urban Studies, 43*(2), 441–455. *https://doi.org/10.1080/00420980500416982*

Anderson, B. (2009). Affective atmospheres. *Emotion, Space and Society, 2*(2), 77–81.

https://doi.org/10.1016/j.emospa.2009.08.005

Anderson, B. (2014). *Encountering Affect: Capacities, Apparatuses, Conditions* (New edition). Ashgate. Augoyard, J.-F. (1995). L'environnement sensible et les ambiances architecturales. *L'espace Géographique, 24*(4), 302–318.

Bonicco-Donato, C. (2016). De l'aménagement des milieux à la technologie ambiantale du pouvoir. Éléments pour une philosophie politique des ambiances. In N. Rémy (dir.) & N. Tixier (dir.) (Eds.), *Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances. Septembre 2016, Volos, Greece* (Vol. 2, pp. 593–598). International Network Ambiances. *https://hal.science/hal-01404383*

Breviglieri, M. (2021). Un soulèvement. Occupation critique de l'espace et architecture de champs sensoriels. In D. Tallagrand (dir.), J.-P Thibaud (dir.), N. Tixier (dir.). *L'usage des ambiances. Une épreuve sensible des situations,* Paris, Hermann, 161-171. *https://hal.science/hal-03248174*

Closs Stephens, A., Hughes, S. M., Schofield, V., & Sumartojo, S. (2017). Atmospheric memories: Affect and minor politics at the ten-year anniversary of the London bombings. *Emotion, Space and Society, 23*, 44–51. *https://doi.org/10.1016/j.emospa.2017.03.001*

Coaffee, J. (2020). *Security, resilience and planning: Planning's role in countering terrorism*. Lund Humphries.

Coaffee, J., Wood, D. M., & Rogers, P. (2009). *The Everyday Resilience of the City.* Palgrave Macmillan UK. *https://doi.org/10.1057/9780230583337*

Drongiti, A., & Masson, D. (2023). *Crises terroristes et ambiances urbaines. Quelles marques les attentats*

laissent-ils aux villes ? 2022(13). *https://www.riurba.review/article/13-crise/terroristes/* Gensburger, S. (2017). *Mémoire vive : Chroniques d'un quartier : Bataclan 2015-2016*. Anamosa.

Griffero, T. (2017). *Quasi-things: The paradigm of atmospheres* (S. De Sanctis, Trans.). State University of New York Press.

Klauser, F. (2013). Spatialities of security and surveillance: Managing spaces, separations and circulations at sport mega events. *Geoforum, 49*, 289–298. *https:// doi.org/10.1016/j.geoforum.2012.11.011*

Laketa, S. (2021). (Counter)Terrorism and the Intimate: Bodies, Affect, Power. *Conflict and Society, 7*, 9–25.

https://doi.org/10.3167/arcs.2021.070102

Landauer, P. (2009). *L'architecte, la ville et la sécurité* (1–1). Presses universitaires de France.

Little, C. (2015). The 'Mosquito' and the transformation of British public space. *Journal of Youth Studies, 18*(2), 167–182. *https://doi.org/10.1080/13676261.2014.944119 Madden, D. (2023). Polycritical city? City, 27(3–4), 271–274*.

https://doi.org/10.1080/13604813.2023.2232682

Masson, D. (2024). Mobilités urbaines sensibles : Expériences et usages des ambiances. In J.-B. Frétigny (Ed.), *Les transports et leurs lieux* (pp. 181–204). ISTE éditions. *https://hal.science/hal-04501897*

Masson, D., & Thomas, R. (2020). From a sensitive ecology to a political ecology of ambiances. In D. Masson, *Ambiances, Alloaesthesia: Senses, Inventions, Worlds. Proceedings of the 4th International Congress on Ambiances* (Vol. 1, pp. 268–273). Réseau International Ambiances.

McCormack, D. P. (2008). Engineering affective atmospheres on the moving geographies of the 1897 Andrée expedition. *Cultural Geographies, 15*(4), 413–430. *https://doi.org/10.1177/1474474008094314*

Scott, J. C. (1990). *Domination and the arts of resistance [electronic resource]: Hidden transcripts*. Yale

University Press. *https://ezproxy-*

prd.bodleian.ox.ac.uk/login?url=*http://ebookcentral.proquest.com/lib/oxford/detail. action?docID=34209 07*

Sloterdijk, P. (2005). Atmospheric Politics. In B. LATOUR & Weibel (Eds.), *Making Things Public* (pp. 944– 955).

Thibaud, J.-P. (2015). The backstage of urban ambiances: When atmospheres pervade everyday experience. *Emotion, Space and Society, 15*, 39–46. *https://doi.org/10.1016/j. emospa.2014.07.001*

Thomas, R. (2021). Une critique de l'urbain depuis le champ des ambiances. Perspectives*. Ambiances. Revue internationale sur l'environnement sensible, l'architecture et l'espace urbain, Varia.*

[En ligne] *https://hal.science/hal-03455577*

Wall, I. rua. (2019). Policing Atmospheres: Crowds, Protest and 'Atmotechnics'. *Theory, Culture & Society, 36*(4), 143–162. *https://doi.org/10.1177/0263276419829200*

L16

THE VOLTE OF THE AMBIANCES, THEIR TAKEOVER BY THE COMMON

A VOLTA DAS AMBIÊNCIAS, A SUA TOMADA DE CONTROLO PELOS

Emmanuel Doutriaux
Architect, teacher-researcher
École nationale supérieure d'architecture de Paris-Val de Seine
emmanuel.doutriaux@paris-valdeseine.archi.fr

ABSTRACT

Ambivalence in ambiances, which can be placed under the sign of downward forces of objectification or experienced as a power of subjectivation and emancipation, to refer to Deleuze, questioning the notion of device. Now is the time to update a critique of ambiances, when the panoptic prism of spatial surveillance is behind us and more subtle emanations are emerging. We begin by distinguishing between different political characterizations of these phenomena, before analyzing the ways in which they are taken in hand by residents. Who controls the ambiance? This is the question underpinning the present reflection, which could in turn condition the different meanings of the notion of comfort. Should we be satisfied with a sensory prescription (associated with the guarantee of a fixed enclosure) or is it a matter of freely varying the registers of the sensitive (by emphasizing the variations of the in-common)?

KEYWORDS: ambiance. common. discretion. empowerment. control.

RESUMO

A ambivalência das ambiências, que podem ser colocadas sob o signo de forças descendentes de objetivação ou vividas como uma potência de subjetivação e emancipação, para nos referirmos a Deleuze, questionando a noção de dispositivo. É agora o momento de atualizar uma crítica das ambiências, quando o prisma panótico da vigilância espacial está ultrapassado e emergem emanações mais subtis. Começamos por distinguir entre diferentes caracterizações políticas destes fenómenos, antes de analisarmos as formas como são tomados em mãos pelos residentes. Quem controla o ambiente? É esta a questão que está na base da presente reflexão e que pode, por sua vez, condicionar os diferentes significados da noção de conforto. Devemos contentar-nos com uma prescrição sensorial (associada à garantia de um recinto fixo) ou trata-se de fazer variar livremente os registos do sensível (acentuando as variações do comum)?

PALAVRAS-CHAVE: ambiente. comum. discrição. capacitação. controlo.

"What's sorely lacking in our age is an art of living with technology. An ability to welcome and to filter, to become entrenched and to disconnect. Practices that open up the world to us whenever addiction lurks, a rhythm of use that is not algorithmic, an ecology of attention that frames us, and a relationship with AIs that is neither crude nor submissive. [Damasio, 2024]"

The proceedings of this session reveal the extraordinary ambivalence of the notion of ambiance, when considered in terms of its political agentivity.

It appears to be potentially instrumented by power, whether public (the "police" of the street or of large, open interiors) or private (in a physical sphere, or as part of the technological apparatus of the virtual), Foucault's premonitions on the emergence of societies of control appearing in this sense to be well-founded.

The ubiquity of ambiance, in the register of the discrete or "lesser existence" [Thibaud, 2016], has also been mentioned: it can be a factor of an insidious power acting on us without our knowledge (manipulative), just as it can be the subtle quiver acting on our bodies in the hedonism of a half-consciousness (empathic).

We could add a third register of discretion, inviting us, regarding the activity of designing, to an open architectural conception of ambience, in which it could be part of that art of living referred to by Damasio, giving due weight to the arguments of freedom and empowerment.

This raises a paradox: how can we think about, design and even model future ambiances, without prescribing their nature in detail, or determining their execution? Is this agenda not all the more pressing given the intensity of our democratic crises, and the active mobilization of citizens? Wouldn't the pressure exerted by the dynamics of the commons lead to a less formal determination and a more creative sharing of design?

My aim here is to explore concrete experiences in which users would be able to activate this control over ambiances.

ON THE COERCIVE AND SEDUCTIVE REGISTERS OF AMBIANCE

In short, we could identify three political expressions of ambiance, even if the format of this contribution forces us to make a somewhat summary conceptual distinction. The first stems from a coercive potential - that of policing - whose aim is remote control, of the public space in particular, whether exercised by the power of the same name, or by delegation of services to private service providers. The more discreet the technology (cameras, presence detectors, badged access control, anti-occupation street furniture, etc.), the more pernicious its manifestation. So it is, when it comes

to the city and security, with the analyses made by Paul Landauer, when "modifiable space is replaced by situational prevention" [2009]. But this kind of deployment is also part of the "aseptization/appeasement" dialectic, as deciphered by Julien Torchin [2022] in the conflicts between a municipality's planning strategies and its opponents in what he calls "the battle of ambiances", referring to several works, including those by Rachel Thomas [2020]. Comfort and safety are often intertwined here, and function as formidable antiphons for the promotion of ambiance policing.

We are also entitled to extend this problem to the control exercised over the "mirror of the world" that is the virtual search engine, since "everything you see [in the real world] must be in our databases", according to a Google Street View engineer quoted by Kate Crawford [2021]. She continues: "Collecting data, categorizing and labelling it, and then using it to drive systems - all these practices are a form of politics. They have given rise to what are known as operational images, representations of the world intended exclusively for machines. Bias is the symptom of a deeper evil: a normative and centralizing logic that serves to determine how the world should be perceived and evaluated".

The second political expression of ambiance has to do with its seductive potential - which would be commercial (in the sense that it involves relationships) - whether commercial or non-commercial. In the truest sense of the word, its aim is to manipulate subjects, using devices where their free will has no real place, but where an empathic dimension is activated, arousing the pleasure of the senses, to live through an experience whose scenario is dictated in advance.

This is typically the case with thermal baths, such as those designed by Zumthor in Valls and Nouvel in Le Havre, where the hedonistic aim of the ambiance is passively satisfied by the abandonment of body and mind.

In Nouvel's case, the aim was to produce "a satisfactory representation of the ambiance intentions set out in the initial discourse [and correlated by] incessant back-and-forth between [the architect] and his collaborators around digital images"; In Zumthor's case, "the images that [came] to mind [while designing] are mostly linked to personal memories" and translated by the use of sketches and "stone models [that were] immersed in water to observe the effects produced by the light cracks on the soaking stone" - as Céline Drozd [2011] states in her choice to compare these approaches. These design processes certainly highlight modal differences in design and writing - analogue and strongly embodied for one, digital and relatively abstract for the other - but their arguments are likewise representational. On the one hand, it's a question of imagining oneself in advance, of 'projecting' through (visual) representation a singular (individual) intuition of what the atmosphere and the induced action should be. On the other hand, this experience is envisaged as a spectacle, immersive to be sure, but which reproduces the standard codes of a (stage) performance in which users are assimilated to quasi-spectators, confined to precisely determined roles.

And Drozd rightly wonders whether "the imaginary element, deliberately present in these representations, [might] not act as a brake on the real perception of [the] atmosphere in the constructed spaces [and] whether it might not constitute a limit on their capacity for interpretation". In fact, however skillful and sophisticated these procedures may be, and however powerfully architected they may be, are they not, in essence, so different, in their ability to condition the 'user experience', from the subjugation practiced by amusement park imagineers [Marling, 1998]?

THE DISRUPTIVE POTENTIAL OF AMBIANCE

But I would like to put forward a third political expression of the ambience, in its disruptive potential. Its aim would be emancipatory, when, as part of a dynamic of user empowerment, the formation of a common would be at stake. The hypothesis would be that the formation of the ambiance is played out on a front line where the positions of the planner - the designer - in his authority (power of tidyness), and the user - the inhabitant - in his legitimacy (power of agency), are negotiated or even exchanged.

In an illuminating work on this subject, the artist and sociologist Mathilde Chénin [2024] examined two situated experiences combining living and working spaces, in which she was involved in varying forms (guest resident in one, co-initiator in the other).

The first was an industrial wasteland in Marseilles, known as La Déviation, which a community was gradually going to invest in on a long-term basis, starting with its acquisition of the land, not without a long period of internal controversy over the dialectic of the creative precarious, which would be a guarantee of freedom, and the active sedentary, which would be a sign of commitment. Secondly, in the French Jura region, we are talking about Bermuda, an association structure housed in the shelter of a vast hall containing workshops for production, research and distribution in the arts, as well as a place of residence. The people behind the project will have designed it with the architects from Actm, and most of it will be self-financed and self-built.

The emblematic case of artistic co-habitats invites us to reflect on a pro-active commitment to the experience, which is the antithesis of the passive immersion to which the otherwise symbolic programmes of the thermal establishments mentioned above invite us.

Figure 1 to 3. Bermuda on site. Source: Adapted (1 & 2) from Chénier (2024) and Online website of Bermuda (3).

This is because of the interlocking of three conceptual inversions of the ambiance: by allowing time for the latter to emerge "through the end/purpose" of these places (inhabiting) rather than by predetermining it, by giving rise to it through the practical activities that make it work (the ordinary) rather than by idealizing its nature, by inscribing it in a dynamic of being-together (the common) rather than under the control of an authorial signature.

Living. Chénin opportunely draws a distinction between a constructivist perspective, as expressed by Amos Rapoport, which would have us believe that worlds are made before they are lived in, and a residential perspective, as defended by Ingold or Heidegger, which closely links building with the human activity of inhabiting, in the broadest sense of the term. Housing - in the sense of residing there rather than elsewhere - is given symbolic primacy over other programmes - even if they are the majority in number. At "Bermuda", it's up to the residents to initiate the project, which they design in collaboration with the architect, and which they largely carry out themselves. Intangible conceptual principles will not have primacy, in their radicality and fixity, to guarantee the successful completion of the operation, but it will be the creative process itself which, in practice and through its flexibility, will accompany the project. The lived experience and ongoingness of the inhabitant's hand-brain are paramount here.

The ordinary. By proposing to invert the phrase "the artist as worker" to "the worker as artist" in order to describe what is at stake in this small society, Chénin is placing

as much emphasis on the material investment that these artists will make, turning themselves into builders and maintainers of their sites, in order to place on the same level a humble craft activity and their learned artistic practice, as she is pointing out the importance of this theatre of the ordinary, of this routine assumed as such. "Living in such places stimulates a regime of attention conducive to the appreciation not only of details but also of the way in which they are arranged within the singular whole, so many modalities of engagement in action that make it possible to perceive the *Stimmung* of the place in question [Simmel, 1913]. Simmel chose the term - which evokes the atmosphere, the mood and, strictly speaking, the state of mind of a place - to describe 'the kind of activity that presides over the erection of the landscape as a practical activity', as our author notes, following Trom [2021] ".

Note this paradigmatic inversion: it is not the author's work that provides the keys to the future atmosphere; it is the ordinary practices that set the tone for the atmosphere. Moreover, on the artists' website, the architect is mentioned as the project's 'representative': this says a great deal about the extent to which the artists feel that they are also its designers, to the point where they seem to be claiming with him the *Équerre d'argent* awarded to this building for its *Première oeuvre* (a recognized prize awarded annually by a major French construction media). This says a lot about the prevalence of the "ordinary inhabitant" over the "extraordinary creator".

The common. Chénin will refer to the concept of tonalisation as borrowed by Jean-Paul Thibaud [2018] from the philosopher of *La formation de l'esprit scientifique*: "Using the metaphor of the aeolian harp, Bachelard proposes this notion to describe the way in which we enter into sympathy with the surrounding environment and resound to its vibrations What is at stake is the intensive relationship we have with our surroundings, the rhythmic participation and energetic communication that make up the world of feeling [...]. Tonalization is thus a fundamental moment of impregnation and of our capacity to be affected. Thanks to its action, which makes the world truly expressive and alive, bodies harmonise and synchronise with *milieux* (environments)."

It is in fact the physical charge of "a regime of [conceptual and constructive] engagement in presence", and even, more explicitly, of "resonance", that creates the atmosphere here. Having been involved in the project herself, the artist-sociologist and her peers will, she believes, experience the conjunction of a tuning (syntonization) and synchronization of affects forming "the tessitura of a 'we' so that the common can be composed as well as possible".

Figures 4 to 6. Bermuda: main works completed. Source: Online website of Actm architects.

The question of form cannot be avoided if we are to understand these interlocking relationships. Rather than opting for the expected strategy of rehabilitating a wasteland, as in the case of La Déviation in Marseilles, the small community of Bermuda chose to acquire land on the edge of a village and to build new, which is not so common in this context, and gives the present case an emblematic value that goes beyond its programmatic singularity. It's about living and working, and it's also about pooling resources. The structure has something of a temple about it: on a rectangular platform of 1,300 m2, two long parallel porticos in white concrete with a double-level height take up the load of a vast gabled roof in ribbed sheet metal (including polycarbonate days) set on a tight rhythm of wooden trusses, with louvred pediments on the façade. This prismatic volume houses four blocks of unequal size in monowall brick, dedicated either to collective production workshops (joinery, metalwork, video), or to workshops and/or accommodation of their own, or to communal areas of a different nature (collective kitchen, community office, 'motel' for guests) and a very large area in the gaps left between the blocks, as well as on their periphery (over half the total area).

Sheltered from the monospace of the "temple" erected as a major feature, the minor gradients of porosity within the different blocks range from (in) oneself (private) to (in) us (collective), and the completely available in-between regime gives play between volumes and programmes and confers considerable scope for interpretation to the

expression of the collective present. This prompts this micro-society to agree on a way of acting, a script, which forms its common ground and has been a feature of its day-to-day life: What boundaries does it agree on between what belongs to the founding members and the occasional users of the structure (occasional hire of the facilities or long-term residence)? How does it take care of the material finishing touches to the communal areas and the maintenance to follow? How does its craft acculturation, gained over the course of the works, make the latent qualities of the site 'sing' (the rough and the smooth, the light and the dark, the hot and the cold, the sheltered and the windy, etc.)? It is from this play, both literally and figuratively, between the parts of the built environment and between the players in the network, that an active atmosphere is created, an *ambiance de jeu* ("environment of play") we might say, following the example of the Situationist artist Constant.

COOPERATIVE EMPOWERMENT

No doubt it will be objected that these cases are too singular to serve as examples. Although the exceptionality of the favourable circumstances in which they have emerged may presage a generic situation in the future - alternative places can be seen as laboratories where inventive political configurations are tested - it is important for me here to extend the spectrum of these disruptive environments to the field of (collective) housing production, insofar as this sector would be a pivotal link for thinking more globally about 'living in society', upstream of other programmes (places for collective living, facilities, offices, etc.).

A number of experiments are now being carried out in the cooperative device, which may be sanctioned by changes in the legislative framework. This is the case in France with the Alur law of 2014, which distinguished two models: that of *auto-promotion* ("self-promotion"), whose collective ambition is limited to carrying out the project upstream (acquisition, design, construction), only to return to a classic form of co-ownership once the project is completed; and the more original *coopératives d'habitants* ("residents' co-operatives"), which, by maintaining the difference between ownership of the land and the right to use it, guarantee the common good over the long term.

There are a host of initiatives in this area today, whether they be the work of public authorities, residents' associations, mixed structures (such as La facto, which includes builders, architects and facilitators) or architects: in France, for example, there is the pioneering work of Bernard Kohn, the Maison des Babayagas in Montreuil (opened in 2016), or more recently the work of the Franco-Chilean agency Plan Comùn.

One case that strikes me as particularly significant of this new dynamic is that of the Catalan collective Lacol, and their La Borda project in Barcelona.

This project combines different scales and priorities: municipality / neighbourhood

/ community / contractor. It involves a public contract for the transfer of land (under a 75-yearlong lease) to a residents' cooperative, which, in the first phase of consultation, undertakes to establish, in good society with the neighbourhood, a co-responsibility project for the management of community life (definition of collective spaces, criteria for co-existence), an ecologically clean way of life (energy, materials, emissions), etc., before distinguishing, in the second phase, an architectural proposal based on quality criteria (functionality, community spaces, relationship to the environment, technical and ecological consistency) and financial reliability. In this instance, the legal structures of the La Borda residents' project owner and the Lacol project management will both be based on the cooperative model - which will give the whole affair a strong legal and political coherence.
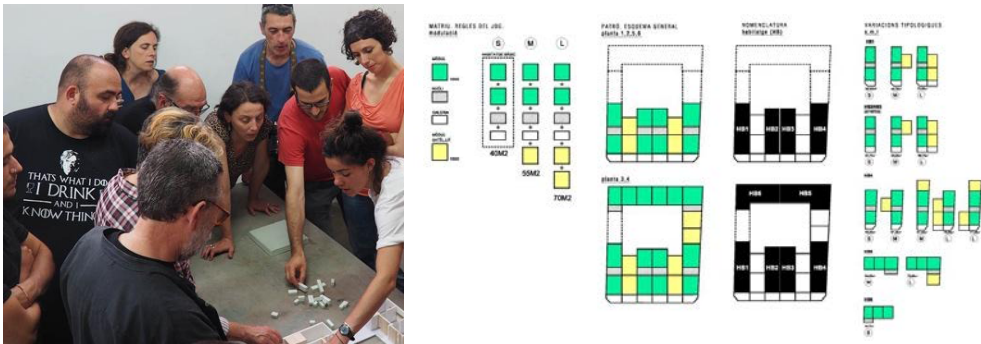
Figures 7 & 8. La Borda: the participation phasis around support-system device.
Source: Online website of Lacol architects.

To manage a range of dwellings of different sizes, the architects will be using a modular invariant (3.4 x 4.9 and 3.03 m high) aggregated into three models of 45, 60 and 75 m², set within a regular CLT timber structure that alternates deep, through-going frames and leaning half-frames. In so doing, they are referring to a system of the order of John Habraken's "support system" [1998], allowing, within a given infrastructure, a great deal of room for negotiation during the participation phase between and with the residents, a great deal of freedom for private development in the short term, and "modular bartering" between neighbouring flats in the medium term, which is consistent with the disjunction between property ownership (cooperative) and right of use (cooperators), since these exchanges of surface areas have no legal implications: here there are no real estate lots to be determined, but cooperative shares to be distributed

While the inclusion in the public domain of this communal area, to which the city is offering its land, will mean that the city will give back its urban amenity (a public passage giving access to the district's service facilities at the heart of the block), this development is distinguished by the internal multiplication, over a considerable percentage of its surface area (25%), of shared programmes (or non-programmes), with a variety of qualifications and locations: shared kitchen-dining room, bicycle

parking and event space on the ground floor; a large multi-purpose double-height space for games and laundry, also used for coworking and parties, on the1st floor; a guest flat on the2nd floor; a large terrace for hanging out the washing, overlooking the Tibidabo park on the 5th floor; a green roof accessible from the 7th floor; etc.

And finally - last but not least - La Borda is distinguished by a material qualification that perfectly masters these gradients of use and openness.

Either a three-tone material 'touch' that distinguishes the parts (the warmth of the overall structure of the CLTs and the external blinds with thick wooden slats; the coolness of the galvanised steel hardware and ribbed polycarbonates of the intermediate bodies; the immaculate neutrality of the painted plaster walls housed in the interfaces). In other words, a series of well-positioned figures around which the complex is organized: the showcase façade on street; the drying terrace; the "multi-purpose" greenhouse; and last but not least, at the heart of the block, this large courtyard (approximate dimensions 15m x 10m x 25m high), with a movable cap that acts as a vast environmental regulator (greenhouse effect in winter, shading fan in summer), around which the distribution of the building complex, its shared programmes and its private flats, is arranged on gangways.
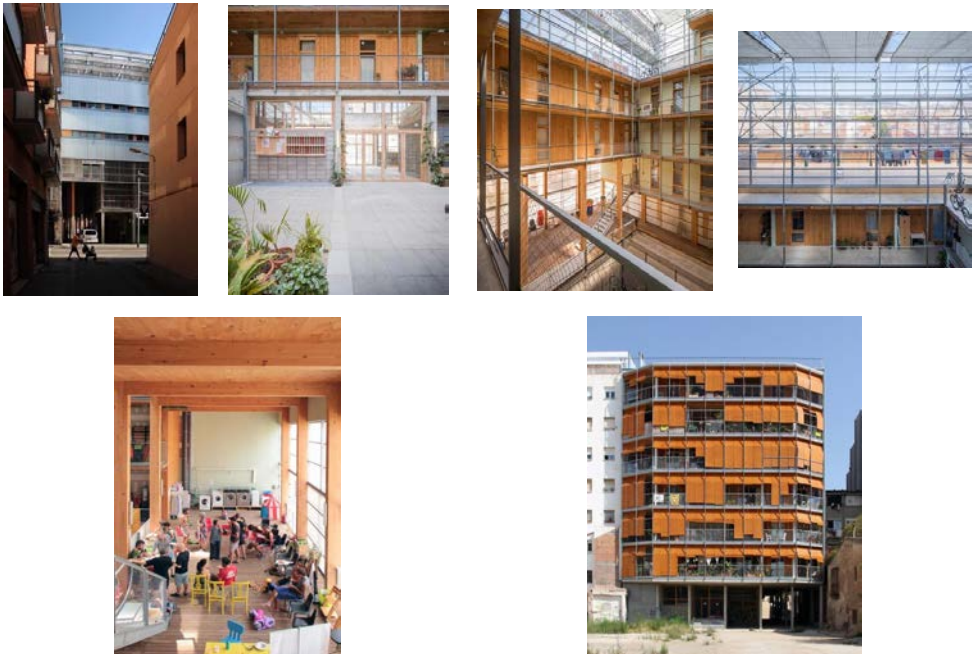
Figures 9 to 14. La Borda: street façade with public passageway, ground floor of the cooperative, courtyard of the "corral", terrace-dryer, gathering in the indoor hall, south façade and its roller blinds. Source: website of Lacol architects (photos: Lluc Miralles).

This play on referents also reflects the architectural project's resolute commitment to a conception of the "shared world": the courtyard-patio refers, according to the architects, to the southern *corrales* of the Spanish peninsula, and the multiplication of the "wood blinds" (kept at a distance from the façade by the balcony railings), as well as the range of drying racks on the terraces, also describe, in a new way, the lexicon of the large house "somewhere in the South". What's more, they require their occupants to put into action the mechanisms of communal living - to be created in the strict sense (closing, opening the door, veiling, etc.) and in the broad sense (setting the daily table, living in the courtyard, occasional feasting, sharing household chores, etc.) - without this mechanism, which can be used to create a sense of communal life, having any effect on the occupants.) - without this arrangement, which in certain respects could refer back to the historical referent of some phalanstery, being this time governed neither by the figure of an enlightened patron, nor formally rigid (typological variability, minor appropriations of domestic thresholds), but on the contrary promised to a shared governance and a clear division between the potential of the inhabiting community and the comfort of perfectly reserved private areas - elegantly expressed by the swing of the individual blind on the rail of the banister, which forms a counterpoint to the breathtaking effects of the collective corral.

THE FUTURE OF SHARED GOVERNANCE

Alain Damasio's claim to the reverse control of the course of things in relation to technology raises the question of the capacity of residents to see themselves as the creators of their common home, and of citizens to see themselves as actors in the city.

The reversal of the governance paradigm, as anticipated in the 2000s by Michel Callon et al [2001] in their promotion of citizens' forums, and widely deployed since then in civil society, thus invites us to update, in architectural terms, research into the possible interplay between the designs of project managers and the intentions of communities of users, as in support, for example on Frei Otto's tree-house experiments in Berlin (the ÖkoHaus), on Habraken's system-support thesis, and on the competence/performance dialectic invoked by Hermann Hertzberger [1991]: "competence is the ability of the form to be interpreted, and performance is the way in which the form is interpreted in a given situation".

Common? The legal quality of a decoupling of rights of use and rights of the soil, as well as cross-cutting rights and obligations; the political quality of shared governance, and the subsequent economic quality of pooled resources; the architectural qualification of the in-between spaces slipped between the narrow definitions of "in private" and "in public", ambiantial potentialisation and anthropological empowerment of action.

Ambiance? The material and aeraulic fluidity of touch, sound, lighting and temperature, a sensory ecology; the power of affect, equalled only by each person's capacity to get involved in the common work; the interplay of socialities that such mobilisation engages, a powerful determinant of programme and form.

The large shared landings of Plan Comùn / Dorval-Bory / Kuehn Malvezzi (social housing in Paris) or Sophie Delhay's housing projects (including this large participative vessel planned in Munich), the vast canopy of the Bermuda 'temple' in the Jura, or the deep corrala of La Borda in Barcelona form the crucible of atmospheres that are neither police nor commercial, but derive from the common good. By pushing the logic of open systems, these experiments seek to bring the position of project managers into line with the political changes that society is demanding of us.

BIBLIOGRAPHY

Callon, M., Lascoumes, P., Barthe, Y. (2001) Agir dans un monde incertain. Essai sur la démocratie technique, Paris, Le Seuil.

Chénin, M. (2024) Le commun par l'usage, Construire et habiter en artiste, Genève, MétisPresses.

Crawford, K. (2021) Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence, Yale university books.

Damasio, A. (2024) Vallée du silicium, Paris, Seuil.

Deleuze, G. (1989) Qu'est-ce qu'un dispositif ? in Michel Foucault philosophe. Rencontre internationale. Paris, 9, 10, 11 janvier 1988 (pp. 185-195), Paris, Seuil.

Drozd, C. (2011) La représentation des ambiances dans le projet d'architecture, in Sociétés & Représentations 2010/2 (n° 30) (pp. 97 à 110). *https://doi.org/10.3917/sr.030.0097*

Habraken, N. J. (1998) The Structure of the Ordinary, Cambridge, London, MIT Press.

Hertzberger, H. (1991) Lessons for students in architecture, Rotterdam, Uitgeverij 010 Pub.

Landauer, P. (2009), L'architecte la ville et la sécurité, Paris, Puf.

Marling K. A. (1998) The Architecture of Reassurance: Designing the Disney Theme Parks, Paris, Flammarion.

Simmel, G. (1913) Philosophie du paysage, in La tragédie de la culture et autres essais, Paris, Rivages, 1993.

Thibaud, J.-P. (2016) Les puissances de l'ambiance, in N. Rémy & N. Tixier (eds.), Ambiances demain. Actes 3è congrès international sur les ambiances, Volos.

Thibaud, J.-P. (2018) Les puissances d'imprégnation de l'ambiance, in Communications n°102 (1) (pp. 67-79).

Thomas, R. (2020). Les mises en ambiance de la ville apaisée. Paradoxes et risques d'une aseptisation programmée, in Géo-Regards (pp. 179-194), n° 13.

Torchin, J. (2020) La bataille des ambiances ; affects et conflits d'aménagement à Rennes, 06/06/2022 [*https://metropolitiques.eu/La-bataille-des-ambiances.html*]

Trom, D. (2001). À l'épreuve du paysage. Constructivisme savant et sens commun constructiviste, revue du Mauss n°17 (1) (pp. 247-260).

Press release La Borda: « Lacol Arquitectura Cooperativa », L'Architecture d'Aujourd'hui, février-mars 2022 ; Fernandez Fulvey, F. «Cooperativa de vivienda La Borda», Plot 50, agost-sept 2019 ; Montaner, J. M. «La arquitectura de La Borda: contexto, gestión y forma», Summa+ #176 febrer 2020 ; « La Borda cooperative housing» C3 #404 2019 ; «Cooperativa de vivienda La Borda, Barcelona», Aquitectura Viva #233-234 2021

NAVIGATING MIGRATORY SPACES: RESISTANCE AND BELONGING PRACTICES IN BERLIN

NAVEGANDO ESPAÇOS MIGRATÓRIOS: PRÁTICAS DE RESISTÊNCIA E PERTENCIMENTO EM BERLIM

Diogo Mello Jeremias
M.Sc. Urban Designer
Independent Writer
diogomellojeremias@gmail.com

ABSTRACT

This article investigates how the politicization of migrants' everyday experiences configures social and political spaces of belonging by examining resistance practices in Berlin. Drawing on feminist theory, the study explores the political dimensions of migrants' bodies and their capacities for self-emancipation. It highlights how historical marginalization processes impact migrants' lives while recognizing migrant's subversive micropolitical actions. Through ethnographic research, including unstructured interviews with four migrant residents of Neukölln (Berlin), the study reveals how the urban experience of migrants can challenge their sense of belonging — but also how collective practices can empower migrants by enabling the politicization of their everyday life struggles. Ultimately, the study indicates that migrants can foster a deeper sense of belonging and affirm their agency by politicizing everyday life experiences.

KEYWORDS: migratory spaces. resistance. belonging. everyday life. Berlin.

RESUMO

Este artigo investiga práticas de resistência e como a politização das experiências cotidianas dos migrantes configura espaços de pertencimento social e político em Berlin. Baseando-se na teoria feminista, o estudo explora as dimensões políticas dos corpos dos migrantes e suas capacidades de autoemancipação. Destaca ainda como os processos históricos de marginalização impactam a vida dos migrantes, ao mesmo tempo que reconhece as ações micropolíticas subversivas dos migrantes. Através de pesquisa etnográfica, incluindo entrevistas não–estruturadas com quatro ativistas em Neukölln (Berlim), o estudo revela como a experiência urbana dos migrantes pode desafiar seu senso de pertencimento – mas também, como práticas coletivas podem empoderar os migrantes ao possibilitar a coletivização de suas lutas. Por último, o estudo indica que os migrantes podem promover um senso mais profundo de pertencimento e afirmar sua agência ao politizar suas experiências cotidiana.

PALAVRAS CHAVE: espaços migratórios. resistência. pertencimento. vida cotidiana. Berlim.

1. INTRODUCTION

In a city like Berlin, with its many historical layers, examining socio-spatial segregation is challenging and requires a multifaceted approach. As Blokland and Vief (2021) note, "Berlin has moved from a politically divided city to a city with new divisions" (p. 254). Consequently, quantitative analysis alone cannot fully capture the city's socio-spatial dynamics, as statistical data does not fully reflect the urban experience of Berlin's inhabitants (Blokland & Vief, 2021). The district of Neukölln, which has the second highest concentration of residents with a migrant background in Berlin, exemplifies this analytical complexity. The centrality of Neukölln and the presence of efficient infrastructure in the district might indicate relatively little residential segregation.

However, these territorial characteristics do not convey the socio-spatial segregation processes present in the district.

These "new divisions" shape migrants' ability to appropriate from the city and access its infrastructures, as "the use of urban places and institutions in the city may influence the reproduction of disadvantage across groups and possibly generations" (Blokland & Vief, 2021, p. 267). The current socio-spatial dynamics of migratory spaces in Berlin complicate the understanding of segregation in the city; the divisions also reflect the transposition of a logic of transnational borders and its mechanisms into everyday life spaces (Yuval-Davis et al., 2019). Consequently, racialized subjects commonly endure continuous acts of daily violence, as underscored by Kilomba (2020):

> It is not a "single assault" or a "discrete event," but rather a "constellation of life experiences," a "constant exposure to danger," a "continuing pattern of abuse" that repeats itself incessantly throughout one's biography — in the bus, at the supermarket, at a party, at a dinner, in the family. (p. 43)

Due to the shift of border control to the street-level, migrants' urban experience is significantly shaped by the ubiquity of anti-migrant practices. Migrants become subject to various forms of bordering practices, whether through bureaucracy or interpersonal interactions (see Yuval-Davis et al., 2019). Such practices can lead to a constant state of fear and surveillance among migrants. Understanding migrant resistance in Berlin therefore requires examining how bordering practices and tools force migrants into precarious conditions that not only hamper their ability to integrate but also position them in a state of perpetual vulnerability and subalternity.

Based on four interviews I conducted with activists in Berlin, the reports of migrant experiences that I discuss in this paper are not isolated accounts but rather a reflection of an experience that is widespread among migrants in the city. The continuous enforcement of control mechanisms generates in migrants a lasting feeling of being under threat that is exacerbated by the challenges they face in accessing essential services such as housing and healthcare.

In this context, resistance among migrants reflects their enduring response to everyday institutional practices of control. It serves as a reaction to both structural violence and the need to navigate oppressive systems, and it challenges systemic processes of marginalization. Despite an apparent conformity to bordering practices of control, migrants' resistance can conceal revolutionary power in passivity, a tactical practice characteristic of nonviolent resistance (Butler, 2020; Federici, 2020). Insights from the interviews conducted for this study also highlight the importance of politicizing everyday struggles in collective spaces. This approach is crucial for empowering migrants, as it fosters spaces of belonging where they can meet in solidarity and feel connected to a community with shared political purposes (Dean, 2019).

In this work, "space" is understood as "*a relational arrangement of living beings and social goods*" (Löw, 2016, p. 135, italics in the original). This perspective highlights that space is dynamic and formed through continuous interactions among bodies and objects (Löw, 2016). By adopting this perspective, I acknowledge the complexity of analyzing spaces of belonging and recognize the profound impact that historical and structural marginalization processes have on migrants' daily lives and their ability to configure spaces where they can fully exercise their agency. My analysis shows how migrants experience various forms of control that challenge their sense of belonging. However, I also elaborate on how migrants empower themselves through collective life and, more specifically, through activism. Feminist theory provides my analysis with a deeper understanding of the political dimension of migrants' everyday life and self-emancipation within their resistance practices. Through this lens, migrants' experiences in Berlin are interpreted in this study as a complex interplay of structural violence, resistance, and belonging.

2. THE METHODOLOGICAL APPROACH

To conduct this study, I employed an ethnographic research approach within a cultural studies framework, using unstructured interviews to gather accounts of migrants' experiences of resistance and belonging in Berlin. By framing the research as a cultural study, I analyzed the reality of migrants as resulting from broader social contexts rather than individual and isolated actions (see Atkinson, 2017). The chosen methodology was crucial in structuring a sensitive and responsible process of handling and interpreting the collected material (see Atkinson, 2017; Mitchell, 2007).

I conducted four unstructured interviews with members of the group Right 2 the City (R2C), a Berlin-based activist group fighting for housing rights and social justice. R2C is an English-speaking working group within the Deutsche Wohnen & Co enteignen (DWE) campaign that advocates for the expropriation of major real estate firms, as a means of addressing housing shortages and escalating rents.

I used the interviews to gain insights into the experiences of migrants in Berlin. I used a gradual and deliberate approach to the activist group over the course of about 6 months, fostering a familiar and trusting environment with the migrant activists I ultimately interviewed. Each interview lasted at least one hour and was conducted in person or via videocall due to pandemic-related restrictions. I conducted the interviews in English, Portuguese, or Spanish. The language choice was crucial in ensuring comfort and effective communication with the interviewees. Pseudonyms are used in this paper to protect the interviewees' identities.

The interviews did not follow a fixed question list; instead, they followed a flexible guide centered around two main topics: the challenges of being an immigrant in Berlin and the interviewee's perception of spaces of belonging and resistance in the city. This flexibility fostered organic and open-ended conversations. Furthermore, it

created a relaxed environment and enabled the interviewees to reflexively articulate their understandings of resistance and belonging in Berlin.

3. ANTI–MIGRANT EVERYDAY PRACTICES: THE BORDERING EXPERIENCE IN BERLIN

> You always have to sit for an exam, you know? […] Either with German, or bureaucracy, or in terms of being a good citizen.

This statement from Paul, a queer Argentinian, reflects how he experiences bordering practices of control present in institutionalized spaces and in daily interactions with German culture. Paul highlights how the German language itself functions as an everyday bordering tool, but bordering practices are also experienced by migrants through constant policing, derogatory public discourse, and limited access to the labor market, education, healthcare, and housing (Yuval-Davis et al., 2019).

Although bordering practices occur in everyday life, their efficacy lies in their lasting effect, given the sense of fear and anxiety that they generate (Federici, 2020; Kilomba, 2020). In my conversation with Paul, he also related that a significant part of his experience in Berlin is addressing the "constant fear that you are doing something wrong," confirming the traumatic impact that bordering practices can have on migrants. A similar feeling of fear was described by another interviewee, Carol, a cisgender Brazilian woman. She attributed the feeling of fear to the difficulty of accessing housing and health systems in Germany. The constant fear makes both interviewees feel socially vulnerable and uncertain as to whether they will be able to sustain their lives in Berlin. Carol described the uncertainty as follows:

> Especially during the first four years, I lived in the panic that I wouldn't be able to stay and would have to return to a traumatic situation I lived in Brazil […]. I was terrified! So, for me, it was much easier to accept what was happening […]. I wanted to stay here anyway, and I justified it to myself all the time.

The fear Carol experiences as a migrant triggers another fear — one generated by previous trauma from her urban experience in Brazil. In turn, the fear of revisiting that previous trauma contributes to the constant feeling of fear while in Germany. Furthermore, her mention of living "in the panic" emphasizes the longstanding impact of fear. One of the consequences of this situation, as identified by Carol, was the need to live, in the beginning of her time in Germany, in a "delusional" reality that she created for herself. She not only had to explain to authorities and others why she was in Berlin but also felt compelled to justify her situation to herself so that she could better accept it.

Carol's experience reflects how the relationship of control migrants exert on themselves bolsters the effectiveness of tools of control: Amid oppressive conditions,

migrants start to act against themselves, against their own wills. This relationship is part of a set of practices of control that aim to restrict, to the extent possible, any desire for political insurgency through the abuse of the subject's unconscious (Rolnik, 2018). Thus, migrants' experiences in Berlin, mediated by the feeling of fear, can limit their awareness of their imposed subaltern position.

When discussing her first years in Berlin, Carol noted that her irregular situation was a consequence of the difficulty she faced in registering her residence at the time, and how this difficulty, which prevented her from acquiring the *Anmeldung,*[1] further fueled her fear of being checked by authorities. Difficulty registering one's address is relatively common in Berlin, because residents are often unable to find affordable accommodations in which they can register. In Berlin, many rental contracts are characterized by irregular and short-term subleases. In Germany, registration is fundamental for obtaining housing, work, a bank account, and a visa. Difficulty registering therefore makes it impossible to fully inhabit German cities. Carol describes this difficulty as the result of a triangular relationship: "[I]f you don't have an *Anmeldung*, you can't open a bank account; if you don't have a bank account, you can't get a job; if you don't have a job, you can't get the *Anmeldung*. And I lived this without being able to politicize it." This triangular relationship serves as an example of the processes of subalternization that are forced upon migrants — and how the bureaucratization of everyday life in Berlin triggers fear of being caught in an irregular situation.

To cope with the fear of being caught, marginalized migrants often assume a condition of invisibility, which tends to lead to social isolation and a reduction in collective life experiences. In Carol's case, she was often identified by the white Germans as a body "out–of–place" and therefore positioned in such a condition of subalternity that she repeatedly had to justify herself to prove that she was not a threat. In this context, fear can compel migrants to either conform to the idealized image of a "good citizen," as reported by Paul, or to adopt invisibility as a strategy to evade various forms of border control, as stated by Carol.

The identification of who qualifies as a "good citizen" depends on two conditions: The first is conforming to the idea of the "good," which involves a comparative process within societal norms. In the context of migration, being "good" means embodying a role that conforms to local social, cultural, and economic expectations without challenging the perceived order (Le Goff, 1998). This role may involve accepting a subalternized position within the spaces defined by these social relations. The second condition is one's ability to be recognized as a citizen, which involves a complex dynamic of recognition between individuals, society, and its institutions (Le Goff, 1998).

---

1 Anmeldung is the address official registration a person needs to apply for when residing in Germany.

However, the possibility of performing[2] the "good citizen" is not a simple one. Rather, it is directly dependent on a "nexus of differential racialization" that socially positions the subject "through distinct, yet overlapping, hierarchies of legal status, gender, culture, class and social space" (Erel et al., 2016, p. 1347). This nexus indicates that social markers (e.g., race, ethnicity, gender, language, income, and education) can restrict migrants' ability to inhabit the city. It also reveals how performing the "good citizen" is not often a possibility — nor a desired reality — for many migrants.

Considering the narratives presented in this section, migrant conditions must be viewed within a complex, hierarchical social relationship shaped by racializing structures. There are many other complicating factors that influence the social segregation experienced by migrants in Berlin, but based on the interviews I conducted, the aforementioned topics (language, feelings of fear, internalized oppression, bureaucracy, and social positionality) are fundamental to qualifying the term "resistance" within migratory spaces and to the configuration of spaces of belonging in Berlin.

The topics outlined thus far help contextualize the anti-migrant practices that commonly restrict the urban experience of migrants in Berlin. The need for some migrants to act "accordingly" often places them in a position of invisibility and consequent subalternity vis-à-vis the State and its border control mechanisms. However, the situations of subalternity presented do not indicate useless passivity among migrants nor an inability to disrupt oppressive structures through the performance of nonviolence resistance (Butler, 2020). Rather, Federici (2020) recognizes "the rebellion brewing in many acts of consent – the many forms of sabotage built under our apparent yessing the system, which, under particular historical conditions, can turn into powerful movements" (p. 47). Therefore, the compliance, and the apparent "conformity" of certain bodies must also be seen as practices of resistance (see Butler, 2020). In the next section, I will describe the moment in which migrants' awareness of their reality begins to engender practices of empowerment through the politicization of their everyday lives.

4. MIGRANT EMPOWERMENT THROUGH THE POLITICIZATION OF EVERYDAY LIFE

> From the moment that contact with other people was possible, I started seeing that the stories that they [other immigrants] told mirrored my own. But because they had been active for a longer time, they were able to politicize life.

---

2 The term performance is used here considering the criticism raised by Federici. She understands the term as sometimes limiting, despite being useful as a concept, because it "suggests passive obedience to a law, enactment of a norm, an act of consent. [...] [W]hat is often called 'performance' would more properly be defined as coercion and exploitation" (Federici, 2020, p. 46). Thus, the use of the term would be restrictive in thinking the performance of the subject without critically understanding its revolutionary capacity — or potency — in conditions of subalternity. Accordingly, the use of the term in this text should be read as the naming of an expectation of the oppressor and not as a condition of consent of the oppressed.

In this quote, Carol refers to a phase of her life in Berlin during which socializing with other migrants became a possibility and helped her to recognize her reality as a racialized body. Carol says it was fundamental for her to be able to socialize and experience collective spaces before she became involved in activism in Berlin: "As my politicization happened, I was also able to better understand what this body is in this city — as a woman, as an immigrant woman." Carol had been living in fear of having to leave Berlin. Only once she could regularize her visa and housing situation could she feel safe enough to participate in collective life and, later, in activism. By politicizing her situation, Carol understood her role in the process of configuring spaces of belonging in Berlin.

Carol's personal experience confirms that the life circumstances of some migrants can result in solitary experiences. It also highlights the possible impacts of a limited social life on migrants' ability to configure spaces to which they can belong. In this context, spaces of socialization are fundamental so that everyday experiences can be shared and collectively politicized. However, engagement in activism only appears as a possibility when migrants can access spaces in which they see themselves as collective subjects with collective struggles. Mario, a cisgender Argentinian man, describes this politicization process as follows:

> This process of politicization [...] is a praxis in collaboration with the subaltern sectors that obviously implies working, bringing theory to them, discussing politics, discussing experiences [...] collectively.

Mario emphasizes the need for spaces of belonging to be configured through interactions between individuals both within and outside of activism. These spaces facilitate the formation of coalitions between different political groups and, as Mario notes, the opportunity to "politicize the moments of need" of his peers in struggle. Mario's comment reflects a broader criticism of political action that is reduced to self-referential activism or to activist actions that do not look outward. The revolutionary power in the resistance engendered by activism resides in its capacity to configure spaces of belonging for those who are in activism as well as those who are not. Coalition processes should be understood as stemming from political actions that necessitate the construction of a common perspective among individuals and "their relation to others on the same side of a political struggle" (Dean, 2019, p. 36).

In the context of Berlin, politicizing must include discussing and redefining the internal dynamics of the city's political space as well as reassessing which bodies configure that space. An example of a practice that is helping redefine Berlin's political landscape is the R2C cheerleading group, which serves as the main symbol of the DWE campaign. Beyond the practical application of cheerleading for the campaign (it increases media attention and the campaign's popularity), cheerleading's importance is enshrined — especially in the context of this analysis — in its effect on the bodies in action and for their peers in struggle. Elena, a cisgender Italian woman, described that importance as follows:

> What we are doing is something in a territory of German people. So we are entering a campaign that is German […]. And we are coming with something that they don't know what to do with […]. When I know that my body is out of place and I'm proud of it, it's by cheerleading.

In Elena's situation, the sense of being "out of place" appears to be accompanied by a different feeling from the one reported by Carol (fear). Elena's report indicates that she no longer feels the need to justify herself. This is not necessarily because she has been integrated into German society. Rather, it is because Elena is now able to recognize her body as a space of belonging and can perceive the impact of her actions towards her peers.

Drawing from Elena's case, the migrant body, conscious of its subaltern status, repositions itself in relation to its oppressor while also claiming ownership of its (politicized) body. Accordingly, to politicize the body is to think of it as a space to be configured as belonging to the migrants themselves and as a crucial space for asserting identity, rights, and visibility within broader socio-political landscapes. This perspective reframes the body: It is not a passive vessel but rather a dynamic entity through which migrants navigate and negotiate their migratory status within social and spatial contexts. By politicizing the body, migrants reclaim agency over their physical presence, challenging dominant narratives and practices that seek to marginalize them.

If space is constituted in a relational way, then so too is the body — as long as it is thought of as a space (see Löw, 2016). Therefore, the idea of reclaiming the body requires the conquest of the idea of space, since both the perception and the experience of the body are influenced by the way in which the body is understood and "discursively generated" (Löw, 2016, p. 92). To think of a body as relational is to imagine it being defined by the relationships it establishes (Löw, 2016). Elena's account also exemplifies how the body is affirmed as a space of belonging based on the relationships that enable its existence, rather than on the behaviors or positions imposed upon it by oppressive dynamics. Elena notes:

[While cheerleading], I'm really fearless. I have no problem in screaming, in just shout. […] There is insubordination when body dance in the street. There is [insubordination] even if we are in Berlin, [even] if we are in the capital of clubbing. […] Seeing movement in the space as not codified as jogging or [other] sports is something interesting.

In Elena's case, cheerleading not only configures space in which she can exist. It also redefines her body as being a space of belonging in which she is no longer afraid, causing a disruption between the expectations placed on her and, among other things, her behavior and positionality. The fearless feeling she describes can be read as the moment when she pursues her own body and regains power over herself. This is further confirmed when Elena acknowledges that cheerleading is a possibility

to disrupt existing expectations regarding how her body should act or the codes it should follow. The insubordination in cheerleading that Elena describes is closely linked to dance's capacity to facilitate one's reclamation of their body, rediscovering it as a space they can belong to. Federici (2020) describes this phenomenon in her text "In Praise of Dancing Body:"

In essence, the act of dancing is an exploration and invention of what a body can do: of its capacities, its languages, its articulations of the strivings of our being. (p. 123)

Federici's exploration of dance resonates with Elena's experience in cheerleading. Moreover, while describing the potential effects of cheerleading, Elena also refers to the idea of space as emerging "[in] action" (Löw, 2016, p. 135), from the interconnectedness of bodies engaged in collective practice. Thus, the body's configuration as a space of belonging is possible at the moment in which resistance practices, such as cheerleading, are present. This reflects how the body can be affirmed as a space of political belonging through the presence of resistance practices.

Both Elena's and Carol's reports illustrate how migrants in Berlin, through socialization and collective engagement in practices of resistance, can configure spaces of belonging that encompass their own bodies. Moreover, both interviewees highlighted the significance of politicizing migrants' everyday lives, exemplified in this paper through their engagement in activism. Their narratives indicate how the politicization process can empower migrants to assert their identities and overcome marginalization perpetuated by street-level bordering practices. In the following section, I elaborate on some meanings attributed to resistance and belonging.

5. CONCLUDING THOUGHTS ON RESISTANCE AND BELONGING PRACTICES, AND THE POLITICIZATION OF MIGRANTS' EVERYDAY LIFE IN BERLIN

To understand how the resistance practices of migrants can configure spaces of belonging, this section addresses the possible meanings attached to the terms "resistance" and "belonging." In particular, I examine how migrants experience anti-migrant practices in their daily life in Berlin. Additionally, I explore how and when these practices configure spaces of belonging, and how belonging can also imply resisting.

In Carol's case, resistance gained new meaning from the moment she was able to politicize her everyday life, thereby experiencing spaces in which her body, as a Latin American woman, could then exist. For Carol, to resist initially meant to survive and act tactically against tools that limit the migrant experience in Berlin. As she further reported, as a migrant, she "resist[ed] every single moment;" however, her actions do not necessarily

created spaces to which she could belong. Thus, resisting becomes, as Carol defines, having to "wake up in the morning in a place that doesn't speak your language" and building relationships in a language that often functions as a gatekeeper. She continues:

> You resist every single moment that you are in this land. [...] One thing that I realized becoming an activist is how much I was an activist before doing activism just by living here.

Based on Carol's experience in Berlin, resistance can take the form of addressing past traumas and seeking ways to alleviate the fear and anxiety caused by a system that bureaucratizes migrants' lives and thereby curtails their existence as individuals. Migrants' subalternized experience in the city requires them to continually justify themselves and often to act in conformity with a violent State and an oppressive society. These conditions make resisting a fundamental part of migrants' experience in Berlin, leading, for instance, to Carol's understanding that she was an "activist [even] before doing activism."

Throughout this paper, I address the notion of resistance not only to provoke an expansion of the meanings applied to the term but more so to convey the experience of migrants within oppressive relations. By examining practices of resistance that are also linked to survival, it becomes clear that subalternization processes often limit the possibility for migrants to engage in collective life and political actions. In this context of limited opportunities, coalition and solidarity among migrants at the micropolitical scale become fundamental to empowering all marginalized bodies — not only those directly involved in activism. However, it is only through the politicization of their everyday lives that migrants can fully explore their potential to affect themselves and others, and to further reappropriate their bodies as spaces of belonging. Federici (2020) describes that potential as follows:

> [T]he power to be affected and to effect, to be moved and to move, a capacity that is indestructible, exhausted only with death, is constitutive of the body, there is an immanent politics residing in it: the capacity to transform itself, others, and change the world. (p. 124)

Accordingly, practices of resistance do not necessarily configure spaces of belonging; the revolutionary potential of these practices is often curtailed by various tools of control, such as those I mentioned in Section 3. That potential emerges when the capacity of the individual as a collective subject is explored. Furthermore, the activation of spaces through a coalition rarely results in commodified spaces of belonging because comradeship steers collective struggle away from political incapacity (Dean, 2019; Federici, 2020). If resisting does not mean coalescing, spaces of belonging can perpetuate subalternity. Federici (2020) further emphasizes that collective work must involve the reappropriation of the body as the primary space for overcoming systematic oppression:

> "Our struggle then must begin with the reappropriation of our body, the evaluation and rediscovery of its capacity for resistance, and expansion and celebration of its power, individual and collective." (p. 123)

Elena recognizes the reappropriation of her body and its capacity for insubordination while cheerleading. This capacity for insubordination is established by her performance that deviates from expectations about her body. As I noted earlier, the performance of the "good citizen" are not always desired by migrants, since belonging may require migrants to subject themselves to a predetermined social position — often a subaltern one. Paul problematizes this issue in the following way:

> You pay the price for belonging. [...] We always put belonging as a very positive thing and as something that we all aspire to. Something that I struggled with my whole life was [...] finding a group to belong to.

Therefore, while Elena's insubordination challenges the expectation that migrants conform as "good citizens," Paul highlights that this performance can entail a subaltern position.

These accounts and the others examined in this paper show how practices of resistance can — but do not always — lead to the establishment of spaces where migrants can truly belong. My findings revealed how resistance practices can serve as survival tactics in response to oppressive structures. The study further confirms that resistance gains new meanings when migrants' daily lives are politicized through collective experience and when their agency is fully realized. Furthermore, migrants' sense of belonging expands to include their bodies as the primary space of belonging — one configured through their practices of daily resistance.

6. BIBLIOGRAPHY

Atkinson, J. D. (2017). *Journey* into *social activism: Qualitative approaches.* Fordham University Press.

Blokland, T. & Vief, R. (2021). *Making sense of segregation in a well-connected city: The case of Berlin.* In M. van Ham, T. Tammaru, R. Ubarevičienė, & H. Janssen (Eds.), *Urban socio-economic segregation and income inequality* (pp. 249–270). Springer. *https://doi.org/10.1007/978-3-030-64569-4_13*

Butler, J. (2020). *The force of nonviolence: The ethical in the political.* Durnell Marston.

Dean, J. (2019). *Comrade: An essay on political belonging.* Verso Books.

Erel, U., Murji, K., & Nahaboo, Z. (2016). Understanding the contemporary race–migration nexus. *Ethnic and Racial Studies, 39*(8), 1339–1360. *https://doi.org/10.1080/01419870.2016.1161808*

Federici, S. (2020). *Beyond the periphery of the skin: Rethinking, remaking, and reclaiming the body in contemporary capitalism.* PM Press.

Kilomba, G. (2020). *Plantation memories: Episodes of everyday racism.* Unrast–Verlag.

Le Goff, J. (1998). *Por amor às cidades* [For the love of cities]. UNESP.

Löw, M. (2016). *The sociology of space*: *Materiality, social structures, and action.* Palgrave Macmillan.

Mitchell, J. P. (2007). Ethnography. In W. Outhwaite & S. P. Turner (2007), *The SAGE handbook of social science methodology* (pp. 55–66). SAGE Publications. *https://doi.org/10.4135/9781848607958*

Rolnik, S. (2018). *Esferas da insurreição: notas para uma vida não cafetinada* [Spheres of Insurrection: Notes on Decolonizing the Unconscious]. N-1 Edições.

Yuval-Davis, N., Wemyss, G. & Cassidy, K. (2019). *Bordering*. Polity.

L16

LISTENING TO WAR. ORDINARY SENSORY EXPERIENCE IN WAR-TIME UKRAINE

EXPERIÊNCIA SENSORIAL ORDINÁRIA EM TEMPO DE GUERRA NA UCRÂNIA

Poupin Perrine 1,
1: AAU CRESSON
poupin.p@grenoble.archi.fr

ABSTRACT

Different types of sounds have been the basis of many accounts of the war experience and ambiance in human history. At present in Ukraine, artists and sound engineers, like many other civilians, have been collecting a lot of sound material in the war that Russia has been waging since February 22 in Ukraine. The presentation will feature work by sound professional with whom I have been collaborating since 2016. His sounds help us to document the war in progress and its ongoing effects on everyday life. There are many topics concerning the sensitive experiences of war and war ambiance, related to the destruction of urban landscapes, territorialities, cities, neighborhoods, habitats, historical and cultural heritage, milieux and ecosystems.

KEYWORDS: War. Ukraine. Soundscape. Silence. Documentating.

RESUMO

Diferentes tipos de sons têm sido a base de muitos relatos sobre a experiência e o ambiente de guerra na história da humanidade. Atualmente, na Ucrânia, artistas e engenheiros de som, como muitos outros civis, têm vindo a recolher muito material sonoro da guerra que a Rússia tem vindo a travar desde 22 de fevereiro na Ucrânia. A apresentação contará com trabalhos de profissionais do som com quem tenho vindo a colaborar desde 2016. Os seus sons ajudam-nos a documentar a guerra em curso e os seus efeitos na vida quotidiana. Há muitos tópicos relacionados com as experiências sensíveis da guerra e do ambiente de guerra, em conjunto com a destruição de paisagens urbanas, territorialidades, cidades, bairros, habitats, património histórico e cultural, ambientes e ecossistemas.

PALAVRAS CHAVE: Guerra. Ucrânia. Soundscape. Silêncio. Documentar.

1. INTRODUCTION

I am Sociologist at CRESSON, with a qualitative and ethnographic approach. In general, I use different methods in addition to classic ethnography: film ethnography with a video camera, online ethnography to analyze digital social networks and sound methods. I have been working for about fifteen years in Russia and also Ukraine. My research themes in recent years have been environmental issues, more specifically, ordinary inhabitants' struggles against development projects in Russia (as huge landfills). In Ukraine, I did fieldwork on the war in Donbass between 2014 and 2022 on the experience of women taken hostage by the Russian army and then released, and I followed them in their geographical trajectories and experiences.

The new stage of Russia's war in Ukraine, which is now total war, at the end of February 2022, has dramatically changed my personal and professional life. It is not possible to go to Russia, all scientific partnerships are stopped. Moreover, it is not morally evident to go to a country that has switched from authoritarianism to a form of fascism.

Then, the CNRS, my employer, forbids me to go in Ukraine too, for security reasons. It is almost impossible to carry out longterm ethnographic research in Ukraine from an institutional point of view. Moreover, the war completely changed the environment and habits I knew. The world as my interlocutors knew it has disappeared. They can no longer invite me into their land as they used to. Some have left everything behind and became internally displaced persons or refugees, others have stayed and are living in fear. For all, there is a life before and a life after 24 February 2022. And it's the same from the point of view of research on these territories. In other words, I'm not a war specialist who was drawn to the war in Ukraine. It was the war that came to me, my living and working spaces and my interlocutors with whom I have shared moments of life for many years. This affects the way we study war.

The narratives surrounding the war in the West are largely geopolitical and put people's experiences at a great distance. These discourses correspond to a certain denial of the war, an attempt to turn gaze away from problems and responsibility. The war sounds different in Ukraine. A sensitive approach is able to show this reality. The idea here is to collect sounds from Ukraine since February 2022 and to understand the world in which they have emerged.

My qualitative documentation of the war is part of a huge documentation work by Ukrainians themselves, not only cultural actors, but also ordinary people, state agents, rescue teams, soldiers... My work also aims to give an account of these spectacular efforts by Ukrainian society. Digital technology and the massive use of smartphones in Ukraine have transformed as elsewhere the ways of collecting, preserving and making available archives, and therefore the circulation of news in this world. The war involved an enormous amount of work documenting war crimes, crimes against humanity, the crime of aggression and the crime of genocide. The Ukrainian conflict represents an anthology of the most serious violations of international law. The aim of the documentation is to be able to bring cases before national or international courts.

2. DOCUMENTING EXPERIENCES IN INHABITED SPACES AT WAR THROUGH SOUND

There are many topics concerning the sensitive experiences of war. One aspect is related to the destruction of urban landscapes, territorialities, cities, neighborhoods, habitats, historical and cultural heritage, milieux, ecosystems, in the war that Russia has been waging since February 22 in Ukraine.

Soundscapes and relationships with sound have changed significantly since the total invasion of Ukraine. Recording is a particularly meaningful activity in Ukraine today. One of the goals of sound recordings and broadcasts in Ukraine itself at the moment revolves around two poles: 1) Can the sharing of sound experiences help to reduce the distances between people dispersed by war? 2) Listening to the streams has become a recording of personal stories in the background of the soundscapes of a

country at war. These sound recordings now serve as an archive of stories, places and interactions inside communities, ecosystems, etc.

2.1 Some artistic recording projects
2.1.1 "Good things"
Some artistic recording projects had started before February 22. For example by "Слушні речі" ("Goods things") an association created before the war for cultural mediation in Odessa on environmental problems of the Black Sea. Some landscapes were disappearing and artists and ecologists decided to keep a trace for example of ports in the Odessa region. They recorded some soundscapes. After February 22 the project changed and the idea of understanding the experience of war and the environmental damage caused by war emerged. Some of the participants had to move because their place of residence were in bombing areas.

On 5 November 2022, there was an online presentation of the collective sound work of Ukrainian artists created in the framework of the "*Land of Return, Land of Care*" laboratory. Throughout the day, participants broadcast live sounds that reflect their personal experience of war in five regions of Ukraine (Kyïv, Dnipro, Uzhhorod, Lviv and Odessa).

These participants/artists said :

"War has left its mark on the soundscapes around us. The silence of once bustling cities is unnerving, alarms define the daily routine and sudden loud sounds force us to listen to everything around us. They are the ones that tell us to take cover in case of danger, they are the ones that inform us about the work of the air defence. At the same time, there are many personal stories: the sound of a shovel digging a trench in a territorial defence, a soothing song in your headphones, the silence in an old church near the border, or even the forced abandonment of music. Our experiences are different, but they are united by the fact that we have begun to perceive sounds differently since the large-scale invasion began".

The artistic research laboratory on the experience of war "Land of Return, Land of Care" was supported by the British Council in the framework of the UK/Ukraine cultural season "Scenarios for the Future".

2.2 Andrii Nidzelskyi, Ukrainian sound engineer
I collaborate with a Ukrainian sound engineer, Andrii Nidzelskyi, who works for fiction and documentary films. I met him around 2016 because he was part of a collective of Ukrainian directors, operators and cinematographers, *Babylon 13,* formed in 2013 during the Maïdan revolution, in which they have been filming since the first days of the revolution, full of events, testimonies (*https://babylon13.org.ua*). We invited him and other people to a colloquium we organised in 2017 with Jonathan Larcher, a visual anthropologist, in a seminar project we had, "*Political Cameras*".

2.2.1 Sounds of war

In war there are different types of sound and sound has been the basis of accounts of the war experience (Hartford, 2017; Tańczuk & Wieczorek, 2018; Daughtry, 2020). The sound is heard at the front and at the rear, by different people with different sensibilities (Sykes, 2018). There is also some common experiences of sound in every place affected by war. Sounds are the source of physical and psychological scars that soldiers bring home or that people experience in different bombed territories.

Among the sounds listed in the book (Tańczuk & Wieczorek, 2018) are those that also currently exist in Ukraine:

1) The sounds of air raids and bombings;
2) Silence and noise in the sound environment of ruins and empty spaces;
3) Listening carefully in cities in danger;
4) Sound and trauma;
5) The de-urbanisation and ruralization of the soundscape of destroyed cities: they become quieter and emptier, as if gradually reverting to a past that was not so populated or noisy
6) The audible signs of a return to normality in de-occupied towns;
7) The constant and changing sounds of propaganda in occupied territories by Russia.
8) The technologies of sound (radio, broadcasting centre, street loudspeakers);
9) The transformation of national acoustic communities;
10) The adaptation of unknown urban spaces through sound;
11) The ways of representing the soundscapes in literature, autobiographies, fiction and documentaries, exhibitions and musical compositions.

2.2.2 Sounds of war in Ukraine. The sounds of Andrii Nidzelskyi

[Sound 1. "Kyiv during the war!", April 2, 2022, recorded by Andrii Nidzelskyi] (all sounds are on :
[https://cressound.grenoble.archi.fr/son/2023_VENEZIA/Catalog_NewsFromTheWorld.html)](https://cressound.grenoble.archi.fr/son/2023_VENEZIA/Catalog_NewsFromTheWorld.html)

Andrii recorded this in the first month of the war in April 2022 and posted it on his Instagram account:

« Kyiv during the war!

No guys, it's not sound design or sound effects, I just put a microphone in my homeyard and recorded this atmosphere..

This is ordinary day in the our beautiful city and as in other cities throughout Ukraine continues heroic opposition of the Ukrainian people to the russian military invasion.

In the agony of powerlessness, the occupiers are destroying civilians and children with air strikes, destroying kindergartens, schools, churches and all infrastructure, trying to persuade us to surrender!

We hold on! » (https://www.instagram.com/p/Cb2sYr9AnuO/)

Heavy artillery, air defense, airstrikes and rocket, explosions, destructions, attacks

injuring and killing civilians, hiding in bomb shelters or underground areas, be limited in water, electricity, food, medicine and care correspond to common experiences in Ukraine now. Some people are personally traumatized, being direct witnesses or victims of violence, destruction, death. These experiences are all the more acute the closer you are to the front line. Listening also differs depending on whether you are a combatant, a civilian, an adult, a child, a vulnerable person, etc.

Alongside the sounds of artillery fire, many of the sound recordings reveal a kind of "silence" of war. Even in big cities, an unsettling silence everywhere, and the usually annoying sounds of traffic jams, crowds, and sonic waste are only a melancholy memory. This silence besieges the bodies of people who are confronted with their radical finitude. Many of our respondents spoke of a feeling of isolation, the loss of communication with friends, colleagues and family.

Warning sirens are sounding all over Ukraine. People remember precisely the first alert, on 24 February 2022, which seemed strange and unreal. People were very scared then. It was a kind of terror. This type of terrifying bombardment is a common Russian technique seen in wars in Chechnya and Syria, for example. The urban flow was suddenly interrupted, and silence griped the hearts: it disappeared from the airwaves, like a dead person. Yet death is no longer something unexpected in Ukraine today. On the contrary, one wonders why one is still alive. People constantly hide behind time: "*We wonder if we will live to see tomorrow, what our plans are*". Then, people got used to it quickly. An official App sends notifications to users every time the air raids siren sounds. This App also emits a sound that you can stop. Air raid siren disrupts the daily activities. At night, the sirens wake you up. Ambulances are also sounding in Sound 1. Ambulances feature prominently, and are another element in the soundscape of a city at war.

[Sound 2. "*Battles near Kyiv, 9am, yard, March*", march 2022, recorded by Andrii Nidzelskyi]

Silence on the battlefield is literally the calm before the storm. Listening to silence is more frightening for a soldier than listening to bombs and artillery. When there is shooting, soldiers know where the shells are going and where they are coming from, but when there is silence, they feel extreme fear and anxiety at the thought of what is going to happen next. It's a common experience of all soldiers in war.

The voice of everyday life (barking dogs, bird sounds) is also present, in a minor mode. They are completely silent when the sound of cannons is heard. It seems to be a moment of terror for all and the whole living world.

[Sound 3. "*Cemetery, flags, windy, Irpin*", march 2022, recorded by Andrii Nidzelskyi]

The soundscapes also correspond to painful events. In Irpin, on the outskirts of Kyiv,

we are standing in a cemetery in March 2022. In audio 3 we hear the sound of flags flapping in the wind over the graves. Far away, you can hear the rumble of artillery. Since the war, the town cemetery has had a large military section. There are many new crosses. The date March 2022 is written several times on the gravestones, which number in the hundreds. The town suffered greatly because it was occupied by Russian forces and was an intense battleground. The inhabitants had to wait for the Russian army to leave before they could bury the bodies that littered the courtyards, streets and gardens. Taking away the corpses was forbidden by the Russians. Those who dared were shot. (see also :
https://www.rfi.fr/fr/podcasts/%C3%A9couter-le-monde/20231008-le-son-qui-reste%E2%80%93-drapeaux-au-vent)

3. ENDURING WAR AND ITS SOUNDS

The silence hides traumatic experiences. Russian invasion has impact on the mental health of people in Ukraine, including stress, anxiety, depression, exhaustion, insomnia, nightmares of war, and post-traumatic stress disorder (PTSD) (Kang et al., 2023). In the early days, people were terrified and instantly dropped to the ground after an alert signal. Today, people react with much more restraint, quickly "reading" the threat level from the sounds. Now, in 2024, after two and a half years of war, people seem to be used to reacting to war sounds. They sort sounds according to need. The "subtleties" of the air raid system must be distinguished: "continuous tones, rising and falling, high and low, sinusoidal oscillations between a pitch of about 200 Hz and 400 Hz, interrupted by a pause". The same applies to the varieties of "artillery" sounds. This is what can be called the acquired sound sensitivity syndrome. However, reactions vary depending on the person, the situation, the time of day and even more so where you live. Some people don't go to the air raid shelter every time after the alerts, which come several times a day. Repeated alerts create boredom and a sense of waiting and anxiety. Anxiety also evolves. People who were able to escape abroad, refugees, continue to be traumatised by these sounds. Fireworks, lightning, air alerts, the wheels of a suitcase can all raise buried sonic memories to the surface. In other wars in other contexts, these traumas have lasted for years.

War films and mainstream medias are based on effects that literally bombard their viewers with sound. Many recent studies have also focused on the damage caused by the heavy sounds of war, the sounds of guns and tanks, and consider listening as an act of survival (Goodman, 2012; Daughtry, 2020). The sounds of everyday life are absent or barely audible (Sykes, 2018). However, the "sounds of war" and wartime audition have a much more complex structure than machinery. One way to access the emptiness or confusion caused by war is to consider the sensory and hearing experience of everyday civilian life, frequently temporally and spatially altered by war. Everyday life is constantly rearranging itself rather than disappearing: we can look at the specific situations in which these disturbances occur. Another aspect is that in their discourse, particularly in public, people are also silent. Many people, including

refugees, do not talk about their sensitive experience of war. This is sometimes a strategy of protection. Our study involves being attentive to the plurality of sounds, hearings/listenings and experiences, and therefore in their duration. This approach goes against the idea of a universal auditive experience of war.

4. BIBLIOGRAPHY

Daughtry, J. M. (2020). Listening to War Sound, Music, Trauma, and Survival in Wartime Iraq. Oxford University Press.

Goodman, S. (2012). Sonic warfare: Sound, affect, and the ecology of fear. MIT Press.

Hartford, K. (2017). Listening to the din of the First World War. Sounds Studies, 3(3), 98-114. *https://doi.org/10.1080/20551940.2017.1392227*.

Kang, T.S., Goodwin R., Hamama-Raz Y., Leshem, E. & Ben-Ezra, M. (2023). Disability and post-traumatic stress symptoms in the Ukrainian General Population during the 2022 Russian Invasion. Epidemiology and Psychiatric Sciences. *https://doi.org/10.1017/S204579602300015X*.

Sykes, J. (2018). Ontologies of acoustic endurance: rethinking wartime sound and listening. Sound Studies, *https://doi.org/10.1080/20551940.2018.1461049*.

Tańczuk, R. & Wieczorek S. (Eds). (2018). Sounds of War and Peace: Soundscapes of European Cities in 1945 (Eastern European Studies in Musicology Book). Peter Lang.

L16

"IT'S SO EASY TO LIVE HERE": SENSORIAL MAPPING AND CRITICAL ETHNOGRAPHY OF MARGINALIZATION, PLACE-ATTACHMENT AND AGENCY IN ITTOQQORTOORMIIT (KALAALLIT NUNAAT, GREENLAND)

"É TÃO FÁCIL VIVER AQUI": MAPEAMENTO SENSORIAL E ETNOGRAFIA CRÍTICA DA MARGINALIZAÇÃO, APEGO AO LUGAR E AGÊNCIA EM ITTOQQORTOORMIIT (KALAALLIT NUNAAT, GRONELÂNDIA)

Tanguy Sandré 1, 2,
tanguy.sandre@uvsq.fr
1: Cultures, Environnements, Arctique, Représentations, Climat, CEARC-OVSQ
2: Centre for the Study of the Sciences and the Humanities

Louise-Marie Jouault
louise.marie.lmj@gmail.com

ABSTRACT

"It's so easy to live here." This singular phrase was captured many times in the remote Arctic town of Ittoqqortoormiit (Kalaallit Nunaat, Greenland). This contrasts with the harshness described in literature and history, where mapping was a crucial tool for the Danish settlers to gain sovereignty over east coast of Kalaallit Nunaat. Throughout four critical ethnographic fieldworks in the Arctic town of Ittoqqortoormiit between 2021 and 2023, we mobilized a narrative-centered transdisciplinary approach aiming at supporting marginalized voices and contributing to process of empowerment. In this contribution, we propose to extend the framework of critical ethnography by mobilizing sensorial mapping to reiterate voices pushed in the margins. By allying ethnographic research and artistic map, we contribute to the articulation between large-scale and place-based dynamics as experienced locally. It also provides space for the representation of placeattachment and belonging, relationships with other-than-humans and territorial agency, and not least indigenous place-naming.

KEYWORDS: sensorial mapping, lived experience, critical ethnography, marginalization, agency.

RESUMO

"É tão fácil viver aqui". Essa frase singular foi capturada muitas vezes na remota cidade de Ittoqqortoormiit (Kalaallit Nunaat, Groenlândia). Isso contrasta com a dureza descrita do Ártico, onde o mapeamento foi uma ferramenta crucial para os colonizadores dinamarqueses conquistarem a soberania sobre a costa leste de Kalaallit Nunaat. Ao longo de quatro trabalhos de campo de etnografia crítica, mobilizamos uma abordagem transdisciplinar centrada na narrativa com o objetivo de apoiar vozes marginalizadas e contribuir para o processo de empoderamento. Nesta contribuição, propomos estender a estrutura da etnografia crítica mobilizando o mapeamento sensorial para reiterar as vozes empurradas para as margens. Contribuímos para a articulação entre a dinâmica de larga escala e a dinâmica baseada no local. Isso também oferece espaço para a representação do apego e do pertencimento ao lugar, das relações com outros seres humanos e da agência territorial e, não menos importante, da nomeação de lugares indígenas.

PALAVRAS CHAVE: mapeamento sensorial, experiência vivida, etnografia crítica, marginalização, agência.

1. INTRODUCTION

In October 2022, Charlotte Pike, the former local representative of Ittoqqortoormiit (East Kalaallit Nunaat/Greenland) in the *Inatsisartut*, the national parliament (2021-2022), initiated a petition entitled "Ittoqqortoormiini Umiarsuaqaqqittariaqarpugut". The petition called for the community to be better supplied with an additional supply ship, after many goods went missing from the second and last Royal Arctic Line (RAL) ship of the year. While the Arctic town of Ittoqqortoormiit is indeed

narrated by local resident in terms of remoteness and persistence of processes of marginalization, place-attachment and agency are critical to understanding people's lived experience. For example, "it's so easy to live here" was a common statement alongside discussions during our second fieldwork in the town.

This expression of easiness, first, contrasts with the harshness of the Arctic as described by upper-class white male Arctic explorers. The latter have saturated Arctic literature and history. Mapmaking was a crucial means of asserting Western sovereignty over what were perceived as "empty spaces" to be colonized. In East Kalaallit Nunaat in particular, the dispute between Norway and Denmark in the 1920s led to an escalating race between Denmark and Norway to map the east coast as accurately as possible (Arke & Jónsson, 2010, pp. 126–127). Denmark won the case against Norway at the International Court of Justice in The Hague and was granted sovereignty over all of Kalaallit Nunaat. Second, the assertion of easiness challenges the science-based narrative of the Arctic , which has been portrayed primarily through observations of rapid climate-induced change, accelerated by the polar amplification occurring in the Arctic – phenomenon by which the Arctic has warmed about four times faster than the globe since 1979 (Rantanen et al., 2022). Third, the expression of easiness cannot be understood apart from the persistence of processes of marginalization that the people often express. Although Kalaallit Nunaat has recently gained a greater degree of autonomy from Denmark since 2009, the historical subalternization of the Tunumiut, the east coast inhabitants, literally the inhabitants of the backside of the country, by the Kingdom of Denmark is reiterated by the central government of Kalaallit Nunaat based on the west coast.

In this article, we propose to extend the framework of narrative-based research by exploring the potential of sensorial mapping as a decolonial approach to reiterate voices pushed in the margins. By allying ethnographic research and artistic mapping, we aim to consider contextual representations of place in its visibilization of local subjectivities and power dynamics. The next section (2) presents the context of the research and specifies our approach to open the dialog between critical ethnography and sensorial mapping. The results section (3) provides an account of the expression of marginalization, place-attachment and agency in relation to place(s). Finally, the discussion section (4) discusses the potential of the sensorial map in creation to promote a transdisciplinary dialogue attentive to power dynamics and fertile for the visibilization of lived experience.

2. SENSORIAL MAPPING AS A COUNTER-NARRATIVE DEVICE IN ITTOQQORTOORMIIT
2.1 Case Study: Ittoqqortoormiit, East Kalaallit Nunaat
Ittoqqortoormiit is the northernmost community on the east coast of Kalaallit Nunaat (70°30'N22°W), located at the mouth of the Kangertittivaq (Scoresby

Sound). Ittoqqortoormiit was founded as a colony in 1924-1925 by Ejnar Mikkelsen. The foundation was a piece in the escalating conflict between Denmark and Norway over sovereignty in Northeast Kalaallit Nunaat. Seasonally covered by sea ice, the Kangertittivaq fjord is influenced by cold polar air from the north, oceanic air from the south and cold, dry air from the west. An area of permanent open water, a polynya, has long been identified at its mouth. The community of Ittoqqortoormiit has long relied on subsistence hunting as its main source of income and it remains an important aspect of the local food supply (e.g., muskox, narwhals, seals, polar bears) but is also, and very importantly, deeply anchored in local identity. In 2023, among the 352 inhabitants of the town (Statistics Greenland, 2023), 11 were professional hunters. In recent years, the Ittoqqortoormeermii, the inhabitants of Ittoqqortoormiit, have been faced with multidimensional transformations. Since the Self-Government Act (2009), Ittoqqortoormiit municipality was incorporated into the much larger Kommuneqarfik Sermersooq, ruled from the capital. Since then, the town is experiencing a significant population decline driven by the mobility of educated community members to Nuuk - from 509 inhabitants in 2008 to 352 in 2023. Notably this has led to an increased feeling of institutional marginalization and a decline of local services. Together with the aforementioned challenges, the community is also dealing with larger ecological restrictions (Sandré et al., 2023; Sandré, Vanderlinden, et al., 2024), rapid and non-linear sea ice changes (Sandré, Wardekker, et al., 2024). The town is also characterized by its remoteness as the nearest kalaaleq town is Tasiilaq (800 kilometers south). Access to the community is highly weatherdependent. Ittoqqortoormiit is only connected by air to Iceland and only two cargo ships deliver food supplies in July-August and September.

2.2 From narratives to sensorial mapping: theoretical and methodological approach

2.2.1 An approach anchored in people's narratives

In Ittoqqortoormiit, four long fieldworks have been conducted by the main author – from four weeks to two months. Open-ended interviews, participant observations and informal discussions were sustained remotely and locally from 2021. In this article, we mobilize 32 interviews with 22 community members collected from 2019 to 2023 in Ittoqqortoormiit. Interviews were conducted in English, Danish or Tunumisut (with an interpreter). The interviews were conducted with the aim of collecting local experience of changes and to understanding the meaning people associated to living here. We adopted a narrative-based approach in order to decipher how people make sense of their experiences as "people express, develop, and model their identity, and even their future actions, through narration" (Moezzi et al., 2017, p. 6). Narratives also elicit knowledge, beliefs and experiences that are mobilised by community members and local communities to make sense of changes (Vanderlinden et al., 2020). In addition, narratives are critical in situations of epistemic or environmental injustice as they support people's own ability to speak (Ottinger, 2017) and contribute to the recentring of knowledge from the margins (Dutta et al., 2022) and the process of empowerment (Datta, 2018).

2.2.2 When critical ethnography meets sensorial mapping

Sensorial mapping is often described as a methodological tool whose objective is toward accounting "for subjective forms of space perception. It is thought of as an alternative to modalities of objectivizing representations of space" (Arménio et al., 2022). Although this distinction is fragile as mapping is inherently situated and rarely devoid of intentions and purposes, sensorial mapping is a powerful tool for representing relationships between place, lived experience, and community. Following Powell (2010), we consider that (sensorial) mapping is a powerful tool for "encountering and (re)presenting empirical material, particularly in the ways that the visual evokes multisensory, and thus an embodied, experience" (p. 549). Our sensorial mapping approach, informed by critical ethnography, is conceived as a form of reiteration of the lived experience. As Madison (2020) points out, critical ethnography requires to "probe other possibilities that will challenge institutions, regimes of knowledge, and social practices that limit choices, constrain meaning, and denigrate identities and communities." (p. 30). Therefore, sensorial mapping is mobilized as a counter-narrative device that holds the potential to challenge the imbalance of power maintained by conventional maps that have been and are crucial tools for affirming control and rights over space.

2.2.3 Thematic coding and co-occurrence of places

The interviews were coded using Atlas.ti 9, following an emergent coding approach, i.e., the codes are not pre-determined, but rather emerge empirically. We identified three main categories: marginalization, place-attachment, and agency. These three categories bring together different thematic codes (see next sections). We also applied place-name codes, i.e., when a place appeared to be mentioned, we associated it to a quota whose appellation is the name of the place. This allowed us to map the co-occurrence between thematic codes and specified (see Figure 1). This is the first step to prepare the artistic creation of a sensory map.

3. MARGINALIZATION, PLACE-ATTACHMENT AND AGENCY AS EMERGING CATEGORIES IN ITTOQQORTOORMEERMII'S NARRATIVES AND LIVED EXPERIENCES

Despite the town's remote location, Ittoqqortoormiit's residents are largely connected to the globalized world. If the community has long relied on subsistence hunting (polar bear, walrus, narwhal, muskox, seals, etc.) as its main source of livelihood, reliance on imports has increased, a greater proportion of the population is engaged in domestic and international mobility, and residents are highly present and engaged in social media. In 2024, Ittoqqortoormeermii is experiencing multidimensional changes driven by distance from decision-making, lack of social services, general distrust of local knowledge, environmental constraints, linguistic subalternation, and general stigmatization of East Coast people. Among the people's narratives, we have

identified three main categories that capture the diversity of experiences of place: marginalization, place-attachment, and agency.
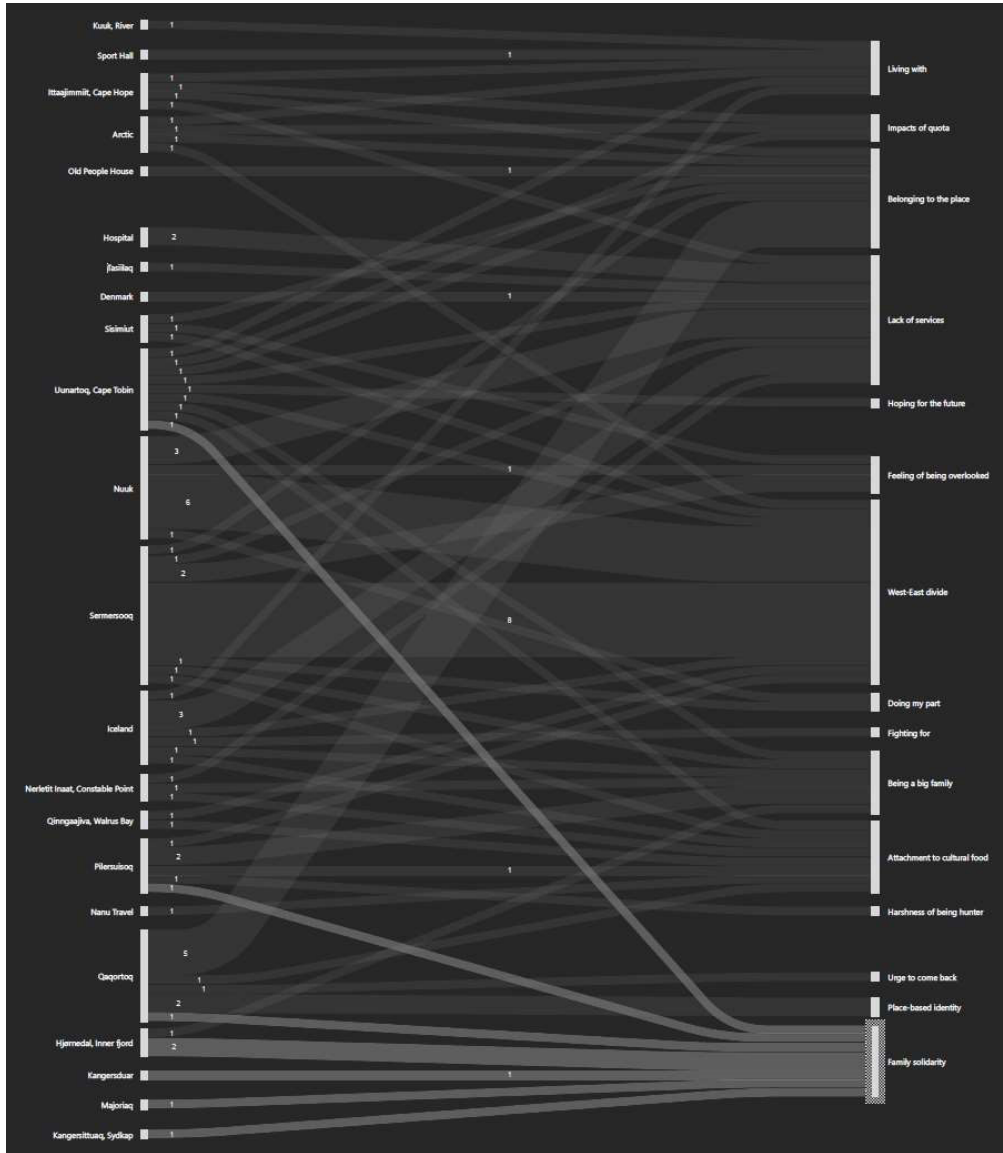
Figure 1. Co-occurrence of marginalization, place-attachment and agency codes, and place names in people narrative, generated by Atlas.ti 9.

3.1 Marginalization

3.1.1 "We have to ask to Nuuk": the feeling of being marginalized by the central administration

- **West-East divide:** East Kalaallit Nunaat have historically been considered and marginalized by the central colonial administration, then post-colonial since 1959. The divide between East and West Kalaallit Nunaat after the 2009 municipal merger has increased the centralization of power in Nuuk, the capital, and marginalized the local population.
- **Feeling of being forgotten:** The region is often forgotten and stigmatized because of its alleged violence, the costs it would represent or the "primitiveness" of its inhabitants.
- **Lack of services:** The scarcity of human resources and services is critical for the inhabitants, for example, the absence of a doctor forces pregnant women to move out, at two days travel, a month before the birth date.

3.1.2 "The hunters have big problems": the difficulty of maintaining the way of life

- **Harshness of being hunter:** The number of hunters is decreasing, while the community has always been defined as a subsistence hunting community. The generation of income through hunting has become so low that fewer and fewer people in the next generation are willing to be hunters.
- **Impacts of quota:** Since 2004, the imposition of quotas on hunting prey has drastically changed practices and the relationship with non-human animals, e.g., the increasing number of polar bears is now perceived as a threat to the local population.

3.2 Place-Attachment

"Place attachment refers to bonds that people develop with places, bonds that are multidimensional, evolve through time" (Giuliani, 2003). In times of changes, place attachment is identified, for instance, as a determinant of the decision to out-migrate as an adaptation strategy (Heleniak, 2009). Place attachment is also identified as a strong identity marker (Dixon & Durrheim, 2004). Place attachment may also be seen as the integration of multiscale connections: connection to those we hold dear, connection to our community and connection to the environment, connection to our ancestors who lived and died and are buried there (Raymond et al., 2010).

3.2.1 Expressions of belonging

- **Belonging to the place:** In Ittoqqortoormiit, belonging to the community in which people live is associated with a specific way of life. It also includes expressions of ownership (e.g., it's my land), love (e.g., I love dog sledding), cognitive and identity claims.

- **Attachment to cultural food:** Attachment to hunting food is framed and experienced as a way of affirming culture and place specificity, e.g., specific taste, "soul food". This also includes ideas of species preservation.

3.2.2 "We must help each other": community solidarity
- **Being a big family:** The remoteness and size of the town is associated with statements such as "we have to be together" or "we have to help each other". It is often linked to the description of what a hunter's life is like.
- **Family solidarity:** Solidarity is also central to the way people relate to their family members and the way knowledge is passed from generation to generation.

3.2.3 "Something is missing": entanglement in place
- **Place-based identity:** Ittoqqortoormiit plays a central role in how people define and present themselves, in such a way that individual identity is inextricably entangled or intertwined with place.
- **Urge to come back:** When people have to move away, for example, for education, the experience of residents who have lived abroad is often portrayed as a threatening one, with expressions of homesickness, of "something missing", or feelings associated with the "urge to return".

3.3 Agency
Human agency is "the ability of people to act intentionally to shape their worlds" in other words to "convert ideas into purposeful actions" (Nash, 2005, p. 67). The emphasis on agency is crucial in postcolonial or marginalized contexts where humanity and agency are often denied.

3.3.1 "We must do something for the community"
- **Doing my part:** The desire to do something, to help the community, to make things better is often present in people's vision of the future. It is also often related to the need to bring people back after they have gone out for education (see above).
- **Fighting for:** The situation of marginalization experienced by the local population pushes people to take action and to engage in resistance discourse, for example in the face of divergent values or concerns coming from outside.

3.3.2 Living with adversity
- **Living with:** The ability to face situations of uncertainty and changing conditions (e.g., changing climate and sea ice), and the acceptance of the inability to reduce these uncertainties, plays a key role in how people cope with situations in which they have limited agency.
- **Hoping for the future:** Expressing hope for the future is often linked to this inability to predict what will come next. Optimism plays a central role in overcoming adversity.

4. CONCLUSION

As Olmedo (2021) points out, sensorial mapping opens up space to rethink the boundaries between the arts and sciences, while contributing to recentre the understanding of lived experience. Furthermore, in the context of marginalisation and subalternation, the use of a narrative-centred transdisciplinary approach creates an opportunity for the reiteration of marginalized voices (Sandré et al. 2023). Similarly, narratives are critical in situations of epistemic or environmental injustice as they support people's own ability to speak for themselves (Ottinger 2017) and contribute to the recentering of knowledge from the margins (Dutta et al. 2022) and the process of empowerment (Datta, 2018). By paying attention to people experience of the place, it could also give pride of place to people's sensibilities and emotions in the writing of scientific knowledge. The use of drawing also aims at representing the ecology of the town, i.e., the links between humans and non-humans, the seasons and the territory. It also shows how infrastructures and built spaces can be tools of domination on the one hand, and expressions of identity on the other. The elaboration of transdisciplinary objects creates space for an open dialogue through discipline, but also through different epistemic cultures. As Olmedo (2021, p. 15) wraps it: "Potentially sharable and stimulating the exchange of experiences, they are a source of epistemological rethinking of scientific standards of inquiry and scientific language." (our translation).

Note: This is a working paper. It was conceived in the process of co-designing an approach to bridge critical ethnography and sensory mapping. As this process is still in progress, the contents and arguments are largely subject to change.

5. REFERENCES

Arke, P., & Jónsson, S. (2010). *Stories from Scoresbysund: Photographs, Colonisation and Mapping.*
/paper/Stories-from-Scoresbysund-%3A-Photographs%2C-and-Arke-J%C3%B3nsson/e2cd2939dbb6ef8be628e9d35a53516fdad1db2a

Arménio, J., Gatelier, K., Landrin, L., & Revol, R. (2022). "Sensitive Mapping." In *Performascope: Interdisciplinary Lexicon of Performance and Research-Creation.* Université Grenoble Alpes. *http://performascope.univ-grenoblealpes.fr/en/detail/177603*

Datta, R. (2018). Traditional storytelling: An effective Indigenous research methodology and its implications for environmental research. *AlterNative: An International Journal of Indigenous Peoples, 14*(1), 35–44. *https://doi.org/10.1177/1177180117741351*

Dixon, J., & Durrheim, K. (2004). Dislocating identity: Desegregation and the transformation of place. *Journal of Environmental Psychology, 24*(4), 455–473. *https://doi.org/10.1016/j.jenvp.2004.09.004*

Dutta, U., Azad, A. K., & Hussain, S. M. (2022). Counterstorytelling as Epistemic Justice: Decolonial Communitybased Praxis from the Global South. *American Journal of Community Psychology, 69*(1–2), 59–70. *https://doi.org/10.1002/ajcp.12545*

Giuliani, M. V. (2003). *Theory of Attachment and Place Attachment. In M. Bonnes, T. Lee, and M. Bonaiuto (Eds.), Psychological theories for environmental issues.* (pp. 137–170).

Heleniak, T. E. (2009). The role of attachment to place in migration decisions of the population of the Russian North. *Polar Geography, 32*(1–2), 31–60. *https://doi.org/10.1080/10889370903000398*

Madison, D. S. (2020). *Critical ethnography: Method, ethics, and performance* (Third Edition). SAGE.

Moezzi, M., Janda, K. B., & Rotmann, S. (2017). Using stories, narratives, and storytelling in energy and climate change research. *Energy Research & Social Science, 31*, 1–10. *https://doi.org/10.1016/j.erss.2017.06.034*

Nash, L. (2005). The Agency of Nature or the Nature of Agency? *Environmental History, 10*(1), 67–69. *https://www.jstor.org/stable/3985846*

Olmedo, É. (2021). À la croisée de l'art et de la science: La cartographie sensible comme dispositif de recherchecréation. *Mappemonde. Revue trimestrielle sur l'image géographique et les formes du territoire, 130*, Article 130. *https://doi.org/10.4000/mappemonde.5346*

Ottinger, G. (2017). Making sense of citizen science: Stories as a hermeneutic resource. *Energy Research & Social Science, 31*, 41–49. *https://doi.org/10.1016/j.erss.2017.06.014*

Powell, K. (2010). Making Sense of Place: Mapping as a Multisensory Research Method. *Qualitative Inquiry, 16*(7), 539–555. *https://doi.org/10.1177/1077800410372600*

Rantanen, M., Karpechko, A. Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., Vihma, T., &

Laaksonen, A. (2022). The Arctic has warmed nearly four times faster than the globe since 1979. *Communications Earth & Environment, 3*(1), Article 1. *https://doi.org/10.1038/s43247-022-00498-3*

Raymond, C. M., Brown, G., & Weber, D. (2010). The measurement of place attachment: Personal, community, and environmental connections. *Journal of Environmental Psychology, 30*(4), 422–434.
https://doi.org/10.1016/j.jenvp.2010.08.002

Sandré, T., Gherardi, J.-M., Madsen, O., Zhu, Z., & Vanderlinden, J.-P. (Directors). (2023). *Inuuniddinni Ilaaralaaor*

[Video recording]. CEARC Research Center. *https://vimeo.com/843981469*

Sandré, T., Vanderlinden, J.-P., Gherardi, J.-M., Zhu, Z., & Wickson, F. (2024). Addressing epistemic injustices in species at risk assessments through improved credibility and legitimacy: Case study of narwhal management in Ittoqqortoormiit. *NAMMCO Scientific Publications, 13*. *https://doi.org/10.7557/3.7371*

Sandré, T., Wardekker, A., & Gherardi, J. (2024). While waiting for the sea ice: Stories of changes from

Ittoqqortoormiit. In S. Bremer & A. Wardekker (Eds.), *Changing seasonality: How Communities are Revising their Seasons* (De Gruyter). 0.1515/9783111245591-007

Vanderlinden, J.-P., Baztan, J., Chouinard, O., Cordier, M., Da Cunha, C., Huctin, J.-M., Kane, A., Kennedy, G., Nikulkina, I., Shadrin, V., Surette, C., Thiaw, D., & Thomson, K. T. (2020). Meaning in the face of changing climate risks: Connecting agency, sensemaking and narratives of change through transdisciplinary research. *Climate Risk Management, 29*, 100224. *https://doi.org/10.1016/j.crm.2020.100224*

L17

SAD ATMOSPHERES AND DESPAIRING CITIES

CHAIRS Marc Breviglieri
Paul Bai
Lucia Bordone
Nicole Peccoud

This session will look at sad and gloomy emotional registers, rarely highlighted in the literature on urban ambiances. Yet the experience of cities frequently takes on an intimately unhappy affective coloring for its visitors or inhabitants. In this session, we'd like to focus on "urban sadness", an ordinary mood that can be seen as a powerful witness to the affective knots that bind us to cities.

In this session, we'd like to examine how and to what extent these attachments are affected by the convergence of architectural, meteorological and affective dimensions. Gloomy moods, cold architectures and grayish, rainy climates, for example, maintain connecting paths that see the city unfold in a certain tone: sad, gloomy and dreary.

In this session, we'd like to look at some of the issues surrounding urban transformations and their possible perceived brutality. In every process of transformation, a perspective on the future slips away, putting to the test the reserve of promises and expectations that the city inherently holds. A way of living in and depending on the city is inevitably stripped of its meaning, leading to the sad impression of losing oneself in this absence.

At first glance, a number of urban transformations that alter the way people live appear to be relevant to the idea of communicating "sad atmospheres": desolate landscapes, disused buildings, the disappearance of familiar shops, the devastation or closure of public gardens, the elimination of popular viewpoints and byways, the privatization of public spaces, the proliferation of monotonous buildings, the invasion of tourism, the excessive standardization of urban design, the dulling of folklorized festive events, etc.

More broadly, the challenge of this session is to take seriously a subtle feeling - sadness - that draws on and spills over into the urban environment. By resonating intimately, it allows us to depict, against an obscure background, a certain relational and sensitive power of the city that is difficult to reduce to a measurable property. This darker face of the city thus goes beyond the ills identified in the usual urban diagnoses that point to objective nuisances: technical dysfunction, infrastructural inadequacy, conflicts of use, lack of safety or hygiene. Instead, our session focuses on the deep-rooted feelings inspired by the personality of cities, leaving visitors and residents in a troubled, reflective state, marked by a darkening of mood and sometimes a form of painful apathy.

Whether tending towards the poles of despair, spleen, gloom or melancholy, urban sadness is a sensitive indicator of certain atmospheric qualities that cities exude.

Papers can be presented in a variety of formats: purely analytical reflections, presentations of field notebooks, readings of filmic or photographic images, musical, danced or poetic performances.

The session will focus on a comprehensive approach to the sources and manifestations of "urban sadness". It will focus on the fact that sadness is a possible vehicle for inspiration emanating from the city.

"AS IF IT HAD ONLY BEEN A DREAM". LISTEN CAREFULLY TO THE TWINGE OF SADNESS THANKS TO SOUND ETHNOGRAPHY.

Paul Bai[11]

[1] AAU-CRESSON – Univ. Grenoble Alpes, CNRS, ENSAG*, AAU-CRESSON,
38000 Grenoble, France
* School of Architecture Univ. Grenoble Alpes – France

ABSTRACT

"As if it had only been a dream". Listen carefully to the twinge of sadness thanks to sound ethnography. ("Comme si cela n'avait ´et´e qu'un songe". Se mettre `a l'´ecoute du pincement au coeur `a travers une ethnographie sonore).

This paper will look back at the abrupt end of an emblematic urban agriculture project in the hinterland of railway stations in northern Paris. Focusing our discussion on the different levels of attachment of the members of the association responsible for the project, we hope to examine how the loss of a familiar urban landscape leads to a feeling of sadness among those who have known it. With this disappearance as a starting point, we'll try to describe the atmosphere of Jane Jacobs' famous "borders vacuums".

On 12 December 2022, on the Fermiers G´en´ereux Whatsapp group, which brings together salaried members of the Vergers Urbains association, volunteers and residents of the La Chapelle district, I read a terse message: "goodbye", followed by "it's the end of the FG", at 10.52pm... After several days of silence, a volunteer commented: "last week I saw what 'the end of the Fermiers G´en´ereux' meant. In fact, there's nothing left, as if it had all just been a dream.

The Fermiers G´en´ereux project may have fallen victim to this policy of a clean slate, but the idea of the garden as a source of nourishment, combined with the ideal of a "street kitchen" opening onto a public space capable of creating a society of neighbours, is still alive and well. Indeed, a number of similar initiatives have sprung up in recent years, certainly seeking to enhance the appeal of a city where what lives there spills over and encroaches on the public space in small ways, thereby helping to re-enchant it.

The paper will be based on a sound ethnography geared towards the twinge of sorrow, seeking to convey the emotional power of the disappearance of a part of the city where the memory of the aborted project remains.

Keywords: Sound ethnography, urban agriculture, disappearance, attachments, sad atmospheres

VACANT INDUSTRIAL SPACES AS PLACES WHERE MELANCHOLY IS INSCRIBED: BETWEEN MEMORY AND IMAGINATION.

ESPAÇOS INDUSTRIAIS VAGOS COMO ESPAÇOS ONDE A MELANCOLIA SE INSCREVE: ENTRE A MEMÓRIA E A IMAGINAÇÃO

Alexandre Cotovio Martins
Coordinator Researcher
a.martins@ipportalegre.pt

ABSTRACT

In this communication, we will try to touch on some points of the arc that articulates memory and imagination about vacant industrial spaces, through a double device: on the one hand, recovering the visions of a group of interviewees about an industrial space in transition, a space of their working memories and whose transformation they were facing at the time of the interviews we made with them, at the beginning of the 21st century (2002-2003); on the other hand, introducing imagery elements, through photography, about this space today, as well as some of its uses. In the end, we will try to characterise, albeit exploratorily, some of the ways and means by which these vacant industrial spaces become a reference, either on a mnemonic level or on an imaginary level - depending on the dominant orientation in each case -, towards the rooting of a melancholic vision of them.

KEYWORDS: vacant spaces. industrial spaces. memory. imagination. melancholy.

RESUMO

Nesta comunicação tentaremos tocar em alguns pontos do arco que articula memória e imaginação sobre espaços industriais devolutos, através de um duplo dispositivo: por um lado, recuperando as visões de um grupo de entrevistados sobre um espaço industrial em transição, um espaço de suas memórias de trabalho e cuja transformação enfrentavam no momento em que foram entrevistados, no início do século XXI (2002-2003); por outro lado, introduzindo elementos imagéticos, através da fotografia, sobre este espaço hoje, bem como alguns dos seus usos. No final, tentaremos caracterizar, ainda que de forma exploratória, algumas das formas e meios pelos quais estes espaços industriais devolutos se tornam uma referência, quer a nível mnemónico, quer a nível imaginário - dependendo da orientação dominante em cada caso -, rumo ao enraizamento de uma visão melancólica deles.

PALAVRAS CHAVE: espaços vagos. espaços industriais. memória. imaginação. melancolia.

1. INTRODUÇÃO

Gaston Bachelard, na sua obra sobre a poética do espaço (1957), aborda o conceito de espaço(s) habitável(eis), isto é, visto(s) no horizonte da possibilidade de ser(em) o(s) lugar(es) de inscrição do íntimo, lugar(es) investido(s) de sentimentos e significados carregados de rizomas emocionais, lugar(es) mnemónico(s), lugar(es) de um imaginário de habitação. Espaços do habitar. Mas a verdade é que se utilizarmos a obra de Bachelard para, por contraste, nos ajudar a olhar para os problemas do espaço - e do espaço urbano em particular - podemos reconhecer muitos outros espaços, como os espaços industriais desactivados - ou próximos disso -, que não só seriam difíceis ou impossíveis de habitar (ainda que metaforicamente); espaços de estranheza, de rupturas na paisagem, espaços brutais, envenenados, duros, ásperos,

tóxicos, eventualmente letais, mas nos quais, ainda assim, podemos vislumbrar a possibilidade, senão de uma poética, de uma exploração imaginária penetrante. Espaços do estranhamento.

Neste breve texto, que não encaramos como mais que um resumo alargado da comunicação a apresentar, dado o seu carácter exploratório e tentativo, procuraremos tocar, através de dois cenários, em alguns pontos do arco que articula memória e imaginação sobre espaços industriais devolutos, através de um duplo dispositivo: por um lado, recuperando as visões de um grupo de entrevistados sobre um espaço industrial em transição, um espaço das suas memórias de trabalho e cuja transformação enfrentavam na altura das entrevistas que com eles realizámos, no início do século XXI (2002-2003); por outro lado, introduzindo elementos imagéticos, através da fotografia, sobre esse espaço hoje, bem como alguns dos seus usos. No final, tentaremos caraterizar, ainda que de forma exploratória, algumas das formas e meios através dos quais estes espaços industriais devolutos se tornam uma referência, quer a nível mnemónico, quer a nível imaginário - dependendo da orientação dominante em cada caso -, para o enraizamento de uma visão melancólica dos mesmos.

2. CENÁRIOS
2.1 Cenário I
2.1.1 *Um espaço do habitar*
Tivemos oportunidade, noutro lugar (Martins, 2002), de mostrar como processos espaciais e processos propriamente sociais se encontram, amiúde, estreitamente articulados, debruçando-nos, em particular, sobre a habitação. Não estudámos, porém, contextos habitacionais resultantes do jogo das forças do mercado, ou sequer da intervenção pública, mas sim contextos muito particulares que se caracterizam pela promoção de habitação operária por parte de patrões da indústria, no quadro mais amplo dos sistemas de proteção e fidelização da mão-de-obra operária às empresas industriais que vieram a ser conhecidos, na literatura especializada, pela designação de *paternalistas.*

Explicitemos: a população que, desde 1908, começa a alojar-se regularmente nas casas disponibilizadas pela Companhia União Fabril – ou, de forma mais simples e, porventura, mais sugestiva, a viver nelas – não tinha, na sua grande maioria, qualquer vínculo territorial à então Vila do Barreiro (Portugal), como refere Maria Alfreda Cruz (1973). De facto, embora se verifique que, a partir de 1890, pelo menos, já existe um acréscimo populacional significativo na população concelhia, na ordem dos 37%, na década de 1900 a 1911 o crescimento cifra-se em 56% - partindo duma população que, em termos absolutos, já era 37% maior do que em 1890. Observando-se aqueles dados, pode-se, pois, dizer que o verdadeiro ímpeto inicial da Companhia União Fabril (que chegou a ser uma das maiores empresas industriais da Europa) no Barreiro se dá, em grande medida, devido à sua capacidade de atrair e fixar junto a si uma

população em rápido processo de reconversão ocupacional e, até, social e cultural. Esta capacidade de atração e fixação de mão-de-obra terá passado em larga medida pela criação da rede de serviços sociais da empresa e de alojamento operário. Nas condições da época, a dedicação de uma especial atenção à questão do alojamento operário, ou mesmo, como foi o caso, a implementação de uma política de habitação, ter-se-á apresentado aos decisores como uma solução de crucial importância para fazer avançar e concretizar os planos da Companhia (Martins, 2002). Uma massa de trabalhadores, na sua grande maioria oriundos de um mundo rural em crise, dirigindo-se para as aglomerações urbanas em busca de ocupação na indústria, por um lado, e, por outro lado, uma empresa que começava então a instalar as suas mais importantes fábricas e necessitava, para assegurar o seu funcionamento, de uma mão-de-obra disponível: estes são, sem dúvida alguma, dois dados essenciais à compreensão da necessidade de constituição de uma política de habitação na C.U.F. e do consequente fenómeno de construção social de uma nova população na vila do Barreiro. Falar-se da população operária da C.U.F. ou da política de habitação da Companhia deixando de lado este contexto, é, talvez, dotar-se dos meios para se abster de compreender uma ou a outra coisa.

Na vila do Barreiro da primeira década do século XX a problemática da habitação, particularmente da habitação operária, assumia especificações próprias, nomeadamente – e sobretudo – pela própria dinâmica demográfica gerada pela industrialização e, particularmente, pela instalação, em 1907, das fábricas da Companhia União Fabril (Martins, 2003; Cruz, 1973). A grande massa de trabalhadores que acorreu à vila ribeirinha trouxe problemas inteiramente novos, no que concerne à respetiva organização territorial. Maria Alfreda Cruz alude detalhadamente às condições habitacionais das classes populares no Barreiro, em vésperas da entrada da CUF na localidade. Predominavam então como alojamento as "ilhas" e os "pátios" sobrelotados e frequentemente insalubres. Este tipo de alojamentos terá emergido de um processo semelhante ao que Nuno Teotónio Pereira (1994) isola em Lisboa, sensivelmente para o mesmo período (1870-1930). O processo de industrialização, claramente emergente a partir de meados do século XIX, vai concentrar em Lisboa e nas localidades envolventes a mão-de-obra operária. Esta concentração, além de fazer crescer a população da cidade, também muda a sua composição social, segundo Teotónio Pereira.

No caso do Barreiro, o modo de organização da habitação operária acabou, como mostra Maria Alfreda Cruz (1973), por assumir contornos bastante semelhantes: sobrelotação do alojamento, casas insalubres, exploração imobiliária. É, assim, claro que a intervenção da Companhia União Fabril, ao fornecer "casas económicas em boas condições de higiene e salubridade" (*idem*), veio fazer-se num contexto em que a habitação em condições "dignas" assumia um valor social muito elevado e, assim, mais se terá incrementado o seu papel estratégico enquanto forma de atração de mão-de-obra e de fidelização de certas franjas do operariado à Companhia. Esta capacidade terá continuado, aliás, a fazer-se sentir, porque a habitação operária no Barreiro continuou sendo um problema durante muitas décadas, no século XX.

Neste âmbito, pudemos, estudando a política de habitação operária da C.U.F. (Martins, 2002) e, em particular, a estruturação da experiência e do modo de vida da população que ocupou um dos principais bairros construídos por iniciativa da empresa, o Bairro de Santa Bárbara, no Barreiro, olhar para processos que designámos de *construção social das populações*, caracterizados pelo recorte, entre as populações operárias, de um subgrupo de trabalhadores de acordo com critérios de acesso à habitação em bairros relativamente fechados e integrados no interior do espaço industrial, processos estes que tenderam a constituir as populações de residentes com uma certa *homogeneidade sociográfica*. Isto, desde logo, pelo que acesso à habitação era feito com base em rígidos critérios que se referiam a importantes dimensões da posição social dos trabalhadores, como a sua situação profissional – trabalhadores permanentes vs precários – e familiar, definindo, por conseguinte, no espaço social constituído pela população trabalhadora um sub-conjunto de trabalhadores, passíveis de se tornarem residentes, ou efectivamente residentes, consoante os casos, de uma das casas da Companhia que promovia a habitação. Esta selectividade social nunca deixou de estar presente.

Este processo, continuado no tempo, teve uma influência apreciável na constituição desta população, tornando-a muito dependente do trabalho na fábrica e da relação com as chefias, do parentesco com os já residentes e da capacidade de mobilizar informações relevantes, baseada em solidariedades de cunho territorial, como forma de procurar aceder à habitação. Estas características da população formada neste processo tiveram um papel de relevo na formação de uma "identidade de bairro" (Bachelet, 1998). De facto, aquele conjunto de características dos residentes, sociologicamente semelhantes em campos socialmente relevantes e sujeitos a processos idênticos de entrada na fábrica e acesso à habitação, forneceram coordenadas básicas para essa identidade criando um campo de influência ao nível da interacção e da auto-representação e identificação dos residentes no bairro. As suas semelhanças de condição de classe (assalariados da indústria), de origem sócio-territorial (sobretudo migrantes rurais), de situação laboral (trabalhadores da CUF), de percurso residencial (habitação em más condições, antes de residirem no bairro da CUF), assim como a importância das sociabilidades baseadas no parentesco, afinidade e na origem territorial para a melhoria das suas condições de vida foram fulcrais para a construção da sua experiência enquanto moradores do Bairro de Santa Bárbara (Martins, 2002). Além disto, no bairro, os vizinhos eram os colegas de trabalho, o que é um traço central para a compreensão desta experiência, pelo seu próprio peso na estruturação de um quadro de interacção alicerçado num estreitamento das relações entre o *habitat* e o trabalho operários. As imagens do bairro e do seu modo de vida que os antigos residentes no bairro mobilizavam, quando os entrevistámos, funcionavam como recursos simbólicos privilegiados que estes utilizavam para afirmarem e demonstrarem esta sua experiência social, funcionando amiúde, no plano discursivo, como símbolos ou sinais centrais de uma pertença social que, no limite, implicava, em alguns casos, uma recusa do tempo presente. De modo associado, irrompe a figura da *nostalgia,* que não se resume a uma manifestação imediata de envelhecimento pessoal – envelhecimento, claro, também social, de

quem se sente ligado a um tempo há muito findo , embora este possa desempenhar aí um papel. Esta pertença, fortemente ancorada na vida quotidiana dos residentes e expressa nos discursos sobre a mesma, tinha como campo simbólico de referência e de estruturação fundamental o próprio quadro sócio-territorial de vivência comum.

2.2 Cenário II
2.2.1 *Um espaço do estranhamento*
Discutimos noutro lugar como, em diversos contextos urbanos e no entendimento que estabilizámos então, as bases da vida quotidiana assentam, entre outros dispositivos, em injunções gravadas nos objectos e tornadas reconhecíveis para as pessoas, que por sua vez se ajustam a cada situação à medida que se orientam para uma ideia de bem associada a operadores simbólicos como a eficiência, a produtividade ou a otimização. Um espaço valorizado será, então, aquele que propicia a realização destes operadores. Tal como Bruno Latour (1996) o expressa, embora não exatamente neste contexto, estamos perante uma espécie de simetria entre o mundo dos homens e o mundo dos objectos e da técnica, pois este último elemento de simetria encarna aquilo a que Latour chama "a massa que falta", tal como a massa que falta aos astrofísicos para realizarem o seu sonho de calcular a massa total do universo. Latour diz-nos que a "moral que falta" nos discursos dos grandes e menos grandes moralistas do nosso tempo está mesmo à frente dos nossos olhos, no mundo técnico. Podemos encontrá-la, por exemplo, no cinto de segurança e nos seus sistemas automáticos de aviso, que configuram todo um mecanismo moral, uma vez que têm origem em noções de segurança, trazidas à existência pelos engenheiros que conceberam e construíram o sistema, a fim de tornar claro ao condutor que, se não o utilizar, estará a ignorar um conceito de segurança pessoal que um *outro generalizado* espera dele.

Um dos aspectos centrais da vida metropolitana "globalizada", como refere Manuel Castells (1996), reside tanto na inserção dos centros urbano-metropolitanos em redes globais de intercâmbio, como na articulação desta faceta "global" com a existência quotidiana de territórios "locais" entre os quais fluem as populações metropolitanas. Uma das exigências centrais neste quadro de existência urbano-metropolitana está relacionada precisamente com a mobilidade quotidiana das pessoas entre os seus locais de trabalho e de residência, agora transformados em pontos distantes e territorialmente dispersos (Ascher, 1996). Para o viajante pendular, ou seja, aquele que se desloca diariamente entre vários pontos de uma área metropolitana, a metrópole aparece como um gigantesco mecanismo arquipelágico. As "ilhas" do arquipélago e as formas que utiliza para se deslocar de uma para a outra constituem o coração da sua rotina diária de deslocação. João Ferrão (2002) desenvolve esta perspetiva, afirmando que vivemos atualmente a organização dos territórios como arquipélagos com muitas ilhas interligadas por muitas redes.

Assim, a existência quotidiana do território metropolitano como um arquipélago tende a gerar um mapa percetivo da metrópole que, para os principais grupos populacionais, resulta num ofuscamento ou mesmo apagamento dos espaços e

territórios que se encontram entre e para além dessas "ilhas". Parece haver uma ignorância organizada (embora não necessariamente intencional) dos espaços intersticiais ou extremos das "ilhas", pontos nodais de mobilidade funcional e produtividade urbana, agora elevados a uma ideologia legitimadora que define formas correctas de organizar e usar o espaço urbano. Na linguagem conexionista e binária das redes, as ilhas representam os pontos nodais de uma rede, entre os quais circula o que está "dentro", por oposição ao que está "fora". Retomando a velha metáfora de Erving Goffman, poderíamos dizer que as novas formas de organização do espaço metropolitano tendem a produzir muitos e diversos "bastidores", por oposição aos "palcos" do quotidiano urbano ocupados pelas populações mais "produtivas" e "globalizadas", os conectados.

Estamos assim perante um advento da perceção do espaço metropolitano como funcional, face às exigências da competição global, que tende a reificar certos usos do espaço, apresentando-os como evidentes e inquestionáveis. Mesmo as frequentes críticas dos utentes da cidade tendem a centrar-se mais nas "disfunções" do sistema (falhas ocasionais no sistema de transportes públicos, buracos na estrada...) do que em questionar os fundamentos básicos da sua construção. Estamos a referir-nos a um conjunto de escolhas inevitavelmente morais agregadas numa sociedade metropolitana, que está desigualmente posicionada para imprimir o seu próprio ponto de vista e assim construir o seu espaço.

O espaço em que, há décadas, se situava, na então Vila do Barreiro, a C.U.F. e as suas fábricas, na zona ribeirinha do aglomerado urbano, transformou-se profundamente. Hoje, a cidade do Barreiro é um núcleo urbano integrado de forma densa na aglomeração urbanometropolitana que usualmente se designa por Área Metropolitana de Lisboa, significativamente caracterizada pelas lógicas quotidianas de *commuting.* Quanto à zona industrial onde se situava a C.U.F., foi sendo progressivamente desmantelada, encontrandose, presentemente, boa parte desta área num registo *expectante*, no sentido em que não tem uma funcionalidade urbana claramente definida, designadamente do ponto de vista dos usos das pessoas e instituições locais, encontrando-se, em área significativa, num registo de *espaço devoluto* e em clara degradação. A desestruturação, quer da lógica da organização social, quer da actividade industrial, quer ainda do próprio espaço edificado conduziu a uma *perda* do seu sentido enquanto espaço habitável para se tornar um espaço amplamente *estranho*. Estranho ao *habitar,* desde logo, mas também estranho à actividade económica e social regular ou a qualquer esforço organizado que, no seu conjunto, lhe confira funcionalidade integrada.

Figura 1. O espaço pós-industrial onde se situava a Companhia União Fabril, no Barreiro (captação própria).

Figura 2. O espaço pós-industrial onde se situava a Companhia União Fabril, no Barreiro (captação própria).

3. PALAVRAS FINAIS.

As observações seguintes são menos uma conclusão que um ponto de partida, ponto de partida esse ancorado nas observações precedentes. Não se trata de sistematização oriunda de aturada observação sociológica nem, tão-pouco, de aprofundamento conceptual significativo. Não obstante, cumpre dizer algo sobre o dispositivo – se assim lhe podemos chamar – mobilizado: uma espécie de *flânerie* despreocupada e livre, em que um observador não comprometido, com formação em Sociologia e amante de fotografia, foi, em múltiplas e sucessivas visitas ao espaço que aqui tratamos, acumulando ideias sobre algo que nele – também – vai ocorrendo. Destes *trajectos incertos e não-estruturados* fomos observando que, paradoxalmente este espaço de *estranhamento* tem novas disponibilidades. Despido das suas

rígidas funções anteriores, em degradação, difícil ou impossível de habitar (ainda que metaforicamente), tornou-se espaço de estranheza, de ruptura na paisagem, espaço brutal, envenenado, duro, áspero, tóxico, eventualmente letal, mas no qual se vislumbrar a possibilidade, senão de uma poética, de uma exploração imaginária penetrante.

Vemos, a espaços, no espaço envenenado, quebrado, tóxico e desolado junto ao rio, alguns visitantes (está aberto, embora *muito poucos* o visitem, aparentemente) pontuais, espaçados por centenas de metros, olhando-se ao longe, deambulando, ensimesmados. Mas, além disto, existem os *vestígios,* os traços, as marcas da presença de muitos outros que, a seu modo, vão inscrevendo, também literalmente, neste espaço os seus alfabetos próprios, as suas linguagens, eventualmente os seus discursos. Tudo se passa como se, após uma imagem industrial primeira, progressivamente se alcançassem estas marcas, à primeira vista diluídas na paisagem de metal e concreto.

Figura 3. Detalhe do espaço pós-industrial onde se situava a Companhia União Fabril, no Barreiro (captação própria).

Figura 4. Detalhe do espaço pós-industrial onde se situava a Companhia União Fabril, no Barreiro (captação própria).

Sem margem para dúvidas, ali se registam traços significativos de imaginários urbanos emergentes, inscritos num território que fica além – ou aquém – dos pontos nodais, das ilhas que organizam a macro-estrutura da vida quotidiana de milhares na aglomeração urbanometropolitana de Lisboa e ali, em discretos nichos no interior de uma verdadeira *terra de ninguém*, encontram espaço para os seus voos, quiçá nocturnos.

Figura 5. Detalhe do espaço pós-industrial onde de situava a Companhia União Fabril, no Barreiro (captação própria).

4. BIBLIOGRAFIA.

ALMEIDA, Ana Nunes de (1993). A Fábrica e a Família – Famílias Operárias no Barreiro.

Barreiro: Edição da Câmara Municipal do Barreiro.

ASCHER, François. 1996. Metapolis - Acerca do Futuro da Cidade. Oeiras: Celta Editora.

BACHELARD, Gaston (1957). La poétique de l'espace. Paris: PUF.

BACHELET, Bernard (1998). L'espace. Paris: PUF.

BEAUD, Claude (1990). Les Schneider au Creusot: un modèle paternaliste en réponse aux impératifs du libéralisme et à la montée du mouvement socialiste. In: AERTS, Erik ; BEUAD, Claude; STENGERS, Jean. Liberalism and Paternalism in the 19th Century. Leuven: Leuven University Press.

Castells, M. (1996). The Rise of the Network Society. In The Information Age: Economy, Society and Culture, Vol I. Oxford: Blackwell.

CRUZ, Maria Alfreda (1973). A Margem Sul do Estuário do Tejo: factores e formas da organização do espaço. Montijo: s/ed.

ELEB, Monique (1998). L'Habitation, entre Vie Privée et Vie Publique. In: SEGAUD, Marion et al (Dir.). Logement et Habitat – L'État des Savoirs. Paris: Éditions la Découverte, p. 68-74.

FERRÃO, J. (2002). Portugal, Três Geografias em Recombinação. Espacialidades, mapas cognitivos e identidades territoriais. In Lusotopie, 2002/2: 151-158.

FERREIRA, Vítor Matias (1987). A Cidade de Lisboa: de Capital do Império a Centro da Metrópole. Lisboa: Publicações Dom Quixote.

GUBIN, Eliane (1990). Libéralisme économique et paternalisme en Belgique au XIXe siècle. In: AERTS, Erik ; BEAUD, Claude; STENGERS, Jean. Liberalism and Paternalism in the 19th Century. Leuven: Leuven University Press.

LATOUR, Bruno (1996). Petites leçons de sociologie des sciences. Paris: Éditions du

MARTINS, Alexandre (2002). Paternalismo Patronal e Habitação Operária: o caso da Companhia União Fabril, no Barreiro. Dissertação (Mestrado em em Cidade, Território e Requalificação) – Instituto Universitário de Lisboa: ISCTE.

MARTINS, Ana (1996)., A Quimigal no Barreiro: Um Levantamento do seu Património Museológico. Tese de Licenciatura – Lisboa: Instituto Superior de Ciências Sociais e Políticas, Lisboa.

MÓNICA, Maria Filomena (1982). A Formação da Classe Operária Portuguesa. Lisboa:

Fundação Calouste Gulbenkian, 1982.

PEREIRA, Nuno Teotónio (1994). Pátios e Vilas de Lisboa, 1870-1930: a promoção privada do alojamento operário. Análise Social, Lisboa, v. 127, p. 509-524.

RODRIGUES, Manuel Ferreira & MENDES, José Amado (1999). História da indústria portuguesa – da Idade Média aos nossos dias. Porto: Associação Industrial Portuense / Publicações Europa-América.

SCHULZ, Günther (1990). Industrial patriarchalism in Germany. In: AERTS, Erik ; BEAUD, Claude; STENGERS, Jean. Liberalism and Paternalism in the 19th Century. Leuven: Leuven University Press.

THÉVENOT, L. 2006. L'action au Pluriel - Sociologie des Régimes d'Engagement. Paris: Éditions La Découverte.
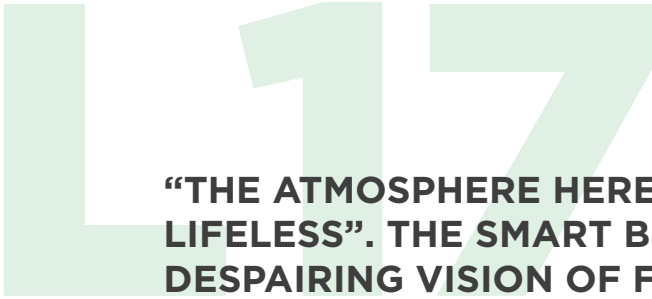
"THE ATMOSPHERE HERE IS SAD, IT'S LIFELESS". THE SMART BUILDING, A DESPAIRING VISION OF FUTURE ECO-CITIES

"A ATMOSFERA AQUI É TRISTE, NÃO TEM VIDA". O EDIFÍCIO INTELIGENTE, UMA VISÃO DESESPERADA DAS FUTURAS ECO-CIDADES

Audran Aulanier
ETH+ – ETHICS EA 7446, Université Catholique de Lille, F-59000 Lille, France
CEMS/EHESS
CeRIES/Université de Lille
audran.aulanier@gmail.com

Laure Dobigny
ETH+ – ETHICS EA 7446, Université Catholique de Lille, F-59000 Lille, France
laure.dobigny@univ-catholille.fr

Margaux D'Hont
ETH+ – ETHICS EA 7446, Université Catholique de Lille, F-59000 Lille, France
margaux.d-hont@univ-catholille.fr

ABSTRACT

This paper analyses the atmosphere of a smart building at the Université de Lille. It describes the sad atmosphere of this building: lack of air, predominant role of machines over which users have no control, lack of conviviality, dull colours, *etc*. Based on these descriptions, the paper envisages the ecological cities of the future based on the smart building model, with the despairing prospect of cities disconnected from their environment and their inhabitants, in order to consume less energy.

KEYWORDS: SMART building. Conviviality. Normalization. Technology. Sadness.

RESUMO

Este artigo analisa o ambiente de um edifício inteligente de uma universidade de Lille. Ele descreve a triste atmosfera deste edifício: falta de ar, papel predominante das máquinas sobre as quais os utilizadores não têm qualquer controlo, falta de convívio, cores baças, etc. Com base nestas descrições, o artigo imagina as cidades ecológicas do futuro baseadas no modelo de edifício inteligente, com a perspetiva desesperada de cidades desligadas do seu ambiente e dos seus habitantes para consumir menos energia.

PALAVRAS-CHAVE: Smart building. Convivialidade. Normalização. Tecnologia. Tristeza.

1. INTRODUCTION

Figure 1: View of the IUT de Lille's building ©Margaux D'Hont

Winter 2024, first visit to the IUT, notes reworked.
After taking the metro, I get out of Roubaix station and soon see on my left the cold, rigid, dark steel frame of the IUT. As I walk along the pavement, I pass a waste ground of a few hundred square meters, bordered by woodenon on the pavement side signs. I'm already in front of the IUT de Roubaix, housed since 2017 in a smart building that has replaced the old brick building in which generations

of students have come and gone. The building is part of a small complex that includes the CROUS canteen, several student residences and another university building dedicated to courses in the applied foreign languages department (LEA). Several brick buildings are opposite to this complex; on the other side of a wide boulevard is a petrol station, where students' cars are anarchically parked. This mini-campus lacks space and is perhaps not completely in its place. IUT employees, who were consulted several years ago, would have preferred another of the proposed sites, a few kilometres away. The campus, which emerged in the train station neighbourhood, still stands apart and is not an integrated part of the environment. For example, many of the IUT employees are 'suspicious' of local inhabitants, especially on winter evenings; or again, in the absence of a suitable car park, students' cars pile up in the surrounding area, next to the petrol station, in the car park of a close-by shopping centre or in the few spaces available nearby, without buying a parking ticket. The fences that surround the campus contribute to the impression of a place that is closed-in on itself, poorly integrated into the architecture and atmosphere of the neighbourhood [1].

Rev3. A "strategy" of the Hauts-de-France region, carried out since 2013 under the initial impulse of essayist Jeremy Rifkin, who was commissioned to develop a roadmap for the region's ecological transition. The building featured in this paper is fully in line with this plan, which aims to "improve the energy efficiency of housing" by "mass-producing high energy performance buildings", or by "developing intelligent buildings and networks", in a word: by making smart buildings the intelligent nodes of the smart city [2]. By investigating this building, and other smart buildings in the Lille metropolitan area, we are asking how to characterise the 'nodes' and 'intelligence' that are omnipresent in the vocabulary of *Rev3*, and more broadly in contemporary urban planning. What does the everyday experience of intelligent buildings mean for users? What imaginations of the ecological city of the future are contained in these 'plans', 'roadmaps' and other 'projects'?

As we can already see from the drawing and the field notes that open the text, the atmosphere surrounding the IUT is sad, out of harmony with its neighbourhood. It's easy to wonder what the *nodes* are when, before even mentioning the building's technology, the campus as a whole is not *connected* to anything in the neighbourhood, squeezed between the boulevard, the station and the railway; an enclave where students only come for their classes. Very little space is left "for the creative and unexpected potential of use [...], through the singular and almost vital gesture of appropriation by the inhabitant" (Breviglieri, 2013, p. 217). Ultimately, this campus seems to be a new avatar of the guaranteed cities described by Marc Breviglieri. On the basis of this observation, we would like to show, by diving inside the building to better highlight the issues at stake on a city scale, that this building in fact represents

---

1 We would like to thank Anouk Germe-Bartier, who spent part of the fieldwork with us.

2 *https://rev3.hautsdefrance.fr/thematique/ameliorer-lefficacite-energetique-de-lhabitat/*

a smart city laboratory, with its predictability and its out-of-this-world, bubble-protected character. We will then see that this building embodies the imagination of a disembodied ecological city of the future, with no possibility of use, where it is the technical system that 'knows', faced with users who are incapable of understanding how they should act, and who tend to retreat into themselves.

To enable the reader to perceive these imaginations and their concrete implications, the remarkable thing about using the ambience as a starting point was that it allowed us to place the concept of *environment* at the centre of the explanation. In trying to 'grasp' the IUT's environment, we produced sound recordings, drawings, photographs and ethnographic descriptions, all of which complement each other in understanding issues of the building on the experience of its users[3]. It was therefore a collective effort that led to research into the ambience of the smart building, a collective effort that was also interdisciplinary: two of the authors are sociologists and one is a designer. For the latter, through her discipline, capturing and then representing an atmosphere through drawing is an invaluable tool for developing a design, i.e. a project, an artefact, the development of a place or the deployment of a service. Drawing is a tool and a skill that allows to capture an atmosphere, a behaviour, an emotion, a situation or a phenomenon over time, all dimensions that cannot always be easily captured by photography or words. Drawing allows us to go beyond this, capturing scenes and users on the spot or reinterpreting them later, highlighting details, phenomena and interactions that are often invisible to the photographic lens and impossible to describe in words. By sublimating subjective impressions, by adjusting and arranging different views and perspectives, drawing reveals atmospheres, transcribes social and emotional dynamics, and invites a new understanding of the subjects observed. The drawing offers the viewer an intimate and subjective representation of the object or subject represented, imagined or illustrated.

The text is presented as an increasingly in-depth tour of the building, from its exterior to its bowels and workings of its machines. After a prelude giving an idea of how to get to the building, the first part of the text takes us into the building, focusing on the (poor) quality of its air. By focusing on the building's airtightness, we better understand what the smart imaginary represents, who understand ecology as a reduction in energy consumption without taking into account the fact that humans are part of the environment. Then, in the second part, by understanding how the building works, we will consider the role of machines in the inhabitant's experience.

---

3 To accompany the reading - a montage of sounds of the IUT and its machines, with drawings of the building: *https://drive.google.com/file/d/1Qeg0MxOc6n54mbg3mObuQhS4QPR-nihE/view?usp=drive_link*

2. POROUS BODIES AND AIRTIGHT BUILDINGS: A SAD ATMOSPHERE AT THE IUT

Figure 2: view of the inside of the IUT ©Margaux D'Hont

First visit, continuation: inside...
I'm now entering inside the IUT building, one of the smart buildings in which I'm doing research for the Incluniv project. First of all, I have to go through two sliding doors and then introduce myself to a security guard, who checks the contents of my bag and my professional card. Such a system is not in place everywhere at the University of Lille, but - the officer tells me - "we have no choice here, with the neighbourhood". Inside, an atrium draws the eye upwards, revealing corridors arranged in regular rectangles, above the void, the walls adorned with the same steel grilles as outside. The regularity of the corridors, the impression of a panopticon, the gates, the alternating shades of grey and white: the atmosphere quickly seems prison-like. Around midday, a few groups of students eat sandwiches sitting on the stairs, wearing their coats. The staff rooms are not very lively. There are two empty treadmills in one room and a group of four colleagues eating in another. Beyond the prison atmosphere, the air is heavy. It's heavy because, with no interstitial spaces, there are few places where students can make the building breathe by taking it out of its programmed uses (for example, classrooms are closed when no teacher is present). Above all, the air quality is bad, despite the CO2 sensors in all the rooms, which are supposed to enable the technical system to automatically increase ventilation if the quality deteriorates (this is what I've learned from various people I've spoken

to, although not all of them agree on the role of these sensors). The windows don't open, they're locked. When I leave in the evening, I'll have a persistent headache…

The problem of air and ventilation is central in the building studied. Looking back on his field notes, one of the authors realised that his migraine on the first day was the symptom of a subject, as many of the people he met put it. An element of language, taken from the technical vocabulary of the 'smart' and shared by many employees, both teaching and administrative, is constantly recurring in conversations - it's about the fuggy atmosphere, as one IT specialist explains:

Every morning, I'm the third or fourth to arrive, so clearly the air isn't supposed to be saturated. But as soon as I arrive, I go from outside air - and mind you, outside air is Roubaix next to the boulevard, it's not the good air - so I go from outside air to this fuggy atmosphere, you can smell it straight away, there's a building smell, a musty smell. The building is supposed to air out at night, the windows open, create a draught, I don't know what. Clearly, it's all smoke and mirrors, nothing works in this system (in French, he says: "c'est de l'enfumage", by playing with words).

Smart buildings are buildings which, in order to be energy-efficient - i.e. have low energy consumption - are airtight (in particular by installing airtight membranes). Their ventilation is therefore fully automated and managed by a central ventilation unit, with heat exchangers transmitting the calories from the fuggy air (leaving) to the fresh air (entering). These air flows are not direct: they are mediated by the technical system, and the building's energy efficiency is based on this automated ventilation, which the unexpected opening of a window by a user would reduce, by cooling (winter) or heating (summer) the room. For this reason, in this type of building, the opening of windows by users is at best discouraged and made difficult, at worst impossible (sealed windows). The deployment of these buildings is in line with environmental objectives to reduce energy consumption and carbon emissions. The stakes are high: the operation of buildings (tertiary and residential) will account for 47% of French energy consumption and 18% of greenhouse gas emissions by 2021 (Ministère de la transition écologique, 2023).

But isn 't there a contradiction in isolating users from their environment, through airtight buildings? Even though these buildings are designed to raise users' awareness of environmental issues (Dobigny & Raineau, 2021)… In the name of environmental policies, these buildings are being deployed in such a way as to prevent any sensitive and responsive relationship with the environment around us (air, heat, coolness, light, etc., are mediated by the technical system, filtered and restored). In so doing, the smart building endorses the idea of the human being as both separate from the environment and a major disrupter and destroyer of it. But these are two different conceptions of the environment that are at stake, since in the second case we are

dealing with a conception of a controlled and standardised environment, which also contributes to giving the illusion that a technical system can compensate for human damage to the climate and does not consider, for example, the role of plants in the climatising power of atmospheres (Breviglieri, 2023). This leads us towards an 'ecology without nature' (Martin, 2023) which, in a technosolutionist paradigm, sees relationships with nature only as mediated by a technical system, delimited, standardised and planned.

In contrast, in a Merleau-Ponty vein, we can say that the body is porous, that we are part of the world not as a separate and abstract entity, but as elements interacting with the environment, as *entrelacs* with what surrounds us (Merleau-Ponty, 1969). For example, we breathe air, which passes through us, literally giving us the breath of life. In the words of the philosopher: "my body is made of the same flesh as the world" (248). The world, then, is not an external object but flesh, a space that opens up "a *pregnancy* of possibles " (250). Similar perspectives can be found in John Dewey (1925), who frequently evokes the transactions between the organism and its environment, which move us and allow us to experience the environment, which is never totally separate from us. Or by Tim Ingold, who urges us to "resituate ourselves in an active and dynamic relationship with our environment" (Ingold, 2013b, p. 27). For him, inhabiting the world means participating in a world of forces, energy and flows (Ingold, 2013a). Although different, these conceptions of the relationship between the human and the environment lead the investigator to look at the atmosphere insofar as it is "what makes the sensitive exist" (Thibaud, 2018b), which seems to be disappearing in the world of the smart building.

In fact, the building we surveyed, representative of a generation of intelligent buildings that manage air flows autonomously, using sensors and air handling units, is conceived as autonomous, outside an environment from which it only takes what is necessary: the air needed for healthy renewal. Only around 20% of fresh air is injected into the circuit, says a technician interviewed while repairing a unit: this would guarantee clean and adequate air according to "European rules" that he doesn't know how they were set. The building is therefore airtight, and this means that when permission is finally granted to open a window in a room that is becoming unliveable, the air is sucked out. The way in which one of the IT specialists responsible for this room describes it is striking:

> *I opened the window, and all the flow went out. You could see all the dust being sucked up, a kind of flow that you could see with the light, and then the smells, you could feel that things were stirring, there were waves of really nauseating smells that were taking hold in this room with the heat from the machines and the students. There's something wrong with the design, the smells and all that, it shouldn't be stored up and go out like that when you open, as a flow, or open every day!*

So what are the possibles, what experiences remain open in this building? The perspective of atmosphere (*la perspective de l'ambiance*) allows us to describe a third way between the subject and the environment; this in-between involves describing the experience insofar as it remains "in the grip of various and varied impregnations that increase or decrease our power to act" (Thibault, 2018, p. 77). At the IUT, as we can see from the drawings and descriptions above, there is a sad atmosphere that manifests itself in a building with an independent metabolism that should not be touched. The perfection of the machines, run by an Artificial Intelligence (AI) programmed by a company based in Lyon, means that no-one on site can regulate the air flows, apart from the technician from the company responsible, who drops in from time to time to make some adjustments. But even he sometimes complains about the difficulties of getting to grips with the system: "Sometimes I'm happy with my settings, the lights are green, I come back a few weeks later and it's the AI that has taken over, and I have to start all over again, it's not stable here".

Ne pas avoir la main. This is the constant regret of the building's various users, right down to the technician in charge of its maintenance. Ultimately, this building is one of the "many material devices [that] aim to neutralise the perception of time in the city, to produce environments that are invariably temperate and protected", but listening to its users, we can see that "the ambient conditions in which we live are therefore partly beyond our control and challenge our sheer will to control them" (Thibaud, 2018b, p. 34). But if the will to control is not enough to effectively control the environment of this building, even though it is fairly modest in size (especially on the scale of the urban environment that the imaginary of the smart city would also like to control), it helps to give the illusion that trained users who follow the rules are all that is needed for it to work. But human/machine connections - and this will be the subject of the second part of this presentation - are complex and counter-intuitive. Above all, the imaginary of a competent user who lets the machine manage the atmosphere overlooks the major anthropological factor of the porous body and the necessary transactions with the environment. The descriptions of the disembodied atmosphere of this building, which does not allow its users to inhabit it, opens up the possibility of "questioning the idea of a possible exteriority of nature, allowing us to experience in concrete terms that we are on board, and contributing to bringing ecology back into the home. By enabling everyone to feel part of this world, the ambience helps us to think about the conditions for integrating ecological issues into the daily experience of the inhabitants" (Thibaud, 2018b, p. 35).

If we follow Thibaud's proposals, the descriptions of these IUT environments unfold a critical movement that puts the finger on what is missing in these buildings: an everyday experience and a link to the outside environment. The air is too thin, too dry (the plants in the bibliothèque universitaire die from an atmosphere that is too dry), and the prison atmosphere is too confining, breaking down the sense of conviviality with its dimly lit spaces and software that regulates the flow of people into rooms and prevents colleagues from passing each other, limiting the personal uses of

progressive appropriation. In so doing, it is the desire to live together (Breviglieri, 2009) that is undermined, with people refocusing on their personal, compulsory tasks and their personal ways of dealing with machines that are working as best they can: collective complaints and ticketing via software designed for this purpose have gone unheeded since several years.

In short, the bleakness of the environment contributes greatly to the isolation of humans, who become inexperienced in a way, to use the words of Günther Anders (1956), a critical philosopher of technology who, in his considerations on radio and television, noted that the confinement to the home characteristic of these technical devices prevented us from experimenting, the world being delivered to the home. His conclusions could be rephrased as follows: since we are provided with a (standardised and guaranteed) environment, we no longer have to act creatively, we have to function, as a separate entity. Unfortunately, the difficulties of normal functioning are suddenly becoming apparent and are vigorously undermining normality: the frequent migraines of many users, the discomfort of several students, and more generally the installation of office heaters in winter or fans in summer, as symptoms of a reduced importance given to behaviour (for example, clothing) and use, in favour of an environment made 'pleasant' by a technical system. In fact, with the smart building and its construction airtight to the outside environment, the user finds himself cut off from the flows, which only return to him transformed. Yet to live in a building is to be in a relationship, with things as well as with living beings or the atmosphere, to forge an intimate relationship with one's surroundings (Breviglieri, 2012). This familiar link to the world is opposed to the idea of closure: living is an opening. In order to live, you need continuity between your home and the world. The various authors mentioned, from their phenomenological (Merleau-Ponty), pragmatist (Dewey) or anthropological (Ingold) perspectives, use different tools to show that the experience of the world and of living in it requires experimentation with certain practices and certain relationships. In other words, it requires an active role on the part of the inhabitant and a sensitive learning of situations, which are necessary for understanding the world and even for perceiving it, and which are essential for understanding our fundamental co-constitution with the environment. Ultimately, as we have seen, it is this possibility of a sensitive relationship with the world and its flows that is prevented by the smart building (Dobigny & Raineau, 2021).

3. STORIES OF MACHINES: HOW TO INHABIT?

Continuation of the visit, a few weeks later, winter 2024
Let's go upstairs with a member of the security staff to find out how the classrooms work. The first thing he shows me is how the blinds work, by means of a central control located next to the blackboard. They can't be adjusted window by window: the whole room is activated at once and, if you forget to validate, they go back up after a few minutes. Above all, they are governed by a weather mat, called a "girouette" by some teachers, which raises the blinds, as a protective measure, when the wind is strong. Another day, a teacher and I witnessed this happening in the middle of a film screening. The students were no longer surprised, and the teacher, wearily, let the screening continue in poorer conditions. No one has any control over the machine. The building knows what's good for it. As for ventilation, it's the same thing, the building knows - but not the humans. At this point, as we walk along, the security guard points out the many open doors, emphasising that the building is not designed for this: the doors have to be closed to work properly. After descending the stairs, as we visit the air handling units in the cellar, he clarifies his thoughts:

"With technology, people don't adapt, actually. For example, if you're asked to leave the door closed and the windows closed, it's not for nothing: it means that if you leave the door and windows closed, the air handling system will work normally. If, for example, the air handling system detects that air is coming in, it will say "yeah, I'm useless: I'm stopping". You have to wait 10/15 minutes for the system to detect, and then it can work at 100%.

Figure 3: weather mat ©
Margaux D'Hont

From the 19th century onwards, faced with the emergence of urban agoraphobia, urban planners saw the city "as a pure 'traffic space' rather than a living environment" (Gaudin, 2018). In the same way, Smart Buildings are all about regulating human and physical flows (air, energy, light, heat, *etc*.). As we can see in the extract that opens this section, the employees of the security company perfectly adopted this idea. Their mission consists in monitoring the IUT both in terms of the flow of people and the basic monitoring of machines, so that external technicians can be called-in if necessary. The agent I visited with personifies the system, makes it talk, and gives it a willingness to stop by virtue of a feeling of uselessness, to explain its non-activation if the room doors are open. The very idea of building users themselves having control over ventilation seems long forgotten: the presence of an (almost) omnipotent technical system is so standardised that other ways of managing

a building are relegated to oblivion. Similarly, it's the safety of the blinds *themselves* that is emphasised: if they were to blow in the wind, there'd be a risk of them tearing, and replacing them would be difficult. Personified in this way, the building can only be used to a very limited extent by its users: it must not be rushed in order to respect its 'wishes' and take care of the intelligent tools it contains. By humanising the machine, humans become almost dehumanised, because they are rendered incapable of dealing directly with their environment; incapable, therefore, of inhabiting it. And yet, "inhabitation remains a guarantee of the power to maintain oneself in the future" (Breviglieri, 2006), a guarantee of the feeling of being able to act, particularly when it comes to ecological issues. In the imaginary of the smart, the future is seen in the machine, without thinking that without care for it, everything will collapse, without thinking that the machine is also an integral part of the environment. These buildings need constant care on the part of their maintainers, but the resources given to a maintenance policy (Denis & Pontille, 2022) are more often than not reduced to a pittance.

Now that we've come to the end of our tour of this building and its sad atmosphere, it's time to say something surprising: students as a whole like this building. If they do like it, it's in a very special way. They also note the cold, hospital-like or prison-like atmosphere: one student, for example, explained that "you feel like you're being watched, because everything is around the atrium, you can see everything from everywhere, plus the dark colours, it's not pretty, it's dreary, actually". When asked about the building's technical and ecological aspects, many mentioned "the solar panels on the roof", or the fact that "it's self-regulating, in terms of temperature and so on". Although they are often more familiar than their teachers with the touch-sensitive controls in the rooms for lights and curtains, in the end they know very little about how the building actually works. Several of them also admit to having regular migraines when they come to class, without necessarily attributing them to the air. What seems surprising, in the end, is that on the one hand the majority seem to agree on the impersonal atmosphere of the premises, which does not encourage them to occupy the building at any time other than during lessons: "if you consider the spaces for us, there are only two : the break room and the library," explains one student, "both are too small and we don't feel like staying there". A fellow student agreed, adding: "It lacks soul, you don't want to stay there, it doesn't feel like home, anyone who says that is a liar". But, on the other hand, they also say: "this building is from our time", or "they're not taking the piss out of us here, it cost three million, or three billion, I think, they're investing in our future, that's what counts in the end". Or again: "I want something impersonal here, we're here for our future, it has to already look like a company, I think it looks like the images of Google's offices in the United States, so that's cool, that's what we need, to project ourselves". A certain representation of the world of work and the company, and incorporation of the company's discourse of rationality and efficiency, where there is no need to be distracted by user-friendly spaces, the performative efficiency of the austere building that doesn't distract from the objective of working there (and just work). Despite agreements with employees

and teachers on how the atmosphere should be experienced, students have a fairly positive perception of this sad atmosphere, in a place where they don't want to stay. Their social background probably needs to be explored further: an IUT offers short degree courses, and to stay there for long is to fail. But if we listen to them, we can also see in the smart building they visit every day a response to a "civilisational anxiety", that of acting without guarantees. The students interviewed have finally fully integrated the neo-liberal imperative of efficiency and adaptation (Stiegler, 2019), and this smart building responds, adapts to the environment, and aims for efficiency because it knows what is good, thanks to various sensors.

The technical system does not, therefore, generate an inhabitation detached from constraints, which would allow students to invest themselves fully in personalised gestures. But it does allow students, through the imagination that surrounds it, to develop defensive places in response to their anxieties, which result in "a narrowing of affective fields and possibilities of experience" (Breviglieri, 2013, p. 217) rather than an increase in the feeling of inhabiting, rather than a sensation of doing-with-the-environment that would also make it possible to bring ecology back into everyday experience and make them aware of the environmental issues facing cities.

4. CONCLUSION: FROM SMART BUILDINGS TO THE ("ECOLOGICAL") DESPAIRING CITY

In this paper, we have documented the ambience of a smart building, which is supposed to promote the ecological transition by consuming less energy. Where Olivier Gaudin described urban environments of fear at the end of the 19th century, due to the "invention of agoraphobia" - fears that led to responses in terms of improved flow management - we might wonder what practical urban design responses the despairing environments of smart buildings will lead us to…

The Haussmannian city no longer offered "continuity with the inhabited interior" (Gaudin, 2018, 226). In a way, the smart building takes this approach to space planning as far as possible by separating the building from its environment and organising flows using various technical systems. If we consider the ambience produced by the smart building as a laboratory for understanding the ambience of the ecological city of the future, this implies a critical movement in the urban ecological imagination, in the sense that this vision of environmental transition – technosolutionist and aiming for efficiency (energy, technical systems, etc.) - distances residents ever further from their living environment, rather than inventing new ways of living. To consume less, the ecological city would then become a deserted and lifeless city, "abandoned to its technical workings" (Reigeluth, 2023). A city that has no tolerance for the overflow of vegetation (Breviglieri, 2023), where the rare plants die because of both the dryness of the building's atmosphere and the lack of human care…

5. BIBLIOGRAPHY

Anders, G. (1956). *The obsolescence of man [online translation, 2014],* https://libcom.org/book/export/html/51647

Breviglieri, M. (2006). Penser l'habiter, estimer l'habitabilité. *Tracés, 23*, 914.

Breviglieri, M. (2009). L'insupportable. L'excès de proximité, l'atteinte à l'autonomie et le sentiment de violation du privé. *In* Breviglieri, M., Lafaye, C. and Trom, D. (dirs.) *Competences critiques et sens de la justice.* Economica.

Breviglieri, M. (2012). Un essai d'approfondissement sociologique de l'anthropologie capacitaire de Paul Ricoeur. *Études Ricoeuriennes / Ricoeur Studies, 3*(1), 3452. https://doi.org/10.5195/errs.2012.134

Breviglieri, M. (2013). Une brèche critique dans la " ville garantie " ? Espaces intercalaires et architectures d'usage. In *De la différence urbaine. Le quartier des Grottes / Genève* (p. 213236). Metispresse.

Breviglieri, M. (2023). Biens communs de proximité et pouvoir climatisant des ambiances urbaines. *GéoProximitéS*, 0. https://geoproximites.fr/ark:/84480/2023/09/21/biens-communs-de-proximite-et-pouvoir-climatisant-des-ambiances-urbaines/

Denis, J., & Pontille, D. (2022). Le soin des choses : Politiques de la maintenance. La Découverte.

Dewey, J. (1925). Experience and Nature. La Salle: Open Court.

Dobigny, L. & Reineau, L. (2021). *What "efficiency" are we talking about? Imaginaries of smart, efficient and airtight buildings*. The Society for Philosophy and Technology Conference, Catholic University of Lille, France.

Dorthe, G. & Dobigny, L. (under press). From smart buildings to smart users. Energy transition to the test of parasitic humans. In *The Smartification of Everything*. University of Toronto Press.

Gaudin, O. (2018). Les scènes urbaines de la peur : L'invention de l'agoraphobie, une histoire d'ambiances. *Communications, n° 102*(1), 219232. https://doi.org/10.3917/commu.102.0219

Ingold, T. (2013a). *Making: Anthropology, archaeology, art and architecture.* Routledge.

Ingold, T. (2013b). *Marcher avec les dragons* (P. Madelin, Trad.). Zones sensibles diff. les Belles lettres.

Martin, F. (2023). Les éléments enchaînés : Sensibilités climatiques depuis une maison écologique « intelligente » (Japon). *Socio-anthropologie,* 48, 21-33. https://doi.org/10.4000/socio-anthropologie.15869

Merleau-Ponty, M. (avec Lefort, C.). (1969 [1964]). *The Visible and the Invisible: Followed by Working Notes* (Alphonso Lingis, Trad.). Northwestern University Press

Reigeluth, T. (2023). *L'intelligence des villes : Critique d'une transparence sans fin.* Éditions Météores.

Stiegler, B. (2019). *«Il faut s'adapter» : Sur un nouvel impératif politique*. Gallimard.

Thibaud, J.-P. (2018a). Les puissances d'imprégnation de l'ambiance. *Communications, n°102*(1), 6779. *https://doi.org/10.3917/commu.102.0067*

Thibaud, J.-P. (2018b). Vers une écologie ambiante de l'urbain. *Environnement Urbain / Urban Environment, 13*. *https://journals.openedition.org/eue/2135#bibliography*

L17

VARIATIONS OF SADNESS: ATMOSPHERES OF RETAIL VACANCIES IN THE PEDESTRIAN ZONE OF A GERMAN CITY CENTRE

VARIAÇÕES DE TRISTEZA: ATMOSFERAS DE ESPAÇOS COMERCIAIS NA ZONA PEDONAL DE UM CONTRO URBANO ALEMÃO

Rainer Kazig
Scientist
Univ. Grenoble Alpes, CNRS, ENSAG*,
AAU-CRESSON, 38000 Grenoble, France
* School of Architecture Univ. Grenoble Alpes
rainer.kazig@grenoble.archi.fr

Helena Rapp
PhD student
Johannes Gutenberg-Universität Mainz
Geographisches Institut
h.rapp@geo.uni-mainz.de

Agnes Bartmus
Master student
Karlsruher Institut für Technologie
Institut für Regionalwissenschaft
agnes.bartmus9@kit.edu

ABSTRACT

This contribution focuses on the atmospheres of a pedestrian zone in a medium-sized German town (Bad Bergzabern) that is strongly characterised by retail vacancies. In Germany and France, the centres of cities in this category are particularly characterised by vacancy, so that the atmosphere of vacancy described in the following should not be seen as an isolated case. The presentation refers to the results of an exploratory empirical study, which is based on the method of *parcours commentés* and an autoethnographic exploration. Sadness emerged as a central characteristic of the atmospheres of the pedestrian zone characterised by vacancy. The paper will show that a sad atmosphere of vacancy can be manifested in different ways, and how it can be so manifested. It will first be characterised as a typical urban atmosphere. Building on this, it will be shown how it can take on different intensities.

KEYWORDS: atmosphere. sadness. retail vacancies. city centre. aversion. acceleration.

RESUMO

Esta contribuição centra-se nos ambientes de uma zona pedonal de uma cidade alemã de média dimensão (Bad Bergzabern), fortemente caracterizada por espaços comerciais vazios. Na Alemanha e em França, os centros desta categoria de cidades são particularmente caracterizados por espaços vazios, pelo que a atmosfera de espaços vazios descrita a seguir não deve ser um caso isolado. A apresentação refere-se aos resultados de um estudo empírico exploratório, que se baseia no método de *parcours commentés* e numa exploração autoetnográfica. A tristeza surgiu como uma caraterística central das atmosferas da zona pedonal caracterizada pela desocupação. O artigo mostrará que uma atmosfera triste de vazio pode manifestar-se de diferentes formas e como se pode manifestar. Em primeiro lugar, será caracterizada como uma atmosfera urbana típica. A partir daí, mostrar-se-á como pode assumir diferentes intensidades.

PALAVRAS-CHAVE: atmosfera. tristeza. vagas de retalho. centro da cidade. aversão. aceleração

1. INTRODUCTION

The centres of European cities have historically been, and still are today, an important location for supplying their inhabitants. Retail shops are therefore one of the defining elements of European city centres. With the relocation of retail trade to the outskirts of cities and the development of online trade, the importance of centres as retail locations has weakened in recent times. In the course of this development, small and medium-sized towns in particular are confronted with an increased number of vacant retail shops, with a tendency to consolidate in structurally weak regions (Berroir et al., 2019).

However, the trend described does not only affect the supply function of the centres. In the course of the aestheticisation of everyday life and the development of contemporary society into an experience society, urban centres have developed into places of experience in a previously unknown form (Wiegandt, 2015). Shop windows and displays in front of shops, particularly in pedestrian zones, contribute to the quality of the experience and to the overall positive appearance of centres. In the best-case scenario, they are a source of attraction and a positive aura. Vacant shop spaces with taped-up or empty shop windows impair the overall appearance of the centres concerned and their potential to function as experiential places. Atmospheric research, with its potential to capture the situated experience of spaces and their small-scale changes, offers a promising approach to capturing the experience of city centres characterised by vacancy in a differentiated way.

This article refers to an exploratory study of the experience of atmospheres in the pedestrian zone of the medium-sized town of Bad Bergzabern in south-west Germany, which is heavily characterised by vacancies (Kazig et al., 2023). At the time of the study in November 2019, 16 of the 36 shops in the almost 250-metre-long pedestrian zone were vacant. However, the shop windows of five of the vacant shops were used as display areas. The pedestrian zone is predominantly framed by historic, two- to three-storey buildings. Modern buildings were added in a few places in the 1970s. At one end, the pedestrian zone leads into a small square with a neighbouring church. With its building structure, the pedestrian zone therefore has an attractive appearance, making it an interesting case study for investigating the potentially negative effects of vacancy on the experience of the atmosphere of city centres.

2. THE CONCEPT OF ATMOSPHERE

The concept of atmosphere on which this study is based refers both to German-language atmospheric research and to some considerations from French research on ambiances. With the concept of atmosphere, people are seen as sensual beings who are connected to their immediate surroundings at all times via all their senses. Human sensuality is thought of as the feeling of one's own presence in the actual environment, which becomes manifest in a specific state. In the German-speaking discussion, feelings in particular are emphasised as an expression of the state of person (Böhme, 2001; Hasse, 2002). However, atmospheres can also become manifest in the form of specific attention (Kazig, 2007) or at the level of gestures and motor skills (Thibaud 2003, p. 288ff). These differentiations are helpful in order to empirically record the atmospherically influenced subjective state of a person.

A specific subjective state goes hand in hand with a way of "experiencing the world" (Böhme 2001, p. 81). The concept of atmosphere therefore also brings into view the notion that spaces appear to be tuned, characterised by an affective tonality (Thibaud 2015). The experience of the atmospheres of centres characterised by vacancy can therefore be manifested both in a specific subjective feeling and in the experience of a specific tuning or affective tonality that characterises these spaces.

Atmospheres as understood by the social sciences describe a phenomenon that unfolds between people and their immediate surroundings. Both sensitivities acquired through socialisation and involvement in activities influence the perception of atmospheres. They are therefore not to be understood as deterministic forces that are reflected equally in the experience of all people in a place. As a result of this consideration, this study also raises the question of the extent to which there are differences in the experience of the atmospheres of the centre characterised by vacancy.

3. METHODOLOGY

A slightly modified form of the "Parcours commentés" method developed by Thibaud (2001) was used to record the experience of atmospheres in the pedestrian zone of the case study. The method is based on the subjects describing their perceptions and sensations during an accompanied walk in situ along a largely predetermined route. After the walk, in a classic interview situation - in our case, with the help of a map - an interview takes place in which the sensations along the route are recalled and, if possible, sections of the route that are perceived as uniform are delineated. The walk was conducted with the instruction to describe the perceptions and feelings while walking through the pedestrian zone. The participants were therefore not aware of the specific focus of the study on the experience of vacancy either before or during the course. Only at the end of the interview was a question asked about the experience and perception of the vacancy.

In addition, the sensory appearance of the case study location was recorded in order to enable us to understand the interplay of environmental qualities and subjective feelings in the evaluation. This took the form of a mapping of the vacant properties and photographs of the pedestrian zone and the façades of the vacant shops. In contrast to Thibaud (2001), we did not reconstruct the experience throughout the entire parcours. Instead, we focused the evaluation on the particularly striking subjective perceptions shared by several test persons when encountering vacant properties.

A total of ten walks were carried out, in which the participants were asked to walk through the pedestrian zone in both directions. Of the ten participants, four were local residents, three were familiar with the pedestrian zone and three had no knowledge of the pedestrian zone or the municipality. This differentiation between non-local and local participants was intended to enable us to explore the question of whether and how familiarity with the location influences the experience of the atmosphere of the pedestrian zone which is characterised by vacancy. Both the walks and the follow-up interviews were recorded, fully transcribed and analysed using MAXQDA software.

The data from the walks and the mapping were collected as part of a bachelor's dissertation in November 2019 (Bartmus, 2020). They were re-evaluated in summer 2021 and supplemented by an introspection by two authors during a walk through

the pedestrian zone in order to be able to take the influence of the season into account. In each of the individual introspections, as with the parcours, the experience and perception of walking through the pedestrian zone was to be described and spoken into a recording device. The particularly striking effects of encounters with vacant properties were transcribed.

4. SADNESS AS A CENTRAL CHARACTERISTIC OF ATMOSPHERES OF VACANCY AND THEIR MOTOR EFFECTS

In our study, we focus on the particularly striking effects on subjective feelings when encountering vacant properties in the pedestrian zone. We have labelled them as basic atmospheric effects and thus want to express the notion that there is a basic orientation of atmospherically conveyed concern when encountering vacant properties. They can be understood as characteristics of a typical vacant property atmosphere and complement the typology of urban atmospheres begun by Kazig (2008). An atmosphere of vacancy is expressed in the experience of parts of the pedestrian zone characterised by vacancy as lifeless, dreary, sad or uncomfortable. We have used the term "sad" to describe what we consider to be the most appropriate characterisation of this atmosphere. The following dialogue excerpt gives a brief impression of how they are experienced: "It's rather so oppressive, an oppressive feeling. So not such a welcome [feeling], at least in the first area here in the pedestrian zone. Yes, it all just seems so sad." (Mr B, non-local with knowledge of the area).

The contribution of vacancies to the experience of parts of the pedestrian zone as sad becomes understandable if one considers the appearance of vacancies already briefly mentioned in the introduction. Empty or taped-up shop windows do not create any positive impressions through displayed and staged goods. On the contrary: they appear abandoned. Empty shops also lack the potential to enliven the street space by emitting odours, fragments of conversation or music when the doors are open. The vacancy also reduces the number of passers-by, which further increases the feeling of sadness when walking in the pedestrian zone. The interview excerpt makes it clear that the affective tonality of the pedestrian zone characterised by vacancy is not experienced in a distanced way as an aesthetic characteristic of the pedestrian zone, but is reflected in the respondent's negative subjective state in the form of a feeling of sadness. This negative affective concern as a result of the vacancy is also evident in another interviewee: "Right now it's [short pause] really negative inside me. Completely negative. Here a shop, here again nothing." (Mrs N, former local resident).

In addition to a negative subjective emotion, the sadness of the pedestrian zone affected by vacancies can also be expressed on a motor level, as the following excerpt from a parcours illustrates: "A bit uncomfortable, let's say. Uncomfortable. Just not cosy, but like: well, let's go through quickly so that we can get somewhere nicer." (Ms

D, non-local). The impulse to accelerate when walking through a pedestrian zone that seems dreary makes it possible to leave this area quickly and escape the negative feeling. The pedestrian zone, which should actually be an invitation to stroll - i.e. to walk through it slowly and to a certain extent enjoyably - thus becomes a transit area that passers-by would rather cross quickly. In addition to the acceleration, a second motor effect is the turning away from the negative impressions of empty shops: "I've seen a few shops that were empty and where nothing seemed to be inside. I noticed that, but I didn't think much about it. [...] I don't know, I just paid attention to other things." (Mr E, non-local). By turning away from a sensory encounter with the vacancies, a conscious confrontation with this situation and the negative feelings that accompany it can be largely avoided. Despite the vacancies, the pedestrian zone in Bad Bergzabern offers more or less appealing attractions in most areas, which make it possible to a certain extent to escape the negative effects of the appearance of the vacancies even without speeding up.

5. VARIATIONS IN INTENSITY

The aforementioned effects of atmospheres of vacancies on a subjective level are accentuated by various influencing factors. They can be caused by the specific sensory characteristics of the pedestrian zone or the subjective disposition towards the effects of vacancies.

The season has been indicated as an influencing factor. In the study conducted in winter, several participants expressed the view that they could certainly imagine a more positive experience of the pedestrian zone in the summer months, or that they - as people familiar with the place - had already experienced it quite differently in summer. However, introspection while walking through the pedestrian zone in July made it clear that even in summer, the areas characterised by vacancies tended to be perceived as sad and the effect of acceleration was present.

The use of vacant shop spaces as exhibition areas contributes to a more pleasant experience of vacancy. The use of the shop windows as display space creates a positive vibe. However, this effect can be weakened by passers-by who realise or know that there is ultimately no business behind a shop window. The quality of the staging and the neatness of the shop window's appearance also influence the positive atmospheric effect of its use as a display area. The type of shop window also has an influence on the atmospheric effects of vacancy: while a vacancy with floor-to-ceiling shop windows radiates a strongly negative effect into the pedestrianised area, the effects are less pronounced with half-height shop windows.

The case study also suggests that embedding a vacancy in an attractive environment mitigates the negative effects. The central part of the pedestrian zone - with some attractive shops, attractive facades and well-kept planting and greenery - was hardly perceived as sad by the participants, despite more than half of the shops being vacant.

As previously emphasised, the experience of atmospheres is determined by individual or collectively shared dispositions. The case study indicated that local residents tend to be more affected by the perceived sadness. They often compare their experience of the current situation with their memories of a more lively town centre that was not yet or less characterised by vacancy. The sadness appears to be felt even more strongly as a result. Different dispositions also arise from the interest associated with visiting the city centre. Participants who are more interested in experiencing architecture appear to be less affected by the atmospheric effects of vacancy than those who see the city centre primarily as a retail centre.

6. CONCLUSION

Our exploratory study was able to show that the vacancy of retail shops in the pedestrian zone of a city centre leads to the emergence of an atmosphere of sadness. This is reflected in the negative experience of passers-by who spend time there, the impulse to cross this area quickly or to turn away from the vacancies as far as possible. These characteristics of the atmosphere illustrate how a city centre that is heavily characterised by vacancies loses its quality of stay.

The study also showed that both the specific appearance of the vacancy (type of shop window, quality of the surroundings of the vacancy, season, intermediate use of the vacancy as an exhibition space) and personal criteria (expectations of a visit to the city centre, local ties) influence the intensity with which the atmosphere is experienced. The influencing factors mentioned first indicate starting points for urban planning with which the negative atmospheric effects of vacancies can be mitigated. The influence of personal factors shows that the immediacy of the experience of ambiance postulated in French ambiance research (Thibaud, 2002) must be relativised for the experience of atmospheres of sadness. Rather, they are to be understood as a cultural phenomenon that is coconstituted by socialisation. This is the basis for the possibility that in future city centres can be experienced positively and not as places of sadness, even without or with a very limited retail presence.

7. BIBLIOGRAPHY

Bartmus, A. (2020). Die Fußgängerzone von Bad Bergzabern. Atmosphären unter Berücksichtigung der Leerstandssituation (Bachelor Dissertation). Johannes Gutenberg-Universität Mainz. Mainz.

Berroir, S., Fol, S., Quéva, C. & Santamaria, F. (2019). Villes moyennes et dévitalisation des centres : les politiques publiques face aux enjeux d'égalité territoriale. Belgeo 2019 (3). *http://journals.openedition.org/belgeo/33736*.

Böhme, G. (2001). Aisthetik: Vorlesungen über Ästhetik als allgemeine Wahrnehmungslehre. Wilhelm Fink Verlag.

Hasse, J. (2002). Die Atmosphäre einer Straße. Die Drosselgasse in Rüdesheim am Rhein. In J. Hasse (Ed.), Subjektivität in der Stadtforschung (pp. 61–113). Selbstverlag Institut für Didaktik der Geographie.

Kazig, R. (2007). Atmosphären – Konzept für einen nicht repräsentationellen Zugang zum Raum. In: R. Pütz &

C. Berndt (Eds.), Kulturelle Geographien. Zur Beschäftigung mit Raum und Ort nach dem Cultural Turn (pp. 167-187). Transcript.

Kazig, R. (2008). Typische Atmosphären städtischer Plätze – Auf dem Weg zu einer anwendungsorientierten Atmosphärenforschung. Die Alte Stadt, 35(2), 147-160.

Kazig, R., Rapp, H., & Bartmus, A. (2023). Leerstand und Stadterleben aus der Perspektive der Atmosphärenforschung. Das Beispiel der Fußgängerzone von Bad Bergzabern. In: Standort, 47, 229–236. *https://doi.org/10.1007/s00548-023-00852-3*.

Thibaud, J.P. (2001). Les parcours commentés. In M. Grosjean & J. P. Thibaud (Eds.), L'espace urbain en méthodes (pp. 79-99). Éditions Parenthèses.

Thibaud, J.P. (2002). L'horizon des ambiances urbaines. Communications, 73, 185-201.

Thibaud, J.P. (2003). Die sinnliche Umwelt von Städten. Zum Verständnis urbaner Atmosphären. In M. Hauskeller (Ed.), Die Kunst der Wahrnehmung. Beiträge zu einer Philosophie der sinnlichen Erkenntnis (pp. 280-297). Die Graue Edition.

Thibaud J.P. (2015). En quête d'ambiances. Éprouver la ville en passant. Métiss Presses.

Wiegandt C.-C. (2015). Innenstädte in Deutschland. Auf dem Weg zu neuen Erlebnisorten. Geographie aktuell und Schule, 37(217), 4-13.

L17

ANAPHORE DE LA PERTE. ATTENDRE QUE LE VENT SE LÈVE (ANAPHORA OF LOSS. WAITING FOR THE WIND TO RISE).

Nicole Peccoud[1]

[1] Haute Ecole Sp´ecialis´ee de Suisse Occidentale – Switzerland

Abstract

In September 2023, the "Galiffe" reception area for the mentally fragile left its premises, abandoning the meticulously tended and pampered adjoining garden. The soil and lush vegetation that sheltered the wooden huts that gave hospitality to so many people every day were soon to be demolished, to make way for a vast extension to the railway station, designed to ensure smooth traffic flow for the *hurried passers-by* who flock there. This paper invites us to reflect on the city's gloomy atmosphere, drawing on the ethnography of this gradually deserted institutional space, and particularly its garden.

The garden, that microcosm which is both *the smallest parcel of the world and the totality of the* world (Foucault), dispensed priceless jewels to its users, combining the benefits of its shade, the abundance of its scents, the joy of participating collectively in its care and the happiness of harvesting its fruits, while at the same time forcing us to come to terms with a whole series of unforeseen events over the course of the seasons and unexpected visitors. This fragile, dynamic, random negotiation and tuning didn't undermine the joyful anticipation of the seeds and shoots that would soon become visible.

Calling it "my forest", "little jungle", my "paradise", or my "oxygen bubble", everyone found substantial ways to soothe themselves, to regenerate, to gather bits and pieces of themselves often fragmented by psychological suffering. A vegetal skin, supple and lively, made itself available and willing to the tested and weakened bodies. Over time, a veritable "ecosophy" (Guattari) was created, making the ambient qualities of the place the heart of the welcoming compositions. The injunction to move, borrowing from the liberal lexicon of flexibility and the happy comfort of spaces dimensioned to hygiene and safety standards, nonetheless seemed to promise the enchanting prospects of the allure of the new.

The reflective work carried out aims to make perceptible the burn of loss which, like a litany, loops the emptiness left behind, but also the bitter discovery of its impossible replacement and the repetition, like an anaphora, of the deprivation of this organic island which reminds users of every impediment that the gravel of the new device summons up. Through a sound and photographic composition close to the neglected garden, the voices of irresistible nostalgia in the face of the irremediable will be heard, as well as those of potential calls and invitations from social workers to try to give the "irrevocable" a taste of "hope" (Jankelevitch), and also the murmurs of the garden itself, which, before it is totally destroyed by the imminent building site, never ceases to wait, in patient expectation - where "a clearing is accomplished" (Levinas) in spite of the impassive - for the wind to rise and scatter its abundant, fertile seeds, carrying them far, far away. So that it may continue to be reborn "in a multiplicity of forms and metamorphoses" (Coccia).

Keywords: loss, attachment, urban space, wasteland, waiting.

L18

SENSITIVE APPROACHES IN URBAN-SCALE PROJECT PROCESSES

CHAIRS Théa Manola
Mathilde Girault
Silvère Tribout

Theoretical writings on sensitive aspects of the urban and "sensory urbanism" (Paquot, 2010; Besse, 2009; Zardini et al., 2005), and on "sensitive architectures" (Pallasma, 2013; Bonnaud, 2012), have been circulating for some years now. However, very few scientific works empirically address the consideration of these aspects in the design process, particularly on an urban scale and by design professions (Paxinou, 2017; Degen, Melhuish, Rose, 2015; Busenkell, 2012).

The "design" professions (architects, landscape architects, urban planners, etc.), historically involved in the production of the urban, but with a renewed focus in recent years (notably with an increase in the number of stakeholders from the world of art and design), have historically constructed themselves as bearers: of technical expertise and, for some of them, of aesthetic expertise, which very largely calls upon the sensitive (notably in the training of some of these professionals). And yet, although sensibility is present in the discourse of urban space designers, it still seems to be groping its way through the methodological and epistemological aspects of project practice.

This session will examine the place and role of sensibility within the design process of urban and territorial projects (from public spaces to large-scale projects). Our hypothesis, linked to the PROSECO research (ANR-20-CE22-0002-01), is that sensibility can play an ambiguous role in design processes, insofar as it can be both a vector of normativity and a field of creativity. It can be both (implicitly or explicitly) mobilized to enhance quality or to impoverish it; and this in all possible spectrums of intervention (from the most institutional to the most informal). We therefore consider that design professionals (whether planners, local authority technicians, architects, urban planners, landscape architects or others) deal with existing standards in their day-to-day work, and that the arrival in force of the environmental issue feeds this process with new standards; but it can also be an opportunity for creative repositioning and inventiveness, notably calling on the sensitive (work on materials, climatic management of spaces, etc.).

In what forms is sensitivity mobilized? In what words? What values are promoted? Is there a part of those professions that is most inclined to mobilise sensitive aspects in the project process (for instance younger or explicitly politicaly engaged professionnals)? Do contemporary issues (ecological, inclusion, gender, etc.) lead to the mobilization of the sensitive? What are the motivations and values for mobilizing, or not, the sensitive? If so, what forms of knowledge and what specific tools are used? In what perspective, and to highlight which aspects of the territory, is sensitivity mobilized? In what way does the possible mobilization of sensitivity call into question design habits, and in particular the involvement of residents and users and consideration of their sensitivities?

How do these changes affect the project process and the role of professionals? What influence do the training, professional and personal trajectories of professional players have?

Proposals may come from researchers working on these issues, or from professionals with a reflective and theorized view of their own practices.

L18

AN INTEGRATIVE REVIEW OF THE IMPORTANC E OF AMBIENCE IN COLLECTIVE HOUSING FOR ELDERLY PEOPLE.

UMA REVISÃO INTEGRATIVA DA IMPORTÂNCIA DA AMBIÊNCIA EM MORADIAS COLETIVAS PARA IDOSOS.

Andréa Holz Pfützenreuter
Dra. Arch Professor/Dra. Arq. Professora
UFSC
andrea.hp@ufsc.br

Ana Lucia Cordova Wandscheer
Phd Student / Doutoranda
UFSC
aluw18@gmail.com

ABSTRACT

This integrative review on how ambience can affect institutionalized elderly people suffering from neurodegenerative diseases aims to present the concepts of Aging in place; Collective housing for the elderly; and Neuroarchitecture correlating public space and place. Research suggests that the planning of neighborhoods favors attachment to place, social interaction, engagement, technological support, safety, green areas, mobility and the coexistence of different generations. Housing for older people with neurodegenerative diseases should provide a sense of community, enhance comfort and dignity, support courtesy, provide choices and offer opportunities to engage with society. The neuroscience of architecture assists in understanding the psychological issues of human experiences in response to the built environment, with an understanding of the connection between the properties of space and emotions, promoting options for environmental design according to the stages of life.

KEYWORDS: aging in place. neuroarchitecture. place. coexistence. experiences.

RESUMO

Esta revisão integrativa sobre como a ambiência pode afetar as pessoas idosas institucionalizadas acometidas de doenças neurodegenerativas, tem o objetivo de apresentar os conceitos de Aging in place; Moradia coletiva para pessoas idosas; e Neuroarquitetura correlacionando o espaço público e o lugar. As pesquisas sugerem que o planejamento de bairros favoráveis ao apego ao lugar, interação social, engajamento, apoio tecnológico, segurança, áreas verdes, mobilidade e favoreçam o convívio de diferentes gerações. As moradias para pessoas idosas com doenças neurodegenerativas devem proporcionar senso de comunidade, aumentar o conforto e a dignidade, apoiar a cortesia, proporcionar escolhas e oferecer oportunidades de envolvimento com a sociedade. A neurociência da arquitetura auxilia na compreensão das questões psicológicas das experiências humanas em resposta ao meio construído, com o entendimento da conexão entre as propriedades do espaço e as emoções, promovendo as opções para o design de ambiente conforme as fases da vida.

PALAVRAS CHAVE: aging in place. neuroarquitetura. lugar. convivência. experiências.

1. INTRODUCTION

Neurodegenerative disease is a progressive brain disorder that suppresses memory and thinking skills and, eventually, the ability to carry out everyday tasks. Although dementia is more common as people get older, it is not a normal part of ageing (Mckhann et al. 2011), nor is it exclusive as cases have been identified in younger people.

The area affected determines the clinical presentation of the disease, being divided into three main domains of symptoms: neurological, cognitive and neuropsychiatric. The neuropsychiatric domain or behavioral or psychological symptoms of dementia are correlated with disturbances in perception, thinking, behavior or mood in patients with dementia (Delfino, Cachioni, 2015).

The diagnosis of dementia is intended to cover the spectrum of severities, ranging from the mildest to the severe stages of illness, with symptoms that interfere with basic abilities; show a decline from previous levels of performance; are not explained by delirium or severe psychiatric disorder; and cognitive impairment is diagnosed (Mckhann et al., 2011).

According to Torres et al. (2012) early diagnosis is difficult because the initial symptoms merge multiple disorders, including dementia and depression. As the disease progresses, so do the cognitive abilities and physical capacity of people with dementia. According to Førsund et al. (2018) the progression of dementia often leads to moves from one's own home to long-stay institutions. Facing new environments threatens a person's existence, diminishing the ability to maintain control over one's own life. When moving to an institution, the elderly need to rebuild their sense of space. Research in the field of Environmental Gerontology emphasizes the ability/need to preserve a sense of continuity, maintain recognition of one's identity and sustain an attachment to place (Førsund et al., 2018).

This article presents an integrative review on how ambience can affect institutionalized older people with neurodegenerative diseases, conceptualizing Aging in place; housing for older people with dementia; and neuroarchitecture correlating public space and place. The three main concepts applied in the integrative review highlight how ambience can affect housing for institutionalized elderly people affected by neurodegenerative disease.

2. RESEARCH METHODOLOGY

To systematize the search process, we opted for the first phase of the System Search Flow (SSF) method, which can be used for both systematic and integrative reviews. The method consists of four phases and eight activities. In the first phase, defined as the search protocol, the search strategy is divided into five activities: defining the search strategy; consulting the database; organizing the bibliographic portfolio;

standardizing the selection of articles; and composing the portfolio of articles (Ferenhof; Fernandes, 2018).

The search engines used were SCOPUS, WEB OF SCIENCE, PUBMED, EMBASE, PYSCINFO and COCHRANE. Boolean operators or logical search operators ("AND" and "OR") were also combined to connect the uniterms or descriptors to prepare the search (Ferenhof; Fernandes, 2018; Zina et al, 2012). The search was limited by age, people aged sixty or over, English language, published between 2011 and 2022, full and free texts available on the Capes portal.

The search was divided into four subjects: (1) ambience in architecture, the uniterms "Ambience", "Ambience in Architecture", "Neuro Architecture"; (2) housing for the elderly and special care units, the uniterms "Homes for the Aged", "Home, Old Age", "Homes, Old Age", "Old Age Home", "Old Age Homes", "Residential Facilities", "Housing for the Elderly", "Continuing Care Retirement Centers", "Life Care Centers, Retirement", "Assisted Living Facilities", "Special care units"; (3) aging in place and independent living, the uniterms "Aging in place", "Independent Living", "Aged", "Elderly", "Environmental docility"; (4) neurodegenerative diseases and Alzheimer's Disease, the uniterms "Neurodegenerative Diseases", "Alzheimer Disease", "Dementia". The uniterms or descriptors in English were consulted on the Decs - Descritores em Saúde (Health Descriptors) database. "Scientific uniterms - Mesh descriptors - are determined by the US National Library of Medicine and used to index articles in Index Medicus and MEDLINE" (Zina et al., 2012).

In order to select the texts by reading the title, keywords and abstract, we used the Rayyan program, a free software program that helps manage review data. With the program, it was possible to view the results searched in each database, which helped in the process of checking for duplicate articles and making the selection based on the inclusion and exclusion criteria.

With the help of Rayyan, three hundred and twenty-one (321) duplicate articles were identified, resulting in five hundred and ninety-eight (598) selected articles. After eligibility, four hundred and twenty-eight (428) studies were excluded because they were not aligned with the research concept through the inclusion and exclusion criteria, resulting in one hundred and seventy (170) selected articles. After reading the title, abstract and keywords, the studies were organized into tables in Google Sheets, where forty-two (42) articles were excluded based on the criteria, resulting in one hundred and twenty-eight (128) studies focused on the research objective in order to extract the relevant data and information for the construction of the literature review.

After reviewing and consolidating the data, twenty-nine (29) articles were selected for full reading, where the researchers or research groups had published more than one article in the period stipulated for the data search. Some authors were chosen and

integrated into the review because they dialogued with the studies being researched: (Lawton; Nahemow, 1973); (Boer et al., 2015); (Heylighen; Bianchin, 2013); (Pallasmaa, 2016); (Gieryn, 2000); (Passini et al., 1995).

Most of the articles selected are from the United States (17), followed by the Netherlands (6), Spain (3), Israel (2) and Austria (2). Of those publications focused on housing for older people with degenerative disease, the research areas are in geriatrics and health science and are more inclined towards person-centered care. The publications related to aging in place, the research areas are public health and social assistance and related to community support programs for older people. Of the selected publications on neuroarchitecture, the areas of bioengineering and architecture are in line with health science and brain research. The studies are aimed at motivating the construction of environments that favor the well-being and health of users and on the effect of indoor built environments on the cognitive processes of memory and attention in humans.

3. RESULTS

The methodologies for the subject Aging in place were systematic literature reviews, narratives, scoping, and mixed methods with interviews and the use of GPS (Global Positioning System). For Alzheimer's Disease and Special Care Units, the methodologies of the publications found were systematic literature reviews, observations and interviews. For neuroarchitecture, the methodological procedures use sensors such as EEG (Electroencephalography). Since 2014 there has been an increase in publications and the methodological procedures include observations, focus groups and systematic literature reviews.

3.1 Aging in place

Understanding the main differences and similarities between theories related to aging in place are important to reduce problems for public policies, service providers, advocates and consumers in general (Greenfield, 2011). The promotion of aging in place can be seen as efforts to reduce barriers, causing subjects to remain in their residences despite declines in health (Greenfield, 2011; Greenfield, 2012; Satariano; Scharlach; Lindeman, 2014). Conceptions of lifelong communities differ and are based on the individual experience of genuinely listening to the experiences of older people living in these places, as the success of a concept is related to the experiences of its users (Van Hees et al., 2017). Research related to geographical gerontology has shown that the results concretely illustrate how place attachment is neither inherently positive nor necessarily achievable according to the current conception of deprived and disadvantaged residents (Finlay; Gaugler; Kane, 2018).

Ecological frameworks suggest specific dimensions that promote aging in place: Relative focus on social and physical environments; Relative focus on near and far environments and their mutualities; Relative focus on particular types of social

structures and systems and their interconnections; Relative focus on older people as leaders of change; Segmentation of subgroups of older adults; Initiating person-environment change at the moment of a life transition.

The idea of elderly-friendly places to enable aging in place incorporates a vision that is to encourage and enable people to remain in their home or neighborhood for as long as possible, improving the living environment (Van Hees et al., 2017). Ageing in place is based on characteristics such as the availability of elderly-friendly housing, proximity to facilities and services, transportation opportunities and spatial opportunities for social participation and feelings of security. Place attachment is based on a personal connection, such as neighbors, relatives, a partner, or because of precious memories, often related to personal relationships (Van Hees et al., 2017). Attachment to places also depends on the geography and architecture of the places themselves. Residents of neighborhoods near prominent landmarks, or with easily defined edges, or with a better quality housing stock, are more likely to have stronger emotional ties to the place where they live (Gieryn, 2000).

Finlay et al. (2021) identified that neighborhood active aging infrastructure is significantly related to the level of cognitive function among older American adults. The finding suggests that places that encourage routine walking, as well as social interaction and civic engagement, can protect cognitive function. Areas with a greater number of parks showed higher levels of cognitive function than their peers. Areas with higher business density showed higher cognitive functioning. Community policies and interventions on resource allocation and urban development are needed to support aging populations, including park infrastructure and recreational facilities for users of all ages and abilities, strategically combining residential and commercial areas. Neighborhood resources that support safe, social and accessible exercise can promote physical and cognitive health in adulthood.

Geographical gerontology tends to assume that most older people cultivate a strong sense of interiority; having lived in their homes for a long time, the furniture, layout and belongings represent precious memories and contentment. Finlay, Gaugler and Kane (2018) point out that survey participants described years of living in deprived and disadvantaged homes and neighborhoods. Prohibitive environments, including rules imposed in homeless shelters and subsidized housing, limited the ability to intentionally build a sense of home. Participants experienced material and socioeconomic barriers to building physical, social and psychological dimensions of home and community. The research exposes lived experiences and contexts of ageing that are often overlooked with issues such as financial deprivation, transient housing, commercial disinvestment and social isolation coming to the fore, showing the need to develop new research that reflects and responds to the very different global contexts in which people age (Finlay; Gaugler; Kane, 2018).

3.2 Housing for older people with dementia

The concept of care uses a theory-based evaluation approach to understand the mechanisms triggered by interventions and how they bring about changes in outcomes (Adlbrecht et al., 2021; Adlbrecht; Bartholomeyczik; Mayer, 2021). Profound changes in the physical, social and organizational environment are needed to provide a care environment that enables people with dementia to be part of society (Boer et al., 2020). Care approaches for people with dementia that include individualized activities and an environment that promotes social interaction are needed (Adlbrecht et al., 2021). The physical and social environment directly impacts outcomes for residents with dementia (Boer et al., 2020). Special dementia care units are characterized by their spatial and structural design, specifically trained staff and activities adapted to the needs of the residents (Adlbrecht et al., 2021).

In one of the studies, the selected assisted living residence was a non-profit organization designed exclusively for people with dementia and consisted of the following quality of care indicators: Alzheimer's-friendly environmental features; Alzheimer's-specific care team training; extensive activity programming; and low staff turnover. The residence had one high-functioning cognitive unit and one low-functioning unit (Caspi, 2014). Residents in the sample experienced much lower levels of negative emotional states, behavioral expressions, and self-neglect behaviors when they were engaged in structured activities compared to when they were not engaged in activities (Caspi, 2013; Caspi, 2014).

The built environment, i.e. the nursing home building, its architecture and the technologies applied, are seen as an indirect means of support. This implies that professionals in the fields of health, technology and design need to work together to program and design the ideal retirement home of the future. In the case of nursing homes, technological and architectural solutions can support the well-being, activities of daily living and quality of life of elderly residents, as well as supporting and optimizing the work processes of care professionals and professionals in the field of maintenance. In the Netherlands, building a home-like healthcare environment is a universally accepted concept and is known for its extensive system of residential and nursing home care (Van Hoof et al., 2014).

Research has shown that when creating a home for older people, architectural and technological solutions are important elements, but activities, participation and adequate care support are also necessary for comfort and quality of life (Van Hoof et al., 2014). Although the development of segregated environments exclusively for individuals living with dementia continues, it contributes to the stigma that is currently attached to having a diagnosis of dementia. The evidence that exists on the benefits of segregation versus integration is somewhat contradictory. It is recommended that options are available, to accommodate people who prefer not to be segregated or have to necessarily move as their abilities change, and people who prefer to live with others who are going through similar changes.

The growing focus on person-centered care values and practices will stimulate further innovation, largely based on an increasingly active role that individuals living with dementia are and will continue to play (Calkins, 2018). However, in relation to inclusive design, it can be problematic to claim that people don't understand, they may not have the professional knowledge, but they contribute in practice with their difficulties and observations (Heylighen; Bianchin, 2013). Some practical recommendations were developed by Calkins (2018) with: Creating a sense of community within the care environment; Enhancing comfort and dignity for all in the care community; Supporting courtesy, concern and safety within the care community; Providing opportunities for choice for all people in the care community; Offering opportunities for meaningful involvement to members of the care community. The theories point to a model of action and change, a model focused on the concept of care. The organizational context and the environment condition the functioning of people with dementia.

Some studies suggest modifications for small-scale projects in institutions, bringing a domestic character that promotes sensory stimuli and facilitates orientation, activity programming, training and low staff turnover. The quality of care is directly linked to support staff, social interactions and a dementia-sensitive spatial design. Some important guidelines: 1) physical comfort; 2) private room with the appearance of an apartment; 3) use of your own furniture, homely features; 4) guest bed; 5) adequate lighting; 6) gardens; 7) leisure; 8) pets; 8) simple, self-directing building; 9) security; 10) interaction with the neighborhood.

3.3 Neuroarchitecture

The neuroscience of architecture provides a practical basis for studying the experiential dimensions of architecture that have been forgotten in modern building science (Chatterjee, Coburn, Weinberger, 2017). "Neuroscience supports the view that we experience entities before elements. Our atmospheric sense is clearly an evolutionary priority and a consequence of the activities of the right hemisphere of the brain" (Pallasmaa, 2016). This area represents evidence-based architectural research that focuses on understanding the psychological dimensions of human experiences in response to architectural design (Chatterjee, Coburn, Weinberger, 2021).

Environmental qualities differentially stimulate our visual, auditory, somatosensory, vestibular and olfactory neural networks. The sensory-motor system deals with the bottom-up processing of building characteristics, including visual, as well as acoustic, tactile and even olfactory and navigational characteristics of the built environment. The brain's basic response to the sensory attributes of a building can be perceived through an individual's cultural knowledge, identity and education, as well as their knowledge of an area. These sensations are linked to subsequent motor responses, such as object affordances, avoidance reactions or navigation through buildings (Chatterjee, Coburn, Weinberger, 2017). According to Chatterjee, Coburn, Weinberger

(2021), "the emotional appraisal system integrates information from the sensory-motor and knowledge-significance systems, leading to aesthetic experiences." These experiences can range from intense feelings of pleasure to fear.

Sensory networks can be considered guardians of the architectural experience. "The omnidirectional senses of hearing, touch and smell complement visual sensations to produce a multisensory existential experience relating us fully to our setting" (Pallasmaa, 2016).

Shape and geometry can improve attention processes in curvilinear interior spaces made of steel, concrete or glass, while memory processes can be enhanced in a square or cylindrical space made of concrete (Llorens-gámez; Higuera-Trujillo; Omarrementeria; Llinares, 2022). Changing the geometric specificities of an architectural space is significantly associated with a distinct effect on human emotions (Shemesh; Leisman; Bar; Grobman, 2022).

The psychological and neurophysiological results indicate that cool tones improve attention and memory performance more than warm tones, due to the level of activation of the sympathetic system that is appropriate for maintaining a greater state of alertness and cognitive performance (Llinares; Higuera-Trujillo; Serra, 2021). Light, sound and temperature conditions can improve attention processes in cool, quiet and bright spaces, while memory can be improved in warm, quiet and moderately bright spaces (Llorens-gámez; Higuera-Trujillo; Omarrementeria; Llinares, 2022, 2022).

The function of a space cannot be overlooked, both in terms of the design features and the experiences of the inhabitants (Chatterjee; Coburn; Weinberger, 2021). It is important to understand why different levels of cognition occur in different built environments (Llorens-gámez; Higuera-Trujillo; Omarrementeria; Llinares, 2022). By understanding the connection between the properties of space and human emotions, new paths can be created for the design of environments.

4. CONSIDERATIONS

The investigation of the environment and housing for institutionalized elderly people through the integrative review identifies the concept of Aging in place linked to public policies and the elimination of barriers to aging at home, in the neighborhood (Greenfield, 2011; Greenfield, 2012; Satariano; Scharlach; Lindeman, 2014). The concept of housing for elderly people with dementia, with centered care units linked to the spatial, structural design and personnel specifically trained to the residents' needs (Adlbrecht et al., 2021). And neuroarchitecture is related to understanding the psychological dimensions of human experiences in response to architectural design (Chatterjee; Coburn; Weinberger, 2021).

Research suggests that the promotion of neighborhoods that are more favorable to place attachment, through social interaction, civic engagement, with good quality housing, with accessibility, technological support, security, green areas, mobility and important references, favor the coexistence of different generations, protecting cognitive function and promoting community aging. In the perception of pedestrians in urban spaces, research shows that the safety of elderly people, with a greater number of pedestrian crossings, light intensity (around 4,500K) and surrounding vegetation, can reduce stress, especially at night. (Linares; Higuera-Trujillo; Montañana; Castilla, 2020).

Centered care, through the environment and team supervision, is the basis of studies related to the housing environment for elderly people with dementia. As a model of action, they highlight that small houses with few elderly residents, where the social area, kitchen and wards are more central and the private rooms are adjacent, facilitate the orientation of residents and the care provided by the team. Chatterjee, Coburn and Weinberger (2021) comment that open, calm and warm environments can reduce stress. The home-like nature of institutions allows residents to use their own furniture in the rooms and to have a support bed for a visitor or caregiver.

5. REFERENCES

ADLBRECHT, Laura et al. (2021) Engagement in purposeful activities and social interactions amongst persons with dementia in special care units compared to traditional nursing homes: an observational study. Scandinavian Journal Of Caring Sciences, [S.L.], v. 36, n. 3, p. 650-662, 21 jul. 2021. Wiley. *http://dx.doi.org/10.1111/scs.13017*.

ADLBRECHT, Laura; BARTHOLOMEYCZIK, Sabine; MAYER, Hanna. (2021) Mechanisms of impact and contextual aspects of a dementia special care unit in long-term care: a process evaluation. Bmc Geriatrics, [S.L.], v. 21, n. 1, p. 680, dez. 2021. Springer Science and Business Media LLC. *http://dx.doi.org/10.1186/s12877-021-02637-5*.

BOER, Bram de et al. (2020) The Homestead: developing a conceptual framework through co-creation for innovating long-term dementia care environments. International Journal Of Environmental Research And Public Health, [S.L.], v. 18, n. 1, p. 57, 23 dez. 2020. MDPI AG. *http://dx.doi.org/10.3390/ijerph18010057*.

BOER, B. de et al. (2015) Living at the farm, innovative nursing home care for people with dementia-study protocol of an observational longitudinal study. Bmc Geriatrics, [S.L.], v. 15, n. 1, p. 144, 2 nov. 2015. Springer Science and Business Media LLC. *http://dx.doi.org/10.1186/s12877-015-0141-x*.

CALKINS, Margaret P. (2018) From Research to Application: supportive and therapeutic environments for people living with dementia. The Gerontologist, [S.L.], v. 58, n. 1, p. 114-128, 18 jan. 2018. Oxford University Press (OUP). *http://dx.doi.org/10.1093/geront/gnx146*.

CASPI, Eilon. (2014) Does Self-Neglect Occur Among Older Adults With Dementia When Unsupervised in Assisted Living? An Exploratory, Observational Study. Journal Of Elder Abuse & Neglect, [S.L.], v. 26, n. 2, p. 123-149, 5 fev. 2014. Informa UK Limited. *http://dx.doi.org/10.1080/08946566.2013.830532*.

CASPI, Eilon. (2013) Aggressive behaviors between residents with dementia in an assisted living residence. Dementia, [S.L.], v. 14, n. 4, p. 528-546, 3 set. 2013. SAGE Publications. *http://dx.doi.org/10.1177/1471301213502588*.

CHATTERJEE, Anjan; COBURN, Alex; WEINBERGER, Adam. (2021) The neuroaesthetics of architectural spaces. Cognitive Processing, [S.L.], v. 22, n. 1, p. 115-120, 27 ago. 2021. Springer Science and Business Media LLC. *http://dx.doi.org/10.1007/s10339-021-01043-4*.

COBURN, Alex; VARTANIAN, Oshin; CHATTERJEE, Anjan. (2017) Buildings, Beauty, and the Brain: a neuroscience of architectural experience. Journal Of Cognitive Neuroscience, [S.L.], v. 29, n. 9, p. 1521-1531, 1 set. 2017. MIT Press. *http://dx.doi.org/10.1162/jocn_a_01146*.

DELFINO LL, CACHIONI M.(2015) Neuropsychiatric symptoms among elderly people with Alzheimer disease and caregivers' behaviors. Geriatric Gerontol Aging.

FERENHOF, Helio Aisenberg; FERNANDES, Roberto Fabiano. (2016) Desmistificando a revisão de literatura como base para redação científica: método SSF. Revista Acb: Biblioteconomia em Santa Catarina. Florianópolis, p. 550-563.

FINLAY, Jessica et al. (2021) Neighborhood active aging infrastructure and cognitive function: a mixed-methods study of older americans. Preventive Medicine, [S.L.], v. 150, p. 106669, set. 2021. Elsevier BV. *http://dx.doi.org/10.1016/j.ypmed.2021.106669*.

FINLAY, Jessica M.; GAUGLER, Joseph E.; KANE, Robert L. (2018) Ageing in the margins: expectations of and struggles for •a good place to grow old• among low-income older minnesotans. Ageing And Society, [S.L.], v. 40, n. 4, p. 759-783. Cambridge University Press (CUP). *http://dx.doi.org/10.1017/s0144686x1800123x*.

FØRSUND, Linn Hege et al. (2018) The experience of lived space in persons with dementia: a systematic meta-synthesis. BMC Geriatrics, [S.L.], v. 18, n. 1, p. 1. Springer Science and Business Media LLC. *http://dx.doi.org/10.1186/s12877-018-0728-0*.

GIERYN, Thomas F. (2000) A Space for Place in Sociology. Annual Review Of Sociology, [S.L.], v. 26, n. 1, p. 463-496. Annual Reviews. *http://dx.doi.org/10.1146/annurev.soc.26.1.463*.

GREENFIELD, E. A. (2011) Using Ecological Frameworks to Advance a Field of Research, Practice, and Policy on Aging-in-Place Initiatives. The Gerontologist, [S.L.], v. 52, n. 1, p. 1-12. Oxford University Press (OUP). *http://dx.doi.org/10.1093/geront/gnr108*.

GREENFIELD, E. A. et al. (2013) A Tale of Two Community Initiatives for Promoting Aging in Place: similarities and differences in the national implementation of norc programs and villages. The Gerontologist, [S.L.], v. 53, n. 6, p. 928-938. Oxford University Press (OUP). *http://dx.doi.org/10.1093/geront/gnt035*.

GREENFIELD, Emily A. et al. (2012) A conceptual framework for examining the promise of the NORC program and Village models to promote aging in place. Journal Of Aging Studies, [S.L.], v. 26, n. 3, p. 273-284. Elsevier BV. *http://dx.doi.org/10.1016/j.jaging.2012.01.003*.

HEYLIGHEN, Ann; BIANCHIN, Matteo. (2013) How does inclusive design relate to good design? Designing as a deliberative enterprise. Design Studies, [S.L.], v. 34, n. 1, p. 93-110. Elsevier BV. *http://dx.doi.org/10.1016/j.destud.2012.05.002*

LAWTON, M. Powell; NAHEMOW, Lucille. (1973) Ecology and the aging process. The Psychology of Adult Development And Aging., [S.L.], p. 619-674. American Psychological Association. *http://dx.doi.org/10.1037/10044-020*.

LLINARES, Carmen; HIGUERA-TRUJILLO, Juan Luis; SERRA, Juan. (2021) Cold and warm coloured classrooms. Effects on students' attention and memory measured through psychological and neurophysiological responses. Building And Environment, [S.L.], v. 196, p. 107726. Elsevier BV. *http://dx.doi.org/10.1016/j.buildenv.2021.107726*.

LLORENS-GÁMEZ, Mar; HIGUERA-TRUJILLO, Juan Luis; OMARREMENTERIA, Carla Sentieri; LLINARES, Carmen. (2022) The impact of the design of learning spaces on attention and memory from a neuroarchitectural approach: a systematic review. Frontiers Of Architectural Research, [S.L.], v. 11, n. 3, p. 542-560. Elsevier BV. *http://dx.doi.org/10.1016/j.foar.2021.12.002*.

MCKHANN, Guy M. et al. (2011) The diagnosis of dementia due to Alzheimer's disease: recommendations from the national institute on aging•alzheimer's association workgroups on diagnostic guidelines for alzheimer's disease. Alzheimer'S & Dementia, [S.L.], v. 7, n. 3, p. 263-269. Wiley. *http://dx.doi.org/10.1016/j.jalz.2011.03.005*.

PALLASMAA, Juhani. (2016) The Sixth Sense: the meaning of atmosphere and mood. Architectural Design, [S.L.], v. 86, n. 6, p. 126-133. Wiley. *http://dx.doi.org/10.1002/ad.2121*.

PASSINI, Romedi et al. (1995) Wayfinding in Dementia of the Alzheimer Type: Planning Abilities. Journal Of Clinical and Experimental Neuropsychology, [s. l], v. 17, n. 6, p. 820-832.

SATARIANO, William A.; SCHARLACH, Andrew E.; LINDEMAN, David. (2014) Aging, Place, and Technology. Journal Of Aging and Health, [S.L.], v. 26, n. 8, p. 1373-1389. SAGE Publications. *http://dx.doi.org/10.1177/0898264314543470*.

SHEMESH, Avishag; LEISMAN, Gerry; BAR, Moshe; GROBMAN, Yasha Jacob. (2022) The emotional influence of different geometries in virtual spaces: a neurocognitive examination. Journal Of Environmental Psychology, [S.L.], v. 81, p. 101802. Elsevier BV. *http://dx.doi.org/10.1016/j.jenvp.2022.101802*.

TORRES, Karen Cecília de Lima; SANTOS, Rodrigo Ribeiro dos; MAPA, Filipe Camilo; MORAES, Flávia Lanna de; MORAES, Edgar Nunes de; SILVA, Marco Aurélio Romano. (2012) Biomarkers in Alzheimer disease. Geriatr Gerontol Aging, Rio de Janeiro, p. 273-282.

VAN HEES, Susan et al. (2017)Meanings of 'lifecycle robust neighbourhoods': constructing versus attaching to places. Ageing and Society, [S.L.], v. 38, n. 6, p. 1148-1173. Cambridge University Press (CUP). *http://dx.doi.org/10.1017/s0144686x16001483*.

VAN HEES, Susan et al. (2017) Photovoicing the neighbourhood: understanding the situated meaning of intangible places for ageing-in-place. Health & Place, [S.L.], v. 48, p. 11-19. Elsevier BV. *http://dx.doi.org/10.1016/j.healthplace.2017.08.007*.

VAN HOOF, J. et al. (2014) The Essential Elements for a Nursing Home According to Stakeholders from Healthcare and Technology: perspectives from multiple simultaneous monodisciplinary workshops. Journal Of Housing for The Elderly, [S.L.], v. 28, n. 4, p. 329-356. Informa UK Limited. *http://dx.doi.org/10.1080/02763893.2014.930 365*.

VAN HOOF, J. et al. (2014) Technological and architectural solutions for Dutch nursing homes: results of a multidisciplinary mind mapping session with professional stakeholders. Technology in Society, [S.L.], v. 36, p. 1-12. Elsevier BV. *http://dx.doi. org/10.1016/j.techsoc.2013.12.001*.

ZINA, Lívia Guimarães; MOIMAZ, Suzely Adas Saliba. (2012) Odontologia baseada em evidência: etapas e métodos de uma revisão sistemática. Arq Odontol, Belo Horizonte, v. 3, n. 48, p. 188-199.

L18

USING SENSIBLE APPROACH IN PROGRAMMING AN URBAN PARK, A TOOL TO CONFRONT VISION ON INCLUSIVITY AND BIODIVERSITY.

UTILIZAR UMA ABORDAGEM SENSÍVEL NA PROGRAMAÇÃO DE UM PARQUE URBANO, UMA FERRAMENTA PARA ENFRENTAR A VISÃO DA INCLUSIVIDADE E DA BIODIVERSIDADE.

Guillaume Duranel
Architecte, Maitres de conférences
Alt, LET-LAVUE, ENSA Normandie
g.duranel@alt-au.com

ABSTRACT

This article relates a participatory experimentation to program and design a park. It focuses on how sensible approach were used to take in consideration two aspects, the place of marginalized groups and the protection of biodiversity. It will question the tools that can be put in place in those processes such as photo elicitation. Yet it will also consider the role of designers when they work for elected officials.

KEYWORDS: Park, Participatory process, Biodiversity, Mental image, Photo elicitation

RESUMO

Este artigo relata uma experimentação participativa para programar e projetar um parque. Centra-se na forma como a abordagem sensível foi utilizada para ter em consideração este aspecto, o lugar dos grupos marginalizados e a protecção da biodiversidade. Questionará as ferramentas que podem ser implementadas nestes processos, como por exemplo a elicitação de fotos. No entanto, também considerará o papel dos designers quando trabalham para os representantes eleitos.

PALAVRAS CHAVE: Parque, Processo participativo, Biodiversidade, Imagem mental, Elicitação de fotos

1. DESCRIPTION OF THE PARK OF THE THEUILLERIE AND THE IMPORTANCE OF A SENSIBLE APPROACH

This paper gives feedback about a participatory experimentation to program and design a park in the suburbs of Paris. It aims at highlighting how sensible approaches were used to give a voice to stakeholders on two aspects: the place of marginalized groups and the protection of biodiversity. In this paper written by a member of the design team for the park, the hypothesis is that the process should take in consideration not only the sensory aspect of the park (all the physical manifestation once in the park) but also the sensibility of individuals who experience it by putting a focus on their diversity of status, gender, social class... The term sensibility embeds social constructs and the way they impact the understanding of the surrounding by users. In order to take in consideration sensibility in designing an urban park, the process overlapped participatory industrial design process (Borsari *et al* 2016) with participatory urban planning process (Petiteau, 2002) (Miaux, 2024). This paper will show that an urban park is such a complex entity that a sensible approach becomes politically relevant to consider its transformation if a form of social justice is sought after.

With an area of 4ha, the Park of the Theuillerie is the largest park of the city of Ris-Orangis in the southern suburb of Paris. The park lies on the hillside of the Seine where clay outcrop occurs. The park therefor used to be a place where clay was

extracted to make roof tiles (hence the name "Theuillerie" close to the French word "tuilerie" for tile factory). Later, the park hosted a mansion overlooking the Seine valley. In the sixties, its northern half was sold to private developers to build housing. Only the southern and most elevated part remained as a park and the mansion was demolished in the eighties.

The park is also located on the border of the neighboring city of Grigny. In the seventies, the neighborhood called Grigny 2 which hosts almost 5000 apartments was built next to it. Grigny 2 is the second largest condominium in Europe. The progressive increase of energy cost since 1973 brought the condominium to bankruptcy. The price of apartments dropped attracting slumlords who rented apartments to illegal immigrants. This created a need for parallel, and often illegal, economic activities such as drug dealing and prostitution. The park of the Theuillerie, which is disconnected from the city fabric due to the topography, became a gathering place for those uses which scared some other inhabitants away. Today the park is mainly used by groups of men. Some prostitution (both male and female) also occur. Few inhabitants cross it on their way to the train station. A nearby high school some time uses it for sport exercises in spite of fear of sexual aggression.

2. THE DIAGNOSTIC PHASE, THE FIRST STEP OF THE PARTICIPATORY TRANSFORMATION PROCESS

In 2022, the city of Ris-Orangis selected a team of architects, landscape architects, ecological experts and participatory design experts to refurbish the park. The city asked them to use a participatory method to lead a yearlong participatory programming phase that aimed at including a large panel of potential stakeholders: inhabitants from different neighborhoods, workers, women, kids, teenagers, non-French speaking users, city workers in charge of its maintenance... The park is also located on an important green corridor connecting the Seine River to plateaus, and many environment associations were implicated in the participatory phase. The method aimed at understanding what vision those groups of stakeholders had on the park: what were the reasons for them to use it or not and what were their expectation for this natural park in the city. The method used tools from participatory urban planning such as itineraries, from visual anthropology such as photo elicitation, and from participatory design such as speculative narration.

Between 2022 and 2023, two programming phases occurred. The first one was a diagnostic phase that lasted from September 2022 to April 2023. During this phase, the team organized several workshops according to different formats. The first one was a walking diagnostic in the park with about 30 people. It enabled different participants to express and confront in-situ their knowledge about the park[1]. This format was chosen for the first meeting since the winter was approaching and other

---

1 This process was inspired by the "itinerary" process of Jean-Yves Petiteau.

formats of diagnostic while walking would become difficult in the colder months. After the collective walk through the park, a group of musicians organized a concert in the main clearing in order to show how the park could become a gathering place with events such as concerts.

Figure 1/Figura 1. Picture of a concert organized in the main clearing.
Source: Alt 2022

During the month of fall and winter 2022, workshops were mostly organized indoor and the goal was to reach people who don't often come to the park in order to understand why they didn't use this large natural area. Six workshops were organized. The large number of workshops was designed to reach many different types of users. Those workshops were:

Two workshops with teenagers in two different homes for associations (enabling to reach more teenagers, with a total of 40 participants),

One workshop in a large office building next to the park where the design team was able to meet about 30 people who didn't live in the city but worked there,

Two workshops with the association of women where people were learning French. It enabled to meet about 15 non-French speaking women who sometime used the park,

One workshop with local association with about 20 people mainly involved in environmental associations.

Those workshops aimed at understanding what was the mental image of the park according to each type of users and in which ways the park should evolve. In this regard each workshop was an occasion to adapt the tools to reach the aimed public. For instance, in the case of the workshops with women who are learning French,

photo elicitation was used as a way to overcome the language barrier (Bigando, 2013). With teenagers, drawings of imaginary parks were used to collect a narrative construct of how they would like to use the park of the Theuillerie in a process close to speculative narrations (Haraway, 2020).

After those workshops with different types of users, the design team organized a workshop with the city's technical team such as gardeners, city policemen and road workers. The aim was to understand what the park's current maintenance brought to the diagnosis.

Figure 2/Figura 2. Picture of a collage made during a photo elicitation workshop.
Source: Alt 2022

3. CONTRASTED MENTAL IMAGES OF AN URBAN FOREST

The results from those workshops were of course to diverse and rich to describe them all here. Yet one of the main teachings was that the park was called by many people "the forest". For instance, when the design team would call the park by its name of "Theuillerie", kids would not understand what that name referred to. This toponym of "the forest" was shared by a large amount of people, teenagers, women, and even local activists. However, if the name of "the forest" was shared, the mental image attached to it could differ wildly between users.

To some people, the mental image of the forest was very positive. It evoked a calm and peaceful place for leisure and outdoor activities. Even If they could still hear the city's noise, they felt peaceful. The forest also evoked a rich biodiversity within the park. This was supported by the fact that some species thought of as typical of woodlands lived in the park such as foxes, squirrels and woodpeckers. However,

this mental image was not supported by the result of the ecological study, lead in the meantime by the design team. The ecological study showed that most of the park actually had lots of invasive species such as Robinia pseudoacacia that hardly support any biodiversity (especially small fauna), and its ecological characteristics could hardly be considered as a real woodland.

For some other people, the mental image of the forest was mostly negative. They expressed fear to go in the park due to its bad reputation as well as the fact that once inside, the outside city was not visible anymore. They deemed the park to be poorly lighten even in daytime and therefore dangerous. They talked about the forest as a forbidden area where the rule of the city seemed to dissipate.

Finally, to other people the mental image of the forest brought mental images of freedom and of a place where adventure was possible. The fact that the current park had very few amenities was considered a good thing since it enabled to have a richer imagination, especially for playing. Its natural aspect with rugged pathways was considered very positive.

This example shows that while using the same word of "the forest" to describe the park, the mental image associated with it may vary dramatically when sensibility takes into consideration. This shows how language alone may not be sufficient in order to take in consideration the entirety of users experience and wishes in order to transform the park. In a context where storytelling and narrative approach in participatory design tends to become the norm (Matthey, 2015) (Matthey et al, 2022), sensible approaches invite designers to go beyond the language to consider more complex realities.

In the meantime, the design team worked on the technical diagnostic of the park and confronted it with the knowledge gathered in those workshops. The results of the global diagnostic (both technical and coming from the workshops) were exposed to the public in April 2023 in a large indoor workshop that aimed at organizing all the results. The goal was not to decide which have this aspect of the park should prevail, but mostly to invite each stakeholder to accept that other people could have a different mental image of the park and that gender, age and social status could affect how the park was perceived.

Those results show that in order to deliver this diagnosis, the design team had to incorporate sensible and subjective aspects of the parc to its rational diagnosis. In this regard, the sensitivity of users was the main resource for this process. This hypothesis is based on the idea that their might be links

4. PUTTING CONTROVERSIES IN THE SPOT LIGHT TO ENGAGE PROGRAMMING THROUGH SCENARIOS

In order not to erase those differences of point of views, the design team made a list of what were the consensual points and what were the controversies. Some of those controversies were:

- Should bikes be allowed in the park?
- Should the park be closed at night or should all fences be removed?
- Should events be allowed in the park (such as concerts) or should it remain a place dedicated to biodiversity?
- Should illegal activities be banned or is there a possibility not to marginalize more those who are excluded from regular public spaces?

This list of controversies shows that the difference of mental images about what an urban forest represents met other disagreements on who was welcome in the park or not. The neighboring condominiums being highly pauperized, the park was a gathering point for illegal activities. Stakeholders debated on whether illegal activities could cohabit with uses by other people such as kids and families.

Within this debate, it appears that this project holds political stakes about social justice and inclusivity where the sensible approach gave a better footing to decision making. Instead of overlooking those disagreements the design team used them to build a strategy through scenarios that confront different point of view. For instance, should the park be welcoming to families by making it safer, even if that means some marginalized people will be excluded? Or should we consider that illegal economic activities will take place no matter what and instead we may be able to design strategies to allow them to cohabit with other activities?

Regarding the cohabitation of human and non-human, should the park be mainly dedicated to human activities? Or should a part of the park be forbidden to people to protect fauna? And would this second hypothesis be compatible with the goal to make the park safer?

5. THE SCENARIOS STAGE IN-SITU TO CONFRONT IDEAS TO PHYSICAL SPACE

The design team regretted that most of the diagnostic phase events were held indoors, thus disconnecting those narrations to the park itself. This decision was taken because the diagnostic occurred in the fall and winter. For the second phase dedicated to scenarios, it was decided to hold most meetings in the park. The design team organized three workshops in the park between May and September 2023.

The workshop in May of 2023 happened at the same time as local association held events in the park. It started in the morning with a collective cleaning operation

of the park, where every participant helped pick up trashes. The afternoon was dedicated to different activities that could attract all kinds of inhabitants. Some of those activities were used by the design team to present different possibilities for the park. For instance, a walk through the park with scale one to one test was organized. It helped all participants express their desires on what part of the park was well suited for different kinds of activities.

The second workshop was also organized in the park in Jully of 2023. Three scenarios were presented to participants. Those scenarios aimed at organizing all the sought-after activities in three different spatial layouts, each with different hierarchy. Organizing this debate in the park enabled to invite people who had followed closely the process, but also bystanders. The workshop ended with each participant expressing on post-it what they liked and what they disliked about each scenario. The goal was to not vote for one scenario but to confront them in order to debate on what was their strong and weak points. This process gave rise to a fourth scenario drawn collectively at the end of the workshop.

Regarding the two aforementioned aspects of biodiversity and inclusivity, the selected option was to bring down every fence of the park and to make the hypothesis that an open park would benefit cohabitation between the public. Illegal activities would be tolerated yet with a stronger social control, mainly by increasing pedestrian and bike flux through the park. The wooded areas with mainly invasive species would gradually be replaced with local species. However, the area with the main ecological value should be closed in the spring and summer to allow nesting.

Figure 3/Figura 3. Picture of a debate around the three scenrios in the park.
Source: Alt 2023

6. FROM PROGRAMMING TO IMPLEMENTING, A SLOW PROCESS

During the summer of 2023, the design team worked on this forth scenario and calculated its cost. They presented the result of this process to elected officials and the technical services in charge of the maintenance of the park. They reached the conclusion that the project was technically feasible. Concerning the cost of the park, they decided that construction should be divided in at least four fiscal years in order to allow the city to find subsidies. The increase in construction time became an opportunity to continue working with inhabitants. It appeared that a longer construction schedule could give the time for new uses to take place slowly in the park. The design team and the maintenance team had the opportunity to do a long-term evaluation of the new amenities and to adapt the project if needed.

In September of 2023, the final scenario was presented to the inhabitants in a workshop where that new schedule was announced. This gave the possibility to change some of the proposed design, but mainly to program with inhabitants what could be the strategy to help new users discover the park and to encourage activities that were deemed positive.

Figure 4/Figura 4. Picture of a discussion around a model of the park during the final workshop
Source: Alt 2023

7. CONCLUSION ON THE DIFFICULTIES FOR THE DESIGN TEAM

Today the process moved to technical design stage and the first construction should start by the end of 2024. The participatory process is ongoing, yet there is a will to open it to other inhabitants since those present from the beginning of the process are becoming less involved. It brings up the problem of relaying participatory process to different groups as the design stage advances.

We can point out that within the design team the participatory dimension of this process was more or less easy to implement. For instance, the architects were accustomed to participatory design process and they were strong believers of its necessity, which helped support it to other team members. In the other hand, the ecological expert approached the process mostly as a constraint. During workshops, she used her scientific approach to dismiss other points of views, for instance regarding the ecological value of the park.

The design team was used to participatory design process that focuses on language-oriented strategies and that take into consideration complex organization of decision making (Charles, 2022). In those processes language is a powerful tool to communicate but may also bring forms of rhetorical manipulation. As shown in this paper, sensible approach made it possible to reveal how the same physical reality and its description by language could result on highly different mental images by users. Digging beyond words enabled to propose a design strategy that aims at being more careful of social injustice but also to address the cohabitation of human and non-human.

In comparison to other participatory diagnosis and programming of natural public spaces using sensible approaches (Miaux et all, 2024), this process did not originate as a research process but as an operational project ordered by the municipality. Sensible aspects remain especially difficult to objectify and even if the participatory process is ambitious, decision remains in the hand of elected officials. This brings a bias to the position of the design team. How can they appear neutral in the process? How can they reassure the stakeholder that their point of view will be taken into consideration? Within two years of this process, it seems that participants understand that the process is not perfect and that some decision might not follow a participatory process. However, they still decide to take part in the process which seems to confirm that even though the process is imperfect it is still worth engaging in it.

8. BIBLIOGRAPHY

Bigando, E. (2013). De l'usage de la photo elicitation interview pour appréhender les paysages du quotidien : retour sur une méthode productrice d'une réflexivité habitante. Cybergeo: European Journal of Geography *https://doi.org/10.4000/cybergeo.25919*

Borsari, A., Brulé, E. (2016). Le sensible comme projet : regards croisés, Hermès n°74 (pp.176-182)

Charles, S. (2023). L'élu, le citoyen et l'architecte. Le projet urbain participatif. Bordeaux, Le bord de l'eau (240p.)

Haraway, D. (2020). Vivre avec le trouble, Paris, Les éditions ds mondes à faire. 380p.

Petiteau, J.Y., Pasquier, E. (2002). La méthode des itinéraires : récits et parcours. In Grosjean M. Thibaud J.P. (Ed), L'Espace urbain en méthodes (pp. 63-77) Parenthèses.

Laplantine, F. (2005). Le social et le sensible, introduction à une anthropologie modale. Paris, Téraèdre. Collection L'anthropologie au coin de la rue.

Laplantine, F. (2007). Le sensible : une pensée des autres, Reliance n°25 (pp. 76-80)

Matthey, L. (2015). Building up stories. Sur l'action urbanistique à l'heure de la société du spectacle intégré. Genève, Decitre, (156p.)

Matthey, L. et al (2022). La métamorphose du récit en urbanisme, Métropolitique.eu. (pp. 1-5)

Miaux, S. et al. (2024). Des outils pour mener une recherche-action participative : Le cas des espaces naturels de loisir informels (ENLI). Recherches-actions participatives, GéoProximitéS 1. *https://geoproximites.fr/_ark:/84480/2024/02/07/des-outils-pour-mener-une-recherche-action-participative-le-cas-des-espaces-naturels-de-loisir-informels-enli/*

L18

SENSITIVE APPROACHES AND PRACTICES: VIEWPOINTS OF THE ACTORS INVOLVED IN THE URBAN DESIGN PROCESS THE "LA BRASSERIE" ECO-DISTRICT IN STRASBOURG, FRANCE

ABORDAGENS E PRÁTICAS SENSÍVEIS: PONTOS DE VISTA DOS INTERVENIENTES NO PROCESSO DE CONCEPÇÃO URBANA O ECO-BAIRRO LA BRASSERIE EM ESTRASBURGO (FRANÇA)

Mathilde Girault
Research engineer / engenheiro de investigação
EVS Laboratory / Laboratório do EVS
mathildegirault@hotmail.fr

Théa Manola
Lecturer / Conferencista
Univ. Grenoble Alpes, CNRS, ENSAG*,
AAU-CRESSON, 38000 Grenoble, France
* School of Architecture Univ. Grenoble Alpes
manola.t@grenoble.archi.fr

Silvère Tribout
Lecturer / Conferencista
ESO Laboratory - Rennes 2 University /
Laboratório do ESO - Universidade de Rennes 2
Silvere.tribout@univ-rennes2.fr

ABSTRACT

The article deals with the corpus of 12 interviews, conducted as part of a research project involving actors in the "La Brasserie" eco-district development project in Strasbourg, France. It addresses meanings of, and approaches to the sensitive, and it emphasises the close relationship between sensitivity and sensibility, despite the instability of their definition. This link concerns beauty and comfort. The article also explores the operationalisation of the sensitive. It shows that beyond its inclusion in established tools, the sensitive structures methods, attitudes and values.

KEYWORDS: sensitive practices, actors, urban design, project

RESUMO

O artigo trata do corpus de 12 entrevistas, realizadas no âmbito de um projeto de investigação envolvendo atores do projeto de desenvolvimento do ecodistrito "La Brasserie" em Estrasburgo, França. Aborda significados e abordagens do sensível e enfatiza a estreita relação entre sensibilidade e sensibilidade, apesar da instabilidade da sua definição. Este link diz respeito à beleza e ao conforto. O artigo explora também a operacionalização do sensível. Mostra que para além da sua inclusão em ferramentas estabelecidas, o sensível estrutura métodos, atitudes e valores.

PALAVRAS-CHAVE: sensível, práticas, atores, desenho urbano, projeto

1. INTRODUCTION

This article is based on the PROSECO research project, which stands for "PROduction SEnsible des projets urbains COntemporains" or "sensitive production in contemporary urban projects". This research is based on the observation that two mechanisms currently drive the production of urban space, and that these may have a significant impact on their sensitive dimension. The first is the aestheticisation of urban worlds (Lipovetsky and Serroy, 2013; Howes, 2005), i.e., a series of phenomena reflecting the growing importance of aesthetics in the public space (Margier, 2014). This first mechanism needs to be considered in conjunction with the second, which is the growing awareness of environmental issues and the need to integrate them into the process of creating spaces. These ecological concerns (Coutard and Lévy, 2010; Barles and Blanc, 2016) have been evident for several decades, and they have also led to changes in the ways that professionals think and act. In this context, a "green aesthetic" (Fel, 2009) has emerged in urban spaces.

We believe that these two mechanisms have an impact on both: a) the consideration given to the sensitive in the design process, and b) the sensitive effects produced and experienced in the spaces in question. In this respect, the general aim of PROSECO is to provide a basis for understanding the role of sensitive in the spatial design process, which in our view extends from planning to the choice of project sites, the formulation of an intention to develop (i.e., the commission), the framing of its implementation,

the design, and its execution. It should be noted here that by "sensitive" we mean "the life of sensations" (Howes & Marcoux, 2006), which is both a way of thinking about the world through sensations and experiences in general (corporeal, sensory, and emotional), as well as our sensitivity towards the world. In our opinion, the term encompasses the sensory (what we can experience through our senses), the signifier (the meaning assigned to what we experience through the senses), and the qualifier (the emotional relationship that this can produce). The sensitive is a way of welcoming these experiences and integrating them into a vision of the world, but it is also an attitude towards these experiences, in terms of being and doing.

While there is an abundance of literature on sensitive experiences of developed spaces, little interest has instead been shown in the ways that actors use the sensitive in the process of designing projects that address environmental issues. And this is precisely the aim of this article.

More specifically, we analyse 11 qualitative interviews with actors involved in the design of the "La Brasserie" eco-district in Strasbourg, France, a portion of which was conducted on site: urban and property developers and members of the project management team (e.g. the architects, landscape architects, urban planners, and engineers, among others.)[1]. These interviews form part of a larger corpus of over 80 interviews conducted in relation to 11 projects in 4 French cities carried out between 2021 and 2023 in Grenoble, Montpellier, Strasbourg, and Rennes.

The "La Brasserie" project has been chosen for this article because it is both a classic example of a contemporary urban project and because it addresses many issues that can reveal the role of sensitivity, including the project's labelling as an "ecoquartier", or eco-district, by the French governement, its offering of green public spaces, and its construction on a site with an existing industrial heritage. We should state that the aim of this article is not to discuss the project itself, rather to use it as a way to tackle the issues that this article seeks to address.

These issues are structured in two parts and then analysed. The first part looks at the meanings and approaches associated with the term "sensitive": do actors use the term "sensitive"? How do they define it, explicitly or implicitly? What terms do they associate with the "sensitive"? What themes are used to operationalise the sensitive? The second examines the links forged by the actors we interviewed between the sensitive and how it is put into practice; in other words, do they use the tools that have been identified? Does the sensitive entail specific modes of action, and if so, what are they? The final section discusses issues concerning the actors 'designated' to deal with the sensitive and the status we propose to accord to the sensitive in light

---

1 Several quotes from these interviews are included in this text. For purposes of anonymisation and clarification, each citation is followed by the role of the interviewee in the project process and the date of the interview. The the proposed acronyms for the roles played in the project process are as follows: UPM = Urban Project Manager / REMP = real estate project manager / AD = Architect designer / LD = Landscape designer / UD = Urban designer / CC = City Councillor.

of this inquiry. Based on a single case study, the following lines of analysis should be regarded as hypothetical. They will be refined in forthcoming publications on the basis of other areas of analysis and research.

2. ACTORS AND SENSITIVITY: AN UNSTABLE DEFINITION, COMMON DENOMINATORS, AND A LINK TO THE SENSITIVE AND SENSITIVITY

The first part of this article looks at the way that professional actors use the term "sensitive". After indicating how familiar they are with the term "sensitive", we will provide information on the way in which it seems to be understood (explicitly or implicitly) by these actors. Strongly associated with sensitivity, the sensitive expresses both an individual point of view and a collective construction, particularly a professional one, which may – not without some tension – be used in the design process. It also involves a form of sensory apprehension of the project. Finally, for the actors involved, the sensitive refers to issues of beauty and comfort, and it explores the role of standards (aesthetic or otherwise) in the process of designing spaces.

2.1 Common denominators: sensoriality, environment, and inclusiveness

Half of the actors queried stated during the interview that they use the term in their everyday work exchanges. Almost that many volunteered the term during their interview (although it should be noted that the interviewees had been informed of the research questions ahead of time) and continued to do so in the ensuing discussion. On this limited basis of interviews, no distinguishing criterion can be used to identify categories of actors who claim to use the term "sensitive" in their work (such as their role in the project, basic training, gender, age, etc.). Moreover, these actors do not share a common definition of the sensitive.

The other half of the actors are unfamiliar with the term. Some expressed discomfort or difficulty in grasping the concept, which they expressed, for example, with bursts of laughter or requests for a definition. Three of them stated several times during the interview that it was hard for them to grasp this term, which they considered to be "*broad*". Unsurprisingly, these actors unaccustomed to or even surprised by the term initially associated sensitivity with actions corresponding to fields that remain peripheral to their own areas of intervention. Whether they use the term on a daily basis or not, whether they are comfortable with its interpretation or not, the term "sensitive" is understood in a variety of ways that are not stable and which are constantly evolving. Nevertheless, certain recurring themes emerge.

The sensitive, particularly for people unfamiliar with the term, is often thought of in relation to participatory processes (e.g. "consultation" and "awareness-raising") and environmental issues (e.g. "biodiversity" and "living environment"). This is in line

with other studies (cf. Manola, Geisler, Tribout, Polack, 2019). When the term is used less comfortably, the actors implicitly associate sensitivity with issues related to the creation of territories, which they expans upon as the discussion progresses. For example, a private property developer (trained at a business school) who was very uncomfortable with the term searched online for a definition before associating the sensitive with the issues of consultation and biodiversity as the discussion progressed.

As a logical extension, actors associate the sensitive with sectoral and often programme-based approaches. We find themes directly linked to sensory issues: lights (UPM 1, 2022; AD, 2022), lighting, nuisance management (UPM 1, 2022), air quality (UD, 2022); but also broader themes ranging from techno-ecology to environmental issues such as energy techniques (REMP 1, 2022), durability of materials (REMP 1, 2022), quality and frugality of materials (AD, 2022), health (UPM 1, 2022), and biodiversity and animal welfare (UPM 2, 2022). The question of inclusiveness and gender also seems to emerge as a theme linked to sensitivity; in the design of public spaces (REMP 1, 2022) and play areas, the goal is to integrate the conditions for welcoming a diverse public, in terms of age, disability, and gender. The sensitive can be viewed as paying attention the diversity of other people's situations and taking them into account in the project: "Being sensitive also means being respectful of others, and therefore of their wishes and expectations. That's how you build a city". (REMP 1, 2022). We will come back to these points in Part 3 of this article.

Although each of the actors we met associated the sensitive with only one, two, or three of these themes, the cumulative diversity shows that the sensitive ultimately covers a large number of project approaches and orientations, with a specific focus on sensory, ecological, and environmental issues (along a very broad spectrum) and on groups of people and their inclusion.

2.2 Beauty and comfort: over-arching themes
of the sensitive

In addition, two over-arching themes (both related to the sensitive from a definitional and/or operational point of view) appear in the actors' discourses: aesthetics and beauty on the one hand, and comfort and well-being on the other: "For me, the sensitive is not only linked to the notion of aesthetics or beauty; it's also the sensory. The feeling of being happy at home, at the right temperature, not suffering from an illness, the cold, and draughts, and telling yourself 'I'm in a state of comfort'". (CC, 2022). We can see that the two terms of beauty and comfort are linked. This is explained by the fact that the quest for beauty does not seem to be a systematic pursuit for all actors, nor a sufficient assessment criterion. In this respect, what is beautiful is (also) what is comfortable: "Beautiful in its proportions, beautiful today and beautiful tomorrow, and beautiful because it brings emotion, because it brings something. We find ourselves under a tree, in front of a row of cherry trees in blossom, at the edge of a lake, or in a square that highlights its own architecture. Beautiful in their elegance, in the beauty and comfort of the place. Beautiful and comfortable". (LD, 2022).

These two themes are present in all types of urban projects, but we may hypothesise that the 'environmental' nature of the project under study increases their presence: "Well, the aim of the eco-district is to build a place where people feel good (laughter). That's the main goal; it's not to make an example or something beautiful. The primary objective is to make something where people feel good, so obviously we take into account the senses, and, as we were saying earlier, we appeal to the senses. We make something beautiful where people, when they look out of their windows, are happy to see that there are trees and gardens down the road, that they have light in their homes (natural light), that they don't have unbearable noise pollution, that they hear birds. That's the first thing we take into account when we start thinking about a project". (UPM 1, 2022). More broadly, it seems that the aesthetic issue is (at least for some) associated with nature, which leads sometimes to a kind of environmental aesthetic. This is defined in opposition to an environmental comfort that would transform "aesthetic objects" into "technical objects": "There is the natural beauty of nature itself: a tree is beautiful and a flower is beautiful. But trees are currently thought of more as a heat shield against heatwaves. You don't plant a tree in a courtyard to give an expressionist painting lesson; you do it to protect the kids. So it's not necessarily a question of an aesthetic-sensitive, but more of sensory- or comfortable- sensitive" (CC, 2022).

That said, it is not only the search for a certain aesthetic or beauty that guides the majority of actors, but also the quest for the comfort and well-being of the inhabitants. In this case, according to the actors, one has to take into account the point of view of inhabitants' sensibilities and carry out specific work on urban sensorialities and how they are created to promote the inhabitants' well-being. This can involve reducing certain sensory situations that are viewed negatively (e.g. exposure to noise pollution), attenuating the presence of others (e.g. increasing the number of islands of urban coolness) and creating new ones by giving greater priority to green spaces, particularly those with flowers (because of the scent of the flowers).

However, these overarching themes can give rise to standards that sometimes contradict each other: "Well, what's beautiful? But beauty is so subjective. For example, I've heard people at Bouygues Immobilier say, 'Yes, you have to make beautiful things, but your beauty isn't the same as someone else's'" (REMP 1, 2022). These normative frameworks can be found in the various areas of action mentioned above, particularly in the management of green spaces. In fact, the choices often pit two visions against one another: on the one hand, encouraging biodiversity and offering spontaneous aesthetics, and on the other, reinforcing the sense of order and quality of the maintenance services: "(…) we let the vegetation grow to a certain extent, but it still has to be cleaned up, and here it's obviously not maintained. (…) Nowadays, we like to let things grow. What's more, we can mow the sides and leave the vegetation in the middle as long as it's cleaned up inside. And what we're seeing now is that it's just not maintained; it's not just a question of vegetation". (Jurist-urban planner, UPM 2, 05/2022). Similarly, the perception of a terrace overlooking

the shared gardens can illustrate these differences in opinion. One planner explained to us that one terrace had caused disagreements among the inhabitants, who felt that it lacked order, whereas other actors (an elected official, a town planner, a landscape gardener, and an architect) cited it as an example of a private terrace that did not need a fence. A photograph of the terrace is on the development company's website. These divergent opinions are certainly also due to the fact that the sensitive is associated with a sensitivity that can include a personal quotient.

2.3 The sensitive and sensibility: when personal experiences and memories interact with professional practices

At some point during each interview, all the respondents associated the sensitive with sensibility. For many of them, the two terms are one and the same. They defined sensibility as the expression of individuality influenced by the experiences of each person. For half the people interviewed, the sensibility of the actors is both personal and professional.

An urban planner in charge of a project (who is architect by training) considered that the role of his sensibility in his professional practices was a "personal" question. Some of the people interviewed found it difficult to explain the interactions between these two polarities (private/intimate and professional) but felt, at least in part, that sensibilities were systematically involved in the project process and that they guided it. One actor recalled how his sensitive and sensory experiences lie at the crossroads of senses associated with a very personal sphere, in particular childhood memories, such as hearing and smell ("I'm sensitive to noises and smells"), but that they were also linked to his training as an architect: "Basically, my training as an architect encourages me to see things". This did not prevent him from feeling a certain discomfort with touch, a sense which is nevertheless central to his field of origin: "Touch isn't my thing at all. [...] in architecture it's quite present: you have hard surfaces, less hard surfaces, woods that are very pleasant to the touch [...] then you're drowned in all the colours." (UD, 2022). Another actor links his experiences of expeditions "in the wild" in North America with his approach to project management. In both cases, the challenge lies both in organising and in accepting uncertainty and not mastering everything, and in defending strong links with the terrain: "Sometimes people say to us, you're a bit of a savage or untamed [...]. What I like about the wilderness is that you don't have much control over anything. So there's no point in stressing yourself out and saying, 'I'm going to calculate everything, master everything' [...]" (UPM 4, 2022).

However, sensibility is also that of the inhabitants and users of the designed spaces. The acrtors view these individualities in a situated and pre-collective way (according to social, professional, and family situations, for instance). Therefore, sensibility exists in function of presumed social roles (e.g. the "mother of the family", children, the elderly), but also of gender identities and socio-economic conditions, for instance.

In terms of project design and management, "inhabitant sensibility" is almost systematically identified as a factor to be taken into account, particularly in terms of the project's social acceptability and in anticipation of social conflicts in the neighbourhood. The socio-economic context, particularly inflation, can reinforce this need by putting inhabitants under stress. In addition, attention should be paid to the diversity of the various groups of people when gathering information.

3. THE SENSITIVE IN PROJECT PRACTICES: BEYOND TOOLS… AN ATTITUDE, VALUE, ETHICS

In this second part, we look at the way in which the sensitive is deployed in the interviewed actors' professional practices. We will show that, in addition to the established and traditional tools and mechanisms of design, the sensitive structures attitudes, values, and professional ethics, often implicitly but nevertheless fundamentally and "at many levels" (AD, 2022).

3.1 A plethora of tools and methods for representing and involving bodies

Consideration of the sensitive can be translated into various regulatory tools: in architectural, urban and landscaping specifications, for example, when it comes to guaranteeing housing with "plenty of light […] and that cross the entire floor", to "respond to people's sensibilities" (UPM 1, 2022); in coordinating the colours of materials and facades (UD, 2022); in the definition of rules for designing open spaces, as noted by a developer whose structure has now defined various types of "sensory, edible, and refreshing" gardens from which program managers must draw before the beginning of each project (REMP 1, 2022).

Consideration of the sensitive can also be embodied in representational tools and approaches capable of expressing and eliciting sensitive relationships to places and projects in the process of being designed or built: through drawing, 3D views, modelling (UD, 2022), photography (Jurist-urban planner, UPM 2, 05/2022), "mood boards" and perspectives (AD, 2022), [even] "simple layouts" that can "multiply the sensations" and "develop the emotions" of professionals, residents, and users (LD, 2022), "reference images" to share "sensations", and "lived moments". The techniques used are both manual tools to "express things quickly" and computer tools, which can nonetheless be seen as sources of an over-complication and over-representation of detail at the expense of highlighting intentions, as a waste of time, and a "loss of any effect of scale" (LD, 2022). These doubts and questions have already been widely addressed in the literature (Cunin et al., 2015; Amphoux, 2002; Peltonen, 2000; Léglise, 2016).

In addition to visual representations, it is sometimes "words" and "vocabularies" that are used to "translate the sensitive" (LD, 2022). Conversely, this category of tools also includes methodologies for exploring and working on site. They involve the bodies of

the actors and inhabitants, enabling them to think about the project "with their feet on the ground" or "their hands in the clay" (Facilitator, 2022):

> "Inspiration is also the site. We're going to build the building here, and if you're in an urban environment, it's a lot different from when you're out in the countryside. That's another influence. What about the location is influential? I mean, within the immediate environment. You don't design a building in the same way as when you put one up in a natural environment, or one that's very wooded. There are going to be influences even in the choice of colours, that sort of thing" (AD, 2022).

Unlike strictly visual and remote productions, the on-site part and its practices through movement activate the different senses, memories, individual and collective perceptions in order to get a sense of the inhabitants' feelings: these include "urban walks to identify social problems", "exploratory walks", "nature walks" (Jurist-urban planner, UPM 2, 05/2022), "awareness-raising and discovery walks", "artistic walks" (UPM 3, 2022), "reversed inhabitant routes" (Facilitator, 2022), and inhabitant workshops using "legos" and "drawings" (Facilitator, 2022). These different approaches used by the interviewed actors recall the methodologies used in "mobile methodologies (Büscher, Urry, Witchger, 2011)" (Thibault, 2022, p.1), although they do not refer to them explicitly.

3.2 The sensitive as an attitude, a value, and a professional ethic

In addition to these approaches, all the actors interviewed associate the sensitive with project methods: through the multidisciplinary composition of teams (UPM 1, 2022), the ability to build teams with a "shared understanding", guaranteeing a "good feeling between colleagues" (AD, 2022) and a "good relationship" between "architect", "engineer" and "ecologist", which are necessary conditions for designing and implementing projects. Consideration of the sensitive also takes the form of "listening to inhabitants to understand their sensitive relationship to the project" (CC, 2022), and in "inviting writers and photographers to come and show the places in a different way" (UPM 3, 2022). It is also embodied in the ways in which public meetings and inhabitant involvement in general are managed. Consideration of the sensitive is reflected in the "spatial organisation of public meeting rooms" (where residents interact directly with each other), in the invitation to let "opinions, emotions, and the sensitive, express themselves" (Facilitator, 2022), to express and reinforce their "sensitivity to the living environment", "to the things that surround us" (Jurist-urban planner, UPM 2, 05/2022), "to explain and get people to support the projects", particularly with regard to policies with "sensitive representations and perceptions" such as the densification of city blocks (REMP 1, 2022). Lastly, the actors associate a consideration of the sensitive with methodologies for establishing connections, through meetings on site, the setting up of "neighbourhood correspondents" to guarantee a "sensitive consideration of the space" through specific, individual exchanges between inhabitants and the project team (Jurist-urban planner, UPM 2, 05/2022).

Above all, sensitive seems to permeate a whole set of attitudes, values, and prior professional ethics that fundamentally condition the actions of the people with whom we met. In their own way, they act as a counterpoint to what Frédérique Peyrouzère calls the "loss of our capacity to experience and to share experiences", which is concomitant with "the loss of attentional processes" and a source of the "reification" of living beings (Peyrouzère, 2018). According to one interviewee, it is "this sensitivity that gives us our own personality, our own project, our own approach", a sensitivity "to what surrounds us" (AD, 2022), a "sensitivity to the place, the occasion, the moment, the warmth, the coolness, the heat, the cold" (LD, 2022), a sensitivity that allows us to "propose, suggest, and bring things to this subject, to this project, to this exercise" (LD, 2022).

A number of actors also spoke of empathy (UPM 1, 2022; AD, 2022), of "taking care of your neighbour", "respecting others, and their desires and expectations", taking care of "customers" (REMP 1, 2022), "respecting the topography, respecting the territory, respecting the entities that are already there, the fauna, the flora" (S. LD, 2022), the ability to "receive information", to "listen to the client" (AD, 2022), and more generally "listening", an "openness to the world" (LD, 2022), and paying attention to "disturbing as little as possible" (AD, 2022):

> "When we go to a natural area, to a site, we are already disturbing an ecosystem that we don't go into very much, with all these insects moving around in the grass. But I think it's important to take into account – well, of course the insects will manage to find another place to live, but I would still say that we're upsetting an ecosystem that will recover afterwards, but we have to be aware that if people have built here, we should perhaps try to do it in a way that causes as little disturbance as possible". (AD, 2022)

These professional attitudes seem to guide all the stages of the project process. When it comes to perceiving the site, sensitive approaches can be a means of taking a "360° view", understanding and considering the viewpoint of each actor (Jurist-urban planner, UPM 2, 05/2022). When it comes to designing the spaces, the way in which professionals work are decisive. For instance, an interviewee suggested creating a variety of working conditions: "listening to music", "working in different places", "with your feet in the water or in the sand", at different times of year, as well as using techniques that would not only be "productive", but which would also influence the design choices. The sensitive is regularly involved when it comes to designing spaces: in thinking about the conditions of implementation and development during the construction phase (LD, 2022), in the way the designed spaces are managed (UD, 2022), in considering their future (Jurist-urban planner, UPM 2, 05/2022), their evolution over the seasons (Jurist-urban planner, UPM 2, 05/2022; LD, 2022), and the diversity of possible uses depending on the time of day, week or season (Jurist-urban planner, UPM 2, 05/2022).

Just as actors adopt attitudes, postures, values, and modes of action that they associate with the sensitive, often without making this explicit, they also reveal the obstacles that exist to implementing it. In so doing, they illustrate the opposing tendencies that need to be negotiated for each project. Sensitivity and sensitive approaches cannot always be expressed in practices (UD, 2022) and procedural routines according to "very traditional ways of doing things" (UPM 3, 2022), when it comes to "complying with town planning rules" (AD, 2022) or the "legislative and regulatory arsenal" that reduces the scope of one's design "choices" (AD, 2022). A number of actors point to the tension between standardisation of the housing production process, for example, and a sensitivity to the diversity of future inhabitants and their ways of living (CC, 2022, AD, 2022). As we saw before, this may also explain the fact that the consideration of what is sensitive can be achieved by means that differ from conventional, instituted systems and approaches, and that this can be embodied in professional attitudes and postures that are no less operative. Another source of tension exists between the sense of a here and an elsewhere. The former refers to the intense consideration given to the site, the environment, the sense of "allowing oneself to be instructed by the world" (Ibid., p.28), which is the starting point in the project's design. The latter refers to the processes of importing models that structured the "La Brasserie" project and, more generally, eco-district projects across France. Private terraces opening onto undulating alleyways (through an artificial topography) to guarantee (in part) the privacy of inhabitants appear here as fetish objects straight out of northern European eco-districts, particularly in Fribourg. A third source of tension exists between the tools for expressing and revealing sensitive relationships with the sites and the projects being designed. While IT tools appear to be useful for a number of actors, they also present a risk of losing a connection to the site and its many characteristics (Senett, 2010).

4. THE IMPLICIT IMPORTANCE OF PROJECT OWNERS/MANAGERS IN QUALIFYING THE CONTRIBUTIONS OF THE SENSITIVE

We asked the interviewees about the actors who, in their opinion, bring the sensitive to project processes. Three groups of actors emerge and converge with the approaches to the sensitive described above (cf. Part 1), as well as with the types of spaces in which sensitive approaches apply. "Actors who work on green spaces" (UPM 3, 2022), landscape designers and landscape architects who control the time involved in implementation and construction, ecologists to support the design of gardens and reinforce "the role of nature in projects" (REMP 1, 2022) are all ideally suited to guaranteeing the translation of the sensitive into the spaces most often cited by interviewees: open green areas (public or private). A second group refers to the actors involved in the design and construction of built areas, namely architects (UD, 2022), heritage actors (UPM 3, 2022), as well as workers (AD, 2022). A third group refers to the actors "in contact with the public" (UPM 3, 2022): landscape

architects, capable of "getting people to appropriate something that speaks to them", "participatory actors" (UPM 3, 2022), and "sociologists or psychologists" who enable the [sensitive] approaches to be the "most integrated".

These three groups cover the substantive and procedural aspects of the urban, architectural and landscape project, as well as the many approaches and working methods likely to accommodate sensitive approaches. Nevertheless, it is interesting to note that few actors, other than ones from local governments and the sphere of urban project management designate the latter as having a role to play in the consideration and implementation of sensitive, even though they hold the power to create the methodological and operational conditions for strengthening sensitive approaches in project processes. We hypothesise that the latter are still very much actors of procedure, norms, regulations, and routine and traditional approaches to urban design and planning. The inquiry implicitly highlights the power and greater responsibility held by actors involved in project management (particularly in the urban domain) in a consideration of the sensitive.

Sensitive is a term that is rarely used in professional discourse, and one that struggles to achieve a clear definition among the actors we met. However, we have shown the extent to which, once invited to express their views, actors reveal how the sensitive permeates the **approaches, methods, attitudes and values that they employ, a wide range of typologies of** urban spaces and programmatic approaches, and, finally, a large majority of the actors involved in urban, architectural and landscape design. In this way, the sensitive emerges as a fundamental operating framework that is sometimes unconscious, sometimes explicit, but most often implicit. The interviewees' statements revealed and raised awareness of the potentially fundamental role of the sensitive in their practices. Ultimately, this awareness of the sensitive appears less a means of inventing new practices and methodologies, new programmatic entries, and new spaces in which to intervene than a way to reconsider the whole in a different way, often in a more refined manner, with greater attention, more openness to others, more complexity, very often in a tacit manner.

5. BIBLIOGRAPHY

Amphoux, P. (2002). *Ambiance et Conception: De l'analyse des ambiances à la conception architecturale ou urbaine*. Herbert Simon International Conference, Engineering Sciences, Design Sciences.

Barles, S., Blanc, N. (2016). *Écologies urbaines. Sur le terrain*, Economica/Anthropos.

Coutard, O., Lévy, J.-P. (2010). *Ecologies urbaines*, Economica-Anthropos.

Cunin, M., Yang, M., Elsen, C. (2015). "Mutation of image, mutation of intention? The impact of representations in architectural design". in A. De Boissieu, C. Deshayes, A. Tufano, *Mutations du projet - Milieux et Cultures Numériques* (pp. 149-172). Editions Universitaires de Lorraine, Nancy.

Fel, L. (2009). *L'Esthétique verte: de la représentation à la présentation de la nature*, Champ Vallon.

Howes, D. (2005). *The empire of the senses. The sensual culture reader*. Oxford.

Howes, D., Marcoux, J. S. (2006). "Introduction à la culture sensible". *Anthropologie et Sociétés,* 30(3), 7-17. *https://doi.org/10.7202/014922ar*

Lipovetsky, G., Serroy J. (2013). *L'esthétisation du monde: Vivre à l'âge du capitalisme artiste.* Gallimard.

Margier, A. (2014). "L'esthétisation des espaces publics dans la production urbaine. Une lecture au prisme des enjeux du partage de l'espace public". in S. Dufoulon, J. Lolive (Ed.), Esthétiques des espaces publics, L'Harmattan

Manola T., Geisler E., Tribout S., Polack J.D. (2018). "What place for sound in urban production? Éclairage par les postures et pratiques professionnelles dans le cadre du diagnostic sonore urbain". *VertigO*, 18(3). *https://doi.org/10.4000/vertigo.23818*

Peltonen, J. (2000). DAO : "L'interface utilisateur pour une architecture créative ou le DAO : un outil ou bien un piège ?", *Le Carré Bleu*, No. 1-2, 81-84.

Peyrouzère, F. (2018). "L'appel du sensible. Aesthetic experience & Care within urban ecosystems". in R. D'Arienzo, C. Younès C. (ed.), *Pour un métabolisme collectif des villes* (pp. 23-38). MétisPresses.

Léglise, M. (2016). "Computing and architecture: the grand illusion", Text of invited lecture given at SCAN-16, Available at: *http://scan16.toulouse.archi.fr/scan16/images/ SCAN16-communications/SCAN16-Conference-invite-Michel-Leglise.pdf*.

Sennett, R. (2010). *Ce que sait la main : La culture de l'artisanat*, Albin Michel, Paris.

Thibaud, J.-P. (2022). "Parcours commentés. Psychologie de l'environnement: 130 notions clés", hal-03500403

L18

DESIGNING SENSITIVITY: ALLOWING THE UNPREDICTABLE

PROJETANDO SENSIBILIDADE: PERMITINDO O IMPREVISÍVEL

Silvana Segapeli
Full professor
Unité de Recherche Architectures et Transformations
École Nationale Supérieure d'Architecture de Saint-Etienne
silvana.segapeli@st-etienne.archi.fr

Valter Cavallaro
Former manager of Urban Commons Office of the City of Torino
Urban regeneration expert for public administration
valter.cavallaro@gmail.com

ABSTRACT

Starting from an experience more strongly connected with design aspects, crossing it with that of public regulation, in this article we will develop the thesis regarding the need to consider that urban space is not only designed, but it is lived and this implies subsequent sensory emotions that are not always definable in the design phase. Urban space is a "non-trivial machine" (Von Foerster, 1984): every urban practice modifies the context and therefore produces an increasingly different ambiance. In this paper the notion of common space will be considered as a methodological and epistemological questioning field. We will try to show how current practices of commoning seem to bring more relevance to issues related to ambiance than the more traditional design process. Disciplinary working hypotheses in the project field related thereto, are aimed at building design tools and forms of representation.

KEYWORDS: Commons. Urban regeneration. Ambiances. Collaborative urban design. Sensitivity.

RESUMO

Partindo de uma experiência mais fortemente ligada aos aspectos de projeto, cruzando-a com a da regulação pública, neste artigo desenvolveremos a tese relativa à necessidade de considerar que o espaço urbano não é apenas projetado, mas é vivido e isso implica emoções sensoriais subsequentes que nem sempre são definíveis na fase de projeto. O espaço urbano é uma "máquina não trivial" [Von Foerster, 1987]: cada prática urbana modifica o contexto e, por conseguinte, produz um ambiente cada vez mais diferente. Neste artigo, a noção de espaço comum será considerada como um campo de questionamento metodológico e epistemológico. Tentaremos mostrar como as práticas actuais de comum parecem dar mais relevância às questões relacionadas com a ambiência do que o processo de conceção mais tradicional. As hipóteses de trabalho disciplinares no domínio do projeto a ele associado visam a construção de ferramentas de conceção e de formas de representação.

PALAVRAS-CHAVE: Bens comuns. Regeneração urbana. Ambiências. Desenho urbano colaborativo. Sensibilidade.

1. INTRODUCTION AND METHODOLOGICAL APPROACH

In the early 2000s Andrea Branzi in his «*Modernità debole e diffusa. Il mondo del progetto all'inizio del XXI secolo*» described the urban condition in terms of computer networks and intelligent systems of communication and micro-climate regulation able to intervene on our perceptive abilities (thus altering or making them more performing) :

> "[…] The urban condition today consists of services, computer networks, product systems, environmental components, micro-climates, commercial information and above all perceptive structures that produce a system of sensory and intelligent tunnels; which are contained by architecture but which cannot be represented with the figurative codes of architecture" (Branzi, 2006) .

In this technological omnipresence, which marks the daily life in the cities, is there still a space for the sensitivity in living the urban experience? How do public spaces express the role of sensitivity in urban design processes? How is the urban condition affected by ambiance? How can it be considered such an important value as to introduce new criteria and new practices in designing? And, more relevant, what is the role of the inhabitants and their narration in building and enhancing the urban space as a large sensory space?

Starting from an experience more strongly connected with design aspects, crossing it with that of public regulation, in this article we will develop the thesis regarding the need to consider that urban space is not only designed, but it is lived, and this implies subsequent sensory emotions that are not always definable in the design phase. Urban space is a "non-trivial machine" (Von Foerster, 1984): every urban practice modifies the context and therefore produces an increasingly different ambiance.

> "There is no forest intended as an objectively fixed environment: there is a forest-for-the-guardian-of-the-park, a forest-for-the-hunter, a forest-for-the-botanist, a forest-for-the-wayfarer, a forest-for-the-lover-of-nature, a forest-for-the-carpenter, and, finally, there is a fabulous forest, in which Little Red Riding Hood loses its way" (Agamben, 2000).

What is interesting to note is that, above all, the action of the guardian, rather than the woodsman or the hunter, irreversibly and continuously modifies the environment of the forest. To get out of the metaphor, it is therefore evident that every planned space will be constantly modified by the practices (extraordinary or daily) and the interactions of the inhabitants, of the visitors and of the users.

Regarding the topic of technological omnipresence, that until a recent past has too often been at the service of a policy of dismantling social functions - introducing new ways of social interaction-, today we can finally find many examples that go in

the opposite direction. An example for which a sensory-based approach can allow relevant reflections and lead to a paradigm shift in urban design processes is that of local markets. In this case, the city of Turin plays a very important role in urban retailing. The user's experience of the urban space defined by the marketplace is influenced not so much by the distribution design as by colors, smells and sounds. Without these, the space would be anonymous. Indeed, it is the daily practices of the vendors, as well as of the users, that give meaning to an urban space whose pure distributive design of the stalls would have an irrelevant impact on the urban landscape. For this reason, compared to traditional design processes, the practice of collaborative design can offer a disciplinary opening whose effects in terms of design quality are considerable.

Co-designing a marketplace - which embodies the exact antithesis of the non-places of contemporary shopping centers - means emphasizing the practices of the inhabitants, accommodating the sensory and perceptual dimension of space, making possible a non-predetermined use. It means allowing the unpredictable.

The authors of this paper, in their action-research trajectory, took on different points of observation and distinct roles: Silvana Segapeli, the scientific head of a research program (financed by the Auvergne Rhône-Alpes region) on common spaces in Turin, and Valter Cavallaro, manager of Urban Commons Office of the City of Torino. In the light of the sensitive approach, in rereading in retrospect, and from both positions, they consider that design experiences of market spaces in Turin - that of Porta Palazzo, particularly the largest market in Europe - highlight an aspect that can become essential in design processes, especially participatory: places can become spaces when they are traversed by the vectors of practices (De Certeau, 1990). So, Porta Palazzo, from an anonymous place becomes a market space from the moment its spaces are occupied by the colored stalls, the smells of the goods, the voices of the vendors, the shoppers walking through its 'aisles'. And every day these dynamics substantially alter the urban landscape.

This reinterpretation makes it possible to define a different methodology in dealing with planning, particularly, as we shall see, when referring to the commons. There is a first range of exclusively technical, non-negotiable knowledge. There is a second, which can be occupied by co-design (or advocacy planning with a less recent locution). There is also a third, which the first two must enable: that of practices. This aspect will become very evident in the examination of experiences related to the design of the commons as illustrated below.

This paper, in fact, will follow the theoretical path of commons studies, questioning the practices of active citizenship in the urban spaces of the city of Turin that still bear the marks of a heavy industrial past and whose regeneration demands new levers of transformation. From this point of view, Turin is a relevant case study as the loop: use - generation of space - production of behavioral models, has determined

its shape much more than the moments of break corresponding to the definition of the regulatory tools typical of urban planning (there are just three regulatory plans from the beginning of the '900 to today.) It has therefore consolidated a strong relationship between urban space and its use, mainly on the model of private car use.

This is the reason why in this study, the notion of "common space" will be considered as a methodological and epistemological questioning field. We will try to demonstrate how current commoning practices seem to bring greater relevance to ambiance issues than the more traditional planning process. Disciplinary working hypotheses in the project field related thereto, are aimed at building design tools and forms of representation.

2. TURIN, A CASE STUDY FOR A SENSORY URBANISM

The case study to be dealt with in this paper show how the construction of the values of a sensory urbanism - coevolution, adaptation, inclusiveness, accessibility, well-being, community engagement, collaborative care, polycentric and collective ownership or stewardship, connection to nature, territoriality, ecological regeneration, multisensory experience, flexibility, sustainability and respect for the environment, and so on - gives the common spaces a pivotal role in the reconfiguration of urban ecosystems.

The city of Turin, the capital of the Piedmont region in northern Italy, has faced in the past decades a strong activity of urban regeneration. The choice of linking regeneration to the issue of public spaces was the key for the process of renovation because Turin is a city which has seen its destiny long bound the development of the car industry. In fact, since the 1950, its urban fabric has been structured to welcome a way of life that basically has the capsule of the automobile, which has removed the question of urban environments, in terms of atmosphere and in terms of sensitivity, for a very long time. A common thread runs through the various urban regeneration programs that were opened in Turin after the peak of the economic crisis of the 1980s: public space has, in various situations, been regarded as a field of social experience (Negt, 2007) and the key element of the renewal process. In the last decade, both the actions carried out in the framework of urban regeneration policies of the city and the bottom-up approaches have oriented the urban project towards more sensitive approaches.

In recent years, Turin has been trying to experiment with how the tactical aspects of transitory urbanism and the long-term strategies of urban planning and design can coexist. The aim is to support and pursue strategies and projects of urban and ecological enhancement while welcoming bottom-up tactics and experiences, promoted by citizenship, through the medium of the third sector. These are two ways that can skillfully intertwine and feed off each other through the co-construction of an ethic of plurality and care, within the project process.

In Italy, for quite some time now, the state has no longer been alone in representing the common interest. More specifically, in Turin, the instruments of the "Pact of Collaboration"[1] and the "Regulations on Collaboration between Citizens and Administration for the Care, Shared Management and Regeneration of Urban Commons" (2016)[2] are the nodes of the transition from a participatory system to a collaborative one, which is still in the making, according to a path that presents many difficulties but shows the commitment of many.

Turin is now a city that in its becoming diverges from the groove of metropolization and, following the traces of the city-territory (Magnaghi, 2019), seeks to activate virtuous paths of ecosystem recomposition.

Figure 1. Giardino Pellegrino
Source: Cantarella, City of Turin.

2.1 The need for new narratives

The current research interest in so-called "minor practices" allows us to follow less traveled paths and emancipate ourselves from a homologating research that deprives the studied experience of its salient features, often those pertaining to the sphere of ambiances.

How to reinvent the narrative that is made about the city and its spaces from a sensory perspective?

---

1 Pact of collaboration: it is the civic deal through which the city and civic subjects constitute a form of shared governance in order to regenerate, take care, and manage together one or several urban commons *http://www.comune.torino.it/ benicomuni/eng_version/regulation/index.shtml*

2 Regulation sets out the principles and rules to establish self-governance and shared governance mechanisms for the urban commons in the City of Turin. The cooperation between civic subjects and the City government is established through the adoption of non-authoritative administrative activity, which implies the use of any equal legal instrument suitable for implementing the principles contained in this regulation *http://www.comune.torino.it/benicomuni/eng_version/regulation/ index.shtml*

Tim Ingold sees in the "path" the metaphor of something that is continually coproduced in the collaboration of multiple people, as a vital movement, aiming to cross different narratives: "the ground surface itself is continually renewed, not through the addition of layers but by way of their removal, through natural processes of erosion" (Ingold, 2000).

That path requires much effort, through policies aimed at engaging local communities in the development of practices that nurture the coevolutionary relationship between human settlement and territory and bring out neighborhood common spaces. Community is made up of multiple, multifaceted narratives, but which can find values to share in the sense of "situated knowledges" (Haraway, 2000).

Turin, long since landed in post-Fordism, pursues through various methods and different instruments an ethics of plurality and care. It experiments - taking in account the ebbs and flows of life head -, tests and explores the *usus facti* -the separation of property and right of use- and the tactics of transitory urbanism. The idea is to focus on community as an ecosystem of resources and creativity.

The third sector represents the most valuable tool for supporting citizens' agentivity, aimed at fostering the encounter between actors, the agreement of interests and objectives of the public and private spheres, and communication between citizens and administration. Not only that, but the primary advantage of the latter approach lies in its ability to give voice to the inhabiting community and to accommodate practices and dynamics that challenge the power of reason, break the hierarchical scale between rationality and sensoriality and rediscover the founding role of imagination. So, to prevent technological revolutions from leading to new forms of social exclusion, innovative forms of representation are undergoing experimentations.

2.2 Urban regeneration and the challenge of sensory urbanism

The process of urban regeneration, which began as early as the 1990s with the "Periphery Project," has marked the furrow within which to develop urban policies that outline new urbanities, under the banner of the commons and new forms of governance. The Regulation on Urban Commons, in its articulation, is in fact an expression of this new dimension.

> "The ground on which this silent revolution is taking place is the commons. This is a terrain that is not only physical space and material resources (water, rivers, parks, forests, etc.), but is above all a space for meeting, confrontation, debate, participation, collaboration and the construction of an alternative, mediated and non-confrontational reality. The commons is the real and/or imaginary space for cultivating human relationships, culture, and making sense of human endeavor and collective existence" (Giordano, 2019).

The theme of sensory urbanism often appears only in watermarks in the projects carried out over the past five years in Turin, at the neighborhood microscale. The role of ambiances in the regeneration of neighborhoods emerges silently, thanks to residents' response to the administration's calls related to European funding (Urban Innovative Action calls) of the Co-City first (2017-2020) and ToNite later (2020-2023) programs.

Here the question of ethics comes up again, in the sense of producing subjectivities and not just spaces. The theme of transition from open spaces to common spaces (or space-as-commun in the Stavros Stavrides lexicon), seems to be the denominator of most Co-City and ToNite projects. Integrating public space into private space, and vice versa expanding domestic space, means imagining the porous city: concretely this means implementing innovative practices of co-management and co-design.

If the various gardens reactivated by commoning practices, that have emerged thanks to Co-City program, sometimes present a restricted and not always inclusive accessibility, the latest experiences in Turin, linked to ToNite program, begin to draw a new urban landscape. Each park or garden opens to the community to constitute a landmark, an affective civic space of belonging and sharing.

2.3. Fostering connections between sensitivity and the commons

These projects are often like those fielded within the traditional urban project but involve longer processes of listening and analysis of the territory, because they are linked to the stages of co-design. Here the Regulation on Urban Commons has played a fundamental role in the establishment of common spaces, even in the complexity of a governance to reinvent and the difficulties of applying the principle of horizontal subsidiarity.

Cultivating common values, introducing new subjectivities by attributing a value to them, accepting the challenge of a new form of governance that allows heterarchy, supporting the use of convivial tools, are all actions that fall within the logic of the commons, understood in their political sense (Dardot & Laval, 2015). But the commons can also be understood from another point of view, those of practices and creativity (Bollier & Helfrich, 2022), thus activators of design processes that we can define as 'sensitive' insofar as they are based on relational dynamics that draw on the sphere of the multisensory.

As can be seen from these examples, the question of the commons has not only oriented urban design towards issues concerning the respectful, conscious and shared use of resources, but has also opened a view on the universe of situated knowledges and thus on the development of capabilities, on the role of co-production and co-design processes, not only of spaces but also of their atmospheres. The putting into practice of sensitive reading methodologies to construct plots of knowledge

of the urban space, as well as the amplification of the listening and dialogue phase between the different project actors and the inhabitants, are important segments of a different design approach. In the near future, following in the footsteps of the urban commons, the use of these 'sensory analysis' elements as design levers will be increasingly widespread.

Figure 2. Giardino Pellegrino
Source: City of Turin.

2.4 A collaborative pact : Giardino Pellegrino

Among the various projects of ecological enhancement and urbanity interconnected with the natural environment, "Usanze Pellegrine" stands out; it is a collaborative pact for the care and enjoyment of a public garden - Giardino Pellegrino - created within the ToNite program, following a long process of co-design (pact leaders: Fondazione di Comunità Porta Palazzo, Stranaidea s.c.s entreprise sociale onlus, association CO.H APS).

The legal relationship between access and management is the crux of this project of participatory management and social practices heralding a new "culture of trust" [Bollier & Helfrich 2022]. This is a long-abandoned green space in the heart of Borgo Dora, a lively downtown district devoted to antiques and crafts.

From the figure of abandonment, the Giardino Pellegrino has become a common space, activated by the community of care that gathers around the "casa del quartiere" - a district house- of the Aurora neighborhood. This "ecology of commons" (Hardt & Negri, 2012), that is the set of interdependence relations, care and mutual transformation in a community, is a key element that could irrigate some aspects of the urban project.

The Foundation - Fondazione di Comunità Porta Palazzo- with the help of the active citizens of the neighborhood, has opened a workshop to explore possible uses, through the project "Prove d'uso" ("Proofs of use"): in addition to gardening activities

are tested social theater activities, art workshops, reading groups, etc. bringing together associations around the garden. All these practices are the tools that allow to begin to reflect with the communities' inhabitants on the relationship between built spaces and open spaces and to try to define new coevolutive links between *rus et urbs*, guarantors of forms of ecological and microclimatic balance, urban nutrition (orchards and gardens) and landscape protection and creation. All the principles brought forward by this project - ecology, inclusion, gender, ambiances, etc.- appeal to the importance of the sensory dimension in urban design.

"Usanze Pellegrine" demonstrates how the multiplication of actors can strengthen the urban agenda and its ability to stimulate the processes of collective action and the pluralization of urban governance systems. Even more, it stands up to underline the mobilization of sensitivity with a remarkable transformation in design habits, thanks to the involvement of residents and users in the co-design process, and the consideration of their sensitivities. That's why this case study answers the key question: what forms is sensitivity mobilized?

Practices of care, repair and reconnection innervate this project in which the notion of care is centered on an ethical perspective and clearly linked to a new role of sensitivity within the design process of urban projects.

Giardino Pellegrino casts a critical and constructive gaze on the issues of urban scale and co-creation of the city; it is one of the experimental projects born under the ToNite umbrella and promotes dynamic, evolving, reversible and recyclable interventions and allows for reflection on the temporalities related to the uses of a changing neighborhood. The involvement and cooperation of facilities and inhabitants of the Aurora neighborhood have given rise to collaborative projects and solidarity mutualism services around the block.

Although various initiatives leave room for the growth of an active citizenship and constitute the prodromes of a *'travail-du-commun'* (Nicolas-Le Strat, 2016), possible transformations towards forms of self-government still seem far off. The most innovative forms of governance, within which in practice the associative networks move, coagulate within the narrow perimeter traced by the UIA projects.

3. ALLOWING THE IMPREDICTABLE

With respect to these new practices, interesting examples can often be found among artistic rather than urban or design interventions, such as that of artist Carolina Caycedo, for example, entitled "Be Dammed" (begun in 2012), in which the relationship to natural elements follows an ancestral cosmogony. In her work emerges the need to change our relationship to the water of rivers, seen as veins of the planet, as commons that associate a newfound physicality and sensitivity with the ecosystem.

Nevertheless, there is a new creed of urban design that emerges, tentatively, as in the case study reviewed. The active city, the collaborative city, the contributive city, the inclusive city etc. are syntagms that reiterate themselves in this last decade, symptomatic of a need: that of building new visions to counter the neoliberal "empire" [Hardt, Negri 2000] and to promote the intensity of the commons and of the encounters between the social singularities that make it up. There can be no sustainable development outside a framework of social innovation and of the values that are promoted by the "sensitivity urbanism".

The project briefly discussed in the previous chapter testifies to the importance of collective engagement on the one hand and on the other to the need to reinventing the city, to overcome the tension between city and country in order to build new urban landscapes, new forms of urbanity "*en commun*" and to transcribe the role of communities in regeneration processes, in other words, "*reconstruire l'ensemble des modalités de l'être -en- groupe*" (reconstructing the whole modalities of being -in-group), (Guattari, 1989).

A few years ago, Alberto Magnaghi (2014) argued the need for a "total redesign of urbanity", this is a pivotal conceptual node with respect to the theme of the commons project in the new urbanities. We need to get rid of the idea of a design of stitches and compensations, the point is not to increase the amount of green surface or the number of cycle paths:

> "This path of reconceptualization of urban space in relation to its territory tends to overcome ineffective anti-urban oppositions or, worse, approaches that reduce project action to intersect contemporary urbanizations with cycle paths and compensation parks. The problem of 'return to the city' is in fact a problem only partly morphotypological and of environmental rebalancing; it is above all a problem of reappropriation by the inhabitants of the powers of determination of their living environments (polis, public spaces), powers taken away from the construction of increasingly global and anti-spatial techno-financial machines, which have transformed the inhabitants into consumers" (Magnaghi, 2019, 26-51).

Allowing the unpredictable means treading other paths, reestablishing space for experimentation from below, finding the terms of a new alliance between the construction of the values of a co-evolution, linking the living being to its environment, will enable a real transformation of ways of life in cities and give common spaces a pivotal role in the reconfiguration of urban ecosystems.

> "It is no longer the time of maintenance and small adaptations, but the time has come to jump from the rigid city of the twentieth century to the fluid city of the twenty-first century, from the predatory city of the Anthropocene to the generative city of the Newanthropocene […]" (Carta, 2021).

To highlight which aspects of the territory is sensitivity mobilized in this process, we need to recall the notion of "poetics of tool use" of Tim Ingold. "(…) whether I speak, swear, shout, cry or sing, I do so with feeling, but feeling –as the tactile metaphor implies – is a mode of active and responsive engagement in the world, it is not a passive, interior reaction of the organism to external disturbance" (Ingold, 2000).

The rediscovery of the 'body' as an active subject of social relations and the sensory system of the human being, in an era of awareness of the energy crisis and limited resources, makes it possible to generate new interrelationships between the sphere of architectural and urban design and communities. Participatory planning, co-creation, co-design are not just slogans but operative words.

The theme of the "common" is central: the production of value through social cooperation is the measure of the ability of a system to weave a common canvas and to derive spaces of resistance to neoliberal policies, in contrast to the processes of planetary urbanization and toward a reinvention of the narrative that makes of the city and its spaces in a sensory key.

The approach suggested by the theories of complex systems allows us to confront the idea that urban space is not only form and to think of design as an activity of an evolutionary type that is placed in a continuous rather than unique space-time. And the dichotomy between observer and observed system is overcome. The urban planner must therefore leave behind an exclusively control and homologation-oriented afflatus to facilitate, instead, the diversification of the use of spaces.

In this perspective, the role of the decision-maker - the planner - shifts from a regulatory function to an enabling one for urban practices that fill the urban landscape with emotional meanings.

4. BIBLIOGRAPHY

AGACINSKI, D., BEAUCHER, R., DANION C. (2022). *Pour une refondation démocratique de l'action publique*, in «AOC», 5 january.

AGAMBEN, G. (1995 e 2005). *Homo sacer. Il potere sovrano e la nuda vita*, Torino, Einaudi.

BOLLIER, D. et HELFRICH, S. (2022), *Le pouvoir subversif des communs*, Paris, Charles Léopold Mayer.

BONSIEPE, G. (2017). *Design et démocratie*, in *Civic city. Notes pour le design d'une ville sociale*, Fezer, J. Gorlich, M. (editors), Paris, Éditions B42.

CARTA, M. (2021). *Reimmaginare le città della prossimità aumentata*, in «Agenzia di stampa Cult», 1 febbraio. *https://www.agenziacult.it/interni/nuovo-abitare-reimmaginare-le-citt-della-prossimit-aumentata/*

CAILLÉ, A. (2011). *Du convivialisme vu comme un socialisme radicalisé et universalisé (et réciproquement)*, in *De la convivialité. Dialogues sur la société conviviale à venir,* Caillé, A. et al. (editors), Paris, La Découverte.

DARDOT, P. LAVAL, C., (2015). *Commun. Essai sur la révolution au XXI siècle*, Paris, La Découverte.

DEMATTEIS, G. (2009). *La sostenibilità territoriale dello sviluppo. Dalla biodiversità alla diversità Culturale*, «Lotus», n. 140

GIORDANO, F.M. (2019). « Una rivoluzione silenziosa. Percorsi: quando la democrazia incontra l'amministrazione condivisa », in *Labsus, laboratorio per la sussidiarietà*, 29 october

GUATTARI, F. (1989). *Les trois écologies*, Paris, Galilée.

HARAWAY, D.J. (2000), "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century" , in book: *Posthumanism* (pp.69-84). DOI:10.1007/978-1-137-05194-3_10

HARDT, M., NEGRI, A. (2017). *Assembly*, Oxford, Oxford University Press.

HARDT, M., NEGRI, A. (2009). *Commonwealth*, Cambridge, Harvard University Press.

ILLICH, I. (1982). *Silent is a commons*, Asahi Symposium Science and Man - The computer-managed Society, Tokyo, Japan.

INGOLD, T. (2000), *The Perception of the Environment. Essays on livelihood, dwelling and skill*. London, Routledge.

MAGNAGHI, A. (2003). *Le projet local*, Bruxelles, Éditions Mardaga.

MAGNAGHI, A. (2014). *Il progetto della bioregione urbana. Regole statutarie e elementi costruttivi*, in *La regola e il progetto. Un approccio bioregionalista alla pianificazione territoriale*, Id. (editor), Firenze, Firenze University Press, pp. 3-42.

MAGNAGHI, A. (2019). *La bioregione urbana nell'approccio territorialista. Contesti. Città, Territori, Progetti*, (1), 26-51. *https://doi.org/10.13128/contest-10629*

MAGNAGHI, A. (2020). *Le condizioni di crescita della democrazia dei luoghi,* in «Scienze del Territorio». *La democrazia dei luoghi. Azioni e forme di autogoverno comunitario* ISSN 2284-242X. n. 8/2020, pp. 29-37. DOI: 10.13128/sdt-12372

NICOLAS-LE STRAT, P. (2016). *Le travail du commun*, Rennes, Éditions du Commun.

OLMO, C. (2018). *Città e Democrazia. Per una critica delle parole e delle cose*, Roma, Donzelli.

PINSON, G., « Le projet urbain comme instrument d'action publique », in Pierre Lascoumes, Patrick Le Galès (dir.), *Gouverner par les instruments*, Paris, Presses de Sciences Po, 2004, p. 199-233.

RODOTÀ, S. (2012). *Il diritto di avere diritti*, Bari-Roma, Laterza.

SEGAPELI, S. (2022) (editor) *Vous avez dit espace commun ?* Bruxelles, Collection Action Publique/Public Action, Volume 20, Peter Lang

SEGAPELI, S. (2020). « Communs sensibles et sensibilités en commun dans l'espace public. Animations figures latences », in *Manifestations sensorielles des urbanités contemporaines*, Béligon, R. e Digonnet, R., (editor), Bruxelles, Editions Peter Lang.

SEGAPELI, S. (2020). "Pandemia versus spazio collettivo. Per una topologia della cura"/ "Pandemic versus collective space? Towards a topology of care", FAMagazine Research and Projects on Architecture and the City, n.52/53 (Coronavirus, City, Architecture/ Coronavirus, Città, Architetture. Prospettive del progetto architettonico e urbano), december 2020, pp.184-188

SEGAPELI, S. (2019). « Cultures du projet, cultures publiques, paysages communs. Le cas de Turin », in *Regards croisés : Architecture et transformations territoriales à Medellín & Saint-Étienne,* Bello Marcano, M., (editor), Medellín, Collection Señales, Éditions Bonaventuriana.

STAVRIDES, S. (2016). *Common space : the City as Commons,* London, Zed Books.

VANUXEM, S. (2018). *La propriété de la terre*, Marseille, Wildproject.

VON FOERSTER, H. (1984), *Observig System,*Intersystems, Paperback

ZASK, J. (2016). *La démocratie aux champs. Du jardin d'Eden aux jardins partagés, comment l'agriculture cultive les valeurs démocratiques*, Paris, La Découverte, coll. « Les Empêcheurs de penser en rond ».

L18

SHAPING URBAN ATMOSPHERES THROUGH ART IN THE PARIS 2024 ATHLETES' VILLAGE

MOLDANDO AS ATMOSFERAS URBANAS ATRAVÉS DA ARTE NA VILA DOS ATLETAS PARIS 2024

Ruestchmann Clara
clara.ruestchmann@ehess.fr
Laboratoire d'Anthropologie Politique - LAP
École des Hautes Études en Sciences Sociales, Centre National de la Recherche Scientifique : UMR8177

ABSTRACT

This communication examines the concept of urban atmospheres. It focuses on the role of artworks commissioned within the Athletes' Village in Paris, developed for the 2024 Olympic and Paralympic Games. The presentation explores how these artworks, situated in the public realm and in architectural contexts, shape the urban atmospheres of the future neighborhood. It draws upon ethnographic research and delves into the perspectives of urban professionals, including architects, urban planners, real estate developers and promoters. The presentation shows how art is viewed by these actors as an effective tool for generating a sensory and attractive atmosphere, serving as an enduring legacy of the Olympic Games.

KEYWORDS: Art; Athletes' Village; Olympics; Ethnography; Gentrification

RESUMO

Esta comunicação analisa o conceito de atmosferas urbanas, dando enfoque ao papel das obras de arte encomendadas para a Vila dos Atletas em Paris, planejada para os Jogos Olímpicos e Paralímpicos de 2024. A apresentação explora como essas obras de arte, situadas no espaço público e em projetos arquitetônicos, moldam as atmosferas urbanas do futuro bairro. Baseia-se em pesquisas etnográficas e investiga as perspectivas de profissionais urbanos, incluindo arquitetos, urbanistas, desenvolvedores e promotores imobiliários. O objetivo é entender como a arte é vista como uma ferramenta eficaz para criar uma atmosfera sensorial e atraente, servindo como um legado duradouro dos Jogos Olímpicos.

PALAVRAS CHAVE: Arte; Vila dos Atletas; Olimpíadas; Etnografia; Gentrificação

L19

SENSORY DESIGN AND ITS MANAGEMENT IMPLICATIONS FOR ART AND TOURISM PLACES

CHAIR Dorit Kluge

People are connected in many ways to the multisensoriality of architecture, urban space, and landscape. For them, these are spaces of experience on the one hand and spaces of agency on the other (Liu et al., 2017), as they express their will to design and thus also their will to experience individually and socially. It is therefore about (un)conscious sensory perception and conscious creation of meaning for places at the same time. This dualism has been reflected for several centuries in philosophy (Böhme, 1995), anthropology (Classen, 2017), geography (Tuan, 2012), art history (Pichet & Kluge, 2023), marketing (Biehl-Missal & vom Lehn, 2015), and many other sciences.

Depending on the proximity to the set stimulus, spatial experience involves various qualities and quantities for sensory perception, whether in a kind of concentric arrangement (Iwasaki et al., 2023) or as a phenomenon of overlapping perception. This can relate to a single form of stimulus (sounds) and thus perceptual modality (hearing) or also to multisensory combinations of stimulus forms and perceptual modalities, whereby the degree of complexity in stimulus perception and processing increases. The spatial experience is supplemented by a temporal dimension. People perceive stimuli sequentially, which turns perception into a process. However, people also activate their (sensory) memory and implicitly recall previous perceptions and associations.

The section will focus primarily on artistic and tourist locations (Staiff, 2015), whereby both open and closed spaces will be considered. We are focusing on two key issues: How are places designed so that they can unfold their potential for multisensory sensory perception (spatial component)?

What implications does the specific design have for the management of these places (process component); for example, what needs to be rethought in museum, destination, or tourism management (service process design, value chains, stakeholder management etc.)?

We invite researchers to submit paper proposals for this session. These proposals can be individual case studies, comparative analyses, or theory-based contributions. We would welcome authors working transdisciplinarily, establishing a link between past, present and (digital) future and presenting examples from different cultures around the world.

L19

SENSING SCENTS: THE IMPACT OF SMELLS IN SHAPING PLACE ATTACHMENT

SENTIR OS AROMAS: O IMPACTO DOS CHEIROS NA FORMAÇÃO DA LIGAÇÃO A UM LUGAR

Alexandra Skedzuhn-Safir
Researcher and Senior Lecturer
BTU Cottbus-Senftenberg, Chair of Architectural Conservation, Germany
alexandra.skedzuhn@b-tu.de
a.skedzuhn@gmx.de

Mariko Ikeda
Assistant Professor
University of Tsukuba, Institute of Art and Design, Japan
marikoi@heritage.tsukuba.ac.jp

ABSTRACT

In 2001, the Japanese Ministry of Environment listed the `100 most fragrant sites in Japan'. The list was intended to raise awareness of the different smells in the rural and urban landscape that contribute to the enjoyment of nature, the appreciation of traditional arts and crafts, and food preparation.

The research is based on a case study of Jimbocho, a book town in Tokyo known for its numerous shops for different book genres. This paper investigates the impact of the odours present at Jimbocho in contributing to place attachment. Interviews were conducted with bookstore owners to determine the social value of Jimbocho by investigating this heritage site's role and its smells in shaping identity.

KEYWORDS: smells. heritage. Japan. place attachment. identity.

RESUMO

Em 2001, o Ministério do Ambiente japonês elaborou uma lista dos «100 sítios mais perfumados do Japão». A lista tinha por objetivo sensibilizar para os diferentes odores da paisagem rural e urbana que contribuem para a fruição da natureza, a apreciação das artes e ofícios tradicionais e a preparação de alimentos.

A investigação baseia-se num estudo de caso da cidade dos livros de Jimbocho, em Tóquio, conhecida pelas suas numerosas lojas de diferentes géneros de livros. Este artigo investiga o impacto dos odores presentes em Jimbocho na contribuição para a ligação ao local. Foram realizadas entrevistas com proprietários de livrarias para determinar o valor social de Jimbocho, investigando o papel deste local patrimonial e dos seus cheiros na formação da identidade.

PALAVRAS-CHAVE: cheiros. património. Japão. ligação ao local. identidade.

1. INTRODUCTION

There is an emerging interest in analysing and assessing the values of places by investigating their social values. The social values recognised as having heritage significance are linked to place attachment (Cooke & Buckley, 2021). However, little attention has been paid to historic places at the interface to place attachment, especially not within heritage conservation, as this entails emotional aspects (Wells, 2021) and personal sensitivities (Madgin & Lesh, 2021). One element that impacts the experience of places is smell. Every place has its smell: it leaves an olfactory impression on the personal and collective memory (Bembibre & Strlič, 2017; Tullett et al., 2022). We argue that odours contribute to place attachment by shaping identity and (collective) memory. The book town Jimbocho serves as a case study to demonstrate this. Jimbocho was selected in 2001 by the Japanese Ministry of Environment as one of the "100 most fragrant sites". To allow for a peoplecentred approach, ethnographic methods were employed to analyse the social value of Jimbocho and its attachment

to it. Therefore, between April and June 2024 a total of 13 stakeholders of Jimbocho book town were interviewed to explore the significance of bookstore smells in shaping identity and place attachment. The majority of the interview participants are bookstore owners. They were contacted by telephone, informed about the purpose and content of the intended interviews, and subsequently interviewed in their shop. The semi-structured interviews consisted of both open and closed questions. They focused on the role of the interview participants as stakeholders, years of professional activity, and personal connections to Jimbocho. The questions were designed to shed light on the meaning the odour of (old) books has for the interview participants, their friends, family members, and customers. Further questions centred on odours that are particularly pleasant for participants and the memories or associations linked to them. The final section of the questions related to the listing of the site and its potential impact on the management and the experience of Jimbocho.

2. CASE STUDY

Kanda Jimbocho book town is located in Chiyoda City, Tokyo, north of the Imperial Palace. Within this quarter are several universities, such as the Meiji University, Nihon University and the University of Tokyo. The area is serviced by several subway lines (Shinjuku, Mita, and Hanzomon lines) and is easily accessible. Most bookstores and galleries are on Yasukuni-dori (W/E) and Hakusan dori (N/S).

The most characteristic feature of the book town is the clustering of approximately 130 different retail and wholesale shops and large publishing houses (Association Press & Kanda Bookstore Federation, n.d.) (Figure 1). It has been stated to be the second-largest book town in the world (Johnson, 2018). For the interview partners, the characteristic features of Jimbocho are the level of recognition in Japan and its number of bookstores with independent retailers (Komiyama, 2024; Ito, 2024). Yet, another significant feature of the Jimbocho book town is the specialisation of bookstores into different genres: according to the map published in Japanese and English by the Book Town Association (2019), there are altogether 12 categories, amongst them literature, rare and antiquarian books, history, arts and prints, general second-hand, natural science, foreign books, ideology, and religion. The atmosphere of Jimbocho has been described as relaxing, slow-paced, and comfortable. A mixture of different people is attracted to Jimbocho, from young people, business people and students to booksellers and customers with specific tastes and interests (Abe, 2024; Kawamatsu, 2024).

The beginnings of the book town Jimbocho lay at the end of the 19th century when universities were established in its vicinity. In the past, Jimbocho was nicknamed *Bimbocho* (poor town) because it was mainly home to students and poor *salarymen,* sporting simple grocery shops and old bookstores (Okudaira, 2024). A large fire in 1913 and the effect of the Great Kantō earthquake in 1923 affected the urban landscape. The area, however, remained unscathed from bombing during the Second World War, yet today, redevelopment is also present in this area of Tokyo, which threatens the historic uniqueness of the urban landscape.

Over the past decades, Jimbocho has faced many changes that impacted its economy: the founding respectively, the moving of universities from Tokyo to the periphery, internet sales, the emergence of book chains, and COVID-19. However, a book town like Jimbocho bears the potential to withstand these threats, as due to its high concentration of individual stores, they form a critical mass that, on the one hand, will attract customers and interested tourists, and on the other hand, will create a socio-economic cohesion of booksellers, who secure their economic existence through co-operation and mutual support. Jimbocho, just as elsewhere, has been able to brand itself as a book town, creating a considerable economic centre and national acknowledgement.

Figure 1. View of the southern side of Yasukuni-dori with a clustering of bookstores.
Source: Skedzuhn-Safir (2024)

3. 100 SCENTS

In 2001, the Ministry of Environment (MoE) compiled a list of Japan's 100 most fragrant sites (n.d.). Before the listing, the nomination evaluated the 600 applications received from individuals and local authorities from Japan based on several criteria. The proposed sites should be enjoyable and accessible, promote well-being and relaxation, and be of natural and cultural significance (Japanese Ministry of Environment, 2001). Overall, the purpose of the list was to create awareness of the environment, which could eventually have the added advantage of activating the five exteroceptive senses (Japanese Ministry of Environment, 2001). This approach taken by the Japanese MoE

is remarkable as it addresses environmental pollution not solely by regulating odour nuisances but by actively seeking to promote awareness of the positively perceived smells, not only in rural but, interestingly, also in urban areas.

The listing of Jimbocho as one of 100 fragrant sites in Japan was announced during the Association of Book Dealers' New Year's party (Suwa, 2024). At that time, it was stressed that the smell was an important cultural element of the book town that was worthy of protection. Nonetheless, nearly a quarter of a century later, hardly anybody knows this listing.

4. THE SMELLS OF JIMBOCHO

To familiarise ourselves with the smells of Jimbocho, one of the authors visited most shops before the interviews to investigate the impression of prevailing smells. To allow the odours to be perceived as accurately and objectively as possible, other sensory impressions - primarily visual ones - should not play a role that could falsify the odour image. Therefore, an attempt was made to minimise other sensory impressions (e.g. sight) and any distractions (e.g. conversations). The odours encountered there were then described with the help of four established odour wheels and (mal-) odour lists. These odour wheels were proposed to describe odours in open and closed environments, and one was developed explicitly for books (St. Croix Sensory Inc., 2003; Arbeitskreis Innenraumluft, 2014; Geruchsimmissions-Richtlinie, 2009; Bembibre & Strlič, 2017). From each list, the most appropriate terms were chosen and represented with a colour code. The colours relate to and are associated with the source of the odour: for example, a light green colour represents the odour of hay, coffee has a brown colour, and caramel has a yellow-orange one. This approach is based on research concerning cross-modal associations. Sight and olfaction are firmly connected at the primary olfactory cortex, where colours are assigned systematically to odours (Dematte et al., 2006). As the odour in each bookstore consisted of several (overlapping) smells, each detected smell was made to overlap in the resulting smellmap (Figure 2).

Smellmaps represent a bottom-up and individual approach to recording individual (hedonistic) odour impressions (McLean 2018). As illustrated in Figure 2, it is visible that every bookstore has its own smell, an observation also pointed out by one of the book dealers (Doichi, 2024). The reasons for the different smells are diverse. Firstly, the age of the books is a significant factor for the scent: older books exhibit the smell of cellulose and lignin degradation processes (Otero-Pailos, n.d.), whereas new books smell primarily of their recent production process. Therefore, the employed printing materials contribute to the difference in smells. Binders (glues), (printing) inks, and materials such as leather for book spines add to distinct odour profiles, which differ according to their country of production (Abe, 2024). Noteworthy in this context is that historic books made of paper from Western countries have a different odour to those of Japanese origin because of the use of various paper materials: Traditionally,

Japanese washi paper is made from either the mulberry bush, the innermost bark of the gampi tree, or the mitsumata shrub. The production of books and their materials not only differ according to location and time, and book odours relate consequently not only to the age and employed materials of books but also to their place of production. Lastly, the location where books were kept – in public institutions or private residences, humid cellars or arid storage rooms – all contribute to their smell, as the environmental conditions (esp. relative humidity and temperature) impact degradation processes. Equally significant are the so-called smell events (Porteous, 1985) that took place over time in the places where books were handled and kept: several interview participants pointed out that the smell of books informs about previous owners and their habits (Abe, 2024; Takabayashi, 2024). The odour of smoke produced from cigarettes and incense tends to have a lingering effect as they can still be perceived when ownership of books changes. Especially cigarette smoke is tenacious and can only be removed from the surface with difficulty, if at all.

Figure 2. Smellmap representing the odours perceived in the individual bookstores in April 2024.
Source: Skedzuhn-Safir / mapping and Saeidi / digitalisation (2024).

A knock-on effect of the bookstores is other economic enterprises. These include a book town hotel, coffee shops, and restaurants, many of which offer Chinese cuisine. The smell of food, both on the Yasukuni-dori and its side streets, can be noticed from around 11 a.m. onwards. The smell of food can also be detected in some bookstores; however, it needs to be clarified whether this is always caused by the food consumed inside the stores, or if it can be traced back to ventilation.

A direct link between the listing and the management of the smells of the book town could not be drawn by the interview participants. Nonetheless, several changes occurred since then that indirectly impacted the smellscape, most notably an urban redevelopment with the concomitant loss of individuality of urban quarters. Diesel-powered vehicles, before

they were banned in Tokyo, not only left a layer of dust on the bookshelves and books in the shops but also affected the smell in Jimbocho (Yanakawa, 2024). Also, banning smoking in public spaces changed the smellscape (Yanakawa, 2024). It can, therefore, be assumed that the changes that have led to a different smellscape were not made explicitly with the odours of the book town in mind but as part of urban and spatial planning.

5. THE MEANING OF SMELLS

The meaning of smells is a cultural construct (Howes, 2019). Smells do not inherently have a significance, but their importance is connected to collective and individual attribution of meaning. The meanings are based on socially transmitted ritualised and everyday actions. However, the meaning of an odour can also be based on an individual's personal experience (autobiographical episodes) (Engen, 1991).

For the interview participants, the odours of books resembled smells of old Japanese houses, the house of grandparents, newspapers, old ceramics, old furniture, ink, and European churches in terms of atmosphere, and of people having handled books, which has prompted one book dealer to conclude it to be a natural human smell. The opposite of book smells is associated with a lack of smells: a desert, machines or computers. However, also human-made smells like plastic, women's perfumes, and spray paint would be considered the opposite. The contrary to the smell of books, says book dealer Komiyama (2024), is that of freshness and vitality.

Several, yet not all, of the book dealers speak about smells with friends, family members, business partners, and customers. This is especially the case when it concerns intensesmelling books, no matter whether their smells carry positive or negative connotations (Tezuka, 2024). The book shop owner Kawamatsu (2024) observed that antique book collectors appreciate the smell of historical books, as nothing comparable to that smell exists, and it is part of the thrill of buying an antique book.

Customers' reactions towards smells inside bookstores encompass both negative and positive feelings: some are repulsed by books smelling of mould or tobacco, while others enter a store to take a deep breath, revel in the smell of old books that evoke feelings of nostalgia, and enable them to travel "vertically" through time, and "horizontally" through space (Abe, 2024). Some expressed a relaxing and sleep-inducing effect when smelling ink (Yanakawa, 2024).

6. SMELLS, PLACE ATTACHMENT AND IDENTITY

There is no commonly agreed-upon definition of place attachment (Inalhan et al., 2021).

Its common basis is the emotional connection between place and people (Inalhan et al., 2021). Place attachment is related to identity, place dependence and rootedness (Wells, 2021).

There are two forms of place attachment, divided into «place inherited» and «place discovered»: the former is defined by a long-standing, customary, and unconscious use of a place, and the latter by a conscious choice of place-use (Yang, 2021). Both forms of place attachment apply to Jimbocho. The customary place attachment concerns bookstore owners; this even concerns their relationship to smells in Jimbocho. Some book dealers stated that they are no longer aware of the odours at their shops because they have become accustomed to them, and they are part of everyday life (Okidaria, 2024; Doichi, 2024; Hatsugai, 2024). Still, the smell of books can signify a sense of peace and tranquillity as they trigger positive childhood memories of library visits, evoke feelings of nostalgia and convey an idea of the past and age (Kawamatsu, 2024; Doichi, 2024; Ito, May 2024). Entering another bookshop specialising in old Japanese books, the smells remind one interview participant of history.

Regarding, however, the conscious choice of place-use, some customers come to bookstores for the smell alone. Not only book content but also book odours stimulate the imagination: the smells of historical books, as well as books produced elsewhere, enable both booksellers and customers to travel through time and to other places (Abe, 2024). The smell of books triggers positive memories of pleasant conversations and collaborations with scholars and librarians or reminds them of their grandparents' house (Ito, 2024; Takabayashi, 2024). The smells of books, thus, bear the potential to recall memories of people and past experiences and to allow travels to places never visited and times never lived in.

Amongst the odour preferences of the interview participants, a fourth of them mentioned the smell of books, both old and new, as well as the smell of other odours characteristic of Jimbocho, namely food and, more precisely, curry. The fact that the smell of books is perceived as something very positive is related to the personal experience and meaning of the smell for the person. Therefore, it can be concluded that the identity of individuals is strongly characterised by working and living in Jimbocho, which is also mirrored by their olfactory preferences.

The atmosphere of Jimbocho and the smell of libraries give some of the interviewed persons the impression of "home", a place where they feel comfortable and safe. One interview participant argued that Jimbocho's feature is its "village society" character, where relationships amongst the book dealers are horizontal in that they are aware of each other. The booksellers can suppress attempts by large corporations to get into Jimbocho, as they amount to a critical mass of individual traders (Suwa, 2024).

The potential disappearance of the distinct smells of books and prints would evoke a sense of loss, and many of the interview participants expressed sadness, arguing that part of their culture would be lost and that the feeling of being alive could no longer be transmitted (Doichi, 2024; Ito, 2024). The long-term accumulation of smells, a testament to the passing of time, is a defining characteristic of older books; their smells evoke images of former owners, their habits and lifestyle (Takabayashi,

2024; Abe, 2024; Komiyama, 2024). The book smells also inform of production processes encompassing different materials, such as printing or writing ink, paper, cartons, or leather. It has been argued that the historical smells of books should be acknowledged as the result of changes within the material itself, and it is these changes that contribute to the story of historic books (Bembibre, 2020).

For some book dealers, it is not the smell wherein the value of books lies, partially grounded in the fact that the smell changes over time, and the smell is thus not an inherent part of a book (Yanakawa, 2024; Abe, 2024). For one book dealer, the smell of books is unpleasant enough to ensure the store is well-ventilated; in fact, he avoids trading mouldy-smelling books (Yanakawa, 2024).

Several interview participants stated that Jimbocho indeed plays a role in the shaping of their identity. For one person, the curational activity of preserving books and making them accessible to new owners is part of his identity. Similarly, after years of working in the profession, another dealer has developed a sense of identity by learning more about books and acknowledging his role as a middleman between one owner and the next. For another person, Jimbocho provides the basis for how he wishes to live. For yet another book dealer whose family had the shop for a long time, the preservation of Jimbocho as a cultural heritage constitutes a significant factor in his identity.

Place attachment can also be examined through a people-process-place-model applied to a workspace (Inalhan et al., 2021). This model explores the connection of people to places through three dimensions: a) the person, b) the psychological process, and c) the place (Inalhan et al., 2021). This focus on place attachment is employed in anthropology, yet it is fitting in this context as it helps to define the social value of places (Chen et al., 2021). Concerning the person dimension, place attachment occurs by assigning place meaning – individually and collectively. Interview participants have expressed, as previously mentioned, that the significance of Jimbocho is its strong sense of community due to the collaboration in publishing, buying, (re-)selling and referring customers (Suwa, 2024; Komiyama, 2024). The long-standing business relationships are based on businesses run in the second, third or even sixth generation. Some booksellers were raised in the buildings, serving as shops on the ground floor and as living quarters on the first and second floors (Komiyama, 2024; Okidaria, 2024; Hatsugai, 2024).

Furthermore, Jimbocho attracts people with specific tastes and odour preferences. Seeing that many book dealers are running the business in the second, third or fourth generation signifies that their connection to Jimbocho reaches far beyond a place of work but instead as a place connected to their families and personal life. The psychological process dimension concerns emotional, cognitive, and behavioural aspects (Inalhan et al., 2021). From the interviews, it transpired that participants felt passion and a great sense of value in their profession. At the same time, as owners, they shape their work environment according to their ideas, both within

their shop and as a community, establishing a book association. The place dimension refers to the physical characteristics of a place and the social connections to other people at the place (Inalhan et al., 2021). Interview participants pointed out that the relevant physical features of Jimbocho contributing to place attachment are the high density of bookstores and their uniqueness – also in terms of different smells – and the individuality of buildings. Characteristic of the social connections are the relationships with other book dealers, family members, or customers.

7. CONCLUDING THOUGHTS

The research yielded insight into the personal histories of the interview participants, their connections to Jimbocho, and their meaning in shaping their identity. Jimbocho contributes to the shaping of identity, in which smells play, to some extent, a role, even if only marginally or not consciously. For most participants, the smells in their bookstores are part of their everyday lives.

According to emails received from some of the participants after the interviews, the conversations have raised awareness of the importance of odours in Jimbocho and have made them reflect upon the meaning of Jimbocho for their identity. In that sense, the ethnographic method for research not only enables the realisation of democratic, participatory processes but bears the potential to raise awareness of the significance of heritage.

The interviewed business owners displayed a passion for their profession and for Jimbocho as a unique and well-known business area steeped in history with heritage value. As one interview participant mentioned, the role of second-hand booksellers is comparable to that of a facilitator who bridges the past with the present and the future: a guardian of heritage that concerns both the books and the memories of their former owners.

How smells are thought about and the significance that they have for the bookseller and their customers, as a 'tool' for memories, memories of past real or imagined people and places, is a sign that these smells are a part of the book trade in Jimbocho, albeit not an essential but neither negligible one. Therefore, we can conclude that the smells contribute to the identity of the place. They are part of the exchange between traders and customers, traders among themselves, and they influence the daily life of the booksellers.

Book dealers are well aware of their role in contributing to heritage, whether through dealing in second-hand books, continuing the socio-economic and cultural values of the book town, or simply appreciating and valuing particular smells. The social values that Jimbocho has for book dealers and customers contribute to place attachment.

Cultural heritage is an essential attractant in tourism. Jimbocho's cultural significance lies in its historical and social values. The social values are primarily characterised by the community of booksellers and their identification with the place. They contribute to the particular atmosphere of this place, which invites you to relax and discover books – and smells.

8. ACKNOWLEDGEMENTS

9. BIBLIOGRAPHY

Abe, N. (2024, May 23). Interview no. 7 [in Person; Tokyo].

Arbeitskreis Innenraumluft. (2014). Leitfaden. Gerüche in Innenräumen. Sensorische Bestimmung und

Bewertung. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft. Retrieved 11

July 2024 from *https://www.bmk.gv.at/dam/jcr:c295ef46-013d-479e-8b75c0456434af1c/Leitfaden_Gerueche_2014.pdf*

Association Press, & Kanda Bookstore Federation. (n.d.). Jimbou Book Town. Retrieved 11 July 2024 from *https://en.jimbou.info/*

Bembibre, C. (2020). Smell of heritage [University College London]. *https://discovery.ucl.ac.uk/id/eprint/10093605/1/Smell_of_Heritage_complete_thesis_Bembibre.pdf*

Bembibre, C., & Strlič, M. (2017). Smell of heritage: A framework for the identification, analysis and archival of historic odours. Heritage Science, 5(2), 1–11. *https://doi.org/10.1186/s40494-016-0114-1* Chen, N., Hall, C. M., & Prayag, G. (2021). Sense of place and place attachment in tourism. Routledge.

Cooke, S., & Buckley, K. (2021). Visual research methodologies and the heritage of 'everyday' places. In R. Madgin & J. Lesh (Eds.), People-centred methodologies for heritage conservation: Exploring emotional attachments to historic urban places (pp. 143–155). Routledge.

Dematte, M.L., Sanabria, D., & Spence, C. (2006) Cross-modal associations between odors and colors. Chemical Senses, 31, 531–538.

Doichi, I. (2024, May 22). Interview no. 5 [in Person; Tokyo].

Engen, T. (1991). Odor sensation and memory. Praeger.

Feststellung und Beurteilung von Geruchsimmissionen in Schleswig-Holstein (Geruchsimmissions-Richtlinie),

Pub. L. No. 2129.18, V 61-570.490.101/IV 64-573.1 § 3 BImSchG (2009). Retrieved 11 July 2024 from *https://www.gesetze-rechtsprechung.sh.juris.de/jportal/docs/anlage/VVSH/pdf/VVSH-2129.18-0001A004a.pdf*.

Hatsugai Y. (2024, May 15). Interview no. 2 [in Person; Tokyo].

Howes, D. (2019). Futures of scents past. In M. M. Smith (Ed.), Smell and history: A reader (First edition, pp. 203–217). West Virginia University Press.

Inalhan, G., Yang, E., & Weber, C. (2021). Place attachment theory (pp. 181–194). *https://doi.org/10.1201/9781003128830-16*.

Ito, F. (2024, May 22). Interview no. 3 [in Person; Tokyo].

Japanese Ministry of Environment. (2001, October 30). Selection of the 100 most scenic areas for scent. Retrieved 11 July 2024 from *https://www.env.go.jp/press/2941.html?print=true*.

Japanese Ministry of Environment. (n.d.). List of the 100 most scenic spots in the country. Retrieved 11 July from 2024 *https://www.env.go.jp/content/000074460.html.*

Johnson, A. (2018). Book towns: Forty five paradises of the printed word. Frances Lincoln, an imprint of the Quarto Group.

Kawamatsu, R. (2024, June 3). Interview no. 12 [in Person; Tokyo].

Komiyama, K. (2024, May 23). Interview no. 10 [in Person; Tokyo].

McLean, K. (2018). Communicating and Mediating Smellscapes. In V. Henshaw (Ed.), Designing with smell: Practices, techniques and challenges (pp. 67–77). Routledge.

Okidaria, Y. (2024, May 3). Interview no. 1 [in Person; Tokyo].

Otero-Pailos, J. (n.d.). Historic Preservation Podcast #34: Matija Strlič on the methodology of smell. Retrieved 11 July 2024 from *https://soundcloud.com/columbiagsapp/sets/historic-preservation2?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing*.

Porteous, J. D. (1985). Smellscape. Progress in Physical Geography: Earth and environment, 9(3), 356–378. *https://doi.org/10.1177/030913338500900303*.

St. Croix Sensory Inc. (2003). Descriptor wheel. Retrieved 11 July 2024 from *https://stcroixsensory.blog/2020/03/09/exploring-characters-of-odors/*.

Suwa, M. (2024, May 22). Interview no. 6 [in Person; Tokyo].

Takabayashi, K. (2024, May 22). Interview no 4 [in Person; Tokyo].

Tezuka, O. (2024, June 3). Interview no. 11 [in Person; Tokyo].

Union of Kanda Booksellers. (2019). Jimbocho book town map English.

Wells, J. C. (2021). Attachment to older historic places. In R. Madgin & J. Lesh (Eds.), People-centred methodologies for heritage conservation: Exploring emotional attachments to historic urban places (pp. 16– 38). Routledge.

Yanakawa, M. (2024, May 23). Interview no. 9 [in Person; Tokyo].

Yang, W. (2021). Building emotional GIS. In R. Madgin & J. Lesh (Eds.), People-centred methodologies for heritage conservation: Exploring emotional attachments to historic urban places (pp. 159–176). Routledge.

DETERMINING SUCCESS FACTORS: PHYSICALITY, SENSIBILITY, AND IMMERSIVE ARCHITECTURE IN THE KSA PAVILION AT EXPO DUBAI 2020

DETERMINANDO FATORES DE SUCESSO: FISICALIDADE, SENSIBILIDADE E ARQUITETURA IMERSIVA NO PAVILHÃO KSA NA EXPO DUBAI 2020

Joyce Lau
Architect
Boris Micka Associates
Joyce@BorisMicka.com

ABSTRACT

Expo events merge art and tourism, engaging a diverse array of stakeholders. Country Pavilions act as agents of cultural diplomacy, employing compelling designs to reflect national narratives. This study examines the Kingdom of Saudi Arabia (KSA) pavilion at Dubai Expo 2020, noted for its innovative design and significant popularity. The analysis focuses on the integration of spatial and sensory elements in immersive architecture, scenography, and content management, which collectively crafted an optimal multi-sensory experience. By reviewing the visitor journey, the study highlights strategies that amplify visitor experiences through the creative fusion of movement, interactive content and architectural design. The atavistic reference underlying physicality and sensibility is emphasized as a fundamental tool for place-making, crucial in achieving visitor engagement and cultural diplomacy. The KSA pavilion's success, attracting over 5 million visitors and aligning with global sustainability goals, provides insights for designing future pavilions that resonate universally and leave lasting impressions.

KEYWORDS: Expo Pavilion Design. Multi-Sensory Architecture. Scenography. Visitor Experience. Immersive Atavistic Symbolism.

RESUMO

Eventos da Expo unem arte e turismo, engajando uma diversa gama de stakeholders. Pavilhões nacionais atuam como agentes de diplomacia cultural, empregando designs atraentes para refletir narrativas nacionais. Este estudo examina o pavilhão do Reino da Arábia Saudita (KSA) na Expo Dubai 2020, conhecido por seu design inovador e significativa popularidade. A análise foca na integração de elementos espaciais e sensoriais na arquitetura imersiva, cenografia e gestão de conteúdo, que coletivamente criaram uma experiência multissensorial ideal. Ao revisar a jornada do visitante, o estudo destaca estratégias que amplificam as experiências dos visitantes através da fusão criativa de movimento, conteúdo interativo e design arquitetônico. A referência atávica subjacente à fisicalidade e sensibilidade é enfatizada como uma ferramenta fundamental para a criação de espaços, crucial para alcançar o engajamento dos visitantes e a diplomacia cultural. O sucesso do pavilhão da KSA, atraindo mais de 5 milhões de visitantes e alinhando-se com os objetivos globais de sustentabilidade, fornece insights para projetar futuros pavilhões que ressoem universalmente e deixem impressões duradouras.

PALAVRAS-CHAVE: Design de Pavilhões da Expo. Arquitetura Multissensorial. Cenografia. Experiência do Visitante. Simbolismo Atávico Imersivo.

1. INTRODUCTION
1.1 What Is the Expo: A Contextual Purpose

Expo events represent a unique blend of artistic expression and tourism, engaging a wide range of stakeholders, from global corporations to industry collaborators (BIE, n.d.). Central to these expos are the pavilions, which act as agents of cultural diplomacy, designed to maximise visitor engagement and embody each nation's cultural narratives (Dubai Expo 2020, 2021). These pavilions, conceived as ephemeral cultural products (Vega, 2023), blend diplomatic messaging with innovative architecture and represent substantial investments by both host and participating countries. Since the first World Expo in 1851, pavilions have generated excitement and created lasting memories for millions of visitors, facilitating cultural exchange and learning (Expo 2020 Dubai, 2016). Often likened to the "Olympics of soft power," World Expos allow nations to leverage their branding amidst varying economic and geopolitical contexts. This dynamic nature necessitates expertise in expo pavilion design, a unique and evolving field. This research illuminates the conception of architecture and scenography as an inseparable expo pavilion type, using the KSA pavilion's design to demonstrate the symbiosis of physicality, sensibility and atavistic elements as symbolic connection to human in his spatial interactions.

1.2 Manifestation of Objectives: Physicality & Sensibility

Expo Dubai 2020 marked a significant leap in the conceptualization of art exhibitions by expanding spatial boundaries beyond traditional architectural dimensions, embracing the concept of immersive spaces. The Expo theme, 'Connecting Minds, Creating the Future,' captures the spirit of a collective effort for a creative future. This big vision, with the Expo Organizers' Self-Build Pavilions Guide and the KSA's specific requirements and sub themes, formed the architect's pavilion design brief. As a product of cultural diplomacy in this world event, the KSA pavilion is not just an ambassador to a vibrant country rich in history, diverse natural landscapes, and transformative people-centric opportunities, it must embody universal values such as trust, power, confidence, progressiveness, security, wealth, peace, freedom and beauty. The pavilion delivery team and its selected expo-experienced architect was empowered by the country's leader to design and deliver a worldclass and impactful 'wow' pavilion that will be enjoyed and loved by all visitors over the six-month event.

The conversion of semantic objectives into physical forms and experiences to satisfy the tactile-emotional, mobile-goal oriented, and visual-contemplative and sensitivities of visitors are discussed along two notions: 'Physicality' broadly include objective form, function and spatial aspects whereas 'Sensibility' involves the abstracted and subjective responses of humans in their environments. The concepts of spatial orientation and the architect's narrative (Minnema, 2018) and symbolic interaction theory–architecture connections[1] (Smith, 2006) are two methods that are used in the post-analysis of the pavilion project.

---

[1] This theory informs us about how these designed physical environments contain and communicate our shared symbols and meanings (Smith 2006; Bourdieu 1990; Giddens 1990; Gieryn 2000; Mead 1934).

2. THE KSA PAVILION AT DUBAI EXPO 2020
2.1 Physicality of the KSA Pavilion: A Purposeful Architecture of Connection

The Kingdom of Saudi Arabia's Pavilion at Expo Dubai 2020 earned numerous accolades and attracted 5 million visitors, accounting for a quarter of the event's total footfall. Designed as a 'window' to the world, the pavilion offers engagement limited only by the visitors' imaginations (BMA, 2019).

The architecture features a simple volume rising from the ground, forming an imposing geometrical structure. The sloping prism creates intrigue, prompting questions like "What is this? How does it work? What is in it?" This initial encounter piques curiosity. Despite its monumental scale, the inclined form has a minimal footprint. Its generous setback from the plot's boundary and the expo boulevard commands attention and invites visitors from afar. The perspective of the rising form amplifies its strength, compelling viewers to approach. Beneath the inclined structure, an expansive space serves as an inviting interactive plaza, offering comfort during the day and transforming into a stage with an interactive motion-LED games floor at night, acting as a global meeting place (Figure 1).

As an instrument of soft power, the pavilion prominently displays its technological and sustainability achievements. The immense mirror ceiling, recognized by the Guinness Book of Records as the world's largest overhead LED screen, symbolizes the Kingdom's inclusiveness and openness. Visitors experience the strength of the overhanging structure and see their reflections, creating a sense of connection. The LED mirrors display real-time interactions, engaging visitors with spontaneous moments. Throughout the day, the overhead screen provides entertainment with real-time Trompe-l'œil effects, while at night, the pavilion transforms into a multi-dimensional show, virtually engulfing revelers in the large screen.

The architecture aligns with global sustainability goals, integrating sustainable design principles from the outset. The flat roof functions as a solar farm, supplying energy for the pavilion's consumption during the day. The inclined form casts shade and creates a micro-climate for visitors. Environmental considerations are evident at the pavilion's base, where hanging plants and natural light create a comfortable respite area. Here, visitors engage with authentic KSA hospitality, interacting with Saudi hosts over cultural food and gifts.

The KSA Pavilion's architecture serves as an iconic symbol of universal values and nation branding, effectively communicating its commitment to accessibility, technology, and sustainability. Through external spatial interactions alone, KSA builds its brand relationship with visitors at all levels (Wang, 2019).
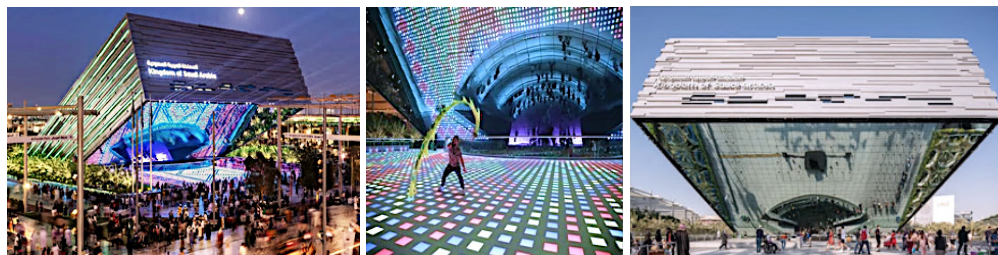
Figure 1. The multi-functioning KSA pavilion performing as: architectural icon, innovative technology, interactive, entertaining and global meeting place, sustainable, accessible, universal world class brand.
Source: image credit to Boris Micka Associates
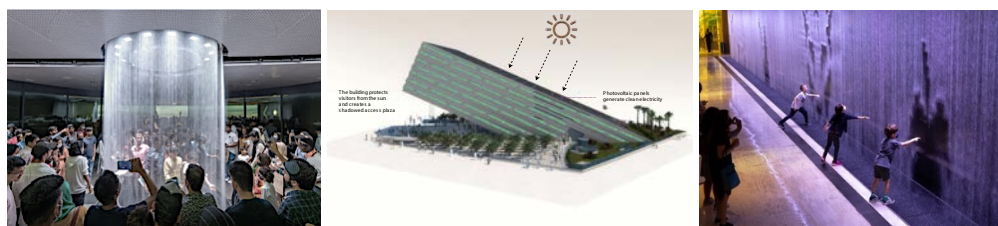
Figure 2. *From left to right:* Water portal immersive moment at entry threshold into pavilion; Sustainability and micro-climate features integrating with softscape, water features and technology: Interactive longest water feature wall.
Source: image credit to Boris Micka Associates

2.2 Visitors' Journey: A Spatially Sensorial Response

In the architect's narrative, the form and journey of the visitors evolved concurrently and naturally interweaved, from historical grounds to the projected future. "Form is function" describes this synergy of the leading message with the architecture, guiding visitors in their unfolding journey of discovery. The pavilion's journey aims to convert all visitors to KSA's fans, presenting it as an ancient nation with latent energy ready to burst onto the world stage.
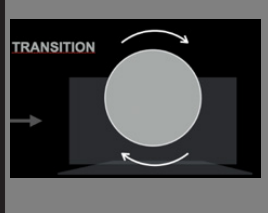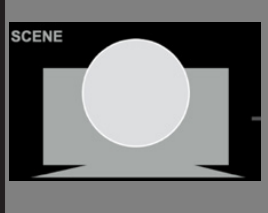
Starting from the pavilion's base, seven immersive environments connect architectural space with animated scenography, media productions, lighting, music, water, and scents. These sensory spaces are constructed with stage setting techniques to evoke emotive responses that reinforce universal messages. The water threshold of 'Welcome' functions as a reception foyer, creating anticipation and pacing the visitors' entry into the discovery. The scenographic travel through 'Heritage' is marked by an ascending escalator that channels visitors' movement. In 'Land & People,' the amplified digital production with the circular void in the floor simulates the sensation of a fly-over. Then, visitors descend another escalator tunnel to preview a future 'Identity'. As the finale, 'Vision' provides total mind and body immersion with refracted images, music, and motion sensors in a kaleidoscopic sphere digital art installation.

The exhibition narrative ensures all visitors, regardless of origin, age, or interests, can easily understand and engage with the content. The media-based productions

are self-explanatory, avoiding extensive text requiring translations. Visitors can experience content from a distance, choosing their preferred angles and viewpoints with the large format presentations. At the end of the visit, 'Palm Garden' offers rest and reflection, returning the body to its natural state with daylight, water, and dappling shadows. The "Discovery Centre" offers additional information about Saudi Arabia, with a vast interactive table and specialized Saudi hosts sharing expertise in culture, tourism, society, and business. It is a collective journey where the crowd's energy is omnipresent, yet visitors enjoy a personalized experience.

In post-examination, Minnema's (2018) concept of human and his world as three stages of transitions offers a framework for how humans relate to their external world. Her categorisation, when applied to the KSA journey, corresponds with the architect's flow plan, where the scene sequencing of "transition-lead-WOW-lead-WOW-transition-leading" confirms a logical pattern of visitors' responses in the spatial context. Transition/Initiating spaces also function as "checkpoints" to manage crowd and visit duration, as consolidated in Table 1.

This ebb and flow effected through the spatial connections not only created a momentum and natural rhythm for the visitors in their forward progression of their journey, but it also serves as a crowd safety and movement mechanism. Each space and experience are designed to engage the optimal number of visitors for a certain amount of time so that the crowd will be kept moving. This is one necessary consideration to manage as many visitors as possible in the duration of the pavilion's opening hours.

Pavilion Theme Journey	Linear Flow	Positioning/Spatial Character (Minnema, 2018)	
WELCOME 	Transition Control 	BEING-INITIATING The mobile body Court Action space	
HERITAGE 	Scene Leading 	BEING-INITIATING Movement space, Directional space	BEING-PART Cell Mood space, Atmospheric space
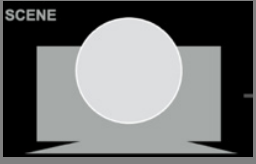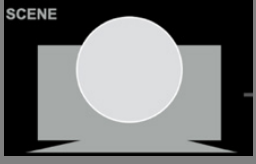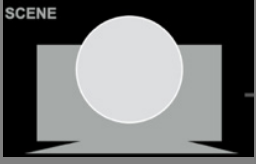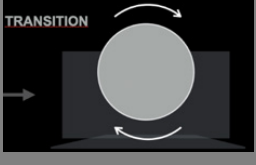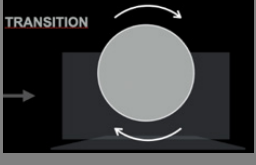
LAND & PEOPLE	Scene WOW	BEING AT A DISTANCE The visual body Domain Visual field Free space	BEING-PART The tactile body Cell Mood space Atmospheric
IDENTITY FUTURE	Scene Leading	BEING-INITIATING Movement space, Directional space	BEING-PART Cell, Mood space, Atmospheric space
VISION	Scene WOW	BEING AT A DISTANCE The visual body, Domain Visual field Free space	BEING-PART The tactile body Cell, Mood space, Atmospheric
PALM GARDEN	Transition Control	BEING-INITIATING The mobile body Court Action space	
DISCOVERY CENTRE	Scene Led	BEING-PART The tactile body Cell Mood space Atmospheric space	

Table 1. A Scenes Flow Framework of the KSA Pavilion relating with the concept of human positioning within spatial character types
Source: author's analysis with adaptation from Minnema (2018)

3. DISCUSSIONS
3.1 Listening To and Understanding Visitors' Expectations

The audience's delight and approval are a success indicator for most country pavilions. "This kind of resonance begins with a process of listening" (Cull, 2019) Expo visitors have limited time during their time at the Expo to optimise their experience and they would need to be selective and prioritize the pavilions they wish to visit. The successful popularity of the KSA pavilion is its high regards for visitors' expectations and the clarity in which their solutions are holistically affected within their experience. 'Visual Impact' serves to attract, 'Visit Duration' serves to engage, control and accommodate the desired turnover, and 'Experience Quality' would ensure visitors' are positively maintained. (Table 2)

Success Drivers	Expectations	Outcome
Visual Impact	The pavilion's location, orientation, and siting are primary design control points, besides the architecture's physical form. Intriguing and unique designs attract curiosity. A visually impactful pavilion, populated with crowds, incites curiosity and encourages exploration.	**Attract**
Visit Duration	Visitors prefer not to feel trapped. The visit length and exit options must be attractive, empowering visitors and affirming their decision to engage.	**Engage & control**
Experience Quality	Visitors expect a blend of entertainment and enrichment. This experience goes beyond mere amusement park thrills or museum exhibits. Visitors anticipate being hosted by the pavilion, seeking a memorable and distinct experience. The time spent should be enjoyable, enriching, inclusive, accessibly comfortable and cherished.	**Maintain and retain**

Table 2. Understanding Visitors Expectation: Success determinants

3.2 Immersing Architecture & Scenography in Atavistic Symbolism

Post-event feedback from visitors at the KSA pavilion during Expo 2020 reveals critical insights into its sensorial impact and lasting impressions. A key objective for the pavilion was to identify the "sweet spot" in nation branding—where design and experience align to create a deep, universal connection with visitors. The pavilion architect Boris Micka emphasized the importance of atavisms and environmental archetypes in associating space with emotions. He believed that embedding these primal elements within the pavilion design would naturally influence visitors' physical

navigation and emotional responses. This methodology combines architectural form, scenography, and content to evoke a "sublime and wow" reaction.

The pavilion's design prominently features a monolithic volume emerging from the earth, a simple yet powerful geometric form. Micka's use of this iconography is reminiscent of the monoliths depicted in the film "2001: A Space Odyssey," where the monolith symbolizes a hidden screen and creates an illusion of depth (Max, 2015). This reference serves a dual purpose: it invokes a sense of technological progress while also being a universally recognizable shape. The metallic monolith in the KSA pavilion can be seen as a metaphor for humanity's advancement through technology, possibly reminding visitors of a giant mobile phone—an everyday object that embodies modern technological strides. (Figure 2)

Figure 2. from left to right: Iconography monoliths depicted in the film "2001: A Space Odyssey; Section of metallic monolith in the KSA pavilion as a metaphor for humanity's advancement through technology
Source: Images credit to Boris Micka Associates
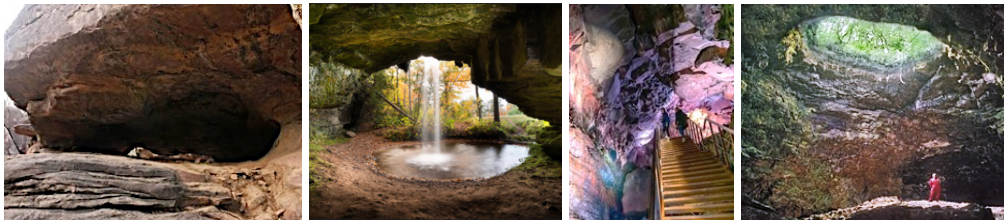
Figure 3. from left to right: Atavistic Symbols: The rock shelter; Water opening of cave; Inside a rock shelter; Cave skylight
Source: Web images from left: Bhimbetka by ephotocorp, Scotts Fall by Neil Weaver Photography, Lava Caving by Artic Adventures, Lave tube ceiling by Dave Bunnel/National Geographic

The pavilion's form subconsciously incorporates the "crepuscular cave" metaphor, inviting visitors to explore its depths. Aschner (2016) suggests that fundamental aspects of architecture and rock art are deeply ingrained in humans, influencing contemporary design. Juxtaposing the metallic monolith with the archetype of a natural cave, the pavilion reinforces a message of embracing historical roots, celebrating the present, and envisioning the future. This architectural narrative prompts visitors to appreciate the monolith's grandeur and shelter, triggering anticipation for the experiences within. (Figure 3)

Curiosity propels visitors down a ramp towards a water-feature 'crevice,' isolating them from the external Expo world. Passing the refreshing water threshold, they move past full-scale landscapes onto an escalator that opens to a dimmed tunnel-like climb—a time travel through Saudi civilization with light and shadow modulating dawn to dusk. The suggestion of nature in architectural spaces connects humans to the larger world. Deep shadows and darkness enhance peripheral vision and tactile fantasy, creating a soothing cave-like ambiance. (Pallasmaa)

This one-directional exhibition then delivers the visitors into their next adventure with 'Land & People'. This is a cavernous theatre with a large circular opening in the floor that draws visitors to stand around and peer into it. The circle is a universal symbol and an emanating source. It represents many ideas - totality, wholeness, perfection, from the self to the infinite. The large format digital scenes move, and 'flies' the visitors into the world of Saudi land, people, and culture. The music and panoramic visuals engage the visitors' psychological dimension beyond mere occupation of physical space. The urge for identification with place or space and acceptance of these primordial feelings reinforce the visitor's individual immersion, whilst imparting a collective sense of celebration, equality, and inclusiveness. (Figure 4)

Figure 4. from left to right: The atavistic recall in the KSA architecture with cascading ramp to water curtain threshold at 'welcome'; ascend through 'Heritage', Celebration of 'Land & People'
Source: Image Credits Boris Micka Associates, 2021

The next part of the journey descends on an escalator that flies over KSA's future projects. This downward motion alerts the body, making visitors more mindful in this automated travel. They are always in an elevated higher position with a privileged overview of new territories, like a hunter surveying the landscape from a hilltop. This directional telescopic spatial travel is the connective transition to prepare for the next space.

Stepping into 'Vision', visitors are confronted by a 30-meter giant sphere. This digital sphere kaleidoscope would relate quickly as a metaphor of the world or cosmic universe. It is a physical and sensorial questioning of truth through its ever-changing and endless possibilities. By manipulating perspectives through mirrored surfaces, 2-D artworks by Saudi artists transform into interactive projections covering the visitors' bodies like tattoos or magical robes, spontaneously making a collaborative art performance (Samajdar, 2024). In this domain, visitors experience the full impact of scenography, digital art, architecture, music, and interactive participation. From here, visitors exit into the open, invited to get closer to the hosting country. A cool

underground palm garden offers tea to engage all their senses, with an interactive water wall, Saudi coffee and ice cream, and chats with friendly hosts. Peace and tranquillity set in – a safe and reflective moment in the cave with skylights. (Figure 5)

The engaging environments in the pavilion are achieved through a linear sequence of spatial scenes that awaken the most primal feelings of all visitors, regardless of their origins. The embedded invisible atavism within the physical forms and geometries creates familiar identifications that all visitors can perceive without needing to read or listen to explicit communications.
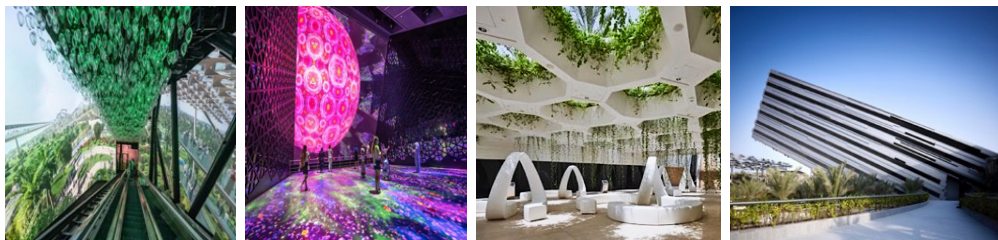
Figure 5. Top left to right: Reflected circumambulation at foyer, Water portal at threshold, Queuing to the opening, 'Heritage' ascend, theatre of 'Land & People', preview of future 'Identity'
Source: Image Credits Boris Micka Associates, 2021

4. CONCLUSIONS

The KSA pavilion at Expo Dubai 2020 exemplifies the effectiveness of integrating physical and sensory approaches in pavilion design. This study focuses on key success factors from the design perspective, encompassing both architecture and visitor experience, while also highlighting the concurrent and underpinning considerations for operations and management. Ultimately, the pavilion's success lies in its optimal performance as a live event.

Architecturally, the pavilion employs a simple yet imposing geometric structure that creates intrigue and invites exploration. The use of a monolithic volume and mirror ceiling symbolizes technological progress and inclusiveness, reinforcing the overarching themes of 'The Sky is the Limit' and 'Connecting Minds, Creating Future.' The design leverages atavistic immersion and symbolic associations through geometry and archetypal forms, forging a deep connection with visitors. This impactful form effectively communicates the pavilion's message, encouraging maximum and repeat visits. With clear functional objectives, the pavilion also addresses servicing requirements, proving to be a highly efficient operation sustaining daily 'performance' runs for over six months.

The visitor experience is meticulously designed to be linear, with intentional cadences and immersive articulation of architectural space through scenography, media productions, lighting, music, water, and scents. Themed environments such as 'Land & People' and 'Vision' utilize large-format digital scenes and interactive projections to tap into visitors' psychological dimensions, fostering a sense of inclusiveness

and celebration. Primal elements and environmental archetypes influence visitors' physical navigation and emotional responses, eliciting profound "sublime and wow" reactions. The journey through the pavilion facilitates universal resonance and identification, making the experience both special and memorable.

Effective day-to-day management is crucial to the pavilion's success. Ensuring efficient visitor flow and high-quality inclusive experiences for the diverse and high-volume traffic, the management team prioritizes smooth visitor movement. Ground staff and the operation control room manage situations via CCTV and mobile devices. Special needs visitors and families receive particular attention to ensure their experience is as seamless as that of other visitors. The pavilion's large plaza accommodates the lineup of visitors, and the linear journey experience prevents stagnated queuing. Separate access points for online pre-booked visits enhance operational flow and positive visitor sentiment. A dedicated team manages VIP and VVIP visits, providing security and avoiding disruption to regular visitors' experiences.

Daily programming in the pavilion plaza, including concerts, cultural presentations, workshops, and children's games, attracts diverse crowds and enhances the pavilion's appeal. The food and beverage experience, featuring pop-up kiosks and live music, transforms the cafeteria into a popular destination and meeting point. The dynamic staffing and volunteer management strategy, led by the Ministry of Culture, involves a team structure with 20% permanent staff and 80% rotating volunteers. This blend of trained and passionate KSA nationals as 'ambassadors' provides fresh perspectives and a sense of authenticity, significantly contributing to visitor engagement, satisfaction and increased affiliation with the country.

The KSA pavilion's widespread acclaim can be attributed to its ability to evoke personalised meanings and insights from visitors. Its architecture and interior environments are imbued with identifiable meanings, creating a compelling, multi-sensory experience. A truly impactful pavilion must transcend political borders to evoke the essence of the communities and landscapes it represents. The KSA pavilion's use of atavistic symbolism appeals to visitors at a primordial level, enriching their experience through self-directed movement and sensory engagement. By masterfully integrating physicality and sensibility in its design, the pavilion showcases Saudi Arabia's cultural and technological advancements, leaving a lasting impression on visitors. This approach offers invaluable insights for designing future pavilions that resonate universally and create positive engagements with its audience.

5. REFERENCES

Aschner, Juan. (2016). Cabin/Cavern: archetypal phenomena and their unconscious persistence. (Conference Paper: AR(t)CHITECTURE Conference, Faculty of Architecture & Town Planning, Technion I.I.T. Haifa, Israel)

Samajdar, Avijit. (2024) The Psychology of Projection Mapping: Understanding its Impact on Perception and Emotion (article from webpage- *https://medium.com/@ projectionmapping0/the-psychology-of-projection-mapping-understanding-its-impact-on-perception-and-emotion-7910d144f3ad*)

Boris Micka Associates. (2019). SAUDI PAVILION EXPO DUBAI 2020 Architecture & Contents. (internal documents)

Cull, Nicholas J. (2020, Jan). Public diplomacy through Expos: The nine commandments for Expo pavilions. (article from Bureau International des Expositions./BIE - *https:// www.bie-paris.org/site/en/latest/infocus/entry/public-diplomacy-through-expos-the-nine-commandments-for-expo-pavilions?*)

Gulf News. (2021, Oct) Expo 2020 Dubai: Saudi Arabia Pavilion showcases country's heritage and future. 3:19. *https://youtu.be/NY0HQfn2Hpo?si=bcaypKC2PBkunqk3*

Minnema, L. (2018). The Language of Architecture and the Narrative of the Architect: An Essay on Spatial Orientation and Cultural Meaning in Architecture. In Handbook of the Changing World Language Map (pp. 1–18). Springer International Publishing. *https://doi.org/10.1007/978-3-319-73400-2_62-1*

Max. (2015, Dec). Monoliths: Gateway to Cinema? (Blog from Film & Architecture / *https://msufilmandarchitecture.wordpress.com/2015/11/10/monolith-gateway-to-cinema/*)

Smith, R. W., Bugni, V. (2006). Symbolic interaction theory and architecture. Symbolic Interaction, 29 (2), University of California Press. *https://digitalscholarship.unlv.edu/ sociology_pubs/5*

Solomon. (2021, Oct). Expo 2020 Saudi Arabia Pavilion (One of the best Pavilion) 4K 22:16, 14,405 views. *https://youtu.be/aPrT00hDgwI?si=CfMWkkg0WCTmbf2E*

Spence, C. (2020). Senses of place: architectural design for the multisensory mind. Cognitive Research: Principles and Implications 2020 5:1, 5(1), 1–26. *https://doi. org/10.1186/S41235-020-00243-4*

Vega, Méndez-Navia (2023, Feb). Expo pavilions: The lasting impact of the ephemeral. (Article from Bureau International des Expositions. /BIE - *https://www.bie-paris.org/site/ en/latest/infocus/entry/expo-pavilions-the-lasting-impact-of-the-ephemeral*)

Wang, Jian. (2019, Jan). Nation Branding & World Expos (article from Bureau International des Expositions. /BIE, Bulletin 2019) *https://www.bie-paris.org/site/images/ bulletins/BIE_BULLETIN_2019.pdf*

L19
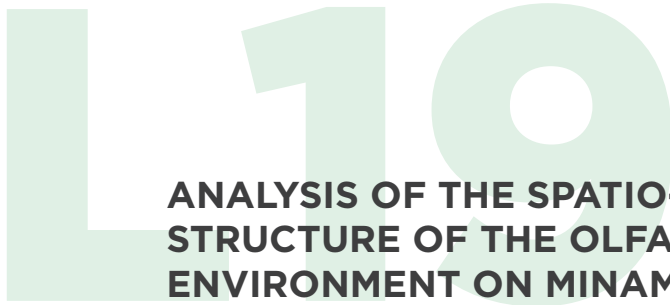
ANALYSIS OF THE SPATIO-TEMPORAL STRUCTURE OF THE OLFACTORY ENVIRONMENT ON MINAMI-DAITO ISLAND: TOWARDS SUBJECTIVE SPATIAL DESIGN AND IMPLICATIONS FOR TOURISM

Yoko Iwasaki
Associate Professor, PhD in literature
Kyoto-Saga Art College (Kyoto, Japan)
yo-iwasaki@kyoto-saga.ac.jp

Toshiya Hashimoto
Professor, PhD in engineering
Rikkyo University (Tokyo, Japan)

Yurie Kaizu
Professor, PhD Professor, PhD in agriculture
Bunkyo University (Tokyo, Japan)

Akio Maita
Visiting Professor, PhD in agriculture
Hokkaido University (Hokkaido, Japan)

ABSTRACT

The 'smell of the land' characterises a place as ambient information and is etched deeply into the mind along with visual information. We have conducted a series of studies on invisible and ambiguous smells, focusing initially on how to notice the variety of smells in different areas, how to visualize them and how to incorporate them into tourism conceptions.

Minami-Daito Island is a remote subtropical island located on the Pacific Ocean at the southern tip of Japan. Our research team has been visiting this remote island since 1998, conducting interviews about its unique flora, fauna, food, and customs. Interviews were conducted with both islanders and tourists, comparing their subjective differences in the olfactory environment. The results showed that to visualise the invisible olfactory environment, not only is spatial and temporal information essential, but also a margin must be provided for subjective information found alongside objective information.

KEYWORDS: Smellscape, Tourism, Olfaction, Island, Environment

RESUMO

O "cheiro da terra" caracteriza um lugar como informação ambiental e fica gravado profundamente na mente junto com a informação visual. Realizamos uma série de estudos sobre odores invisíveis e ambíguos, concentrando-nos inicialmente em como perceber a variedade de odores em diferentes áreas, como visualizá-los e como incorporá-los às concepções de turismo.

A Ilha Minami-Daito é uma ilha subtropical remota localizada no Oceano Pacífico, no extremo sul do Japão. Nossa equipe de pesquisa tem visitado essa ilha remota desde 1998, realizando entrevistas sobre sua flora, fauna, alimentação e costumes exclusivos. Foram realizadas entrevistas com moradores da ilha e turistas, comparando suas diferenças subjetivas no ambiente olfativo. Os resultados mostraram que, para visualizar o ambiente olfativo invisível, não apenas as informações espaciais e temporais são essenciais, mas também uma margem deve ser fornecida para informações subjetivas encontradas juntamente com informações objetivas.

PALAVRAS-CHAVE: Smellscape, Turismo, olfato, Ilha, Ambiente

1. INTRODUCTION

In recent years, in response to the rapid spread of social networking services, there have been examples of tourist attractions being decorated with an awareness of light-up events and photo frames. If too much attention is paid to visually oriented activities that focus on recording and transmitting photos and videos, it becomes difficult for tourists to have a memorable experience that is engraved in their memory by using all of their senses, even if they have actually visited a tourist destination. We want to get away from this situation and regain the original power of tourism, which is the experience of the five senses. Against the background of this awareness of the problem, this study focuses on the role played by the sense of smell in tourism.

It has been pointed out that 'the smell of the land' characterises a place by its ambient information and becomes etched deeply in the mind, together with visual information (Henshaw, 2014). Among the five senses, the sense of smell is particularly closely linked to memory and emotion and is therefore considered to play an important role in making a tourist's experience more memorable. However, as an ambiguous sense that is not visible in reality, it has rarely been regarded as a subject of tourism research (Hashimoto, 2021). Spaces characterised by odours have recently been termed 'smellscapes', and related research has increased rapidly in the last decade (Xiao et al., 2021).

The aim of this study is, therefore, to analyse the characteristics of olfactory experiences from the perspective of smellscapes, to examine their importance and potential, and to extract new soft planning methods for the spatial development of tourist attractions.

2. SPATIAL STRUCTURE OF THE SMELLSCAPE

There are two types of odour perception pathways: those perceived through the nasal cavity (orthonasal) and those perceived as food passes into the mouth and then into the nose (retronasal). We perceive good flavours through these two pathways when eating and drinking. In everyday life and when visiting places, we sense the seasons through the smells of flowers and trees along the roadside and we sense the smells emanating from the sources of smells, which are located at various distances from the actors themselves; from the variety of foodstuffs sold in markets; and from the smells unique to the region carried by the wind. These scents are perceived by the orthonasal system.

What is the spatial structure of the 'odour environment (olfactory environment) that makes up a smellscape? Hall (1966, 1970), a cultural anthropologist, classified four distance zones based on the ways interpersonal communications take place: close distance, individual distance, social distance and public distance. Shinohara (1980) classified landscape visibility into the following distance zones based on how nature (greenery) looks according to distance: near-range (single-tree zone), medium-range

(textural zone) and far-range (topographic zone). With reference to these distance classifications, we assume a spatial structure model in which the smellscape consists of four distance zones, depending on the distance between the behavioural entity and the scent source (Table 1).

Name	Olfactory Pathway		Distance Classification of Spaces for Odor Experience
	Retronasal Olfaction	Orthonasal Olfaction	
Direct-Smell	**+**	**+**	Odors in eating and drinking
Close-Smell		**+**	Private and permanent living spaces (i.e., living spaces) and Smells in their surroundings
Distant-Smell		**+**	Smells in public spaces that set the tone for the community
Afar-Smell		**+**	The "background" of the area, the "presence" of Odors from far away(ex. Scent of sea, wind and rain.)

Table 1. Spatial structures in smellscapes

In this study, the odour environment is first visualised to understand how residents perceive the island's spatial structure and to use this structure as a programme for tourism planning. Next, the study focuses on the similarities and differences in the odours perceived by residents and tourists at the visited places. Tourists perceive a limited odour environment that depends on the season they visit, the weather at the time of their stay, etc. In terms of distance, the main smells perceived by tourists are the close smells of eating a meal, the middle smells of public spaces (in their range of activities, such as sightseeing) and the smells specific to the area during their stay (far smells).

3. FIELD SURVEY
3.1 Selection of survey sites
The odour environment cannot be maintained without the natural environment and living culture there being maintained. For this reason, 'production culture zones' where nature and traditional livelihood and living systems are maintained are considered to be rich in resources in terms of the odour environment (Japan's tourism regions can be broadly classified into two types: 'consumption culture zone-type tourism regions', which attract visitors by attracting equipment-type tourism facilities to areas with a high population density, which can be described as consumption culture zones; and 'production culture zone-type tourism regions', which apply to many regions in Japan, where production activities are carried out using the region's diverse nature and the historical and cultural resources created in the process find their tourism value and develop tourism activities). In particular, islands are surrounded by the sea

and their spatial structure is easy to grasp, so we have conducted a series of studies using islands as a prototype (Hashimoto, 2023).

Minami-Daito Island, the site of this study, is a remote subtropical island with an area of about 31 km². It is located in the Pacific Ocean at the southern tip of Japan. The island is exposed to seasonal sea breezes from all directions and is home to aromatic subtropical plants and endemic species. It has a natural and odorous environment that differs from that of the main islands of Japan. The islanders depend on agriculture, mainly sugar cane cultivation, and fishing for their livelihood, and from December through March, the distinctively sweet smell from a sugar cane-refining plant spreads throughout the island (Fig. 1.).

Fig. 1. Overhead view of the Minami-Daito Island, sugar cane, moonflower and reaping.

3.2 Survey method

Two members of our research group have been visiting the island since 1998 and have conducted a detailed survey of its unique flora, fauna, food, customs and other resources, in addition to compiling a detailed list of ecotourism resources (Report of Minami-Daito Island 2008). For the present study, the contents of the survey were scrutinised once more to extract the island's aroma sources and then organised by distance zone and season, as mentioned above. Based on this list, interviews with islanders were conducted in the field in January and November 2023, followed by a questionnaire survey of tourists.

4. RESULTS
4.1 Interviews with islanders on the odour environment

The interviews with the islanders were conducted based on the list prepared, by checking the distance zones and seasons of the odour sources, making the necessary corrections and adding new odour sources at the same time. Through this process, an 'odour calendar' was created, in which the odour sources were arranged according to a spatial structure model (Fig. 2.). The calendar comprehensively represents the smells perceived by the islanders throughout the year. In June, they strongly perceive smells closely related to their daily life, such as the smell of rose family flowers blooming around them and frogs hit by cars on the road.
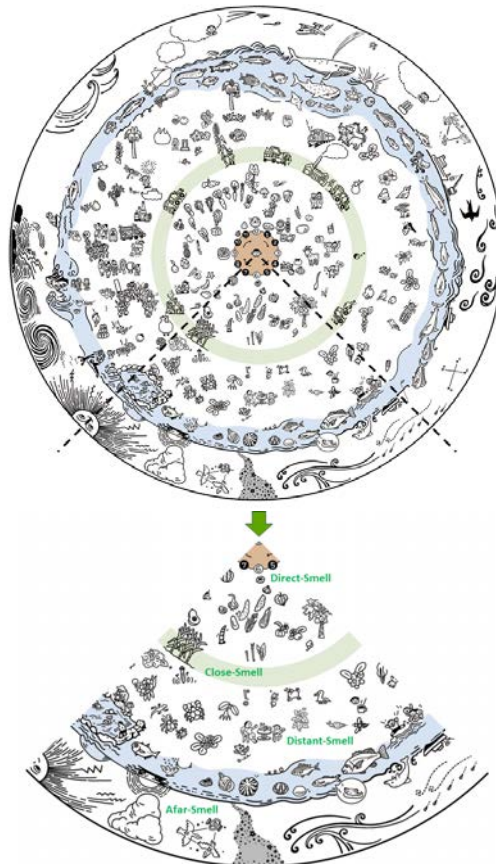
Fig. 2. A calendar illustrating the year's scents in Minami-Daito Island and a section of the calendar centred on June.

4.2 Tourist questionnaire

Tourists were asked to fill in a questionnaire about the smells they perceived on the island. The results of the questionnaire conducted in June 2024 showed that tourists

mentioned 'environmental smells' such as tides and the sea, followed by 'smells related to food such as Daito sushi and rum, and smells of flowers, plants and soil. Comments related to wet weather were also seen. In the free-text responses, some respondents referred to smells in their memories, such as 'I remember the smells of forests and the sea', indicating a situation where the smells of the past and present overlap over time.

5. DISCUSSION

The results of the survey revealed that in order to visualise the invisible odour environment, it is necessary to have not only spatial location information, but also temporal transition and a space where subjective as well as objective information can be obtained. The fact that the smells perceived by islanders and those perceived by tourists are different, even if they exist in the same location, indicates the need for further clarification of the construction of personal olfactory experiences in space and time, in addition to objective data on smells.

6. CONCLUSION

It would be meaningful to use the results of this study when using the odour environment in the creation of a tourist region. If tourists can learn about the residents' odour environment, they can understand their living culture through the unique smells of the area that locals are familiar with and provide a more profound tourism experience by learning the smells or near-scents that appear outside of the season when they visit. In addition, for the residents, knowing how tourists recognise the local smells at the time of their visit, mainly the close smell, will enable them to recognise anew the uniqueness and attractiveness of local smells, which they may not be aware of in their daily lives.

In the future, the smell calendar and smell map created in this study will be used as a proactive spatial design method for visualising invisible smell environments on a temporal and spatial axis, and specific measures for their effective use by the regions that receive tourists will be studied.

REFERENCES

Hall, E. T. (1966). *The hidden dimension*. Doubleday.

Hall, E. T. (1970). *The hidden dimension* (T. Hidaka & N. Sato, Trans). Misuzu Shobo.

Hashimoto, T. (2021). *Fundamental study on 'olfactory experience' in tourism*. Rikkyo University Bulletin of Studies in Tourism, *23*, 2-10.

Hashimoto, T., Maita, A., Kaizu, Y., Iwasaki, Y., & Hama, Y. (2023). *The 'smell environment' at tourist attractions: An attempt at visualization* [workshop]. Japan Society for Tourism Research, City.

Henshaw, V. (2014). *Urban Smellscapes: Understanding and Designing City Smell Environments*, New York: Routledge.

Minami-Daito Village Board of Education (2008). *The Big Heritage of a Small Island: The Treasure Hunt for the Marugoto Museum on Minami-Daito Island*, Hearing Books 1-3.

Shinohara, O. (1980). *Fundamental study on the design of landscape* [Unpublished master's thesis]. University of Tokyo.

Xiao, Jieling. et al. (2021). *Recent Advances in Smellscape Research for the Built Environment*. Frontiers in Psychology, 12:700514.

L20

SMELL OF NATURE: RETHINKING SCENT ECOLOGY IN THE POST-PANDEMIC AND CLIMATE CHANGE CONTEXT

CHAIRS Jieling Xiao
Victoria Linn Lygum

The olfactory experience of nature profoundly impacts human well-being. Natural scents—such as the aroma of forests, flowers, soil, or the sea—evoke positive emotions, reduce stress, and enhance mood. Research indicates that exposure to natural scents can lower cortisol levels, decrease blood pressure, and promote relaxation, contributing to overall psychological and physiological well-being (Bentley, et al., 2023).

The role of scents in ecosystem services is paramount. Various organisms primarily utilize scents for communication and signal transmission. For instance, animals release pheromones for mating, while scents attract pollinators to flowers, aiding successful plant reproduction. Scents also crucially govern relationships between predators and prey: prey animals emit specific scents as a defence mechanism, while predators use scents to locate and track prey, enhancing hunting efficiency (Press, et al., 2000). Furthermore, scents are vital in decomposition processes, particularly in breaking down organic matter. Odorous compounds attract decomposers like bacteria and fungi, aiding in converting organic matter into simpler forms and facilitating nutrient cycling within ecosystems.

Cities are characterized by artificial and often overpowering scents, such as pollutants, vehicle emissions, and industrial odours, contributing to air pollution and adverse human health effects.

The absence of natural scents in urban spaces may lead to sensory deprivation of positive olfactory stimuli crucial for mental health and cognitive function (Spence, 2020). Covid pandemic alert us to the importance of access to "fresh air" and scents of nature. Although some initiatives are seen to introduce pocket parks and green roofs into the centre, few acknowledging the role of scents in urban ecosystem and quality of life in cities. One the other note, climate change also urges us to re-think about sensory ecology and sustainability. For example, heatwaves as a result change our olfactory sensitivity in summer, cause biodiversity loss and damages the circadian cycle of plant scents in the local ecosystem. Rebuilding olfactory connections is pivotal for creating a regenerative and restorative future, from deprivation to reactivation.

This session invites scholars, researchers, practitioners, and artists to explore, discuss, and reimagine the significance of scent ecology in our lives, guided by the following questions:

How are scents creatively used in artistic, architectural, landscape and urban practices to purposefully reconnect people and nature?

How can a better understanding of the role of plant scents in ecosystems inform sustainable practices in agriculture, forestry, and land management, minimizing negative impacts on natural habitats?

How can natural scents be used to indicate environmental changes and ecosystem health?

How can new technology (i.e. XR, AI) innovate the documentation and representation of plant scents in built environment?

We are interested in diverse formats of contributions including traditional papers, multi-media outputs or action-based learning activities.

INFLUENCE OF SMELLS FROM NATURE ON HUMAN PSYCHOLOGICAL AND PHYSIOLOGICAL REACTIONS: A REVIEW OF EFFECTS OF EXPOSURE

INFLUÊNCIA DOS CHEIROS DA NATUREZA NAS REACÇÕES PSICOLÓGICAS E FISIOLÓGICAS HUMANAS: UMA REVISÃO DOS EFEITOS DA EXPOSIÇÃO

Francesca Taufer
PhD Student
Swedish University of Agricultural Sciences, Sweden
francesca.taufer@slu.se

Anna María Pálsdóttir
Associate Professor, Senior Lecturer
Swedish University of Agricultural Sciences, Sweden
anna.maria.palsdottir@slu.se

Marcus Hedblom
Professor
Swedish University of Agricultural Sciences, Sweden
marcus.hedblom@slu.se

ABSTRACT

Focus on wellbeing from nature has been on visual features although humans are multisensory perceivers. Smells from nature are released from plants, flowers, soil or water and are part of the human experience of an environment. This paper aims to review the effects of exposure to smells from nature in indoor and outdoor environments and the different ways in which smells from nature can affect human psychological and physiological reactions. Results suggest that exposure to smells from nature positively influences human psychological and physiological reactions and highlight potentials in using smell from nature to decrease stress and tension, increase positive mood and relaxation with benefits on human health and well-being. However, knowledge about smells from nature is still limited, especially with physiological measures in-situ, and there is the need for more studies to define how smells can be implemented to increase the environmental qualities and improve human health and well-being.

KEYWORDS: smells from nature; human health; urban and natural environment; psychophysiological reactions; sensory experience.

RESUMO

O foco no bem-estar da natureza tem sido nas características visuais, embora os humanos sejam percetores multissensoriais. Os cheiros da natureza são libertados pelas plantas, flores, solo ou água e fazem parte da experiência humana de um ambiente. Este artigo tem como objetivo rever os efeitos da exposição aos cheiros da natureza em ambientes interiores e exteriores e as diferentes formas como os cheiros da natureza podem afetar as reações psicológicas e fisiológicas humanas. Os resultados sugerem que a exposição aos cheiros da natureza influencia positivamente as reações psicológicas e fisiológicas humanas e destacam o potencial da utilização dos cheiros da natureza para diminuir o stress e a tensão, aumentar o humor positivo e o relaxamento, com benefícios para a saúde e o bem-estar humanos. No entanto, o conhecimento sobre os cheiros da natureza ainda é limitado, especialmente com medidas fisiológicas in-situ, e há necessidade de mais estudos para definir como os cheiros podem ser implementados para aumentar as qualidades ambientais e melhorar a saúde e o bem-estar humanos.

PALAVRAS-CHAVE: cheira da natureza; saúde humana; ambiente urbano e natural; reações psicofisiológicas; experiência sensorial.

URBAN GREEN SPACES AND MENTAL HEALTH – THE ROLE OF PLANTS VOLATILE ORGANIC COMPOUNDS

ESPAÇOS VERDES URBANOS E SAÚDE MENTAL – O PAPEL DOS COMPOSTOS ORGÂNICOS VOLÁTEIS DAS PLANTAS

Aurora Ruggeri
PhD Student
University of Neuchâtel
aurora.ruggeri@unine.ch

ABSTRACT

Through a biosocial approach and based on the geography of health, my research explores the role of urban green spaces in the recovery process for people with a diagnosis of psychosis. While evidence of nature's benefits on human health is growing, the mechanisms remain unclear. Volatile organic compounds (VOCs) emitted by plants interact with human bodies and can influence both physical and mental health. The potential health benefits of VOCs depend on their presence in the environment where humans-plant encounters take place. Most research on VOCs has been conducted in forest environments, but these compounds may also play a role in urban settings. Drawing on a participatory action-research in Lausanne, Switzerland, I examine the quantity and quality of VOCs in various urban parks and identifies the plants responsible for their production, with a focus on the biological functioning of plants and also on species specificities.

KEYWORDS: Green spaces. Mental health. Volatile organic compounds. Urban environment

RESUMO

Através de uma abordagem biossocial e com base na geografia da saúde, minha pesquisa explora o papel dos espaços verdes urbanos no processo de recuperação de pessoas com diagnóstico de psicose. Embora as evidências dos benefícios da natureza para a saúde humana estejam aumentando, os mecanismos por trás desses efeitos ainda são incertos. Compostos orgânicos voláteis (COVs) emitidos pelas plantas interagem com o corpo humano e podem influenciar tanto a saúde física quanto mental. Os potenciais benefícios à saúde dos COVs dependem de sua presença no ambiente onde ocorrem os encontros entre humanos e plantas. A maioria das pesquisas sobre COVs tem sido realizada em ambientes florestais, mas esses compostos também podem desempenhar um papel em contextos urbanos. Com base em uma pesquisa-ação participativa realizada em Lausanne, Suíça, examino a quantidade e a qualidade dos COVs em vários parques urbanos, identificando as plantas responsáveis por sua produção, com foco no funcionamento biológico das plantas e nas especificidades das espécies.

PALAVRAS-CHAVE: Espaços verdes. Saúde mental. Compostos orgânicos voláteis. Ambiente urbano

L20

PERSPECTIVES ON PLANT SMELLSCAPES: A SCENT MODULE FOR OUTDOOR USE AT DEMENTIA CARE HOMES

PERSPECTIVAS SOBRE PAISAGENS OLFATIVAS: UM MÓDULO OLFATIVO PARA UTILIZAÇÃO EM ÁREAS EXTERNAS DE CASAS DE CUIDADO À PESSOAS COM DEMÊNCIA

Victoria Linn Lygum
Researcher
Department of the Built Environment, Aalborg University,
Copenhagen, Denmark
vll@build.aau.dk

Nanet Mathiasen
Researcher
Department of the Built Environment, Aalborg University,
Copenhagen, Denmark
nam@build.aau.dk

ABSTRACT

Human surroundings are experienced through the senses and the senses aid humans in understanding and responding to their environments purposefully. If sensory functions are reduced, a person's world becomes more difficult to understand and act in. People with dementia often have dysfunctional cognitive systems and difficulty processing sensory information, which may lead to ill-being. This paper introduces the notion of scent modules for outdoor use at care homes for people with dementia. Scent modules should offer pleasant sensory and cognitive stimulation in natural surroundings. Perspectives on how scent modules can be integrated into health-promoting care and create well-being for people with dementia are presented.

KEYWORDS: Landscape architecture. Smell. Scent. Dementia. Well-being. Care home.

RESUMO

Seres humanos experimentam o ambiente ao seu redor através dos sentidos, os quais ajudam a compreender e reagir ao ambiente de forma proposital. Se as funções sensoriais são reduzidas, indivíduos apresentam dificuldades em compreender e agir no ambiente. Pessoas com demência frequentemente apresentam sistemas cognitivos disfuncionais e dificuldades em processar informações sensoriais, o que pode levar ao mal-estar. Este artigo introduz a ideia de módulos olfativos para áreas externas de casas de cuidado à pessoas com demência. Módulos olfativos podem oferecer uma estimulação sensorial e cognitiva agradável em um ambiente natural. Perspectivas sobre como módulos olfativos podem ser integrados na promoção do cuidado à saúde e bem-estar de pessoas com demência são apresentadas neste estudo.

PALAVRAS-CHAVE: Arquitetura paisagística. Olfato. Cheiro. Demência. Bem-estar. Casas de cuidado à pessoas com demência.

1. INTRODUCTION

Dementia is a great public health challenge (World Health Organization, 2021) and there is a pressing need for research on its prevention, treatment, and on care of people with dementia (Prince et al., 2015). In Denmark, many public care homes are under increased pressure due to tight budgets, high staff turnover, and lack of professional training among staff (Sparre et al., 2023). Staff can struggle with even the most essential elements of care, such as getting residents washed and dressed, curtailing health-supporting activities, such as getting outside. This is unfortunate, as the stimulation of natural elements can have a positive effect and can make a decisive difference in the well-being of people with dementia (Detweiler et al., 2012; Gonzalez and Kirkevold, 2014; Whear et al., 2014; Murroni et al., 2021). A vicious circle might begin where quality of life reduces over time (manifesting in apathy or agitation), making it increasingly difficult for staff to do their job. To assist staff in

facilitating essential parts of everyday life, residents are often given antipsychotic medication. However, this use is inappropriate as it is associated with unpleasant side effects, falls, and premature death (Falsing 2021).

People use their senses to perceive the world and to act appropriately in it. This applies to most activities, such as eating, taking a walk, or interacting with others. There are different ways of categorizing the human senses, but it is generally accepted that there are eight. Senses provide information about what is outside the body; these senses include sight, sound, touch, taste, and smell. There are also senses that provide information about where the body is in space and how it moves, including position and movement, as well as gravity, head movement, and balance. Finally, the sense that provides information about the inside of the body is the visceral sense (Ayres, 2008). To maintain the proper functioning of the senses, they must be stimulated. Through everyday activities people typically improve the acuity of these senses (Ayres, 2008).

People with dementia often face challenges relating to themselves and their surroundings. This reflects a reduced ability to perceive, organize, and interpret sensory stimuli (Nationalt Videnscenter for Demens, 2023). Furthermore, people with dementia are often unable to sustain their remaining sensory function as they can find it hard to take initiative to participate in activities due to loss of cognition, the ability to think, and to make decisions. Thus, they do not receive the sensory stimuli they need to maintain their health. Not receiving enough stimuli or receiving the wrong kind of stimuli (e.g., watching irrelevant TV) may lead to either under- or overstimulation, which can cause passivity or aggression (Nationalt Videnscenter for Demens, 2023). In this regard, targeted sensory stimuli can be a significant means of enhancing well-being among people with dementia. Therefore, people with dementia must be supported in receiving and processing suitable sensory stimuli.

Sunlight and fresh air are fundamental for well-being. Seeing, touching, and tasting plants can engage many parts of the sensory system. Furthermore, scents have the potential to arouse pleasure, evoke emotions and memories, and contribute to the maintenance and improvement of cognitive function. These benefits of olfaction are the result of its stimulating power. Olfaction is directly projected onto the parts of the brain responsible for emotion and memory and are involved in attention.

2. THE SCENT MODULE

This paper presents the concept of scent modules and provides perspectives on scent modules for outdoor use at care homes for people with dementia.

2.1 Design

At Danish care homes the level of accessibility to green outdoor environments is decisive for how often the staff helps the residents to get out there. At most of the care homes, the residents only get help to get out once or twice a week (Hansen & Jessen, 2011).

The scent module design presented in this research is a small wooden construction offering pause and contact to the sensory stimuli of outdoor natural elements. The scent modules can make a significant difference by being adaptable and providing easy access to natural qualities even in small spaces. Parts of the module can be put together in varying ways and thereby adapted to individual cases or specific needs. This means that, depending on the characteristics of spaces, the module can vary in size, number of elements (deck, bench, raised planting bed, pergola), and how the elements are put together. This makes it possible to tailor modules to fit specific outdoor areas and the size, dimensions, features, and exposure to sunlight, wind, and rain.
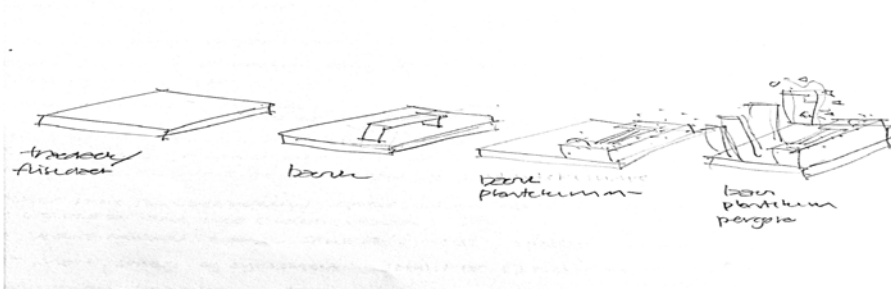
Figure 1. The module and its elements: deck, bench, raised planting bed, and pergola. Sketch by Nanet Mathiasen.

2.2 Use

The module should allow for meaningful, supportive stimulation, movement, balance, and taking a seat in the module. Sunlight, colour, and form activate the sense of sight. Plants and their wealth of positive sensory stimuli stimulate the senses of touch, sound, and taste.

An array of plant scents suggest beauty and pleasure and evoke emotions and memories among the residents. Furthermore, the scents maintain and improve cognitive function.

Scent modules will ideally appear as outdoor attractions that facilitate staff-assisted use, as part of the care program. Stimuli from meaningful natural elements will support the well-being of the residents and ideally lower the use of psychopharmaceuticals associated with negative consequences at Danish care homes.

3. PERSPECTIVES ON SUPPPORTING WELL-BEING

Scent modules can be integrated into health-promoting care and can enhance well-being for people with dementia in several ways.

3.1 Enjoying Moments

Focusing on the present is essential for the well-being of people with dementia, as they often struggle with short-term memory loss. Experiencing plant scents is an activity

which residents can enjoy in the present moment. In this respect, scent modules facilitate meaningful activities and provide something to talk about (if conversation is still possible).

Furthermore, the scents can give pleasure. With its high diversity and complexity, plant scents are some of the finest and most sophisticated smells which the world has to offer (Lacey, 1991).

3.2 Psychological and Physiological Effects

Experiencing plant scents may also evoke emotions and assist in recalling memories (Palsdottir et al., 2021). As the sense of smell is connected directly to the areas in the brain that process feelings and memory, olfactory stimulation may improve understanding of self among people with dementia (Glachet & Haj, 2020).

Scents can affect people physiologically. There is ongoing research on the Japanese practice of "forest bathing" or shinrin-yoku. The intention is that one goes into the forest and improves one's health through sensory stimuli. Researchers have found that scents from conifers can have a direct effect on the vitality of people who spend time around them (Jo et al., 2010; Li et al., 2006).

Figure 2. A raised planting bed providing access to several different plants and their scents:
chive, sage, oregano, lavender, marigold, parsley. Photographer: Victoria Linn Lygum.

3.3 Training Mental Skills

Recent research indicates a connection between the ability to use one's sense of smell and dementia. Reduced sense of smell can be a first sign of dementia, as the parts of

the brain that process this information are attacked by the disease. Resent theories of dementia, therefore, assume that dementia can be decelerated by maintaining and stimulating ones sense of smell through smell training.

An essential aspect of the scent modules is to support the connection between cognitive function and scent. Scent modules provide opportunities for scent training to maintain and improve cognitive skills. Further investigation into olfactory stimulation as a non-pharmacological intervention for people with dementia is necessary (Cha et al., 2022; Cha et al., 2021; D'Andrea et al., 2022).

Scent can thus promote well-being in many ways among the residents. It can arouse pleasure, significant emotions and memories, relaxation or stimulation, and can maintain brain function.

4. DISCUSSION

The detailed design of the scent modules should happen in an evidence-based design process (Hamilton & Watkins, 2009) where decisions are based on current best evidence and in collaboration with end-users. Furthermore, post-occupancy evaluation could strengthen design guidelines and effect of the scent modules.

Scent modules should provide opportunities for simple, easy-to-understand activities that simultaneously afford meaning and joy. Scent modules should be included as part of care programs for health-promoting everyday activities in care homes. It is crucial that staff see the value of using scent modules in achieving well-being among the residents. Scents should facilitate residents being in the moment and enjoying their lives despite illness. The success of scent modules depends on the clear understanding, among care staff, of the value of the activity and its effects. Staff must also understand when and how it can be used with the residents as part of their daily life.

Scent modules are also open for use by relatives e.g. friends or family members. The relatives can have a moment together with the residents where the activity is prescribed and straightforward. Scent modules can initiate meaningful interactions, which is sometimes difficult due to the loss of skills such as recognition and speech among people with dementia. The efficacy of scent modules can be improved through the availability of instructions to assist staff and relatives.

Scent modules will be most effective if they are maintained and cared for as a recognized and integrated part of the operations of care homes and if the correct resources and competencies are available for this.
Altogether, integrating the scent module into everyday life in a purposeful way is essential to reaching the goal of fostering well-being for people with dementia living in care homes.

5. BIBLIOGRAPHY

Ayres, J. A. (2008). *Sensory Integration and the Child: Understanding Hidden Sensory Challenges.* USA: Western Psychological Services.

Cha, H., Kim, S., Kim, H., Kim, G., & Kwon, K. Y. (2022). Effect of intensive olfactory training for cognitive function in patients with dementia. *Geriatrics & Gerontology International, 22*(1), 5-11.

Cha, H., Kim, S., Seo, M. S., & Kim, H. S. (2021). Effects of olfactory stimulation on cognitive function and behavior problems in older adults with dementia: A systematic literature review. *Geriatric Nursing, 42*(5), 1210-1217.

D'Andrea F., Tischler V., Dening T. & Churchill A. (2022). Olfactory stimulation for people with dementia: A rapid review. *Dementi,. 21*(5), 1800-1824.

Detweiler, M. B., Sharma, T., Detweiler, J. G., Murphy, P. F., Lane, S., Carman, J., . . . Kim, K. Y. (2012). What is the evidence to support the use of therapeutic gardens for the elderly? *Psychiatry Investigation, 9*(2), 100-110.

Falsing, R. (2021). *Stadig mange mennesker med demens får antipsykotisk medicin.* København: Nationalt Videnscenter for Demens.

Glachet, O., & El Haj, M. (2020). Smell yourself: Olfactory stimulation improves self-concept in Alzheimer's disease. *Neuropsychological Rehabilitation, 32*(3), 464–480.

Gonzalez, M. T., & Kirkevold, M. (2014). Benefits of sensory garden and horticultural activities in dementia care: A modified scoping review. *Journal of Clinical Nursing, 23*(19-20), 2698-2715.

Hamilton, K. & Watkins D. H. (2009). *Evidence-based design for multiple building types.* Hoboken, New Jersey: John Wiley & Sons, Inc.

Hansen, E. B., & Jessen, A. (2011). *Adgang til natur for beboere i plejeboliger.* København: Anvendt Kommunal Forskning.

Jo, H., Fujii, E., & Cho, T. (2010). An experimental study on physiological and psychological effects of pine scent. *Journal of the Korean Institute of Landscape Architecture, 38*(4), 1-10.

Lacey, S. (1991). *Scent in your garden.* London: Frances Lincoln.

Li, Q., Morimoto, K., Nakadai, A., Inagaki, H., Katsumata, M., Shimizu, T., ... & Kawada, T. (2007). Forest bathing enhances human natural killer activity and expression of anti-cancer proteins. *International journal of immunopathology and pharmacology, 20*(2_suppl), 3-8.

Murroni, V., Cavalli, R., Basso, A., Borella, E., Meneghetti, C., Melendugno, A., & Pazzaglia, F. (2021). Effectiveness of therapeutic gardens for people with dementia: a systematic review. *International Journal of Environmental Research and Public Health, 18*(18), 9595.

Nationalt Videnscenter for Demens (2020). *Sansestimulering.* København: Nationalt Videnscenter for Demens

Pálsdóttir, A. M., Spendrup, S., Mårtensson, L., & Wendin, K. (2021). Garden smellscape– experiences of plant scents in a nature-based intervention. *Frontiers in psychology, 12*, 667957.

Prince, M.J., Wimo, A., Guerchet, M.M., Ali, G.C., Wu, Y.-T. & Prina, M. (2015). *World Alzheimer Report 2015 - The Global Impact of Dementia: An analysis of prevalence, incidence, cost and trends.* London: Alzheimer's Disease International.

Sparre S. L., Winkler A., Andersen, L. S. & Jensen M. F. (2023). *Når arbejdet udmatter. En litteraturbaseret og kvalitativ undersøgelse af omsorgstræthed som fænomen i den danske ældrepleje.* København: VIVE.

Whear, R., Coon, J. T., Bethel, A., Abbott, R., Stein, K., & Garside, R. (2014). What is the impact of using outdoor spaces such as gardens on the physical and mental well-being of those with dementia? A systematic review of quantitative and qualitative evidence. *Journal of the American Medical Directors Association, 15*(10), 697-705.

World Health Organization. (2021). *Global status report on the public health response to dementia.* Geneva: World Health Organization. License: CC BY-NC-SA 3.0 IGO.

L20

BREATHING ECOLOGICAL CONNECTION: THE PERMEABILITY AND INTIMACY OF SCENT

RESPIRAÇÃO DA CONEXÃO ECOLÓGICA: A PERMEABILIDADE E INTIMIDADE DO AROMA

Rowan Tandiwe Watson
Lecturer
Atlantic Technological University, Sligo
Rowan.Watson@atu.ie

Serena Ferreira Oliveira
Graduate
Atlantic Technological University, Sligo
S00248687@atu.ie

ABSTRACT

Architecture often focusses on the visual and the seemingly separate, solid materials of buildings. In contrast, this paper explores how scent and breathing underscore the fluid, interconnected reality of our interactions within our environments. It discusses how scent and the act of breathing are associated with a sense of permeability, bonding, and ecological connection. The paper draws on research from Architecture and Interior Design to illustrate how smell can affect us, evoking place-memories linked to interpersonal connections. It also considers movement memory and the experience of breathing, highlighting that our encounters with air serve to remind us that space is filled with substances that envelop and permeate us. The study relates the design consideration of these sensory experiences to an ethical ecology. It advocates for design practices that foreground our deep physical and sensory interconnections with people and environments, thus fostering a relational and ecological awareness of place.

KEYWORDS: scent. breathing. permeability. ecological. bonding. memory. architecture. interior design.

RESUMO

Arquitetos e designers de interiores costumam focar no visual e nos materiais sólidos como madeira e concreto. No entanto, este artigo destaca como o odor e a respiração revelam a realidade fluida e interconectada de nossas interações ambientais. Discute-se como o cheiro e respirar relacionam-se com permeabilidade, conexão ecológica e intimidade familiar. Baseando-se em pesquisas de pós-graduação e doutorado em Arquitetura e Design de Interiores, o estudo explora a ligação entre cheiros, memória do lugar e interações humanas. Aborda também as memórias de movimentos proprioceptivos, ressaltando como nosso contato com o ar e fluidos, além dos sólidos, nos faz lembrar que estamos envolvidos e permeados pelas substâncias ao redor. O artigo argumenta que atenção a essas experiências sensoriais fomenta uma "ecologia ética", enfatizando práticas de design que reconhecem nossa interdependência com o ambiente e promovem uma consciência relacional e ecológica do espaço.

PALAVRAS-CHAVE: aroma. respiração. permeabilidade. ecológica. vínculo. memória. arquitetura. design de interiores.

1. INTRODUCTION

For architects and interior designers much of design practice can be dominated by visual experience, with olfactory experience remaining neglected (Matheny, 2016; Lupton & Lipps, 2018). Furthermore, design tends to foreground the seemingly permanent, separate, and solid materials used in construction, such as concrete, stone, wood and glass, forgetting that the space surrounding us "is not empty" (Hay, 2020). Such perspectives strengthen perceptions of distance, distinctness, and separation from our surroundings. In contrast, the experience of smelling, and

simultaneously inhaling the particles of matter perceived as scent, emphasizes the fluid and 'entangled' nature of our bodily interactions within spaces (Barad, 2007). This paper uses excerpts from research studies in Architecture and Interior Design to illustrate the experiences of connection, permeability, and openness that accompany the sense of smell, the act of breathing, and our physical interactions with the air surrounding us. The paper supports phenomenological and ecological perspectives and methodologies that emphasize relational and situated ways of knowing the ecologies surrounding us (Rawes, 2013; Barad, 2007; Code, 2006; Spretnak, 2011; Braidotti, 2022). It posits that the act of becoming infused with our surroundings is inherently intimate, fostering awareness of the relational nature of reality and highlighting that we are part of, rather than separate from, our social and natural surroundings (Spretnak, 2011).

2. FRAMING THE RESEARCH

The paper is informed by a graduate research project that investigated the relationship between scent and memory, and PhD research[1] that explored the proprioceptive imagination of place during movement.

The graduate study aimed to explore the relationship between smell, place and memory, through participant narratives. It focused on the memories of places evoked by specific aromas. Utilizing a qualitative methodology, the research was conducted in two phases. Data collection involved open-ended interviews with 11 participants, and thematic analysis was used to identify patterns and themes from the transcribed interviews. Post-interview analysis revealed two main themes, (i) inter-human connection and bonding, and (ii) the emotive potency of smell. These themes suggested that smells can emphasize human connections, evoking intensely felt reminiscences, and highlighting the bonding experienced during shared activities. The findings emphasized links between olfactory experiences and the emotional strength of related memories, suggesting that integrating scent into design can support environments that resonate more deeply with occupants.

---

1 Research at Birmingham City University supervised by Professor Rachel Sara, Professor Victoria Hunter and Dr Jieling Xiao.
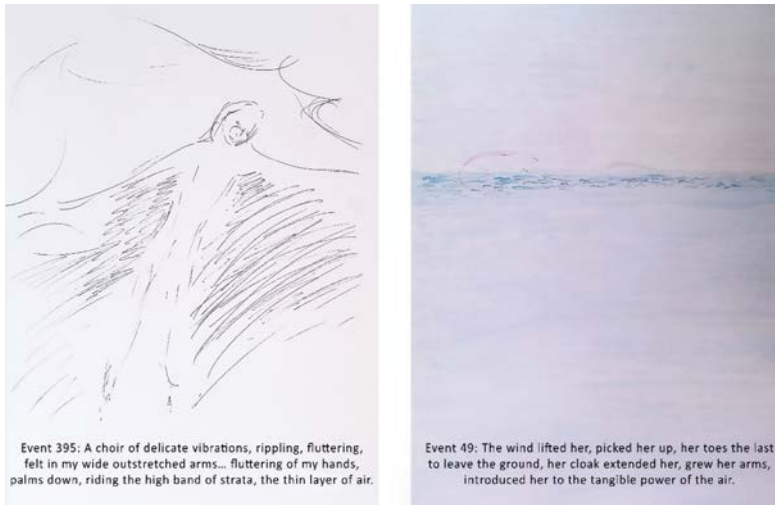
Figure 1. Airy places imagined during open, extended movement.
Source: Adapted from author's sketch-journals (2014).

The paper is also influenced by the first phase of a transdisciplinary practice PhD that developed a new way of using movement praxis to embody site and design experience. The research phase that informed this paper aimed to identify several movement-place associations. To these ends, 365 involuntary mental images of places were captured during studio-based movement. Post-practice analysis revealed several connections between the movement and the place qualities imagined. These included a direct connection between the sensations of contraction, expansion or fluidity in the moving body and concurrent imagined surroundings being solid, airy, or liquid. The imagination of airy scenes was triggered by movement that felt expansive, delicate, and open as illustrated in the imagery evoked during movement events 49 and 395 (see Figure 1).

3. FEELING BREATH AND OPENING TO THE AIR
3.1 Openness of interactions with air

This movement experience provided a reminder that the relationship between the air and our moving bodies is characterized by experiences of openness, permeability, and immersion. Movement that evoked the imagination of the sky or airy scenes typically included the sensation of stretching and opening, with arms spread or raised opening the upper torso. As illustrated in Figure 2, these movements expanded and lifted the ribcage. Such opening of the torso was accompanied by the sensation of expanding the lungs to welcome air in, foregrounding the contraction and expansion of the body in permeable interaction with its surroundings.
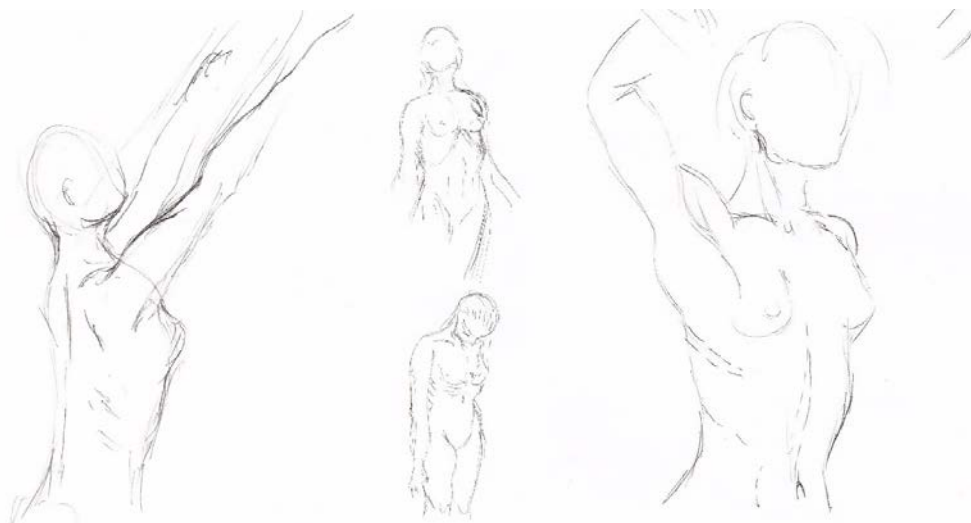
Figure 2. Opening the torso to air and sky.
Source: Author's studies adapted from Calais Germain (1993).

3.2 Body-place permeability

An awareness of both our porosity and the permeability of the boundaries between our body-selves and our surroundings would continue to influence the second phase of the PhD. When walking the future building-site, breath served as a gauge of the changing conditions surrounding my body, whether breathing in wetness or aroma or dust. During this action, awareness of the aromas on site would be accompanied by the sensation of becoming wetter, dryer, colder, or warmer internally on the in-breath, and of releasing my own body's moisture and heat on every outbreath. As illustrated in Figure 3, breath served as a reminder that we are both permeable and soluble, "entangled" and indivisible from the matter of our surroundings (Barad, 2007).

Figure 3. Being permeable and soluble.
Source: Author's doctoral dissertation (Watson, 2023, p.122).

3.3 Breathing and feeling

In this manner the act of breathing, of absorbing and then releasing, connects us physically to the matter of place. In mindfulness and meditation practices, awareness of the breath is used to support awareness of the body in the present moment (Eddy, 2016). However, the way in which we breathe is also linked to our emotional state and openness, or receptivity, to our surroundings (Eddy 2016). Relatedly, breath-work has been used as a core practice across four generations of somatic movement education and therapy (Eddy 2016). To summarize, when smelling something, we breathe in. In this moment we inhale the air, taking in its particles. This act connects us to the matter of our surroundings, and how we engage in the action of breathing is also linked to our emotional state and our feelings towards the world surrounding us.

4. SCENT, MEMORY AND CONNECTION

The sense of smell has a strong capacity to evoke memories (Herz, 2007). Conceivably, memory is significant in architecture because it reflects our cultural identity and embodies our history, traditions, and values (Bastéa, 2004). Furthermore, memory influences our understanding of space, place, and identity (ibid). Pallasmaa (2012) proposes that "a particular smell makes us unknowingly re-enter a space completely forgotten by the retinal memory" (Pallasmaa 2012, p. 58). As illustrated by Pallasmaa (2012), smell can reconnect us to memories of places and events we have forgotten. Relatedly, the relationship between smell and associated memories of place was explored during 11 interviews. Analysis of the participants' narratives revealed associations between scent and place-memories that were characterized by emotional strength and inter-human connections. As illustrated in Figure 4, the most common words used to describe the memories evoked by smells included "happy," "nostalgia," and "family", highlighting both an association with meaningful family activities and the emotive associations of the memories.

Figure 4. Most frequent words in participant narratives.
Source: Adapted from author's unpublished dissertation (Ferreira Oliveira 2024, p.19).

4.1 Emotional potency of scent-triggered memories

Rachel Herz proposes that "there is no doubt that our sense of smell is more intensely and intimately linked to our moods and emotional life than any of our other sensory experiences", (Herz, 2007, p. 97). Likewise, Lupton and Lipps (2018) propose that when we encounter a fragrance from our past, it evokes potent emotions (Lupton & Lipps, 2018). As illustrated in Figure 3, the research participants described memories evoked by scents as significant, incorporating a sense of nostalgia. The Collins English Dictionary defines nostalgia as "a yearning for the return of past circumstances", or "the evocation of this emotion", (HarperCollins, 2018, section Nn). For example, Marcel Proust depicts an involuntary memory triggered by scent and the experience of a madeleine dipped in tea, as evoking a flood of reminiscences (Proust, 1913, cited in Lupton & Lipps, 2018). Likewise, participants Jen, Connor, John and Sarah, described the memories evoked by scents using expressions such as "immediate", "significant", "very strong", and "nostalgia". These memories often evoked reminiscent emotions such as "happiness" or "sadness". The emotional potency of these memories is illustrated in the following interview excerpts:

> Jen: "Yeah, I think nowadays, especially because he passed away a few years ago. So, I think if I smell [turf] immediately, I am like, oh his home. There is this connection to this smell and his home for me."

Connor: "I grew up in [a] more rural Ireland and now live in the city. So, [turf] is something that I don't smell very often; and when I do it brings back a lot of nostalgic memories."

John: "[It]definitely brings me back to being in the bog when I was a kid. I used to do it every summer. So that's very strong memories [of turf], a lot of nostalgia."

Sarah: "Everyone is in just such a right state of mind by the sea... I feel like it just washes everything away. Like, I know that's such a cliche thing."

The smells described evoked strong sentiments for all, often tied to family and shared experiences. The bog's scent reminded John of childhood labor with family and friends, and Connor's memories of burning turf and rural Ireland were tied to moments of togetherness with his mother by the fireplace. These olfactory cues highlighted the influential role of sensory experiences in recalling and reinforcing strong interpersonal bonds, with linked emotional responses that reinforced the participants personal and family identities.

4.2 Inter-human connections and bonding

In all cases, participants reported a scent and memory linked to a place or activity that fostered connections with families and friends (see Figure 5).
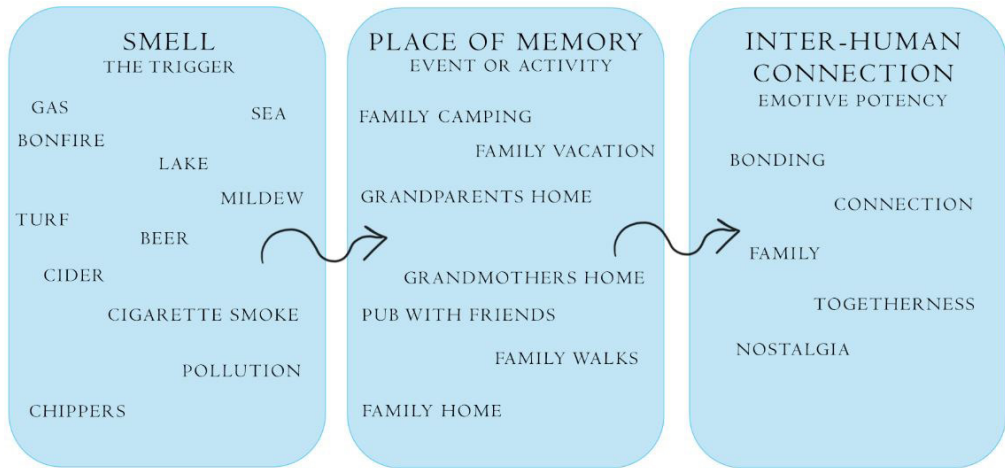
Figure 5. Aroma evokes memory of situation with associated feelings.
Source: Adapted from author's unpublished dissertation (Ferreira Oliveira, 2024, p.19).

As illustrated by Aoife, Connor and Jen, specific smells evoked memories of shared experiences, activities, and traditions with family members:

> Aoife: "The smell of bonfires, or just smoke in general like open barbecues, reminds me of summers when me and my whole family would go camping."

> Connor: "My family does still burn turf at home. So, when I visit home, I'm flooded with the memories of my past experiences."

> Jen: "My granddad would live in this old cottage that wasn't built well and had a very old-fashioned stove. I was born in a different country and when coming over the biggest thing that I remember is that turf smell."

These olfactory triggers served as a gateway to cherished memories, strengthening their emotional impact, and reinforcing shared experiences and familial bonds. Most participants described how smells associated with shared activities, such as cooking or sitting by the fire, played a significant role in bonding experiences. These olfactory memories contributed to a sense of togetherness and community, as activities related to specific smells brought family members together. For example, Aoife's family created lasting connections during camping trips, and Jen cherished activities around her grandfather's home. These shared experiences and sensory cues reinforced awareness of familial ties, creating a sense of unity and lasting memories.

5. BREATHING, SCENT, CONNECTION & ECOLOGY

This paper posits that both the potency of memories evoked through scent, and scent's association with shared situated expériences, are reinforced by the essential

nature of the acts of smelling and breathing. The acts of breathing in and sensing a smell occur almost simultaneously. These paired actions combine a permeable opening of the body with a bonding between odorant molecules of place and olfactory receptor cells (Buck & Axel, 1991). In other words, the particles we smell enter and change us. Furthermore, during activities such as experiencing a fire, or eating together, the aroma particles of that situation become bonded to and affect all participants (both human and other) alike. Both the particles of place-event, and associated memories and feelings, become a shared internal patina.

Charlene Spretnak (2011) argues that there is a growing recognition that all creatures are both "composed of and nested within…dynamic and reciprocal relationships" (Spretnak, 2011, p. 4). Similarly, Karen Barad points out that "bodies are not objects with inherent boundaries and properties" but rather "discursive phenomena" (Barad, 2007, section Mat., par.23). Both argue that awareness of being part-of rather than separate-from, awareness that "we are all in this together" (Braidotti, 2022, p. 78), supports ecological ways of thinking and being. For the reasons discussed, aromas serve to remind us of physical connectedness with both humans and other species, awareness of each other's presence and of the shifting conditions of the air and events that we share. In urban contexts, dominated by human constructs, connection to the scents of other life becomes a precious reminder of our interconnectedness, supporting care for biodiversity. Thus, perception of surrounding scents is an inherently relational aspect of the way we understand and remember our environments and each other, supporting ecological attitudes to each other and our surroundings.

6. CONCLUSION

This paper argues that the act of becoming infused with our surroundings is inherently intimate; fostering awareness of the relational nature of reality, and highlighting that we are part of, rather than separate to, our natural surroundings (Spretnak, 2011). Interviews from a graduate research project provide examples of how scent can trigger emotionally evocative memories of places and events that recall bonding activities and connections with others. Such memories can further strengthen interpersonal ties through memories of shared experiences. Likewise, movement records from a practice PhD link the awareness of breath with the physical sensations of being open, permeated, and in intimate physical exchange with the surroundings. Thus, the act and sensation of inhaling the matter of our surroundings accompanies an awareness of its smells, strengthening a related sense of physical connection to the environment and the species therein. As humans, we are deeply dependent on, and interconnected with our communities and environments. The implications for design are that by understanding the impact of olfactory cues on memory and utilizing significant aromas, designers can create spaces that can resonate more deeply and permanently with occupants. Relatedly, attending to scent in design can foster a deeper ecological sense of connection and belonging between places and people.

7. BIBLIOGRAPHY

Barad, K. (2007). Meeting the Universe Halfway: Quantum physics and the entanglement of matter and meaning. Duke University Press.

Bastéa, E. (Ed.). (2004). Memory and Architecture. University of New Mexico Press.

Braidotti, R. (2022). Posthuman Feminism. Polity Press.

Buck, L., & Axel, R. (1991). A novel multigene family may encode odorant receptors: a molecular basis for odor recognition. Cell, 65(1), 175–187. https://doi.org/10.1016/0092-8674(91)90418-x

Calais-Germain, B. (1993). Anatomy of Movement. Eastland Press Inc.

Code, L. (2006). Ecological Thinking: The Politics of Epistemic Location. Oxford University Press.

Eddy, M. (2016). Mindful Movement: The Evolution of the Somatic Arts and Conscious Action. Intellect Books Ltd.

HarperCollins. (2018). Nostalgia. In Collins English Complete and unabridged (13th ed. Section Nn).

Hay, D. (2020). My practice now. Embodiment Conference. https://portal.theembodimentconference.org/sessions/non-discriminatory-learning-3j35aa

Herz, R. (2007). The Scent of Desire: Discovering Our Enigmatic Sense of Smell. William Morrow.

Lupton, E., & Lipps, A. (Eds.). (2018). The Senses: Design Beyond Vision. Chronicle Books.

Ferreira Oliveira, S. (2024). Inhaling Memories: Exploring the Associative Power of Scent. (Unpublished dissertation). Atlantic Technological University, Sligo.

Pallasmaa, J. (2012). The Eyes of the Skin. Wiley.

Rawes, P. (2013). Relational Architectural Ecologies: Architecture, Nature and Subjectivity. Routledge.

Spretnak, C. (2011). Relational Reality. Green Horizon Books.

Watson, R. T. (2023). Place Trace: Embodying Site and Architectural Experience through Movement Praxis. (Doctoral dissertation). Birmingham City University.

SMELLING TOXIC ENVIRONMENTS IN DYSTOPIAS: IMAGINATION, THE NON-HUMAN, AND CLIMATE SOLUTIONS

CHEIROS DE AMBIENTES TÓXICOS EM DISTOPIAS: IMAGINAÇÃO, O NÃO HUMANO E SOLUÇÕES CLIMÁTICAS

Chanelle Dupuis
PhD Student
Brown University
chanelle_dupuis@brown.edu

ABSTRACT

What do dystopias tell us about the future of scent? In a post-pandemic and climate change context, dystopic texts have much to teach us about future scent ecologies. There is creative power in imagining future societies that can reveal important details about our relationship to the smell of our environments. In this paper, I discuss two contemporary dystopias from 21st century French and Francophone literature that highlight the smells of insects and animals and the smells of a climate-change impacted world. Focusing on the novels *Les aigles puent* (2010) by Lutz Bassmann and *Frappabord* (2024) by Mireille Gagné, this project examines the imaginative, creative, world building of dystopic futures to expand the possibilities of odors and their role in describing toxic atmospheres. These novels provide interesting, imagined societies where the smell of nature is shifted due to human behavior and access to air, and breathing, becomes a struggle.

KEYWORDS: smell. dystopias. climate change. imagination. air.

RESUMO

O que as distopias nos dizem sobre o futuro do perfume? Em um contexto pós-pandemia e de mudança climática, os textos distópicos têm muito a nos ensinar sobre as futuras ecologias olfativas. Há um poder criativo na imaginação de sociedades futuras que pode revelar detalhes importantes sobre nossa relação com o cheiro de nossos ambientes. Neste artigo, discuto duas distopias contemporâneas da literatura francesa e francófona do século XXI. Com foco nos romances *Les aigles puent* (2010), de Lutz Bassmann, e *Frappabord* (2024), de Mireille Gagné, este projeto examina a construção imaginativa de futuros distópicos para expandir as possibilidades de odores e seu papel na descrição de atmosferas tóxicas. Esses romances oferecem sociedades interessantes em que o cheiro da natureza é alterado devido ao comportamento humano e o acesso ao ar e à respiração se torna uma luta.

PALAVRAS-CHAVE: cheiro. distopias. mudança climática. imaginação. ar.

1. INTRODUCTION

Walking through a city destroyed by technologically advanced bombs that instantly liquify bodies, Gordon Koum smells the tar of the destruction left behind, a tar that evokes, "the coal residue, the animal fat, and the black space in which the dead walked all at once[1]" (Bassmann, 2010, p.19). This black substance, *goudron* in French, the noun that inspires the name Gordon, has a scent that cannot be clearly defined. Instead, it can only be described in association with other objects or spaces, in this case by describing the odors associated with coal, animal fat, and the black realm of the dead. These things might be thought of as sticky, pungent, humid, metallic, or earthy but there remains in this odor association a level of abstraction and

---

1 All translations are my own unless otherwise noted.

indefinability that is central to the representation of smells in this text. And while we may have personal experiences with coal or animal fat, the realm of the dead exists as an unknowable space.

Dystopic texts present imagined and creative rewritings of odors that stage new environmental relationships. Suddenly, odors mark severe environmental change and carry new communicative potential. Animals and insects navigate the world through odors and use these to converse in new ways with humans. Dystopias are thus interesting texts through which to think about future scent ecologies, climate change, and solutions to the current environmental crisis. How do authors imagine the future? What do these future scenarios have to teach us about our actions and perspectives towards nature? The writing of environments, the staging of breathing, the description of airflow, and the attention given to nonhuman lives all display new environmental possibilities that are "good to think" (Galeano and Adamson, 2016, p.224). That is, these stories and their invented smellscapes can help imagine more sustainable futures, they can be read as cautionary tales.

Lutz Bassmann 's *Les aigles puent* (2010) follows Gordon Koum's grief as he discovers that his entire family has been annihilated by a powerful new bomb. In a world dominated by constant war with "the enemy," the stench of chemicals, fire, and death is unbound. Koum at first tries to ignore the odors around him but then gives in and recognizes the necessity of witnessing and telling the stories of the dead. He details the scents of warfare and world destruction and the political power that orchestrated this dismantling. With mutual extermination at hand in this war-obsessed society, the smell of the end of the world sweeps off the page.

In Mireille Gagné's *Frappabord* (2024), a 1942 experiment on horse flies goes wrong and a dangerous virus is incubated in the fly population of Québec. Years later, the flies begin to bite humans and spread a disease that causes a fever and uncontrolled rage. As Canada experiences record-breaking heat, people become sick and violence spreads in the streets. Théodore must reconcile with his grandfather and figure out what has gone wrong in the world, starting with the flies.

Although these novels come from different regions of the French-speaking world, one from Québec and the other from France, their subject matter, dystopic imaginings of a society beyond grave environmental change, make them ideal texts for comparison. This genre has become "increasingly prevalent in literary projections of possible futures" and highlights a contemporary urgency to think deeply about questions of environmental change (Vakoch 2). Furthermore, both authors write works that attempt to reduce the human to its most primitive, simple condition. Lutz Bassmann writes about, "that which is human, the primitive" (Leménager, 2010) and Mireille Gagné likewise wishes to understand the utility of horseflies and how to cohabit the world with them (Charuest, 2024). They both attempt to write about the essential qualities of the human experience and, in doing so, both consider the

role that smell plays in navigating the world. Two representations of a world beyond environmental collapse offer differing engagements with smell and together take part in a productive conversation on imagination, political power, and toxicity.

In this paper, I will focus on representations of air, the notion of imagination, and non-human perspectives to highlight how French and Francophone dystopic texts of the 21st century bring new light to the environmental crisis and help us imagine a more sustainable future. Using a smell studies lens and turning to recent theoretical work on air and toxicity in the environmental humanities, it will be shown that smell is a powerful sense through which to think about climate change and our current post-pandemic world.

2. WRITING AIR(S)

In a climate-impacted world with new viruses and weapons unleashed in the air, atmospheres are shifted, and toxic air becomes the norm. The poisoning of air makes living a suffocating experience, and this can be seen in the way that authors describe breathing and in descriptions of odors carried by the wind.

In Bassmann's *Les aigles puent*, the air is poisoned by new bombs, as a poisonous gas spreads throughout the city. This city is said to be "polluted forever" (Bassmann, 2010, p.94). These new types of bombs, similar yet more destructive than atomic bombs, send out radiation for miles and destroy the natural world. Walking on the earth after these catastrophic events is, "walking on an unknown ground, revolting, where no detail could evoke a sentiment of familiarity or sympathy" (Bassmann, 2010, p.142). Bodies become infiltrated by toxins to such an extent that it is close to impossible to find meat and vegetables that aren't contaminated (p.61).

This futuristic world set beyond the climate change crisis and after a global chemical war stages breathing as an exhausting necessity. As one character explains, "Breathing with the nose was now problematic, and often, to get the air we needed to survive, we needed to open the mouth like half-drowned people or fish out of water, with the same feeling of urgency and the same debilitating impression that we were coming into contact with death" (Bassmann, 2010, p.99). Conjoined with smells of rot and decay, the mouth inhales this terrifying exterior. Breathing in this text is associated with choking, it is an everyday struggle. The comparison between taking in air and feeling like a fish out of water, asphyxiating, emphasizes the harshness of breathing, the lack of clean air. Although air is often invisible, here it is made visible. As Bruno Latour says, air is "fragile, it's technical, it's public, it's political" (2006, p.2). By making air visible, we see in this text how it can be manipulated for political reasons, in this case, to win a war and destroy the "enemy".

Similarly, Mireille Gagné's *Frappabord* depicts a world in the middle of a heat wave as flies spread a global disease. The "intense heat and dryness" is seen as "irrefutable

proof of climate change" (Gagné, 2024, p.30). With 40-degree Celsius heat and the ever-present smell of sweat, people find themselves "searching for air" (p.21). Although this dystopia is not one of chemical warfare, the focus on air is as intense. Air is not only breath but also weather, wind, and movement. As Nerea Calvillo puts it, "Air is sound, radiation, wind, pressure, temperature...it is smell, vision, erosion, movement, communication..." (2023, p.22). Calvillo explains that we should rather talk of *airs*, not air (p.25).

The factory worker Théodore details how quickly the oxygen leaves a room when the doors are closed to protect workers from the flies outside. He says," The temperature will climb. The lack of light will be overwhelming. Choking. Asphyxiating. The majority of employees will be on edge and it will degenerate quickly. It always degenerates. People can't hold back their emotions" (Gagné, 2024, p.35). Gagné focuses not only on the body's need for fresh air but also the emotional, mental, impact of living in these conditions. She describes how closed-in, warm, overheated, spaces cause people to become irritable and violent; the problems of this dystopic Québec are social, not only environmental.

Similar to Bassmann's mouth-breathing citizens, Théodore in Gagné's text notes that oxygen takes a long time to fill his lungs (p.108). His head hurts, he feels thirsty and is covered with bug bites; the reader can feel his confinement, his dizziness in this warm, heavy, world. Both texts place emphasis on the importance of air for living. They both imagine what it would feel like to not have enough oxygen, to have to worry about getting enough air in one's lungs. Gagné's text especially was written in a post-pandemic context, where we see a renewed sensitivity to the air we breathe. In our world today, "inhaling and exhaling have become health risks with social and political consequences" (Calvillo, 2023, p.85). Both authors call for a need to find solutions to our world's warming, unevenly distributed airs. As Hsuan Hsu explains in his recent book on air conditioning, this technology [air conditioning] is "unsustainable and unevenly distributed" (2023, p.2). Since "air is notoriously difficult to represent" (Hsu, 2023, p. 4), these types of texts are important because they give embodied examples of air in climate-change impacted worlds. What was once unthinkable becomes tangible, visible, and moving.

3. IMAGINED SCENTS

Imagination, a pillar of literature, allows for creative, innovative, descriptions of past and future worlds. In this section, I theorize imagination as a way to rethink the cultural and social functions of smell. In the dystopia, smell/ing is not limited to its real-world functions, it attains new possibilities. I am interested in how authors invent new odors and new ways of relating to the world. By imagination, I mean, "the human capacity to construct a mental representation of that which is not currently present to the senses" (Gotlieb et al, 2019, p.709). I follow Gotlieb et al. in viewing imagination as important for perspective taking and temporal navigation (2019, p.709).

"From the rubble came a strange odor, one of rust, of sweet, expired oil," writes Lutz Bassmann, when describing the war-torn city of Gordon Koum (2010, p. 141).

Bassmann invents new scents and provides creative descriptions of these. In this world, new weapons are built, and these new-age bombs and chemicals give off strange odors that the main character of the text struggles to describe. One of the bombs leaves behind a smell of rust and oil, a new combination of compounds. The technological innovations of this society also involve new substances like sticky glue and magma that line the streets. The scent of this sticky substance is described as:

> Odors of melted metal, liquified organisms, immemorial fire, oily rags, prehistoric rags, oily rags imbued with blood, excremental mash, decomposed vegetables, decomposed animals, the smell of torches, of living torches, of dead torches, of half-alive precipitation, smells of a terminal bog, of terminal petrol, of poisoned canalizations, lyophilized steel, chemical relics, of coal residue (Bassmann, 2010, p.144)

The air smells metallic, bloody, putrid, rotten, poisoned, and toxic. It reminds Gordon of death, coal residue, animal and vegetable products. He uses different nouns and imaginative constructs (like half-alive precipitation) to try to explain what he has encountered. The list of objects gives rise to a general feeling of malaise and dismay. This tapestry of odors stinks to Gordon's nose, he describes the smell of this bomb as an undefinable stench. Here we see an example of how stench is, "an unmistakable symbol of the abuse of power, of a power that has degenerated into violence and is aimed directly at the annihilation of its subjects, who are reduced to victims" (Rindisbacher, 145). The destructive nature of the bomb lies not only in its explosive quality but its scented molecules that traverse spaces and harm the well-being and sense of security of individuals.

Bassmann imagines new innovations that worsen already toxic environments and, in this world of political control and differentiated spaces, not everyone has access to the same air quality and scents. There is an emphasis on the violence of human technological power and the invented odors show the potential magnitude of harm.

For Mireille Gagné, imagination is a way to stage a critique of how humans view the non-human world. As a writer known for her ecocritical, post humanist writing, she brings attention to the importance of equilibrium in our ecosystems and the fragility of human life (Miró, 2023, p.96). Her text reimagines the pandemic, this time in a world where horse flies carry a potent virus that makes people rageful and feverish. Québec, in this novel, sees a rise in cases of domestic violence and arrests as factories start to replace humans with machines. It is the military that is responsible for having created this "fearsome biological weapon" (Gagné, 2024, p.75). Anthropocentric decisions cause the demise of humans and the text reads as a warning against the use of biological warfare.

Imagining end-of-the-world scenarios can propel creative action in the present. Gagné proposes a horsefly that comments on the rising temperatures, "I was confident that the heatwave would persist. You had sufficiently perturbed the climate to allow the pursuit of this cycle...I had transmitted to you more than a simple bite. Our rage, now yours"

(Gagné, 2024, p.177). Giving the fly a voice is one way to reimagine the importance of "listening" to our environment, something I will dive into in the next section. But more importantly, the fly here is talking about rage, a rage that no longer belongs to the fly but to humans. This rage can be interpreted as anger at human actions, a profound disagreement with the order of things. There is a reversal of power at the end of the book and the fly is now in a position of power as the carrier of a potent disease. Since "imagination is the seed that may ultimately produce the rare fruit of creativity" (Gotlieb et al, 2019, p.723), this type of temporal imagining gives space for new reflections on the climate crisis. By imagining that new beings, the flies, are the central sniffers, then new questions arise about odors and future scent ecologies. What smells are to be protected? What smells hold meaning? How do different species imagine smellscapes of the future?

As the literary theorist Northrop Frye emphasizes, "literature is the product of and belongs to the world of imagination" (Goldman, 2007, p.811). For Frye, imagination encourages tolerance, it "contributes to ethics by reinforcing tolerance for others" (Goldman, 2007, p.811). Imagining new smells and new relationships to odors encourages a consideration of different ways of smelling. It encourages a new consideration of the role of smell, the importance of odors in the navigation of environments and everyday life. Imagination in literature pushes forward ethical questions, and in these dystopic texts, the questions almost always involve odors. For these authors, we can smell climate change, and shifting smells is an indicator of a harmed, denaturalized environment.

4. NON-HUMAN ENCOUNTERS

Both *Frappabord* and *Les aigles puent* represent non-human lives and focus on the smell of non-human characters. From eagles to flies, the novels focus on the noses of non-human beings and present interactions between humans and non-humans where smell is central to communication and meaning making. Smell makes other worlds, other perspectives, accessible. In this section, I will use Mathew Arthur's concept of *smellworlds* to talk about how various worlds of smell – from the human to the insectile- interact and communicate (2022).

As the title of this novel suggests, the eagles stink [les aigles puent] in Bassmann's dystopic world. Leonal Baltimore is hired to clear the eagle nests that have been built on top of his employer's building. He goes to the top of the roof and is shocked by the scent of the eagles who "stink, the eagles lose their dirty feathers when they move their wings, the eagles bring, on the gray surface of the roof, the toxic dust deposited by the smoke of the bombs" (Bassmann, 2010, p.108). At first, Leonal is upset with the eagles and blames them for carrying such an intense stench on their bodies. As he continues cleaning and notices the bombs dropping around him, he starts to smell napalm and other toxic chemicals. In this moment, he recognizes that the smells on the eagles aren't scents natural to these birds but rather the smells of toxic chemicals that stick to the feather of the birds and infiltrate their bodies. The eagles do not stink, rather, chemical warfare stinks.
Leonal restructures his relationship with the eagles and decides that he loves them again.

He notices that, "Now he likes them again...he asks them to forgive him for disturbing their wild existence due to his employer's orders" (Bassmann, 2010, p.111). He relates to the eagles and recognizes that they smell just like him; both Leonal and the eagles are victims of the smellscape-altering war weapons dropped on their environment. Like Mathew Arthur claims, "we feel smell. It moves us." (2022, p.1). This moment of solidarity between eagle and man, between the human and non-human world, shows that the blame for "stench" is neither the poor factory worker nor the eagle removed from its natural habitat. Rather, Bassmann brings the eagles and Leonal together to compare their situations and to show that systems of power and control are far greater than both. Later on, the eagles and Leonal find a type of solidarity as each becomes the witness of the other's death. This final act of dying together marks both as victims of the environmental disaster unleashed by human actions. In facing the current climate crisis, it becomes clear that, "climate change policy fails to consider the value of the non-human world" (Katz, 2020, p.24). By engaging with the smell of birds, Bassmann's novel goes beyond the human world to consider how the smell of the natural world is impacted by human actions and how humans then respond to the scents of other species.

Gagné similarly focuses on the non-human by making a horsefly a central character of her story. The *frappabord* speaks in first person throughout the text and starts and ends the novel. The book is intertwined with chapters from the perspective of human characters and chapters from the perspective of the horsefly. On the first page of the text, the fly explains, "I notice you from afar, attracted by your movements...I advance cautiously and inhale your odor. You all possess different scents" (Gagné, 2024, p.9). We are introduced to the world of the horsefly, a world where the fly tracks down its next victim and notices every sensory detail about the person they are following. The sensory world of the horsefly is different from the human world, and we are entered in this insectile sensorium. As the fly surveys Théodore, it says, "your smell was naturally exciting, a mix of sweat and of metal that evoked your blood. Even from a distance, my senses were sharp, enlarged and refined." (p.106). The fly identifies the human's blood and is excited by the information that this smell holds. Gagné describes the world from a perspective we rarely consider, the perspective of a fly. Making a minuscule insect such as a fly the central character reverses the typical hierarchy of perspective offered in novels. Suddenly, this being that some would call a pest is telling us their side of the story and teaching us about their methods of survival.

The focus on an insect, the smallest of overlooked beings, gives rise to fascinating textual descriptions. From paragraphs on tracking and biting to descriptions of reproduction and habitat, the fly is an entry point into a different consciousness of the world. When speaking to their opinion of humans and the human footprint on the world, the fly shares a brilliant ecological discourse condemning the actions of humans:

> You have broken the mechanism to such a point that we are at a point of no return. It's only a matter of time before you are ejected. The Earth won't be able to stand you much longer. I dream that she expulses you from her giant throat,

like throwing up a bad bite of food. I will celebrate, we will scream with pleasure, finally liberated from your presence, from your failure. No one has signed a contract to live with you eternally. (Gagné, 2024, p.152)

This fly dreams of an Earth that no longer bears the weight of the human world. The fly points out that the Earth will live on without humans and that no one wants to live with humans forever. She is putting the blame of the climate crisis on humans and noting that many species feel attacked by human actions. By writing in this style, the message becomes clear, humans have hindered the natural equilibrium of Earth to such an extent that even the smallest fly sees this. This non-human perspective to climate solutions shows how the insectile can play a role in the "production and deconstruction of the subject," (Collignon, 2023, p.6). Since the fly represents a certain formlessness and always points back to a multitude (a multitude of flies hatching from the same source), the fly deconstructs the human subject and brings the idea of a human literary character into question. Who is the protagonist of Mireille Gagné's text? Who smells and who is doing the smelling? We can follow the philosopher John Nolt in agreeing that every living thing, whether sentient or not, should have some moral significance (2020, p.13). In this instance, the fly becomes more central to the text than the human characters, and it is the fly that gets to say the last word.

When including non-human characters, dystopias show that the world has always been more-than-human. These two dystopic texts are highlighting the smells of and the noses of non-humans in innovative and thought-provoking ways that push the climate discussion into new realms. The writing of these future worlds shows that every living being is impacted by changes in our environment and that climate solutions should consider the habitats and needs of all beings.

5. CONCLUSION

The two novels analyzed in this paper show how dystopic texts turn to odors when imagining future, toxic environments. The resounding question seems to be: What kind of world do we want to live in? Both texts highlight the importance of balance, sustainability, and the dangers of war and violence. Central to these texts is the description of air, when the air is polluted, all lives are at risk. In imagining new worlds and new relationships to smell, it becomes possible to see new ways of relating to others. When authors invent odors and shift the way individuals relate to smells, our limited view of how smell is "supposed" to function is expanded and we can imagine new possibilities for smell. These dystopias show that the future of scent involves all species. Smellworlds are multiple and intersecting, and these must be in balance for sustainable, productive environments. Bassmann and Gagné, if anything, push us to recognize non-human perspectives and to pay attention to the smells of our environment. At the very least, we should view the scents of our environment as fragile, temporary, and a vital part of our global heritage and history.

6. BIBLIOGRAPHY

Athur, M. (2022). *Smellworlds*. Redolence and Resonance. 3E Land Booklet.

Bassmann, L. (2010). *Les aigles puent*. Verdier.

Calvillo, N. (2023). *Aeropolis.* Columbia University Press.

Charuest, E. (Janvier 2024. Interview with Mireille Gagné, "Le livre Frappabord et le personnage mordant de l'autrice Mireille Gagné. " Pénélope. *https://ici.radio-canada.ca/ohdio/premiere/emissions/penelope/segments/entrevue/469736/mireille-gagne-frappabord-grosse-isle-aux-grues*.

Collignon, F. (2023). *The Insectile and the Deconstruction of the Non/Human.* Routledge.

Gagné, M. (2024). *Frappabord*. La Peuplade Roman.

Galeano, J.C., & Adamson, J. (2016). Why Bears, Yakumama (Mother of All Water Beings), and Other Transformational Beings Are (Still) Good to Think. In S. Monani & J. Adamson (Eds.), *Ecocriticism and Indigenous Studies* (pp. 224-239). Routledge.

Goldman, Marlene. (2007). Introduction: Literature, Imagination, Ethics. *University of Toronto Quarterly*, vol. 76 (no.3), pp.809-820.

Gotlieb, R. J. M., Hyde, E., Immordino-Yang, M. H., & Kaufman, S. B. (2019). Imagination Is the Seed of Creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge Handbook of Creativity* (pp.709-731). Cambridge University Press.

Hsu, H. (2024). *Air conditioning.* Bloomsbury Press.

Latour, B. (2006). Air. In C. A. Jones (Ed.), *Sensorium Embodied Experience, Technology, and Contemporary Art* (pp. 104-107). MIT Press.

Leménager, G.. (August 2010). Interview with Lutz Bassmann, "L'extinction de l'humanité est plausible." L'OBS. *https://bibliobs.nouvelobs.com/romans/20100824.BIB5532/lutz-bassmann-l-extinction-de-l-humanite-est-plausible.html*.

Miró, Estel Aguilar. (2023). Bois de fer (2022) by Mireille Gagné: the posthuman and ecocritical gaze of the tree-woman. *Anales de Filología Francesa,* no. 31, pp. 85- 97.

Nolt, J. (2020). Climate change and the loss of non-human welfare. In B. G. Henning and Z. Walsh (Eds.), *Climate Change Ethics and the Non-Human World* (pp.10-22). Routledge.

Rindisbacher, H. J. (2006). The Stench of Power. In J. Drobnick (Ed.), *The Smell Culture Reader* (pp. 140-153). Routledge.

Vakoch, D. A. (Ed.). (2021). *Dystopias and utopias on Earth and beyond: Feminist ecocriticism of science fiction.* Routledge.

L21

SOUNDS, CITIES, ART, AND ECOLOGY

CHAIRS Marcel Cobussen
Jordan Lacey

Urban atmospheres are of course experienced through more than one sense: living beings perceive them using their eyes, ears, skin, and nose. However, besides elements that can be experienced through the senses many other agents are more or less active in creating a specific atmosphere. For instance, cultural perspectives and individual idiosyncrasies can produce a diversity in atmospheres in any given situation; socio- political and economic influences enforce expected atmospheres (such as the predominance of car sounds); and ecological or commercial interests codetermine the general ambiance of a site. In short, all these agents (and many more) play a role in the ways places are designed and experienced.

Taking the above into account, our view is not only that sound is an important agent in the creation of an urban atmosphere but that all these agents are connected to sound. A constantly changing constellation of traffic sounds, construction works, human activities, bells, music (coming from shops, buskers or portable audio devices), as well as natural sounds (coming from birds, trees, wind, and rain) not only determine the soundscape or ambiance of a city but also how these are perceived. However, when intervening in such a soundscape or ambiance several other parameters besides sound, might change as well:

for instance, the amount and kind of social interaction, issues about (un)safety or mystery/intrigue. Also, visual, haptic, olfactory and social and/or community transformations might occur in combination with introduced sounds, depending on the type of intervention.

In this session we would like to focus specifically on the relation between the sonic environment, sound art, and ecology in cities. The session is meant to invite presentations of concrete artistic interventions that are directly affecting the ecological situation of an urban environment. In other words, through this session we aim to investigate the following question: how can sound artists contribute to a better ecological climate in cities? As we are aware that these artistic interventions are very much determined by specific situations, we would especially like to invite contributions from various parts of the world (from the Global South to the Global East, West, and North), from metropoles to small-scale cities, from interventions in already existing neighbourhoods to artistic-ecological projects in newly developed areas, etc. Ideally, participants, audience, and session leaders go home with a bag full of best practices, challenging examples, and trailblazing ideas as how art, ecology, and city life can mutually affect and benefit from another.

SOUND ART AS A REINVENTION OF URBAN AMBIANCES OF A HISTORIC CITY

ARTE SONORA COMO REINVENÇÃO DE AMBIENTES URBANOS DE UMA CIDADE HISTÓRICA

Chiraz Chtara
PhD in Architecture
Research Team on Ambiances ERA, LaRPA, Carthage University (Tunis)
chtarachiraz@gmail.com

ABSTRACT

The present research aims to understand the role of sound art in the reinvention of a historic place, the old medina of Tunis, and the enhancement of its character. Two works from Dream City festival were selected: installation "Hadra fergha" by Shinigami-San based on sounds of trades and "Whispers of the city", a vocal creation by soloist A. Sellami. The methodology includes interviews with artists following three themes: the conceptual intentions of art work, the reason for choosing the medina, the artist's personal attach with the city. The sonic effect method has been used to specify the relationships between perception and urban sonic environment.

Results showed that the sonic installations are a kind of musical interpretations of the urban sounds. The conceptual approaches are at the crossing of the material and sonic characteristics of the city. The identity of the medina consists of: Reverberation as musical potential, Crossfade in the old streets, Musicality of the city, Prevalence of human sounds.

KEYWORDS: sound art. Historic city. Urban identity. sensitive sound experience. Sound resonances

RESUMO

A presente investigação visa compreender o papel da arte sonora na reinvenção de um lugar histórico, a antiga medina de Tunes, e na valorização do seu carácter. Foram seleccionadas duas obras do festival Dream City: a instalação "Hadra fergha", de Shinigami-San, baseada em sons de ofícios, e "Whispers of the city", uma criação vocal do solista A. Sellami. A metodologia inclui entrevistas com os artistas, seguindo três temas: as intenções conceptuais da obra de arte, a razão da escolha da medina, a ligação pessoal do artista com a cidade. O método do efeito sonoro foi utilizado para especificar as relações entre a perceção e o ambiente sonoro urbano.

Os resultados mostraram que as instalações sónicas são uma espécie de interpretações musicais dos sons urbanos. As abordagens conceptuais encontram-se no cruzamento das características materiais e sonoras da cidade. A identidade da medina é constituída por: Reverberação como potencial musical, Crossfade nas ruas antigas, Musicalidade da cidade, Prevalência de sons humanos.

PALAVRAS-CHAVE: arte sonora. Cidade histórica. Identidade urbana. experiência sonora sensível. Ressonâncias sonoras.

1. SOUND AS A MOTOR FOR SENSITIVE CREATIONS OF MEDINA STREETS

Since 2007, Tunis has received Tunisian and foreign artists from various disciplines (singers, choreographers, visual artists, etc.) for Dream City, a multidisciplinary biennial of contemporary art in the Tunisian public space, organized by the "Art Rue" association. This festival invites artists to reappropriate, the urban and architectural spaces of Tunis medina by contemporary art. The purpose is to use artistic interventions to present the reality of this historic city by new discoveries to the ordinary user. The subject of the performances must emanate from the specific context of the old city, and therefore requires long or short sojourns of the artists, during which they roam the medina streets, talking to the inhabitants, craftsmen and users in general, to understand the place and draw inspiration from it.

Several installations focus on sound using different approaches. "Echos d'un passage" (2015), by Portuguese artist Pedro Serrazina, is a video installation projected in a room of a former barracks in the medina. On two opposite walls of a very dark space, Serrazina proposed two videos. The first one represents an urban journey in the medina of Tunis and the second one a crossing of Lisboa streets, by permuting their sonic universes. The superimposition of a sound recording on streets that are culturally different leads the visitor to question the listened sounds: to which sound sources are they linked? how is the place of their production presented? Then, Berlin-based Rimini Protokoll offers to visitors the experience of an urban sound journey via artificial intelligence, "Remote Tunis" (2017), which lasts two hours. A group of 50 people roam the city with headphones in their ears. They are guided by an artificial voice-like those of GPS navigators. The gripping experimentation of this long pedestrian walk punctuated by journeys in the metro, a collective dance in a medina square, allowed us to live in two different worlds simultaneously: a sound world furnished by a voice that guides all our movements, thoughts and imaginations, and a visual world that gradually fades away. The stopping point is the terrace of an old building, where the voice gradually disappears, and sound reality resurfaces.

Through these art works, the sound dimension becomes a striking entity, fundamental to experiment the city, particularly the medina of Tunis, with its urban, architectural, historical and social potentialities, strongly distinguished in the memory of the Tunisian. The choice to invest this historic site with art, particularly sound art, is therefore not fortuitous. So, we propose to understand the reason of the choice of the medina as a specific site for the sound art. How does sound ambiances of the medina are manifested in these artistic performances? Which sonic or acoustic potentialities might emerge from the old city? To what extent does sound art contribute to the reinvention of a historic place in contemporary era?

2. CONCEPTUEL MODEL OF URBAN SOUND AMBIANCE

In order to characterize the sound atmospheres created by artists, the understanding of the sound ambiance existence as a real phenomenon is important. According to Campenhoudt & Quivy (2011), conceptualization is an abstract construction whose aims to describe the reality, it will be useful to observe objectively the analyzed situations, corpus of the research. It consists in the elaboration of concepts which identify fundamental aspects, mandatory to observe a real situation. For our research, this stage means to define the sound ambiance notion, which will allow to identify the essential dimensions to its existence. Based on several literature research, the conceptual model of urban sound ambiance involves the interaction of four dimensions: 1) physical sound signal, 2) space of propagation, 3) user perceptions and 4) temporality (Belakehal, 2006; Marry, 2011; Chtara, 2019). Temporalities organize urban activities which are responsible of the appearance of sound signals in a specific space defined through the morpho-acoustic characteristics of its urban forms. The complex [time/signal/space] is perceived by users, who give it meaning and significance (Figure 1).
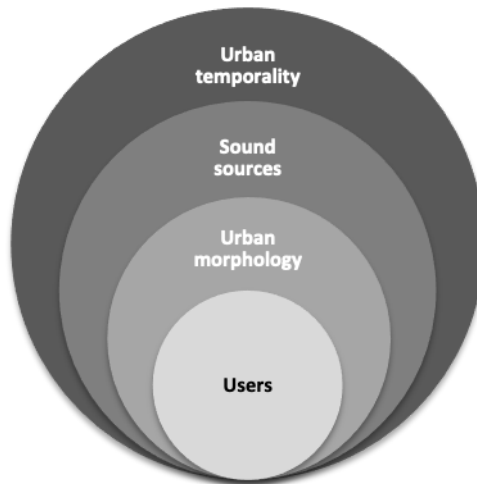
Figure 1 : Conceptual model of the urban sonic ambiance, source: Author

3. CONCEPTUEL MODEL OF URBAN SOUND AMBIANCE

The objective of this research is to understand how the sound can offer a new discovery of the Tunis medina by asking artists and their sonic installation. So, three dimensions will be observed: sound sources, urban morphology and perceptions of the users; the temporality won't be treated here since it is not really important for the selected art works. Users are the artists, we will then question their opinions about the city as a

potential place to sonic art. Semi-structured interviews will be conducted with sound artists, in order to understand their conceptual intentions. As the number of interviewed artists is reduced, a qualitative analysis will be applied to the datas, not a quantitative one. Then, in order to translate the artists' intentions, the sonic effect will be useful. As the sonic effect links perception and action, observation and conception, analysis and creation, it will allow to take stock of sounds in order to discover auditory sensitivities of artists that are relative to the ways of being and the spatial characteristics. This method thus ensures listening to the sound environment, which in its complex subjectivity becomes less mysterious, but above all possible to describe objectively.

3.1 Questioning the sound artists: semi-directive interviews

3.1.1 Semi-directive interviews in researches on architectural and urban environments

Semi-directive interview corresponds to "a situation of interaction provoked by the researcher with the aim of extracting a body of information. On the one hand, the interviewee shares his vision of the phenomenon under study, while on the other, the researcher strives to facilitate the interviewee's speech. Also, the researcher strives to facilitate the interviewee's speech" (Gay, 2006, p. 87). Semi-structured interviews were initially used in sociological researchs. More recently, it has been used in studies of architectural and urban ambiances that question the sensitive imagination of users (Torgue, 2014), or the conceptual intentions of architects attentive to ambiances (Fiori, 2001; Raimbault, 2002; Chelkoff & Veslin, 2003).

Unlike other types of interviews, which give the respondent total freedom to speak, or confine him or her to very specific questions, the semi-directive interview offers the opportunity to develop opinions with a certain degree of freedom on specific themes outlined by the researcher. The researcher must draw up an "interview guide", which will organize the questions to be asked and ensure that the textual material collected is well structured.

3.1.2 Semi-directive interviews in researches on architectural and urban environments

Our target respondents are the sonic artists of Dream City festival. This choice depends on the acceptance and availability of these characters. Our interview guide will be organized around the following themes: 1) The artist's activity and specific work in Tunis medina: questions focus on a particular sound work produced by the artist during one of the past editions of the Dream City event. Knowledge of the details of the chosen work (subject matter, place of performance, musical or other technique) will enable us to ask questions that will target our case study; 2) The medina as a place of art work: this second theme attempts to detect the artist's opinion about the medina as a place that increasingly attracts diverse artistic performances; 3) The artist's personal links with the old City: these questions focus on the artist's personal relation, as a user, with the medina, in particular his or her urban sensory

journey (attachment, memory, etc.). This restitution of the interviewee's words must be i) faithful - we must not betray his words, and above all we must not confuse transcription with analysis, ii) comprehensible for the reader, and iii) respectful of the interviewee, respecting his rights and not transcribing certain passages as he said (Rioufreyt, 2016). Also, the researcher may need to rephrase certain passages, especially since interviewees speak Arabic, so we need to choose the right terms to translate their words without distorting the meaning.

3.2 Sonic effect
Sound effects are divided into five main categories, each looking at the acoustic, spatial and human aspects of the sound situation in a different way (Augoyard & Torgue, 1998; 2005). The first category, "Elementary effects", will be more familiar to the acoustician, while the second, "Compositional effects", is more closely linked to architecture and urban planners. The sociologist or semiotician will be more familiar with the categories "Effects linked to perceptual organization", "Psychomotor effects" and "Semantic effects".

In our research, the interest in using sound effects is twofold: i) listening to urban forms, and ii) translating the artists' sonic imaginaries. First, the morphological specificities of urban space will define the morpho-acoustic characteristics of the urban space of the medina. Second, the sound effects will be used to understand the conceptual intentions of the artists and their auditory sensitivities.

4. SOUND INSTALLATION AND SINGING IN MEDINA URBAN SPACE
4.1 "Hadra Fergha" in an artisanal impasse
"Hadra Fergha" or "futile stories" is the product of a collaboration between Z. M. Hamrouni and M. Ben Cheikh, specialist artists in electronic music based on concrete sounds, first recorded, then manipulated. The idea came from a stroll through the Medina streets. *Bou Hadra* impasse, a dead-end, particularly caught the attention of the artists because of its material characteristics and sounds:

> "There were a lot of mechanical and metallic sounds, and for us that was very interesting. As the impasse was narrow, bounded by two-storey buildings, all the sounds coming out of the workshops ended up turning in the cul-de-sac, so they weren't lost. It was a wonderful atmosphere for us! (…) There was an interesting stereo effect," (Hamrouni, 2018).

Using microphones and recorders, the artists faithfully captured several sonic sequences for each craft (movements, machines) for later use. The idea was to offer a sound and kinesthetic journey through the impasse depriving visitors of their sense of sight. The visitor first encounters an airlock, zone A (*Figure 2*), where he is blindfolded. Then, he enters zone B, where he perceives the real-life sounds of the craftsmen's ordinary work.
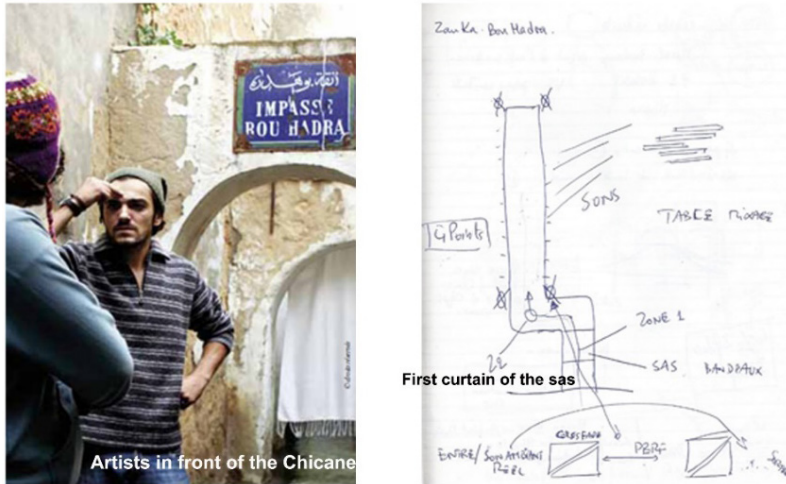
Figure 2. Schematic and photo of "Hadra Fergha", drawing source: Hamrouni (2018), photo source: Ouissi & Ouissi (2010, p. 66)

After a few minutes, from four exit points located in corners of the dead-end, the artists began producing their music, calibrated to the same level as the real noises, while the craftsmen reduced theirs. Using crossfade, based on crescendo and decrescendo, they bring sounds gradually into the cul-de-sac and into the ears of visitors (Figure 3). The four points are used to recreate a sound ambiance like the real atmosphere. The artists broadcast sound from a single speaker, or from two, three or four at a time. The visitor then had the impression that the craftsmen were approaching him with their instruments and coming from several sides, even though they were in their workshops: "the craftsmen were looking at the people, and the people who came to look were themselves being looked at!" Then, the artists would crossfade in the other direction, reducing their sounds to allow the real soundscape produced by the craftsmen's machines to re-establish itself.

Figure 3. Photos of the sound installation "Hadra Fergha", Dream City 2007, Source: Ouissi & Ouissi, (2010, pp.31-32)

4.2 «Mur... murs de la ville» in a residential dead-end

"Mur... murs de la ville" can be translated as "Wall... walls of the City" or "Whispers of the City". The venue for this performance is a residential cul-de-sac. This place was imposed on the artist by the event's organizers. Under the theme "Rêver sa ville" or "Dreaming your City", A. Sellami created her work based on the city sounds through shapes, dynamics and urban morphology. Drawing on a singular experience, almost exclusively sonic, the artist has attempted to highlight the sounds of urban space, as well as those of private space that come from the windows of houses:

> "Walking down the street, all of a sudden a window crosses my path, a very close window since the alleyways are very narrow and the houses are at man's height, you have a window where all of a sudden you can listen to the stairs, the footsteps of a person going up the stairs while you are in a public space, this sound all of a sudden carries you away to private space, your imagination leads you to wonder the person going up the stairs, where is he going, what is the shape and dimensions of the stairs? "(Sellami, 2018).

During two-week daily performances, the soloist discovered the acoustic and sonic potential of the site, immersing herself in the daily life of the inhabitants and their reality as she created her musical composition. There were five windows, three overlooking one house and two another. The sound installation consisted in working with sounds uttered from the five windows and the artist's voice, to suggest a new tonality for the cul-de-sac. The narrowness of the impasse led the artist to place visitors to the right and left, almost stuck to the walls, to listen to the sounds of the impasse:

> "I walked among the people, I was very close to them since the impasse was very narrow, so I even managed to touch people's faces as I passed, in any case I was close. There was a very interesting closeness to the audience", (Sellami, 2018). The propagation of fixed and different sounds from the baffles, those of the artist's voice moving around, approaching the listeners, moving away from them and approaching them again, generated sounds that rotated ceaselessly in the impasse creating "a real musicality" that one of the visitors, eyes closed, danced to hear "he was in a total trance!", (Sallemi,2018).

Figure 4. Experience of soloist Performance, « Mur... murs de la ville » (2007),
source : unknown

5. SOUND IDENTITY OF THE MEDINA REVEALED BY THE ART PERFORMANCES
5.1 The reverbaration of the city as a musical potential

The use of reverberation in musical works is prominent in the approach of both artists. It is a fundamental component of sound creation. Hamrouni, whose artist name is Shinigami San, was captivated by the physical properties of the sounds of the trades in the cul-de-sac, and the way in which they swirled around the space without leaving it: "the reverberation created something latent in the alley, with sounds going off in all directions". The sounds excited by the machines and subjected to the reverberation of the cul-de-sac create a musical ambience, a "very interesting stereo effect". For him, it is not the sound source emitting the sound signal that is observed, but rather the sound that is produced, and he adopts the concept of reduced listening in his work.

While Shinigami San's approach to musical creation is one of reduced listening, uninterested in where the sound comes from, Sellami herself becomes the source of the sound she produces, interacting with the reverberation of the space in which she sings. The spatialization of sound is a feature much used by the soloist, for whom the progressive loss of the sense of vision has even made it essential. She believes that sound defines the volume of the space in which it propagates: "not only do we read visible space, but also invisible space, thanks to sound". For Sellami, playing in a theater, a water tower, a tunnel or a stairwell presents so many interesting spaces in which to sing, since their formal and material characteristics subject sounds to very different modes of sound propagation. The shape, height and materials that make up the space give it a certain tonality, a certain reverberation that makes it unique: "the space has a sound identity (...) It's an instrument in itself". The medina presents spectacular sound phenomena, particularly conducive to the emergence

of the sound effect of reverberation. With its alleyways, cul-de-sacs, different floors, volumes and materials, it is configured according to several spatiality with different sonorities, and multiple sound identities.
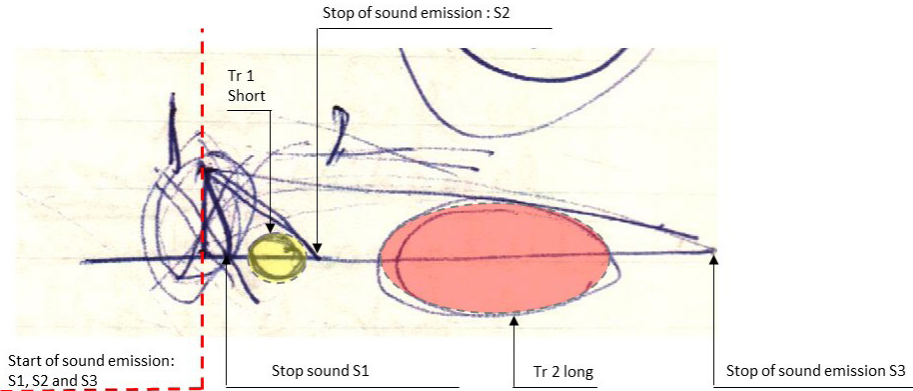
Figure 5. Diagram of three different acoustic spaces: a highly absorbent space for source S1, a moderately reverberant space (Tr 1) for source S2, source S3 in a highly reverberant space (Tr 2) interesting for the musician, Analysis of Author, source drawing: Hamrouni (2018)

5.2 The crossfade in the medina urban space

In designing his sound installation, Shinigami San used crossfading to create the soundscape of his cul-de-sac. At the same time, some sounds arrived in crescendo, others disappeared in decrescendo. The crossfade is the analogous effect to the crossfade in the repertoire of sound effects. The streets of the medina are strongly marked by this sound effect, which emerges when the user is in motion. For Hamrouni, the urban journey through the medina's winding streets is evolutionary. In contrast, crossing the wide, orthogonal streets of the new town is static, with the same sonic ambience. Here, the streets are experienced directly through sight and sound. The streets of the medina are rarely silent, and there's always a crossfade between their sonic ambiances. The progression of medina streets is sequential visually and acoustically:

"I like the passage, I like being in the middle, having the street a little noisy a little far away and having the silence of the alley arriving, it's an in-between which is at the same time what remains of the noisy street and what will arrive from the calm alley", (Hamrouni, 2018). Sellami has also emphasized this evolving aspect of the medina through the mix of acoustic forms with very different reverberations that condition continually changing sound ambiances. For her, "the medina is mutable". The evolutionary nature of the soundscapes perceived as the two artists experimented with the streets of the medina, moving from one space to another, defines a new sound identity for the medina.

5.3 Musicality of the medina: sounds of crafts, sounds of objects

By listening specifically to the sounds of the medina, the sound artists create a certain musicality characterized by the sounds of crafts and objects. The mechanical sounds of the silk weavers in the fondouks[1], or the metallic tones of the hammer blows of the blacksmiths in the impasse, give these places their own specific tonality and sonic identity. Speaking of the artisan blacksmiths, Shinigami San unwittingly described them as true musicians. The blows delivered by the blacksmith, or the metal engraver are characterized by the appearance and reappearance of similar sonic occurrences. The sound recordings were made for two minutes for each machine, to achieve this repetitive rhythm - the repetition sound effect. Through their production, their repetition with a certain rhythm, the musician's ear perceives these mechanical sounds as musical notes. The result is a musical composition made up of several sound sequences of the same duration, spaced by moments of silence that represent the period of recuperation, of breathing, after which the craftsman creates a new movement, a new note.

For Sellami, it was the sounds of objects in the medina that were her first discovery of the medina's musicality. In addition to the resonance chamber that marks the sound space of the medina, she finds a new sound identity in the sounds of objects. She talks about the tinkling of bells coming from simple objects made of terracotta and copper: "Every store has its own music. I walk 20 meters, and I hear five different types of music". During the interview, the artist sang these tones produced by these "instruments", which she assimilates most of the time to little bells. The sounds, engraved in the soloist's sonic memory, are very different and have a certain rhythmicity: a "pir pirr... pirr!" from a zliziyya[2] which tattooing is done, a "tétapeu tcheuuu tchap, tétapeu tcheuuu tchap!" uttered by a weaving machine or the "unnnnnnnnn!" of a turner.

5.4 The prevalence of human voices in the medina sound identity

Asked "If you had to choose one or more sounds to define the urban musicality or sonic identity of the medina, what would they be?", all the artists gave the same answer: the human voice. The human voice appears as a sound marker of the medina's identity, to which the artists pay close attention as they wander around. An analysis of the artists' quotations reveals the attractive sound effect of listening to human voices. This sound source strongly reflects the human presence in the streets of the medina and its everyday uses: commerce, movement, verbal exchanges. The human voice is the most striking because it is always breaking into the soundscape of the streets, making it even more perceptible to the human ear. This continuous appearance of human voices in the streets further contributes to the evolution of the

1 In arab countries, fondouk is a location where the market is held, means also hostel for foreign travelers and traders.

2 A kind of metallic shape used for making cake.

sounds of the medina. Sellami (2018) also highlighted the contrast between noisy urban space and silent architectural space as a particular sound characteristic of the medina: "the silence of the Zitouna Great Mosque inside! Perhaps also, the contrast between the noise of the street, which is a public place, and the silence that exists in the courtyard of the house".

6. HISTORICAL POTENTIAL OF THE MEDINA IN ART WORK

The analyzed sound installations are both musical interpretations of the sonic sphere of the old city. Their conceptual approaches are highly complex, at the crossroads of the material and sonic characteristics of the performance site and a highly singular observation of the urban space of the medina, which the artists have attempted to convey to the public in their own way. The artists' academic and professional backgrounds fueled this interpretative diversity of the city's streets. The soloist's training lies at the crossroads of two musical cultures, lyrical and oriental. She is also a teacher-researcher at the Institut Supérieur de Musique de Tunis (Tunis Superior Institute of Music). Hamrouni began her university studies in architecture, before migrating to music discipline. In addition to his electronic music productions, he teaches at the Institut Supérieur des Arts et des Métiers in Gabès (Higher Institute of Arts and Crafts in Gabes). Exploring the streets of the medina through sound art allowed us to perceive the authentic characteristics of this highly historic place (Figure 6). The sound space of the medina is now being showcased through art creation, and this form of occupation of urban space by art helps to raise citizens' awareness of the city's identity through its sound potentialities, rarely detected by the ordinary users. Nevertheless, the original and historical sounds of the medina remain little explored today. The urban sounds of yesteryear are not invested in the art works. For artists, the medina in its current state is an inexhaustible source of material. But if the artist were familiar with the sounds of the medina's past, would his work be the same? There would probably be a different approach.
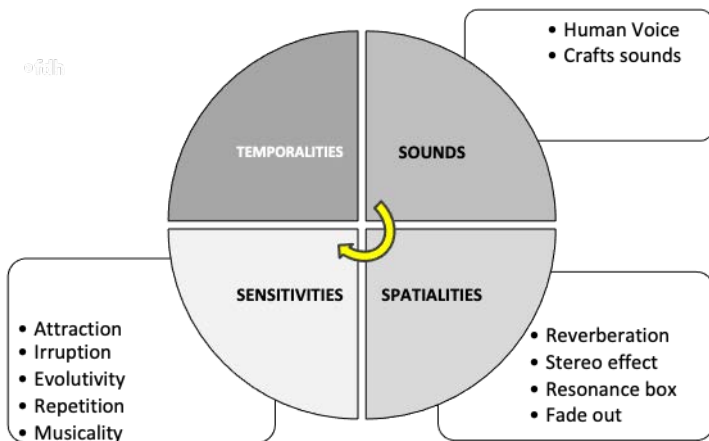
Figure 6. Multi-criteria sound identity of the Tunis medina through artists' performances and perceptions, source: Author

This research opens opportunities to a new collaboration. We have been part of the project Slash Transition organized by the "Art Rue" association. Slash Transition is a project led by seven partners : Trempo (Nantes, France), Casa Capitão (Lisboa, Portugal), Mutant Radio (Tbilissi, Georgia), OpenSpace (Innsbruck, Austria), L'Art Rue (Tunis, Tunisia). It examines the place and role of the sound artist in a region in transition. For Tunisian experience, a local Hub has grouped together artists, architects and musicians in order to make a roadmap to introduce the city to the selected artist. Based on the results of the present research, we suggested a sound walk for the artist experience of the city. LARIE, a Brazilian composer and music producer based in Lisbon, did her first artistic residence in the medina of Tunis in June 2024.

BIBLIOGRAPHY

Augoyard, J.-F., & Torgue, H. (1995). A l'écoute de l'environnement : Répertoire des effets sonores. Marseille: Parenthèses.

Augoyard, J-F. and Torgue, H. (2005). Sonic experience: a guide of everyday Sounds. Canada: McGill-Queen's University Press.

Belakehal, A. (2006). Etude des aspects qualitatifs de l'éclairage naturel dans les espaces architecturaux. Cas des *milieux arides à climat chaud et sec.* Biskra: Thèse de doctorat en architecture-Université Khider Mohamed.

Campenhoudt, L. V., & Quivy, R. (2011). Manuel de recherche en sciences sociales. Paris: Dunod 4ème édition complètement revue et augmentée.

Chelkoff, G., & Veslin, G. (2003). Transformer l'existant : (vers une) conception assistée par les ambiances. Grenoble: [Rapport de recherche] 58, CRESSON, PUCA.

Chtara, C. (2019). Caractérisation(s) de l'espace sonore de la médina de Tunis au XIXe- début XXe siècles : effets sonores, formes urbaines et récits de voyageurs (Doctoral dissertation). University of Carthage, Tunis.

Fiori, S. (2001). Le représentation graphique dans la conception du projet d'éclairage urbain. Grenoble: Université de Nantes.

Gay, T. (2006). L'indispensable de la sociologie. Levallois-Pelleton: Studyrama.

Marry, S. (2011). L'espace public sonore ordinaire : les paramètres de la perception sonore dans les espaces publics: *contribution à une connaissance de l'ambiance sonore.* Grenoble: Université de Grenoble.

Ouissi, S., & Ouissi, S. (2010). *Zone artistique temporaire : penser la ville artistiquement.* Tunis: SIMPACT.

Torgue, H. (2014). Posture d'écoute et attention au monde sonore. Dans Y. Citton (dir.), *L'économie de l'attention. Nouvel horizon du capitalisme ?* (pp. 229-239). La découverte.

Raimbault, M. (2002). *Simulation des ambiances sonores urbaines : intégration des aspects qualitatifs.* Nantes: Thèse de doctorat.

Rioufreyt, T. (2016). *La transcription d'entretiens en sciences sociales : enjeux, conseils et manières de faire.*

L21

AN ECOLOGY OF AUDITORY ATTENTION

Frank Pecquet
Institut ACTE - Arts Créations Théories Esthétiques
Université Paris 1 Panthéon-Sorbonne
fpecquet@univ-paris1.fr

ABSTRACT

This contribution explores the link between ambience and the ecology of auditory attention, emphasizing the quality of the sound environment. Ambiences, as auditory ecosystems, arise from the interaction of a place's physical characteristics with our sound perception, influencing our listening states. Studying soundscapes reveals how sound elements impact our behavior and environmental connection, affecting attention and physical well-being. Understanding these dynamics helps manage environments for comfort and attention by reducing noise and creating tranquil areas. The ecology of auditory attention, or sound sustainability, guides the design of balanced soundscapes that support mental and emotional health, promoting awareness and preservation of our auditory environment within the context of social anthropology.

RESUMO

Esta contribuição explora a ligação entre a ambiência e a ecologia da atenção auditiva, dando ênfase à qualidade do ambiente sonoro. As ambiências, enquanto ecossistemas auditivos, resultam da interação das características físicas de um local com a nossa perceção sonora, influenciando os nossos estados de escuta. O estudo das paisagens sonoras revela como os elementos sonoros têm impacto no nosso comportamento e na ligação ambiental, afectando a atenção e o bem-estar físico. A compreensão destas dinâmicas ajuda a gerir ambientes para conforto e atenção, reduzindo o ruído e criando áreas tranquilas. A ecologia da atenção auditiva, ou sustentabilidade sonora, orienta a conceção de paisagens sonoras equilibradas que apoiam a saúde mental e emocional, promovendo a consciencialização e a preservação do nosso ambiente auditivo no contexto da antropologia social.

KEYWORDS: "sound sustainability". Ecosound. Ecology. Ambiance. ecosystem

INTRODUCTION

In a world where sound stimuli are omnipresent, the notion of auditory attention plays a crucial role in our daily lives. Understanding and managing these soundscapes is essential to preserving our biological, emotional and physical equilibrium. This contribution explores the notion of the ecology of auditory attention, referring to the overall quality of the auditory environment, and highlights the importance of creating balanced sound environments, while introducing the concepts of the ecology of attention developed by Yves Citton (2017).

SOUNDSCAPE: CONCEPTS AND DEFINITION

The soundscape is defined as an ecosystem resulting from the interaction between the physical characteristics of a place and our auditory experience. An "ambience"

is the result of a sensory experience and has a direct influence on our condition. A pleasant soundscape can be soothing and relaxing, while a noisy environment can cause stress and fatigue. Soundscapes encompass all the sounds perceived in each environment, creating a unique auditory atmosphere. They reflect the physical characteristics of a place, such as its architecture and geography, as well as the human activities that take place there. This complex interaction shapes our perception and experience of the environment.

According to Augoyard and Torgue (2005), soundscape is a cultural construct that influences our relationship with the world. It affects our mood, our behavior and our health. The soundscape of a place is not simply a sum of isolated sounds, but a combination of noises, silences, rhythms and reverberations that form a coherent auditory experience. This experience can have profound effects on our well-being. Studies show that pleasant sound environments can reduce stress, improve concentration and promote general well-being (Schafer, 1994).

A relevant example of the impact of soundscape can be found in the field of health, particularly in hospitals. Hospital environments are often noisy, with alarms, conversations and machine noise, which can increase patient stress and hinder recovery. A study by Hagerman et al (2005) found that noise reduction in intensive care units, using acoustic panels and noise reduction interventions, resulted in a significant reduction in patient stress and anxiety. In public spaces, the integration of fountains, vegetation and sound-absorbing architectural elements can create oases of tranquility amid the urban cacophony. A study by Brambilla and Maffei (2006) showed that urban spaces with natural elements and soothing sounds, such as flowing water, are perceived as more pleasant and less stressful. For urban planners and architects, understanding the importance of sound ambience is crucial to designing pleasant, healthy living spaces and aligning with the demands of contemporary design that incorporates new care policies.

THE ELEMENTS OF THE SONIC ECOSYSTEM

Soundscapes are made up of various elements, each interacting in complex ways. The sounds around us can influence our concentration, cause distractions or promote relaxation and training. It is essential to identify acoustic sources and understand how they affect our connection to the environment. Natural sounds can have a soothing effect, while industrial noises can be disruptive. Schafer's (1994) famous dichotomy of low-fi and hi-fi spaces, while no longer as conclusive today in relation to recent developments in urbanization and the efforts made to correct and optimize auditory ecosystems, nevertheless remains relevant despite the economic and social spirals that every society faces today.

Soundscapes are made up of multiple elements: natural sounds (birdsong, water noise), man-made sounds (human voices, industrial activities) and technological

sounds (traffic, electronic devices). The interaction of these elements creates a unique sound texture that influences our auditory experience. The concept of soundscape, introduced by R. Murray Schafer (1977), highlights the crucial importance of the quality of sound environments in our daily lives. A harmonious soundscape integrates sounds in a balanced way, creating a serene and soothing atmosphere. In a well-designed urban park, natural sounds such as birdsong, rustling leaves and babbling brooks combine to provide a sonic refuge from the hustle and bustle of the city. On the other hand, a disturbed soundscape, such as a neighborhood close to a motorway or construction site, can have adverse effects on the mental and physical health of residents.

Studies by Goines and Hagler (2007) show that unwanted noise, such as road traffic, sirens or industrial noise, increases stress, disrupts sleep and reduces quality of life. For example, living near an airport can expose residents to high levels of noise pollution, leading to sleep disturbance, high blood pressure and increased risk of cardiovascular disease. Similarly, an open-plan office where conversations, ringing phones and keyboard noise are omnipresent can reduce concentration and increase employee fatigue. The negative consequences of a disrupted soundscape are not limited to impacts on physical and mental health. They also affect performance and productivity. In school environments, for example, high levels of background noise can impair pupils' concentration, slow down the learning process and reduce academic performance. In addition, stressful noise environments can have a negative impact on social interactions, leading to feelings of frustration and irritability.

To illustrate the importance of harmonious soundscapes, some cities have begun to integrate soundscape management into their urban planning. In Paris, initiatives to reduce vehicle noise by favoring pedestrian areas and public transport have helped to create calmer urban spaces. Similarly, in Barcelona, the installation of plant walls and vertical gardens is helping to absorb noise and improve the sound quality of the urban environment. In this way, the soundscape concept highlights the need for a conscious and balanced approach to the management of noise environments to promote people's well-being and quality of life. Research and initiatives in this field show that the creation of harmonious soundscapes can have profound and lasting positive impacts on people's health and happiness.

THE INFLUENCE OF SOUNDSCAPES ON ATTENTION

Sound environments have a significant influence on our attention span. A wellbalanced sound environment can improve our concentration and efficiency, whereas a noisy environment can lead to a drop in performance and a state of fatigue. According to Schafer's concept, the 'soundscape' plays a key role in auditory communication. For example, in openplan offices, solutions such as acoustic partitions and soundproof carpets can reduce background noise, enabling employees to concentrate better. And in schools, the use of sound-absorbing materials in classrooms can help pupils to concentrate better. These adjustments show how attention to acoustics can promote a more productive working or learning environment.

Studies show that environmental sounds influence our ability to concentrate and perform tasks. For example, Hygge et al (2002) have shown that constant background noise, such as road traffic or electronic devices, can reduce concentration and increase cognitive fatigue. In hospitals, machine noise and visitors' conversations can disrupt patients' rest and the work of medical staff. A study by Xie, Kang and Mills (2009) found that reducing noise in hospitals improved patient comfort and reduced stress for carers. Initiatives such as quiet periods in intensive care units, where lighting is dimmed and noise minimized, have shown positive results in terms of patient recovery and reduced stress for carers.

On the other hand, natural, harmonious sounds can promote relaxation and improve concentration. Berman, Jonides and Kaplan (2008) showed that people exposed to natural sounds had better cognitive performance and reduced stress than those exposed to urban sounds. For example, companies have begun to use recordings of nature sounds, such as birdsong or the sound of waves, in break areas to help employees relax. In schools, a study by van den Berg, Koole and van der Wulp (2003) showed that children who spend time outdoors or have access to views of nature during their breaks have better attention spans in class. Integrating these sounds into our daily environment, whether through sound machines or access to green spaces, can therefore create spaces that are more conducive to concentration and peace of mind.

THE ECOLOGY OF AUDITORY ATTENTION

Yves Citton, in his book *Pour une* écologie *de l'attention* (2014), explores how our attention is captured and manipulated in various contexts, notably by the media and advertising. Applied to the ecology of auditory attention, this involves understanding how surrounding sounds influence our ability to focus and remain attentive. While Citton proposes that our attention is a precious and limited resource, constantly solicited by numerous stimuli, it seems just as relevant to manage this resource in a sustainable way, by reducing noise distractions and promoting acoustic environments that support our ability to concentrate. Citton also stresses the importance of creating spaces that respect our need for deep attention, enabling a better quality of life and greater efficiency in our daily activities. This can include reducing unwanted noise and designing acoustically balanced environments (Citton, 2014).

Georg Franck argues that our attention has become a new form of capital, "Georg Franck's powerful analyses make it possible to recognize in attention a new form of capital, whose circulation, distribution, monopolization and investment are indeed part of an economy, with its mechanisms of production, accumulation, financing, competition and exploitation" (Citton, 2014, p. 46). This perspective highlights how our attention is exploited in a modern economy, where it is constantly captured by the media and advertising. The ecology of auditory attention, in this sense, becomes a question of attention economics: how we can better manage this precious resource

by creating sound environments that minimize distractions and promote deep concentration. Offices that adopt practices to reduce ambient noise or public spaces designed to attenuate urban sounds are concrete illustrations of this sustainable management of attention.

In addition, Citton introduces the concept of *ecosophy*, or environmental wisdom, which includes an *ecosophy of attention* capable of articulating various levels of ecological rearrangement necessary for the preservation of our valued ways of life. He states: *Ecosophy* or environmental wisdom, or even the ecosophy of attention, is uniquely capable of articulating the five levels of ecological rearrangement necessary for the reproduction of the forms of life we value. The biophysical ecology of our environmental resources, the geopolitical ecology of our transnational relations, the socio-political ecology of our class relations and the psychic ecology of our mental resources all depend on the media ecology that conditions our modes of communication" (Citton, 2014, pp. 53-54). This integration of different ecological levels highlights the importance of considering auditory attention in a broader context of sustainability and overall well-being. By revising our current *mediarchical oikos* with a sensitivity to auditory properties, Citton suggests that we could offset the traditional dominance of the visual paradigm. Thus, an ecological approach to attention that includes the auditory could improve our quality of life and daily efficiency by making environments more conducive to concentration and relaxation. Revisiting our media environment through ecological conceptions of auditory attention, as proposed by Citton, could lead to promising advances. For example, increasing awareness of noise pollution in cities could lead to urban policies favoring quiet zones or soothing green spaces. In companies, the introduction of natural sounds or quiet zones could improve employee well-being and productivity. In short, Citton's approach invites us to rethink our interaction with the sound environment, not only to protect our attention span, but also to promote a more balanced and sustainable society.

Brandon Labelle defines four criteria for "sonic agentivity" that redefine our understanding of sound and listening essential to auditory awareness and therefore auditory attention. *Acousmatics* which familiarizes us with sounds whose sources are unknown, helping to understand hyperobjects that restructure our environments without being reduced to a single, manageable source. Sensitivity to vibrations and interferences which reveals their presence and impact. *Conspiracism* where attentive listening catches messages not directly addressed to us. Conspiracism results from the systematic surveillance of our digital communications by entities like GAFAM or the NSA. *Itinerancy* which relates to understanding what happens over time without spatial stability. While sonic phenomena can be recorded, our ears perceive them as always in motion. And the *Power of the Weak* which challenges dominant definitions of agency. Listening requires silence, allowing space for other voices and cultivating a collective acoustic of reciprocity.

SOUND ENVIRONMENT MANAGEMENT FOR COMFORT AND ATTENTION

Understanding the sound dynamics of an environment allows us to better manage it so that it is conducive to our attention and comfort. This can include measures such as reducing unwanted noise, adding soothing sounds or creating quiet zones in urban spaces. While it has been shown that constant noise, such as that from traffic or electronic devices, can reduce our concentration and increase cognitive fatigue (Hygge et al., 2002), natural, harmonious sounds can promote relaxation and improve our concentration (Berman, Jonides and Kaplan, 2008). The idea of an *ecosound*, a measure of sound attention regulation, is essential for maintaining a sound balance conducive to well-being. By approaching sound management proactively, we can create environments that support mental health and productivity.

To improve the quality of soundscapes, effective management strategies need to be put in place. This can include the use of absorbent materials to reduce reverberation, as in offices where acoustic panels can reduce background noise. The installation of acoustic barriers can also reduce noise pollution, an example being noise barriers along motorways to protect residential areas (Nelson, 2004). The creation of green spaces, where natural sounds dominate, can provide soothing sound refuges amid urban noise. Urban initiatives, such as creating quiet zones and regulating traffic, also help to improve noise environments. For example, the city of Paris has set up quiet zones where noise is limited to provide citizens with spaces in which to relax (Pluye, Potvin and Denis, 2004).

Incorporating these measures into urban and architectural planning can have a significant impact on our quality of life. In addition to the direct benefits on mental and physical health, the creation of balanced soundscapes can also encourage better social interaction and a greater sense of community well-being. Research has shown that pleasant soundscapes can reduce stress and improve cognitive performance (Kaplan, 1995). Raising awareness of the importance of soundscapes and adopting hearing-centered design practices can transform our living and working spaces into more harmonious environments. Revisiting our approach to sound dynamics invites us to consider sounds not just as passive elements but as active players in our daily ecosystem, thus contributing to a more balanced and sustainable ecology of attention.

THE ECOLOGY OF AUDITORY ATTENTION: TOWARDS SOUND SUSTAINABILITY

The ecology of auditory attention, or *sound sustainability,* is an innovative concept that examines the way in which sound environments influence our daily experiences and our general well-being. It is part of an approach aimed at creating balanced soundscapes that contribute to optimal mental and emotional health. Aural attention focuses on the conscious management of sound, an essential notion for cultivating

a superior quality of life. As a discipline, it proposes strategies for designing spaces where sound is harmoniously integrated, thereby reducing stress and noise pollution.

The field of care, described as a constellation of sensibilities and practices, invites us to reflect on the importance of attention in our lives. In French, care is broken down into attention, souci, preoccupation, solicitude and care, each of these terms adding a specific nuance to our understanding of caring for ourselves and others. This semantic diversity highlights the importance of active listening and attentional management in our interaction with the sound environment. For example, in an urban setting, an attentive approach to *sound stainability* could include the establishment of quiet zones and the use of absorbent materials to attenuate noise.

William James, an influential psychologist and philosopher, emphasized the crucial importance of attention in shaping our minds. He said that only the things we notice shape our mental experience, otherwise our experience would be pure chaos. For James, attention is the ability of the mind to focus clearly and vividly on one object or thought among several simultaneous options. This focus is essential for perception and cognition, and it plays a central role in the way we interact with our sound environment. Well-directed attention can transform a potentially disturbing soundscape into a serene and enriching experience.

Sound sustainability involves the proactive and considered management of sound to create harmonious acoustic spaces. In the field of architecture and urban planning, this translates into the use of environmentally friendly materials that absorb noise, the design of buildings that minimize reverberation and echo, and the integration of quiet zones. For example, urban green spaces can act as natural buffers against city noise, providing quiet refuges for city dwellers. In addition, modern technologies such as soundproof windows and silent ventilation systems help to reduce noise pollution, promoting a healthier and more pleasant environment.

By incorporating these principles into our daily practices and the design of our living spaces, we can create environments that not only support our physical health, but also nurture our mental and emotional well-being. A conscious and proactive approach to sound management is essential if we are to build a world where aural awareness contributes to a more balanced and harmonious existence.

SOUND ENVIRONMENT AWARENESS AND EDUCATION

The notion of *ecosound* and *sound sustainability* opens to enriching perspectives for education and awareness-raising on the importance of the sound environment. By learning how our actions and choices influence the acoustic reality around us, we can make more informed choices to support the sustainability of sound environments. For example, choosing to reduce the volume of electronic equipment, using absorbent

materials in buildings or planting acoustic hedges in urban areas are all concrete ways of improving our acoustic environment. Research by Davies et al (2013) highlights the importance of collective awareness in transforming the way we perceive and manage sound in our daily lives.

Preserving and creatively recomposing our acoustic environment is crucial to improving our quality of life. Conscious sound management involves not only minimizing noise nuisance but also enhancing beneficial sounds. For example, incorporating water features such as fountains into public spaces or promoting acoustic music festivals can contribute to a pleasant soundscape. Designing buildings with planted courtyards and acoustically efficient construction materials also promotes balanced sound environments. Brown and Muhar (2004) point out that these architectural and urban planning approaches contribute to the creation of harmonious soundscapes, thereby improving the well-being of residents.

Raising awareness of the importance of the noise environment is essential to encourage sustainable practices. Awareness campaigns, educational programs and community initiatives can inform the public about the impact of sound on health and wellbeing. For example, noise management workshops can teach participants how to identify and reduce sources of noise pollution in their daily lives. Guided tours to explore local soundscapes allow participants to discover the diversity and richness of their region's soundscapes. Art projects, such as interactive sound installations, can also raise awareness in a creative and engaging way. Davies et al (2013) illustrate that these educational and artistic activities enhance understanding and appreciation of soundscapes, promoting more respectful and sustainable practices.

CONCLUSION

In summary, the ecology of auditory attention is essential for creating balanced sound environments that are conducive to our well-being. By incorporating a conscious approach to our listening and taking steps to manage soundscapes, we can improve our quality of life and support our mental and emotional health. It is crucial to raise awareness and educate the public about the importance of sound environments and to promote sustainable practices to create acoustically balanced and harmonious spaces.

REFERENCES

Almo F. (2018). Ecoacoustics: A Quantitative Approach to Investigate the Ecological Role of Environmental Studies. Department of Basic and Applied Sciences, University of Urbino "Carlo Bo", 61029 Urbino, Italy

Augoyard, J.-F., & Torgue, H. (2005). À l'écoute de *l'environnement:* Répertoires et pratiques des ambiances sonores. La Découverte.

Berman, M. G., Jonides, J., & Kaplan, S. (2008). The Cognitive Benefits of Interacting with Nature. Psychological Science, 19(12), 1207-1212.

Brian G., & Valeriy S. (2007). General Functions and Specific Applications of Environmental Sound Research [Frontiers in Bioscience 12, 3152-3166, May 1, 2007]

Brown, A. L., & Muhar, A. (2004). An Approach to the Acoustic Design of Outdoor Space. Journal of Environmental Planning and Management, 47(6), 827-842.

Citton, Y. (2014). Pour une écologie de l'attention. Seuil.

Davies, W. J., Adams, M. D., Bruce, N. S., Cain, R., Carlyle, A., Cusack, P., ... & Plack, C. J. (2013). Perception of soundscapes: An interdisciplinary approach. Applied Acoustics, 74(2), 224-231.

Goines, L., & Hagler, L. (2007). Noise Pollution: A Modern Plague. Southern Medical Journal, 100(3), 287-294.

Hygge, S., Evans, G. W., & Bullinger, M. (2002). A prospective study of some effects of aircraft noise on cognitive performance in schoolchildren. Psychological Science, 13(5), 469-474.

Labelle B. (2010, revised 2019). Acoustics Territories: Sound Culture and Everyday Life. Bloomsbury Academic; 2nd Edition

Nishant K., Kirti S. & Mahavir S., (2023). Exploring Sound Absorption properties of Porous Wood-based Ecofriendly Materials for Noise Reduction in Buildings. *J. Acoust. Soc. Am.* 154, A311 *https://doi.org/10.1121/10.0023634*

Susana E. (2023). Eco-Sound Walks: A proposal to promote reduced listening to the natural environment. DOI: *https://doi.org/10.14409/rism.2023.23.e0033*

Judy E. & Elizabeth Hellier (2000) . Auditory Warnings in Noisy Environments. Department of Psychology, University of Plymouth, U.K.

Pluye, P., Potvin, L., & Denis, J.-L. (2004). Making public health programs last: conceptualizing sustainability. Evaluation and Program Planning, 27(2), 121-133.

Schafer, R. M. (1994). The Soundscape: Our Sonic Environment and the Tuning of the World. Destiny Books.

L21

THE REMAINING SOUND THE FORGOTTEN AMBIANCE OF THE ROMANESQUE CHURCHES IN THE CATALAN PYRENEES

O SOM QUE RESTA A AMBIÊNCIA ESQUECIDA DAS IGREJAS ROMÂNICAS DOS PIRENÉUS CATALÃES

Ona Ballo
AAUU CRESSON UGA – AAU CRESSON – France
ballo.o@grenoble.archi.fr

ABSTRACT

The Pyrenees preserve many 11th-12th century Romanesque churches and hermitages, known internatonally for their murals. To prevent their sale to North American collectors, the Catalan government extracted many murals, transportng them by donkey to Barcelona, where they are now housed in the Natonal Museum of Art of Catalonia. Studying the sounds of the past involves focusing on a material that no longer exists, reconstructng traces, testng hypotheses, and also allowing for interpretatons. The "divided heritage" of the Romanesque churches in the Catalan Pyrenees raises the issue of the decontextualizaton of the work, the fragmentaton of an ambiance, and the evoluton of history through a return in situ that primarily engages the senses as a tool of knowledge.

KEYWORDS: Ambiances. Romanesque. Churches. Sound Space. Mural paintngs.

RESUMO

Os Pirenéus preservam muitas igrejas e eremitérios românicos dos séculos XIXII, conhecidos internacionalmente por seus murais. Para evitar a venda desses murais a colecionadores norte-americanos, o governo catalão extraiu muitos murais, transportando-os de burro para Barcelona, onde agora estão alojados no Museu Nacional de Arte da Catalunha. Estudar os sons do passado envolve focar em um material que não existe mais, reconstruir vestgios, testar hipóteses e também permitr interpretações. O "patrimônio dividido" das igrejas românicas nos Pirenéus Catalães levanta a questão da descontextualização da obra, da fragmentação de uma ambiência e da evolução da história através de um retorno in situ que engaja principalmente os sentdos como ferramenta de conhecimento.

PALAVRAS CHAVE: Ambiências. Românico. Igreja. Espaço Sonoro. Murais.

1. INTRODUCTION

One of my earliest aesthetc memories was visitng the Romanesque halls of the MNAC with primary school. While studying Cinema and later Art History, I ofen thought back to the impact of this iconography, which recreates an intmate world where humans and animals traverse states of sublimaton and misery.

When you visit the isolated rural churches that once housed these artworks, you understand that the paintngs are part of a broader ensemble, designed to achieve complete aesthetc and spiritual experiences. In this sense, one of the startng points I want to explore is how the message of faith, belonging to the territory, and visual understanding, was also conceived to be conveyed through hearing.

This journey of listening to mountain spaces, and to be able to reveal what the sound tells us today about these places in general and this heritage in partcular, is a multfaceted project. This research is supported by the Fellowship of La Caixa Foundaton and contemplates a methodology that is at the same tme historiographical, practcal and sensitve. I develop it in CRESSON research laboratory (Research Centre on Sound Space and the Urban Environment), associated with the CNRS (Centre Natonal de Recherche Scientfque).

In the following pages, I'm presentng the background and the general pathways of my approach.

Figure 1. Saint Etenne's lapitadion from Sant Joan de Boí, Museu Nacional d'Art de Catalunya (Barcelona). Source: Museu Nacional d'Art de Catalunya (2015).

2. THE UNFORGOTTEN TRAVEL BETWEEN MOUNTAINS AND NATIONALS MUSEUMS

The Pyrenees preserve a large number of Romanesque churches and hermitages from the 11th12th centuries. These architectures intended for religious worship accumulate today the transformatons of the trace of tme, and are known internatonally for their murals hosted for centuries. The religious iconography covered the interior walls and, in some cases, reached the walls of the façade. It was not tll 1919 that this architectural heritage gained relevance in the artstc world. The sale of the mural paintngs to North American collectors made the Catalan government react. In order to protect the paintngs from other imminent sales, it was decided to extract a great part of the pictorial sets through the technique of "strappo". These frescoes were rolled up and transported with donkeys from the mountains to the capital, untl they were defnitvely re-installed most of all in the Natonal Museum of Art of Catalonia (Barcelona).

Figure 2. During the strappo process in Santa Maria de Taüll.
Source: Pelai Mas (1922).

Nowadays, especially in the Pallars Sobirà area, most churches remain closed all year. Access is not always easy, but once inside the discovery is fascinatng. Being inside allows the visitor to sense *all that was lef behind.* And this raises the following questons: what happens to an architectonic space once the paintngs that were stored have been extracted? Do the buildings maintain their original purpose? We can consider that an architectural monument is alive and is "useful" heritage when it is inscribed in tme, remains exposed to future generatons and can be visited and admired with the purpose of giving imaginaton for future creatve acts. How does this principle apply to the current situaton of the majority of Romanesque churches?

Figure 3. The Bell Tower from Santa Maria de Ginestarre (stll Super8) Source: Judit Naranjo & Ona Balló (2022).

Art History interprets art through vision: it defnes how to look and analyse images. In the Romanesque art from the Pyrenees, this analysis is focused on the pictorial fragments that are preserved in museums. The discovery of the Romanesque heritage happens in big illuminated halls in a city. But images generate meaning according to a context, and in this case, we are faced with a double absence that causes a strong impression to the visitor. On one hand, in the museum, the pictorial representatons have been removed from the landscape, the atmospheres, rituals and other sociological practses that took place inside the religious buildings. And in the other, inside the churches, the visitor faces empty walls that recall the paintngs once held. The desire generated by these absences reinforces the importance of what is lef of material, but also of sensibility. Is it possible to bring back to life the Romanesque churches and contextualise it in order to achieve a full heritage experience?

3. LISTENING TO AMBIANCES TO RENEW PERCEPTION

During the paintng's extracton process, sounds could not be transported, it remins. The "images" crossed the territory and new interior spaces were created to host them. The paintngs lef but each church has retained its original ambient. The relatonship between the murals and the practce of sound in churches is evident. The iconography of Sant Joan de Boí, as studied by historian Milagros Guardia (2000-2001), features, for example, a juggler playing a stringed instrument. Additonally, the paintngs of Sant Romà dels Bons depict fgures reactng to the sacred message with exaggeratedly visible ears. Everywhere, tapestries depicted at the botom of the walls represent the *décor* that was once there: these were likely the same fabrics used during liturgical plays held inside the buildings. In modern tmes, constructons allowed for the procession of a men's choir in each village to the upper foor of the church to accompany the mass with chants. Thus, the history of practces within these mountain churches reveals a traditon that is both sacred and pagan, a space for prayer, but also for entertainment and refuge.

Today, the artstc value and heritage interest of these murals are unanimously recognized, while most of the churches deteriorate and remain silent. Nevertheless, their acoustc qualites, varying according to the locaton, become important when music is once again heard within them, as we experienced with the interventon of musician Arnau Obiols in the churches of Ginestarre and Esterri de Cardós.[1]

The queston of returning the paintngs to their original locaton, which would endanger their preservaton, is not a topic of discussion. How can we give meaning to these interior spaces (both in the church and the museum) by highlightng their sensory aspects? "Faith comes through hearing," claimed Madrid philosopher José Bergamín (2005) in his text on the mystcal power of illiteracy. The potental of listening and sound opens a new directon in research that bridges the built heritage and the

---

1 Available here: htps://cressound.grenoble.archi.fr/son/2023_VENEZIA/Catalog_NewsFromTheWorld.html.

transmission of the sacred message. Primary sources related to the origins of these constructons are sparse, while we are beter documented on the sung masses (the monastery of Ripoll produced a large number of Codices), liturgical dramas, and the producton of troubadours from the 10th century onward.

An approach based on ambiance would go beyond an exclusively iconographic perspectve; it involves considering all dimensions of the place, whether constructed, sensory, or social, and linking spatal qualites with sound efects. Between the open museum and the closed churches, between the mountains and the capital, this round-trip journey aims to beter understand the sensatons produced afer exploring and recording the original architectures to unveil new narratves and possible uses for the future.

Figure 4. Santa Maria de Lleret (stll Super8)
Source: Judit Naranjo

Figure 5. Sond recordings in Santa Maria de Ginestarre Source: Judit Naranjo & Ona Balló (2022).

4. BIBLIOGRAPHY

Augoyard, J.F. & Torgue, H. (1995), À l'écoute de l'environnement : Répertoire des efets sonores.

Éditons Parenthèses, collecton Habitat / Ressources.

Bergamín, J. (2005). José Bergamín. Obra esencial. Turner Publicaciones.

Guardia, M. & Lorés, I. (2020). Sant Climent de Taüll I la Vall de Boí. Memoria Artum.

Guardia, M. (2000-2001), Loculatores et saltator. Las pinturas con escenas de juglaría de Sant Joan de Boí. Locus Amoenus. Universitat Autònoma de Barcelona, *htps://revistes.uab.cat/locus/artcle/view/v5-guardia.*

Tixier, N. (2020), Récits du lieu / Lieu des récits. L'habiter comme patrimoine. Éditons Imbernon.

L21

GIGLI DI NOLA: PERCEIVING, UNDERSTANDING, AND EXPERIENCING THE FESTIVAL

GIGLI DI NOLA: PERCEBER, COMPREENDER E VIVENCIAR O FESTIVAL

Saverio Carillo 1

Susana Alves 2,
s.alves@uniroma1.it

Massimiliano Masullo
1, *massimiliano.masullo@unicampania.it*

Luigi Maffei
1, *luigi.maffei@unicampania.it*

Maria Di Gabriele 1
1: Università degli Studi della Campania Luigi Vanvitelli
2: Università Sapienza di Roma

ABSTRACT

The Gigli di Nola is an Italian folk ceremony featuring a shoulder-borne procession celebrating the feast of Saint Paulinus. This cultural festival is part of the United Nations Educational, Scientific and Cultural Organization's (UNESCO) Representative List of the Intangible Cultural Heritage of Humanity. This study analyses how the physical and spatial aspects of Nola influence the enactment of the cultural festival's soundscape, atmosphere, and behavior of its participants (i.e., bearers and non-bearers). It further examines how the rhythmic qualities of the music are related to bearers' spatial maneuvers and to non-bearers' participation in the festival. The results show that the festival is connected to Nola's urban fabric (e.g., the city's nodes, paths, and boundaries) and community life. The soundscape dominates the atmosphere of the festival and affects people's perceptions and behavior. This study contributes to a critical approach to heritage by proposing an integration of tangible and intangible features.

ABSTRATO

O Gigli di Nola é uma cerimônia folclórica italiana que apresenta uma procissão celebrando a festa de São Paulino. Este festival cultural faz parte da Lista Representativa do Patrimônio Cultural Imaterial da Humanidade da Organização das Nações Unidas para a Educação, a Ciência e a Cultura (UNESCO). Este estudo analisa como os aspectos físicos e espaciais de Nola influenciam a percepção da paisagem sonora, da atmosfera e do comportamento de seus participantes (isto é, portadores e não-portadores) do festival cultural. O estudo examina ainda como as qualidades rítmicas da música estão relacionadas com as manobras espaciais dos portadores e com a participação dos não-portadores no festival. Os resultados mostram que o festival está ligado ao tecido urbano de Nola (por exemplo, os nós, caminhos e limites da cidade) e à vida comunitária. A paisagem sonora domina a atmosfera do festival e afeta as percepções e o comportamento das pessoas. Este estudo contribui para uma abordagem crítica do património imaterial ao propor uma integração de características tangíveis e intangíveis.

KEYWORDS: Gigli di Nola. Soundscape. Atmosphere. Cultural festival. Intangible and tangible heritage. Rhythmanalysis

INTRODUCTION

The United Nations Educational, Scientific and Cultural Organization's (UNESCO) recognition of the intangible aspects of heritage led to the inclusion of diverse ceremonies in the Representative List of the Intangible Cultural Heritage of Humanity (UNESCO, 2019a, 2019b). Amongst these are the "Feste delle grandi macchine a spalla" or celebrations of big shoulder-borne processional structures. The shoulder-borne processional ceremonies (SBPC) comprise of a network of four Italian religious feasts: La Festa dei Gigli di Nola, Il Trasporto della Macchina di Santa Rosa, La Faradda dei Candelieri di Sassari, and La Varia di Palmi (UNESCO, 2019b). Overall,

SBPC replicate ancient Mediterranean rituals practiced in the central and southern regions of Italy. A common feature appertaining to these ceremonies is the presence of machines (Macchine) transported on men's shoulders, according to a specific rite, along the paths of the historical city centers where they occur. The Gigli festival is a popular Catholic feast held every year in Nola to commemorate the return of Saint Paulinus. The festival features eight obelisks which are called Gigli (lilies).

Little is known about how intangible cultural heritage (ICH)is maintained through the interplay of physical and non-physical qualities. Inspired by critical approaches to heritage studies (e.g., Duffy, 2014; Crociani-Windland, 2011; Waterton & Watson, 2013; Smith, 2006; Smith& Campbell, 2017), this study proposes that festivals are social activities whose affective dynamics need to be studied by considering tangible and intangible aspects. The soundscape of festivals such as shoulder-borne processional ceremonies affect people's perception of the event, its atmosphere, and is strongly connected to the social and cultural heritage of the community (Maffei et al., 2015).

The International Organization for Standardization defines soundscape as '[the] acoustic environment as perceived or experienced and/or understood by a person or people, in context' (2014). Soundscapes can be seen in a relational way brought about by people's experience and engagement with everyday settings. Solomos (2018), writes that one must "consider the inextricable links between the vibrating object, the milieu in which the vibration spreads and the subject who listens" (p. 99). Thus, this study tries to understand sound in the Gigli di Nola festival as an embodied part of perception that moves into space and gives it meaning. Sounds and music distinguish the atmosphere of a place and the experiences people have in them (Kearney, 2020).

Atmosphere is defined not as a property of things, but rather as an emergent and continuous configuration (Böhme &Thibaud, 2017; Sumartojo & Pink, 2019; Thibaud, 2015). According to Sumartojo and Pink (2019) "atmosphere is a quality of specific configurations of sensation, temporality, movement, memory, our material and immaterial surroundings and other people, with qualities that affect how places and events feel and what they mean to people who participate in them" (p.6). Atmospheres are an integral part of how the soundscape is perceived and the meanings ascribed to it.

Understanding cultural meanings related to soundscape and associated rhythms in SBPC may represent an important way to safeguard ICH (Kato, 2009). Music and rhythm, which regulate social interaction and shape the atmosphere of an event with a specific affective tone, are significant in the enactment of shoulder-borne processional ceremonies. The soundscape of folk ceremonies goes beyond aural aspects and includes the interrelation between place, performativity, and social engagement via bodily movement.

Although earlier accounts approach the Gigli di Nola from an ethnographic perspective by emphasizing the process of its inclusion in the UNESCO's list (Ballacchino, 2015), few studies have addressed the multi-sensory aspects of this festival (see Primeggia & Varacalli, 1995 for an analysis of the Giglio festival in Brooklyn, NYC).

With this frame in mind, this study seeks to:

1.Map out key physical and spatial elements (e.g., Gigli/obelisks, streets, nodes, and boundaries) and how they affect the enactment of the Gigli di Nola festival, its soundscape, and atmosphere for bearers and non-bearers

2.Understand how the festival's sound properties (e.g., loudness, frequency, and texture) are related to patterns of movement and the maneuvers made by bearers carrying the Gigli.

DESCRIPTION OF SITE, PARTICIPANTS, AND DATA COLLECTION TOOLS

The Gigli di Nola festival takes place in Nola, a small town of about 34,443 inhabitants that lies approximately 40 km outside of Naples, Italy. It happens every year on the first Sunday that falls after the 22nd of June. The feast commemorates the return of Saint Paulinus (ca. 354/5–431) and his heroic, altruistic acts (Primeggia & Varacalli, 1995).

Participants were classified as bearers and non-bearers. The bearers were usually residents of Nola whose families are part of the local guilds (e.g., greengrocers, butchers, innkeepers, bakers, boat builders, shoemakers, blacksmiths, and tailors) for which the obelisks are created. Bearers are the groups of men who follow the religious tradition of carrying the Gigli and making them dance during the day of the parade. The non-bearers are not directly involved in carrying the obelisks or overseeing the Gigli parade. Non-bearers were either residents of Nola or tourists from other parts of Italy or abroad.

Participants were asked about their overall perception of the festival in terms of their satisfaction with it and if it was something they enjoyed or disliked. Participants were also asked about their motivation (e.g., curiosity, passion, tradition, or habit) for participating in the ceremony, their perception of the different senses (e.g., hearing, sight and smell) affecting the atmosphere, and their experience of the festival and procession.

A multi-sensory method for describing and analysing rhythm was used. Drawing from a critical and multi-sensory approach to heritage (e.g., Brambilla et al., 2017), Henri Lefebvre's (1901–1991) concept of rhythm analysis was adopted as a tool for describing and analyzing rhythm and soundscape in the Gigli di Nola. Lefebvre (2004) defines rhythm as the interaction between a place, a time, and an expenditure

of energy. For Lefebvre, the analysis of everyday spaces, such as those dedicated to festivals, entails the consideration between spaces, objects, and bodies and how they give rise to different rhythms.

Fieldwork spanned multiple visits to Nola in 2011 and 2019. Interviews and sound recordings were conducted during the initial visit in 2011. After receiving consent, 120 participants were interviewed briefly on the day of the ceremony. In 2019, further fieldwork involved attending the festival, documenting its different components through photographs and field notes, and talking to participants from Nola who were involved in the festival.

Sound was recorded to understand how music and related rhythms were associated with bearers' movements during the procession. Sound was measured in two situations: close to the Macchine (where musicians were placed) and along the pathways (where the public was gathered) during different phases of the parade to account for the circulation of the procession in Nola's streets.

The audio recordings were made by employing binaural headphones (Sennheiser HDC 451) connected to a portable recorder (M-Audio Microtrack 24/96). Before recording, a pure tone of 94 dB at 1 kHz was taken as reference and used in post-processing to calibrate all in-situ recordings. The files were elaborated using the software 'dB Sonic.' This software makes it possible to analyze acoustic descriptors, apply specific filters to the original audio recordings to isolate the sounds in a specific frequency range, and recognize the rhythmic scan. For example, the bass drum was analyzed by applying a bass pass filter with a lower (120 Hz) and higher cut off frequency (150 Hz).

MAIN RESEARCH FINDINGS

Research findings were organized into three topics: physical and spatial elements; connection between sounds and movements; and soundscape and atmosphere.

PHYSICAL AND SPATIAL ELEMENTS

The Gigli (i.e., lilies) consist of eight wooden and papier-mâché structures or obelisks that are about 25 m in height. The wooden obelisks are named after the ancient guilds of arts and crafts. Gigli corresponds both to the name of the festival (i.e., Gigli di Nola) but also to the 'towers' or structures used during the procession (see Photograph 1).

The Giglio is borne on bearers' shoulders and transported by a "paranza". The paranza consists of a group of about 120 men of differing ages called "cullatori dei gigli. Guiding the paranza is the "capoparanza," who directs the movements of the men, including lifting, placing, and maneuvering the Giglio forwards, backwards, sideways, at varying speeds. The musical fanfare of the Giglio takes place on a pedestal that accommodates both the musicians and their instruments. Each Giglio paranza is carried approximately

1600 meters through the historic city center of Nola. A main node is the Piazza Duomo (see Photograph 2), located in the city center where the parade initiates and ends. While it typically takes around 5 hours for each Giglio to complete the route, the entire procession can sometimes extend through the night, concluding on Monday morning.

The nodes were historically chosen due to their proximity to nearby churches and other meaningful places in Nola. Carillo (2018) suggests that the rhythm of the festival is closely dependent on the physical layout of the historic city. In fact, the urban planning of Nola has been adapted to accommodate the passage of the Gigli each year. For example, windows have been replaced by balconies to allow people to observe the festival. Some of these physical changes have contributed to the imageability of Nola.

Photograph 1: Example of the Gigli

Photograph 2: Piazza Duomo in the city center of Nola where the parade initiates and ends 2. Connection between sounds and movements

The audio recordings were used to understand how the rhythm produced by instruments and the verbal and gestural expressions made by the capoparanza were associated with the movement of the Macchine and the bearers' pace. In general, the festival features different pieces of music of Neapolitan, Italian, and religious origin.

The Gigli maneuvers were identified and synchronized with the recorded binaural sound signals. Analysis of the audio recordings revealed that soundmarks play a crucial role in identifying the ceremony. Soundmarks is a term used in Soundscape Studies to refer to a sound which characterizes an area and has qualities that can be recognized by members of a particular community.

The soundmarks can be recognized in the music associated with the Gigli maneuvers and in the specific commands given by the capoparanza. For example, the song accompanying the *aizata* (raising of the Giglio) is characterized by an increasing rhythm, while the music arranged for the other Gigli movements has a constant rhythm. Furthermore, the audio recordings enabled the identification of key sound sources that contributed to the overall soundscape and atmosphere of the ceremony. The main sound sources characterizing the sonic environment of this ceremony were not only the music of the obelisks in the parade along the same path but also the loud voices and shouts of cheering spectators from the buildings bordering the route.

SOUNDSCAPE AND ATMOSPHERE

Interviews revealed that for both bearers and non-bearing participants the "music" and "rhythm" of the Gigli were key factors shaping their overall experience of the procession.

The festival's rhythm and sound has been maintained consistently throughout its history.

Observations indicated that participants were very energetic and enthusiastic when following the Gigli (Photograph 3). They reported dedicating many hours of the day or even the entire day to attend the festival. Many of the participants were composed of families, with relatives dividing their attention between their children and the fanfare of the paranza. When asked, bearers reported participating in the ceremony more for "passion" and less for "curiosity," whereas nonbearers were mostly drawn to the festival "out of curiosity." For bearers, their rhythm and pace were structuring elements for making the difficult maneuvers of the Macchina. For non-bearers, the music of the fanfare created a festive atmosphere, attuning their mood and motivating them to follow the procession at an energetic pace.

The interviews and engagement with different informants in the Gigli festival also pointed to layers of social interactions. There is an intimate relationship between music and social life, demonstrating that music's primary meanings are social and not

individual (Kavanagh, 2020). The Gigli represents an important place-making practice (Duffy, 2014) connecting people to others (i.e., close interpersonal relationships) and to their place (i.e., deep attachment to Nola).

Photograph 3: Participants (bearers and non-bearers) following one of the Gigli

CONCLUSIONS AND CONSIDERATIONS FOR FUTURE STUDIES

This paper shifts the focus from emphasizing the distinction between tangible and intangible features in festivals to highlighting sound as a crucial material element that conditions the bodies and spaces of the parade. Through sound, important possibilities for action are communicated to both bearers and non-bearers.

We propose rethinking heritage sites as lively urban infrastructures (Amin, 2014). An ecological view of perception and a dynamic view of heritage is needed to use cultural festivals as a means towards creating place attachment and meaningful connections between people and their places. Further studies are needed to examine the liveliness of cultural festivals and attend to their emergent soundscapes and atmospheres. Future studies about the Gigli of Nola should consider body-space relationships and how they are related to the social, political, and ethnic dimensions to reveal markers of gender, class, and ethnicity in the enactment of the Gigli di Nola festival.

The article makes an original contribution to the literature on cultural heritage and festivals by pointing to a multi-sensory approach. Soundscape represents a way of perceiving the environment. In the Gigli di Nola, perception involves experiencing sound as bearers and nonbearers move through different soundscapes and atmospheres. The Gigli represents an important place-making practice where tangible and intangible features are deeply intertwined.

ACKNOWLEDGEMENTS

REFERENCES

Amin, A. (2014). Lively infrastructure. *Theor. Cult. Soc. 31* (7–8), 137–161.

Ballacchino, K. (2011). Embodying devotion, embodying passion. The Italian tradition of the festa dei Gigli in Nola. In A. Fedele& R. Llera Blanes (Eds.), *Encounters of body and soul in contemporary religiosity.* Berghahn Books.

Ballacchino, K. (2015). *Etnografia di una passione: I Gigli di Nola tra patrimonializzazione e mutamento ai tempi dell'UNESCO.* Armando.

Bohme, G., & Thibaud, J-P. (2017). *The aesthetics of atmospheres.* Routledge.

Brambilla, G., & Maffei, L.(2010). Perspective of the soundscape approach as a tool for urban space design. *Noise Control Eng. J. 58* (5), 532–539.

Carillo, S. (2018). La città della goia. Nola e la festa dei gigli: metamorfosi dell'epitelio urbanistico del centro antico. In: F. Capano, M.I. Pascariello, & M. Visone, (Eds.), *Storia e immagine della diversità urbana: Luoghi e paesaggi dei privilegi e del benessere, dell'Isolamento, del disagio, della multiculturalità*. Federico II University Press.

Crociani-Windland, L. (2011). *Festivals, affect and identity: A deleuzian apprenticeship in central Italian communities.* Anthem Press.

Duffy, M.(2014). The emotional ecologies of festivals. In: A. Bennett, J. Taylor, & I. Woodward (Eds.), *The festivalization of culture*. Ashgate.

International Organization for Standardization, 2014. ISO 12913-1:2014 acoustics— soundscape— part 1: definition and conceptual framework. ISO, Geneva.

Kato, K. (2009). Soundscape, cultural landscape and connectivity. *Sites6* (2), 80–91.

Kavanagh, A. (2020). Researching music-and place-making through engaged practice: becoming a musicking-geographer. *Geogr. Rev. 110* (1–2), 92–103.

Kearney, D. (2020). Soundscapes: Geographies of sound and music. In: A. Kobayashi (Ed.), *International encyclopedia of human geography*. Elsevier.

Lefebvre, H. (2004). *Rhythmanalysis: Space, time and everyday life.* Continuum.

Lynch, K. (1960). *The image of the city.* The MIT Press.

Maffei, L., Brambilla, G., & Di Gabriele, M. (2015). Soundscape as part of the cultural and natural heritage. In: J. Kang, & B. Schulte-Fortkamp (Eds.), *Soundscape and the built environment.* CRC Press.

Primeggia, S., & Varacalli, J. A. (1995). The sacred and profane among Italian American Catholics:

The Giglio feast. *Int. J. Polit. Cult. Soc. 9* (3), 423–449.

Smith, L. (2006). *The uses of heritage.* Routledge.

Smith, L., & Campbell, G. (2017). The tautology of "intangible values" and the misrecognition of intangible cultural heritage. *Herit. Soc. 10* (1), 26–44.

Solomos, M. (2018). From sound to sound space, sound environment, soundscape, sound milieu or ambiance. *Paragraph 41* (1), 95–109.

Sumartojo, S., & Pink, S.(2019). *Atmospheres and the experiential world.* Routledge.

Thibaud, J.-P. (2005). The backstage of urban ambiances: When atmospheres pervade everyday experience. *Emotion, Space and Society 15*, 39–46.

UNESCO, 2019a. Intangible cultural heritage. *https://ich.unesco.org/en/lists*. Accessed on July 9th 2019.

UNESCO, 2019b. Celebrations of big shoulder-borne processional structures. In:

https://ich.unesco.org/en/RL/celebrations-of-big-shoulder-borne-processional-structures00721. Accessed on July 9th 2019.

Waterton, E., &Watson, S. (2013). Framing theory: Towards a critical imagination in heritage studies. *Int. J. Herit. Stud.19* (6), 546–561.

L23

TEACHING THE AMBIENT PROJECT

CHAIR Olfa R. Meziou

Scientific community – with its philosophers, anthropologists, sociologists, engineers, geographers, historians and researchers in art, architecture, design, cinema, etc.-working hard to describe ambiance and atmosphere, to analyze the experience of architectural, urban or landscape places and to refine the notions related to atmospheres. Moreover, many architects – like Juhani Pallasmaa, Peter Zumthor or Philipp Rahm -, more or less consciously integrate atmospheric and feeling issues into their projects. As such, they produce real references in terms of ambient projects.

All this constitutes an available material to teach the ambient or atmospheric project. But how do architects and design project teachers procede to teach ambient project? How about going beyond the atmospheric design? All this material is it useful? Should we/ did they invent another one?

What do students teach us? What do workshop's experiences at school teach us? What are the issues for teachers? What about representation? What about evaluation? Can the teaching of ambient project be a kind of reform of the more traditionnal design teaching – if it exists at all – or does it require a real paradigm shift?

SENSORY ENVIRONMENTS: AN ANALYSIS OF PORTUGUESE ARCHITECTURAL CURRICULA

AMBIENTES SENSORIAIS: UMA ANÁLISE DOS CURRÍCULOS DE ARQUITETURA PORTUGUESES

Mónica Alcindor
Associate Professor / Professora Associada
CIAUD-UPT—Branch of CIAUD Research Center, Departamento Arquitetura e Multimédia Gallaecia,
Universidade Portucalense Infante D. Henrique / CIAUD-UPT—Polo do Centro de Investigação CIAUD, Departamento Arquitetura e Multimédia Gallaecia, Universidade Portucalense Infante D. Henrique
CIAUD, Research Centre for Architecture, Urbanism and Design, Lisbon School of Architecture, Universidade de Lisboa / CIAUD, Centro de Investigação em Arquitetura, Urbanismo e Design, Faculdade de Arquitetura, Universidade de Lisboa
monicaalcindor@upt.pt

ABSTRACT

Architecture is corporeity, so architectural space must be conceived from the body and for the body since space is captured through bodily and sensory activities. Therefore, architecture must attend to all the senses involved in its perception. Thus, each architectural project, in addition to solving rational problems and meeting functional, technical, and other requirements, must be able to evoke and reflect the different sensory worlds of each culture.

Studying the case of Portuguese curricula in architecture, it is possible to offer insights into how the approach to knowledge of the sensory worlds is handled in academia by undertaking a documentary analysis.

In a very real way, not enough attention is given within teaching practice to our corporeal and holistic essence. Studies of architecture need to also include an ethnographic dimension, to consider the situations which emerge when the teaching of architecture becomes detached from all of our senses other than simply the visual.

KEYWORDS: Architecture curricula. Sensorial World. Neuroarchitecture. Design Studio Teaching. Portugal.

RESUMO

A arquitetura é corporeidade, pelo que o espaço arquitetónico deve ser concebido a partir do corpo e para o corpo, uma vez que o espaço é captado através de atividades corporais e sensoriais. Por isso, a arquitetura deve atender a todos os sentidos envolvidos na sua perceção. Assim, cada projeto de arquitetura, para além de resolver problemas racionais e cumprir requisitos funcionais, técnicos e outros, deve ser capaz de evocar os diferentes mundos sensoriais de cada cultura.

Estudando o caso dos currículos portugueses de arquitetura, é possível oferecer uma visão sobre a forma como a abordagem ao conhecimento dos mundos sensoriais é tratada no campo académico através de uma análise documental.

De certa forma, não há reconhecimento suficiente nas práticas de ensino sobre a nossa essência corpórea e holística. Os estudos de arquitetura precisam de incluir também uma dimensão etnográfica, para considerar as novas situações que emergem quando o ensino da arquitetura se desligou de outros sentidos, exceto o visual.

PALAVRAS-CHAVE: Planos de estudo de Arquitetura. Mundo sensorial. Neuroarquitetura. Ensino de Projeto de Arquitetura. Portugal.

1. INTRODUCTION

Architecture is corporeity, so architectural space must be conceived from the body and for the body, since space is experienced through bodily and sensory activities. Therefore, architecture must attend to all the senses involved in its perception. Thus, each architectural project, in addition to solving rational problems and meeting functional, technical, and other requirements, must be able to engage with the different sensory worlds of each culture (Holland et al., 2001).

The culture of architecture and design is created and produced almost exclusively for one sense, the visual (Blesser & Salter, 2009; Mau, 2018). In design terms, the use of integrated, multisensory processing allows the creation of multiple effects that can be used by architects as techniques for design, together with their associated spatial implications. The design process needs to work with three main factors (intellectual knowledge, building purpose, and user culture), but only when considering these three main factors together will architects be able to design holistically (de Paiva, 2018).

This research intends to identify the gaps that exist in the architectural curricula regarding the senses and perception, and the effects this has on the training of future architects. In this way, the study will seek to understand how sensory design is approached in architecture curricula in Portugal.

Therefore, to analyse sensory contents and strategies in architecture, an understanding of underlying conceptual frameworks is needed, in particular the general belief that by applying a certain working principle, a specific value will be created (Dorst, 2011). How have these discoveries impacted the teaching of architecture, and where are the gaps in the architecture curricula which should be addressed for the training of future architects?

2. THEORETICAL FRAMEWORK

The majority of architecture is designed for the eye of the beholder, and tends to neglect the nonvisual senses of hearing, smell, touch, and even taste (Sennett, 1996; Spence, 2020). There is an ocular-centrism in occidental culture that was born in the seventeenth and eighteenth centuries in the Enlightenment period, and was later fully embraced by modernism (Henshaw, 2014).

Recently, there has been a growing recognition of the importance of the non-visual senses to various fields of design (Haverkamp, 2014; Lupton & Lipps, 2018; Malnar & Vodvarka, 2004), both individually and, more importantly, when the senses are studied collectively, since this is how architecture is perceived (Bille & Sørensen, 2018). As Pallasmaa (1996) stated: architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses since an architectural work is not experienced as a series of isolated retinal pictures, but in its fully integrated material, embodied, and spiritual essence. However, until very

recently, little consideration has been given by architects to the question of how the senses interact, one with another, in terms of their influence on an individual. This neglect is particularly striking given that the built environment, and the atmosphere of a space, are nothing if not multisensory (Ladavas & Farne, 2004). Design should aspire to multisensory congruency, instead of the ocular-centric dominance of occidental culture (Levin, 1993).

Therefore, architecture should attend to all the senses involved in its perception, considering that the relationship between environment and the individual happens not only in a cognitive way, but also in an emotional one. People have multiple subconscious tendencies and behaviours that govern their responses to built environments (Rock, 2009), and which will be interpreted by the brain differently according to one's culture (Holland et al., 2001; Rodaway, 1994).

Gibson (1966) reformulated the five senses into a classification of the perceptual system in order to capture the functions which also pick up information, rather than simply those which arouse sensations. In other words, they represent the sources of learning which are associated with perception, those which comprise visual, auditory, taste-smell, basic-orienting, and haptic systems. These five perceptual systems are considered as active systems classified by modes of activity, rather than by unconscious processes. This substitution of classical senses with perceptual systems is recommended due to the fact that the latter are clearly shaped through learning and by association (and therefore subject to cultural influence), rather than sensations which are innate or biologically universal (Gibson, 1966). Tracing the ways of teaching involved in the creation of built environments, and the ways in which knowledge is transmitted, provides a greater understanding of the core challenge of design teaching with regards to sensorial perception, and a means of observing and capturing the underlying (cultural) values involved.

3. METHOD

To capture the ways in which sensory perception is approached throughout Portuguese curricula, a documentary analysis has been undertaken of 17 architecture curricula in Portugal, examining the main subjects where perceptual systems are involved.

Examination of these documents has been based on the idea that academic curricula are institutional documents; therefore, they reflect exactly what the name suggests, that insights into societal trends are cognitive models anchored in time with an institutional dimension. This approach has been deployed qualitatively (using discourse analyses) in relation to discursive formation, as the 'condition of existence' (Foucault, 1991). They are specific to, and situated in, a socio-historic context. As Scott (2014) suggests, documents should be seen as 'situated products', while recognising that they are also actants (Latour, 2005), inasmuch that they shape the way we traverse the social dimension.

4. EXPLORING THE APPROACH OF PERCEPTUAL SYSTEMS IN ARCHITECTURE CURRICULA IN PORTUGAL

An explanation of the ideological basis of the Portuguese state's curricular approach to architecture first requires a reconstruction of the conceptual framework from both a historical-cultural and ontogenetic perspective of the underlying rationalities that shaped its subjects.

In the case of Portugal, the training of architects has been particularly sensitive to the dynamics of space and place, and the role of practice in the cultural construction of places. Schools try to avoid transforming architects into intentional agents of cultural discontinuity, by instead encouraging young people to understand their intangible environment so that they can serve existing needs in the most appropriate way. They try to give students the tools to analyse the semiotic keys that allow them to decipher the different experiences that are obtained from a place and thus develop a more conscious analytical perspective, as fundamental chains of expression and architectural work that the architect must consider before moving on to the design phase. Importantly, the intention is to provide students with a more empathic approach, allowing them to develop a critical understanding of the communities within which they work, and the world view of those who live there.

In the curricula of the 17 schools examined in Portugal, there are core subjects of a social nature that seek to establish the connection between architecture and other aspects of general social life, including the economy, political-administrative regulations, and the different worldviews held by the various groups that interact in the spaces designed. However, there is still a gap in developing a conscious and worked approach to wider perceptual systems beyond the visual. In fact, out of the 17 curricular plans, only one subject has been identified that deals explicitly with this topic. Even here however it is dealt with theoretically, and it is not clear whether the student uses this knowledge actively in the projects he or she carries out during the course, as this relies heavily on the values and perspectives of other teachers.

5. CONCLUSION

Looking to the future, the hope is that architectural design teaching and learning will increasingly incorporate our growing understanding of the human senses, and how they influence one another. This era would be marked a new paradigm shift in a Kuhnian sense, incorporating and taking into account an array of perceptual systems.

Architecture studies must not only aim to address wider systems of perception, but also address the meaning and significance of cultural perception systems. The main point is to introduce in the curricula the specific knowledge and approaches needed in order to teach more holistically sensitive professionals. This presents a

challenge not only for architects and designers, but also associated academic fields such as neuroscience studies, to develop an improved understanding of the design and evaluation of inhabitation and place. As Eberhard (2009) states neuroscientists know that if architects imaginatively utilize the scientific process to study the brain they can find new knowledge of value for creating better environments.

Importantly, we should not forget that we are entering a digital age in which architects will be able to design visually compelling spaces even more easily, but where attention to other perceptual systems will have to be pursued more consciously as there is a risk that these will not come naturally.

7. REFERENCES

Bille, M., & Sørensen, T. F. (2018). Atmospheric architecture: Elements, processes and practices. In D.

Howes (Ed.), *Senses and sensation: Critical and primary sources.* Bloomsbury.

Blesser, B., & Salter, L. R. (2009). *Spaces speak, are you listening?: experiencing aural architecture*. MIT Press.

de Paiva, A. (2018). Neuroscience for architecture: how building design can influence behaviors and performance. *Journal of Civil Engineering and Architecture, 12(2)*, 132-138.

Dorst, K. (2011). The core of 'design thinking'and its application. *Design studies, 32*(6), 521-532.

Eberhard, J. P. (2009). *Brain landscape the coexistence of neuroscience and architecture*. Oxford University Press.

Foucault, M. (1991). Politics and the study of discourse. In G. Burchell, C. Gordon, & P. Miller (Eds.), *The Foucault effect: Studies in governmentality* (pp. 53-72). Harvester Wheatsheaf.

Gibson, J. J. (1966). *The senses considered as perceptual systems.* Houghton Mifflin.

Haverkamp, M. (2014). *Synesthetic design: Handbook for a multisensory approach*. Birkhäuser.

Henshaw, V. (2014). *Urban smellscapes: Understanding and designing city smell environments*. Routledge.

Holland, D., Lachicotte, J. W., Skinner, D., & Cain, C. (2001). *Identity and agency in cultural worlds.* Harvard University Press.

Ladavas, E., & Farne, A. (2004). Neuropsychological Evidence of Integrated Multisensory Representation of Space in Humans. In G. Calvert, C. Spence, & B. E. Stein (Eds.), *The handbook of multisensory processing*. MIT Press.

Latour, B. (2005). *Reasssembling the social: An introduction to actor-network theory*. Oxford University Press.

Levin, D. M. (1993). *Modernity and the Hegemony of Vision.* University of California Press.

Lupton, E., & Lipps, A. (2018). *The senses:Design beyond vision*. Princeton Architectural Press.

Malnar, J. M., & Vodvarka, F. (2004). *Sensory design*. University of Minnesota Press.

Mau, B. (2018). *Designing LIVE* (E. L. Lupton, A., Ed.). Princeton Architectural Press.

Pallasmaa, J. (1996). *The eyes of the skin: Architecture and the senses*. Academy Editions.

Rock, D. (2009). *Your Brain at Work. Strategies for Overcoming Distraction, Regaining Focus, and Working Smarter All Day Long*. Harper Business.

Rodaway, P. (1994). *Sensuous geographies: body, sense and place*. Routledge.

Scott, J. (2014). *A matter of record: Documentary sources in social research.* Polity. *https://doi.org/978-0-745-60073-5*

Sennett, R. (1996). *Flesh and stone: The body and the city in Western civilization*. WW Norton & Company.

Spence, C. (2020). Senses of place: architectural design for the multisensory mind. *Cognitive Research: Principles and Implications, 5(1)*, 1-26.

TEACHING ARCHITECTURAL AND URBAN AMBIENCES: SPATIAL EXPERIMENTS FOR 1ST YEAR ARCHITECTURE STUDENTS

ENSINO DE AMBIENTES ARQUITECTÓNICOS E URBANOS: EXPERIÊNCIAS ESPACIAIS PARA ESTUDANTES DO 1º ANO DE ARQUITECTURA

Malek Derouiche
Architect, Ph. D. in architecture, university assistant
University of Carthage, ENAU, LR21ES20, LaRPAA,2026, Tunis, Tunisia
Malek.derouiche@gmail.com

Dorsaf Zid
Architect, Ph. D. in architecture, Adjunct Lecturer
University of Carthage, ENAU, LR21ES20, LaRPAA, 2026, Tunis, Tunisia dorsaf.
zid@enau.ucar.tn

ABSTRACT

Our paper presents the results of a teaching experiment designed to make first-year architecture students aware of sensory perception through the body's engagement with the surrounding space. The 'Spatial Experiments' exercise takes place in four stages: intuitive wandering, attentive wandering, physical experimentation with the envelope, and conceptualization. Students explore, analyze and reproduce spaces using various modes of representation (text, drawing, photography, models). This approach enables them to develop a greater understanding and sensitivity to the parameters influencing architectural and urban ambiences. The experiment demonstrated significant progress in the students' analytical and expressive abilities regarding spatial and sensory characteristics of environments.

KEYWORDS: Educational Experience. Spatial Experimentation. Sensory Perception. Ambient Parameters. Representation Mode.

RESUMO

Este artigo apresenta os resultados de uma experiência pedagógica destinada a sensibilizar os alunos do primeiro ano de arquitetura para a perceção sensorial através da consciência do corpo em ação no espaço circundante. O exercício "Spatial Experiments" desenrola-se em quatro etapas: deambulação intuitiva, deambulação atenta, experimentação física com o envelope e concetualização. Os alunos exploram, analisam e reproduzem os espaços através de diferentes modos de representação (texto, desenho, fotografia, maquetas). Esta abordagem permite-lhes desenvolver uma maior compreensão e sensibilidade aos parâmetros que influenciam os ambientes arquitectónicos e urbanos. A experiência demonstrou um progresso significativo na capacidade dos alunos para analisar e exprimir as características espaciais e sensoriais dos ambientes.

PALAVRAS CHAVE: Experiência pedagógica. Experimentação espacial. Perceção sensorial. Parâmetros ambientais. Modo de representação.

1. INTRODUCTION

Teaching architecture extends beyond mastering construction techniques and design to include a sensitive dimension in which the perception of ambience plays a crucial role. Understanding how different environmental parameters affect the spatial experience is essential for future architects. Ambience has thus become a component of the disciplinary field, where the subject taught includes not only physical environmental phenomena, but also the sensitive dimension and the experience of space (Ouard, 2013). This article proposes a methodological approach for teaching ambiences to first-year architecture students.

2. CONTEXT OF THE AMBIENCE-ORIENTED EDUCATIONAL EXPERIMENT

For the first-year architecture studio, choosing the initial exercise is crucial to introduce students to architecture in an engaging way, avoiding overwhelming theoretical data or complex design exercises that are difficult to understand or master. These students, who have just passed their baccalaureate and come from various social and cultural backgrounds, need an accessible and engaging approach. As part of the 'Introduction to Shaping' module (Architecture studio), we thought it would be useful to begin with an introductory exercise designed to immerse students in the observation and physical experience of space. This exercise aims to transform their perception of architecture, evolving their understanding from a layman's perspective to that of a future architect and expert. By directly engaging students in spatial environments, we encourage deep and critical reflection, enabling them to develop a more nuanced and expert understanding of architecture early in their training.

With this exercise we have tried to answer to this question: how can the teaching of ambiances be effectively integrated into the curriculum for first-year architecture students, and what are the impacts of this approach on their perception and conception of space?

The ambient approach put forward in this exercise is unquestionably that of the sensitive experience of space. In this respect, the writings of Norberg-Schulz and Merleau-Ponty are fundamental to the theoretical construction of this aspect of ambience, firmly anchored in a phenomenology of space, where experience is defined as the inter-individual experience of the world in its spatial and temporal depth (Norberg-Schulz, 1997; Granade 2007). First of all, we assume that a teaching approach based on spatial experiences increases students' sensitivity to factors that generate ambience. Indeed, experimentation transcends the field of architecture by encouraging a critical and often denormative relationship with situations. This enables students to break out of the habits and norms of traditional understanding of observed phenomena and discover new practices and ways of doing things (Chelkoff, 2018). This innovation approach does not seek to impose knowledge and techniques unilaterally, but to develop collaborative and shared processes among architecture students, with a scope that goes beyond the experience itself. Secondly, students who follow this methodology will be better equipped to translate their sensory experiences into concrete architectural designs. In this way, the use of different modes of representation (text, drawing, model, etc.) enriches the students' understanding and communication of ambiences.

3. LEARNING BY EXPERIENCE PROCESS

A large number of learning processes have been developed. In her thesis intitulated "Methods of teaching architecture in virtual immersion: Experimentations for the design studio", Maria Velaora exposed the major theories of learning (Velaora, 2021). Among these learning theories, we first retain behaviorism. This process has many advantages but considers the learner "as a passive person who responds to the stimuli" (Ratna, 2015). Second, cognitivism, this theory is teacher-centered approach and may not correspond to the expectation of the students who may more appreciate an active and dynamic approach. Third constructivism–deconstructivism "knowledge is constructed through one's own personal experiences and interactions with the outside world. The learner takes in new information and gives meaning to it using his or her own prior attitudes, beliefs, and experiences as references" (Stavredes, 2011). And finally, the experiential learning method is an educational theory developed by David Kolb. Experiential learning emphasizes the importance of experience in the learning process (Kolb, 1984). According to Kolb, learning occurs in four cyclical stages (Figure1):

- **Concrete experience** it involves direct engagement in a new experience or specific situation.
- **Reflective observation** consists of observing and reflecting on this experience, analyzing what happened.
- **Active experimentation** it involves testing new ideas and theories in real situations, which generates new concrete experiences and restarts the cycle. This approach highlights the idea that learning is a dynamic and continuous process, where individuals build their understanding and skills through constant interaction with their environment.
- **Abstract conceptualization** this step requires formulating concepts and ideas based on previous reflections, integrating theories or models.
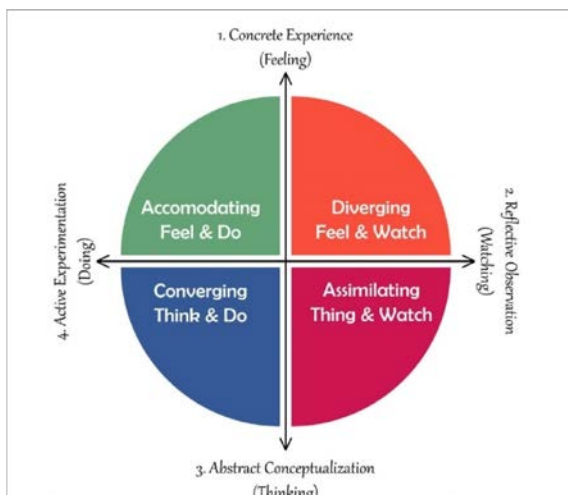
Figure 1. Kolb's learning cycle.
Source: (Mcleod, 2024).

In our paper, we draw on this experiential learning method to highlight the importance of sensory and physical experience in architectural education, enabling students to develop a deeper and more nuanced understanding of architectural and urban environments.

4. TOWARDS A SPATIAL EXPERIMENTATION METHOD

Adopting Kolb's experiential learning approach in architectural education has many advantages. This pedagogical approach, based on the idea that learning is a cyclical process rooted in experience, encourages the active engagement of students. This method encourages reflection on lived experiences, leading to a deeper understanding and practical application of theoretical knowledge. Additionally, it fosters student autonomy and responsibility in their own learning, making education more interactive and personalized. Furthermore, the notion of walkability is crucial to capturing the ambience of an architectural or urban space. By integrating this perspective, we emphasize the idea of the body in movement in space, thus enabling a tangible understanding of the ambiences perceived and experienced. As Le Breton (Le Breton, 2012) puts it, 'Walking is a change of sensory routine, the certainty of constantly surprising oneself, and of renewing one's reference points of meaning and value along the way'. So, discovering a smell, a sound or a shape involves maintaining a connection with your material body as you move, capturing the diversity of your sensory environment. This enables students to enrich their auditory, olfactory and visual palette through mutual discovery.

The figure 2 presents our spactial experiments method presents four steps based on Kolb's learning theory.

Figure 2. The proposed spatial experimentation approach. Source: Authors.

4.1 Intuitive walkthrough

This step aims to raise students' awareness of their sensory experience of space. Students visit different architectural or urban spaces in a predefined route. Then they describe intuitively the sensations and feelings experienced, using various modes of representation (narrative text, drawing, etc.). They can collect data in journals, sketches, audio/video recordings. They are free to explore the space without any specific guidance.

4.2 Attentive walkthrough

In our experimentation students proceed to an attentive Walkthrough. Teachers present the physical parameters of ambiance and explain how sensory experiences

can alter the perception of a place. Students are asked to observe, identify and qualify the parameters influencing ambiances. They revisit impactful spaces to observe and describe light, sound, airflow, thermal, and olfactory parameters. They not only qualify these parameters but also identify the architectural features causing them.

4.3 Simulation on physical models

In our method, students produce models of these features and try to modify the envelope so that they can observe directly how these transformations could modify the physical factors of ambiance. Students can use various materials (natural, colored, textured, of different sizes, etc.) including recycled ones. These models must reflect at least three effects among the effects observed during attentive walking. These materials thus arranged form an outer envelope. A series of experiments will be carried out on these compositions simulating light, sound, thermal and air sources, etc. (Figure3). Students will have to use text, small drawings, videos and photos to represent the effects observed by manipulating the sources.

Figure 3. Simulation devices properties on physical models. Source: Authors.

4.4 Abstract conceptualization

At the end of our method, students are asked to create a conceptual model that abstractly reflects their feelings during the exploration, using diverse materials (natural, colored, textured, various sizes, etc.). Each will need to use different types of materials of different sizes in order to create a three-dimensional (3D) composition. These materials will be assembled and arranged vertically, horizontally or along an inclined plane. This model must translate a spatio-sensory concept specific to the experience lived by each student (Figure4).
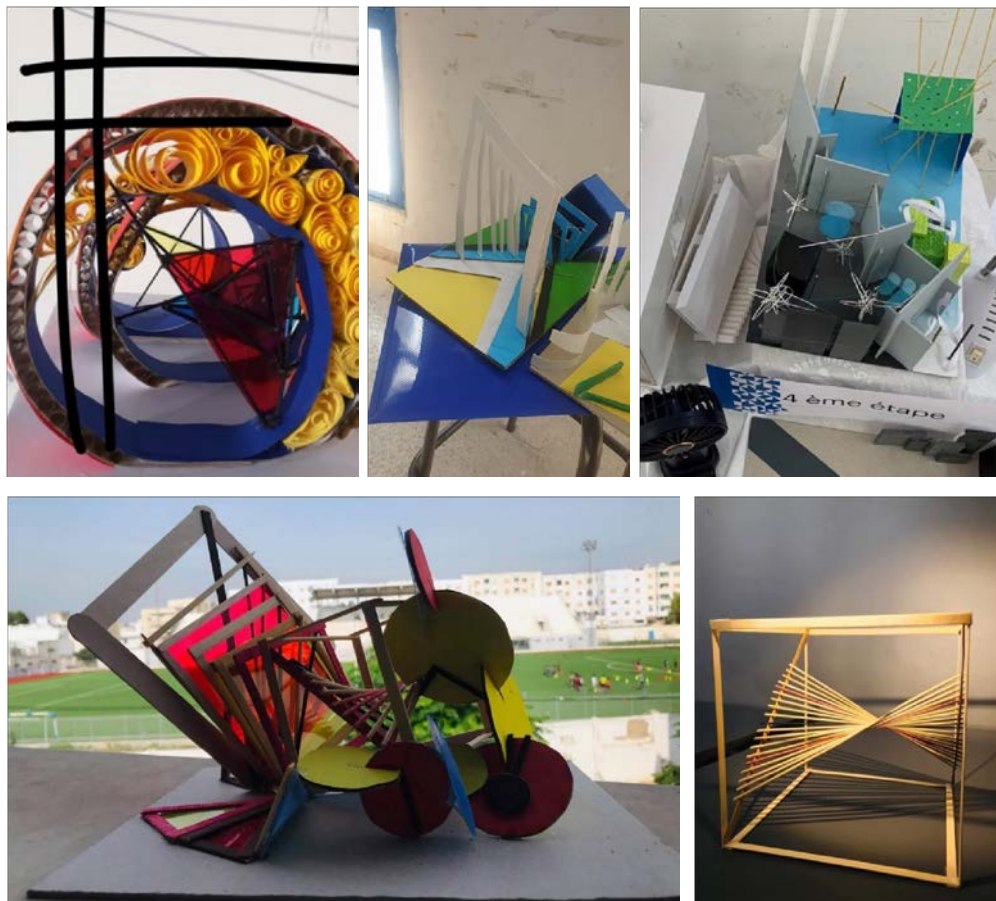
Figure 4. Conceptualization. Students' models.
Source: Authors.

5. EMBRACING ARCHITECTURAL LEARNING THROUGH SENSORY EXPERIENCE: CHALLENGE AND PROSPECTS

The application of Kolb's experiential learning theory in our methodology has proven effective in enhancing students' understanding and engagement with architectural and urban ambiances. By emphasizing direct sensory experiences and reflective practices, our approach aligns with contemporary educational trends that prioritize active learning and critical thinking (Velaora, 2021). This framework not only empowers students to navigate complex spatial environments but also encourages them to challenge conventional architectural norms and explore innovative design solutions based on experiential insights. A key strength of our methodology is integrating the concept of walkability as fundamental to perceiving spatial ambiances. By encouraging students to explore spaces through movement, we acknowledge the embodied nature of human experience and its profound impact

on sensory perceptions. Through hands-on experimentation with physical models and the simulation of environmental properties, students not only deepen their understanding of architectural elements but also cultivate design skills that integrate sensory and experiential dimensions into their creative process.

However, challenges persist in scaling this approach across diverse educational settings and ensuring its applicability beyond introductory courses. While our methodology fosters critical engagement and interdisciplinary exploration, its implementation may need adaptations to suit varying student backgrounds and learning environments. Future research could explore strategies for more broadly integrating experiential learning into architectural education, addressing logistical constraints and maximizing its pedagogical impact.

6. CONCLUSION

In conclusion, this article highlights the transformative potential of experiential learning methodologies in training the next generation of architects. By bridging ambience theory and practice through sensory analysis (reading) and reflexive shaping (writing), we provide students the tools to perceive, interpret and design architectural spaces that resonate with human experience and cultural contexts.

7. BIBLIOGRAPHY

Chelkoff, G. (2018). Expérimenter l'ambiance par l'architecture. Ambiances, 4. *http://journals.openedition.org/ambiances/1558*

Kolb, D. (1984). Experiential Learning: Experience As The Source Of Learning And Development. Prentice Hall.

Granade, G. S. (2007). La phénoménologie du corps et de l'intersubjectivité incarnée chez Gabriel

Marcel et Merleau-Ponty. (Doctoral dissertation). University Paris Sorbonne. France.

Le Breton, D. (2012). Marcher : Eloge des chemins et de la lenteur. Metailie.

Mcleod, S. (2024). Kolb's Learning Styles and Experiential Learning Cycle. *https://www.simplypsychology.org/learning-kolb.html*

Norberg-Schulz, C. (1997). Genius Loci: paysage, ambiance, architecture. Mardaga éditions.

Ouard, T. (2013). Concevoir une ambiance en architecture ? 1st International Congress on Ambiances. September. Grenoble. France.450-454. *https://shs.hal.science/halshs-00833932/document*

Ratna, S. (2015). Learning Theories and Teacher Education. Education and Devlopment. Vol-IV. No-1. *https://sctek.online/wp-content/uploads/2017/05/learning_theories.pdf*

Stavredes, T. (2011). Effective Online Teaching: Foundations and Strategies for Student Success. Jossey-Bass Inc.

Velaora, M. (2021). Methods of teaching architecture in virtual immersion: Experimentations for the design studio. (Doctoral dissertation). Université nationale technique d'Athènes. Athènes.

CAPTURING AND REEACTIVATING AMBIENCE AS A KEY ISSUE IN SENSIBLE URBAN PLANNING

A CAPTAÇÃO E REACTIVAÇÃO DO AMBIENTE COMO QUESTÃO FUNDAMENTAL DE UM PLANEAMENTO URBANO SENSATO

Imen Landoulsi
Architect, PhD,
University of Catrthage, ENAU, LR21ES20, LaRPA, ERA, Tunis
imen.landoulsi.20@gmail.com

Alia Ben Ayed
Architect, HDR,
University of Catrthage, ENAU, LR21ES20, LaRPA, ERA, Tunis
aliabenayed@yahoo.fr

ABSTRACT

As part of the 4th year of project teaching at the Ecole Nationale d'Architecture et d'Urbanisme in Tunis, our team strives to make students aware of the importance of sensitive, environment-oriented design. Our approach consists of adopting an analysis/project attitude based on field experiments. However, this project-oriented attitude - conscious and aiming to be useful - is somewhat contradictory to the very nature of the atmosphere - pure, a-conscious, sensitive vibration - that we are trying to capture. In addition, the reporting phase of the experiment represents a second challenge. How do you reproduce a feeling that is fleeting, labile and elusive? How do we capture this moment of resonance in concert with the atmosphere? A third challenge is that of the project phase, which aims to reactivate atmospheres that are still present on the ground but have faded over time. In this paper, we wish to report on this ten-year experience, while highlighting the heuristic significance of the limits encountered.

KEYWORDS: Sensible Urban Design. Sensory Design. Ambience Capture. Ambience Reactivation. Ambience Representation

RESUMO

No âmbito do 4º ano de ensino de projeto na Escola Nacional de Arquitetura e Urbanismo de Tunes, a nossa equipa esforça-se por sensibilizar os alunos para a importância de uma conceção sensível e orientada para o ambiente. A nossa abordagem consiste em adotar uma atitude de análise/projeto baseada em experiências no terreno. No entanto, esta atitude projectual - consciente e com o objetivo de ser útil - é um pouco contraditória com a própria natureza da atmosfera - vibração pura, consciente e sensível - que estamos a tentar captar. Para além disso, a fase de relato da experiência representa um segundo desafio. Como reproduzir um sentimento que é fugaz, lábil e esquivo? Como é que captamos este momento de ressonância em consonância com a atmosfera? Um terceiro desafio é o da fase de projeto, que visa reativar atmosferas que ainda estão presentes no terreno mas que se desvaneceram com o tempo. Neste artigo, pretendemos dar conta desta experiência de dez anos, sublinhando o significado heurístico dos limites encontrados.

PALAVRAS-CHAVE: Conceção urbana sensata. Conceção sensorial. Captação de ambientes. Reativação da ambiência. Representação do ambiente

1. TEACHING AMBIENT DESIGN

The teaching of 'ambiancie' or ambient design is faced with a major challenge, linked to the very nature of ambience, which is vibratory, labile and elusive, and whose encounter can be missed all the more because we are trying to make it happen. If the atmosphere is there at first sight, it can happen, depending on our state of mind, that we miss the moment of vibrating in tune with it, that we feel excluded, out of place. This is all the more true when we approach it with the intention of capturing it,

at the risk of annihilating the spontaneity of the situation. If the encounter does take place, how do you capture it without reifying it at the risk of dissolving it? How do we capture it? In addition, what tools should be used as part of an urban redevelopment project to preserve opportunities for vibratory encounters? This is the challenge we face as teachers of a project workshop that we hope will be sensitive. The use of art is one of the ways in which we can meet this challenge. Our aim in this paper is to give an account of this ten-year experience, while highlighting the heuristic significance of the limits encountered.

1.1 The context of Tunisian towns

The second semester of 4th year project teaching at the Ecole Nationale d'Architecture et d'Urbanisme (ENAU) in Tunis (equivalent to a Master's 2) focuses on urban design in the context of Tunisian cities. These towns, particularly coastal ones, underwent major changes from the end of the 19th century in response to the logic of colonization. They extended beyond the ramparts of the old medinas, around the area of the new port and station, essential facilities for transporting goods to the metropolis. These cities adopted a rational grid layout, largely inspired by Western models, and built public buildings symbolizing the new power (the consul's residence, the cathedral, the theatre) along tree-lined avenues or facing squares or other forms of public space.

Today, because of the demographic dynamic, these towns are facing accelerated urbanization. As a result, agricultural land is being consumed (urban sprawl), and uncontrolled illegal peri-urban housing is springing up, with deficiencies in terms of infrastructure and sanitation. This phenomenon is accompanied by social insecurity (often leading to delinquency). In addition, the artificialisation and sealing of land increases the vulnerability of these cities to surface water flooding. The situation is made all the more critical by the fact that climate change is increasing the occurrence of one-off events of excessive rainfall. What's more, in the embryonic colonial towns that have now become the hypercentres of metropolises, the road and sewerage network no longer meets needs. In the context of the global economy, port facilities have become obsolete.

It is in this context that the objectives of the 'Study Tour' module undertaken in 4th year are defined. The aim is to identify a city and help students understand how it has developed, so that they can make a reasoned diagnosis of its current situation with a view to proposing solutions to the issues raised. Our project teaching aims to achieve the following objectives:

- Introduction to methods for reading and analysing urban systems,
- Integration of the various investigation and analysis data into the urban project methodology,
- Mastery of the design process in the context of the complexity of an urban context and issue,
- Coherence and legibility of the elements defining the project.

Our teaching team strives to introduce students to a sensitive, ambience-oriented project approach. Our approach consists of adopting an analysis/project attitude (analysis with a view to the project) based on field experiments. In other words, we invite students to question the potential and limitations of the situation in question, with the aim of coming up with project ideas that are relevant to the specific features of the existing situation. The exercise is carried out in three stages: in vivo, in situ and then in vivo again.

1.2 The search for documentary sources

The approach requires multidisciplinary thinking at different scales, from the metropolis to the neighbourhood. Preliminary work, carried out in workshops, aims to draw up a comparative map of the city's development, which consists of superimposing maps from different significant periods on the scale of the metropolis, analysing them and understanding the logic of the city's development over time. The analysis breaks down into the following 4 themes:

- Road network and infrastructure
- Division of plots
- Building layout on the plot
- Singular elements and public space

The work involves bibliographical research into historical sources, the collection of graphic documents, photos, old postcards, eyewitness accounts, travellers' accounts, etc. and the collection of census data. The work is carried out in teams of 6 to 7 students.

1.3 Immersion in the field and ambience capture

The second stage is a sensitive immersion in the field, with the aim of taking the measure of its ambient tones so that they can be taken into account in the project phase. Given the short time available (3 days) for the experiment, a crossing representative of the city's ambient variations was identified to serve as the site.

We are well aware that this project-oriented attitude - conscious and aimed at utility - is somewhat contradictory to the very nature of the atmosphere - pure a-conscious sensitive vibration - that we are trying to capture. According to the philosopher Bruce Bégout:

'Any attempt to capture ambiences, to accumulate them as facts, to manipulate them as data, very often produces the opposite effect. This desire to control simply reifies ambience. What it captures is not the ambience itself, but a projection that misses its mersif and enveloping character. An atmosphere cannot be directly objectified and manipulated… '. (Bégout Bruce, 2020)

In addition Hartmut Rosa points out that:

> '[...] there is no method or seven-step or nine-step manual to help us resonate with people or things. Even if we try to control all the subjective, social, spatial, temporal and atmospheric conditions, to arrange and orient them in such a way as to make an experience of resonance possible, it may be that the meeting by candlelight, the mountain at dawn, the music heard from the most expensive seat in the best concert hall still leave us (or for that very reason) 'completely cold', untouched and unable to establish a relationship.' (Rosa, Hartmut, 2020)

1.4 Restitution

In addition, the analysis reporting phase, in other words the graphic or other form of feedback from the experiment, is in itself a second challenge. How do you capture a feeling that is fleeting, labile and elusive? What do we capture, and in what way, inevitably truncated, inevitably frozen? What is an atmospheric snapshot? To what extent does it reflect this moment of resonance in concert with the ambience (if the magic worked and this moment of vibration took place)? Added to this is the difficulty of finding a type of representation and putting it to the test to help with the project, while at the same time highlighting ambient references or feeding into the construction of new ambient references? How can we reactivate atmospheres that are still present on the site but have faded over time? How can we encourage the revelation of atmospheres (landscapes, for example) that are potentially present on the site, and make the references to these atmospheres operational?

Faced with these difficulties, and despite the short time available for this exercise, we invite the students in the first phase to abandon themselves to the atmosphere, to allow themselves to be impregnated without trying to grasp it, in order to encourage the emergence of resonance. The « parcours commenté en aveugle » (Thibauld, 2022) is a powerful tool that is often used, and which has the advantage of suspending the visual modality in order to focus on the many sound, tactile, aeraulic or climatic phenomena that colour urban situations. It is all the more effective when used in the old centres of medinas, or in working-class neighbourhoods, where urban planning is hidden from view and configured less to respond to the logic of staging than to ensure a certain porosity to sound or air circulation. Or cette configuration est liée à un mode de vie qui concorde avec une certaine conception intégrative d'être au monde proposée par le soufisme bien ancré dans la pensée populaire, explicitée par la philosophie islamique (Ben Ayed, 2021). Happily, the students concerned come from all regions of Tunisia - insofar as ENAU is the only public school of architecture - represent all social categories, and share this conception where the world and the subject are not two separate entities. As a result, vibrational contact occurs quite naturally, the links not being severed by an exclusive attitude in which the intellect takes over from an ever-vibrant sensitivity. We don't necessarily need to resort to special practices such as geobiology, for example, which is used as part of the Sensibilia project (Revoll, Tholliere, De Pertat, Labussière, Damian, 2023). Open

interviews with residents and observation of behaviour and usage are also used to try and get a sense of this ordinary yet powerful daily experience.

On returning from the field, at the end of the first day, a debriefing session is organised, a kind of interactive workshop where participants exchange their experiences. These exchanges can take the form of oral, drawn, photographed or filmed reports. The student groups then intuitively suggest 'artistic' forms of feedback, which can take the form of humorous or romantic anecdotes, photo collages or atmospheric sketches. The other two days in the field are reserved for documentation and analysis proper. They also end with feedback workshops in the evening, which provide a stimulating forum for discussion.

At the end of the three days in the field, a feedback workshop is organised in the form of an intensive three-day workshop. In order to stimulate the students' imagination and allow for the emergence of an original report, no particular instructions in terms of format or technique are given. The presentations take the form of slide shows, accompanied by videos or sound recordings. Given the skills in digital and/or manual graphic tools of 4th year students, who are fairly well equipped at ENAU, the harvest is most of the time fruitful and the renderings sufficiently sensitive to reproduce the variations in ambient tones. A jury is organised to view all the slideshows. On one occasion, a group asked the members of the jury to close their eyes to listen to an ambient sound reconstruction.

Once the diagnosis and ambient feedback have been completed, the second phase of design on the scale of the urban project is less straightforward, insofar as this is the first time in their course that ENAU students are confronted with this scale of project. The workshops are an opportunity to encourage them to use their analysis schemes, which combine the architectural and sensory dimensions (including the postures and words of users), as design tools. This return to sensibility facilitates the emergence of solutions that are relevant from the point of view of inhabitant appropriation. Once again, the use of sensitive representations is encouraged to promote this emergence. Sometimes, however, despite a 'successful' phase of analysis and rendering of the ambience, the transition to the project is not made in the sense of taking account of what already exists and proposing an invisible but nonetheless sensitive micro-urbanism. This phenomenon is undoubtedly due to the trend towards the ostentatious, the flashy and the visible. To win over the jury, and given the difficulty of representing the intangible, the fleeting and the invisible, some results are disappointing from the point of view of atmosphere. These 'failures' bring us face to face with our own limitations as teachers, but they are also a reflection of the whole course at ENAU, which gives too much importance to formatting and emphasises a production where the aesthetics of the object take precedence, not allowing the prerequisites of a sensitive project to develop over the years. In other circumstances, for example during summer courses held on school premises, things work out differently. When we feel, after a sensitive analysis phase, that the transition to the project is not

conclusive in terms of atmosphere, we can encourage the students to return to the site to reconnect. The immediate result of this is an increase in the ambient dimension of the project. Designing on the ground means that we can keep in touch and take account of what already exists (take care of it).

2. ILLUSTRATED CRITICAL FEEDBACK ON EXAMPLES OF AMBIENCE RENDERING AND THEIR TOOLS TICAL FEEDBACK THROUGH EXAMPLES OF STUDENT WORK

2.1 Memory of place and place of memory

By analysing the interviews and old photographs, it is possible to characterize past atmospheres and highlight the shared ambiences that inhabit the collective memory. In depicting these environments, the student uses mixed techniques, collaging fragments of photographs and snippets of interviews in an attempt to capture a collective memory as effectively as possible.

Figure 1 and Figure 2: Representations in collage form of ambiances from collective memory of La Goulette
Source: students work 2020-2021

The characterization of these remarkable environments, which are therefore considered to be part of our heritage (Landoulsi, 2016), (Belakehal, 2012) for their value in terms of use, memory and so on, offering students a potential for referencing, nourished by the atmosphere, the memory of the place and the imagination it generates (figure 1, 2).

2.2 Place mind mapping versus place ambiantal mapping

After introducing the notion of mind mapping in addition to the the built map or administrative map (Lynch, 1960), we encourage the students to question the toponymy of the places. In fact, it often reveals the mental map of users, creating new quarters and districts that reshape the purely administrative division, as well as new affective or usage landmarks. (figure 3). The student is then invited to superimpose on this cartography the representation resulting from the analysis of the modes of appropriation - observed or recounted - of these places. For this goal the students are invited to understand the main profiles of users. (figure 4)

Figure 3: Mind mapping of Bizerte based on toponymy
Source: students work 2017-2018

Figure 4: Representation of user profiles
Source: students work Bizerte 2017-2018

After that are defined the main pathes, identifying poles of attraction and repulsion, describing their tipology, avoiding, nostalgic, spontaneous. (Augoyard, 1979). On a minor scale the cartography can relate even the intensity and typology of contact, gestures and this relation between the form and the utilization (Breviglieri, Landoulsi, 2016) (Figure 5)

Figure 5: Cartography of gestures and utilization
Source: Breviglieri, Landoulsi 2016

2.3 The perceptual analysis, from the pittoresc approach to the ambiental approach

We have referred to the pittoresc approach (Cullen, 1971) to represent perceptions integrating in the same time the notion of effects (visual, luminous, sound) developped in the CRESSON (Augoyard, 1987), (Follut,2002), (Chelkoff,Thibaud, 1992) etc. The students have found in the work on the photographic material a way to transmit the user's perceptions. (figure 6,7), they represent in the same time the typomorphological aspects using on the one hand classical representations, maps, fronts and sections and on another hand transects with collages to integrate user perception and practice. In fact, otherwise they seem to lose the relation between the real physical configuration and the ambiental one and thus they lose their capacity to project.

3. NATURAL SENSITIVITY VERSUS ACADEMIC FORMATTING

At the end of this teaching experiment, we can see that despite the natural propensity of the Tunisian student population to be sensitive to environments, and despite a generally conclusive feedback analysis phase, the transition to a sensitive project remains problematic in the 4th year. In comparison, another experience in the introductory workshop in 1st year (Ben Ayed, Bel Haj Hamouda, 2016) made it much easier to move from analysis to sensible design. No doubt the freshness and spontaneity of the 1st year students, who had no great architectural culture in the academic sense of the term, made this easier. On the other hand, the academic curriculum at ENAU, which favours and promotes productions with a strong plastic and formal content, and the unlimited access to digital platforms that showcase this type of production, contribute greatly to the difficulties in making the transition to a sensitive project. This leads us to think that the sensitive dimension of vernacular architecture, or that of today's working-class neighbourhoods without architects, comes from the fact that this vibratile link is never completely severed when they are built. Didn't the architect Jacques Marmey set up on the building site to create the Lycée de Carthage, his emblematic work with a strong ambient resonance (Ben Ayed, 2014), reproducing the age-old gestures of the maaclem with whom he worked in Morocco and from whom he learned to adapt his architecture to the site?

In the legitimate concern, no doubt, to conform to international standards, isn't the academic course at ENAU missing the mark in the end, by training excellent shapers who have forgotten along the way their natural tendency to play to the atmosphere?

BIBLIOGRAPHY

Augoyard, Jean-François. (1979). Pas à pas, essai sur le cheminement quotidien en milieu urbain, Editions du seuil.

Augoyard, Jean-François. (1987). Répertoire des effets sonores, cinq échantillons. [éd.] Rapport de recherche.

Bégout, Bruce. (2020). Le concept d'ambiance, Editions du Seuil, 378 p.

Belakehal, Azeddine, (2012). Ambiances patrimoniales, problèmes et méthodes. Ambiances en acte (s). International Congress on Ambiances, Montreal, Canada. pp. 505-510

Ben Ayed, Alia et Bel Haj Hamouda, Alia. (2016). La "frange épaisse" : un outil opératoire pour l'analyse. Proceedings of 3rd International Congress on Ambiances. Volos, pp. 81 - 86.

Ben Ayed, Alia. (2021). La porosité au fondement de l'ambiance oasienne. In [Direction] Marc Breviglieri, Noha Gamal Saïd et David Goeury. Résonances oasiennes - Approches sensibles de l'urbain au Sahara. Italie : MetisPresses.

Ben Ayed, Alia. (2014). Le régime ambiantal dans l'architecture moderniste de Jacques Marmey- Cas du Lycée de Carthage. Tunis : Thèse en architecture, ENAU.

Breviglieri Marc, Landoulsi Imen. (2016). Gestes publics d'appropriation et phénoménalisation progressive d'une ambiance autour d'une source sacrée intégrée à la réhabilitation d'une medina (Tiznit, Maroc) in N. Rémy et N. Tixier (dir.), Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances, Volos, International Network Ambiances; University of Thessaly, vol. 1 (pp.105-110)

Chelkoff Grégoire, Thibaud Jean-Paul. 1992. Mise en vue de l'espace public.

Cullen Gordon, (1961). The Concise Townscape. Editons Routledge

Follut Dominique. (2002). L'ambianscope : propositions méthodologiques d'analyse des ambiances appliquées à l'ensoleillement urbain, Ecole Nationale Supérieure d'Architecture Nantes, Thèse en Sciences de l'Ingénieur, spécialité Architecture.

Landoulsi Imen. (2016). De la patrimonialisation à la référenciation ambiantale, Nefta et le Dar Hi. Landoulsi. Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances. Volos, Greece, pp. 921 - 926.

Le Corre, Yanick. (2006). "Le pattern ambiant, une entité opératoire de caractérisation des ambiances urbaines", thèse de doctorat

Lynch, Kevin. (1960). The image of the city. [éd.] MIT Press.

Revol, Claire, et al. 2023. Un contact vibratoire avec les éléments Les cosmologies entre ciel et terre des pratiques de géobiologie. Socio-anthropologie, pp.177-189.

Rosa, Hartmut. (2020). Rendre le monde indisponible,La Découverte, pp.48.

Thibaud, Jean-Paul. (2022). Parcours commentés. Psychologie de l'environnement : 130 notions clés.

Tixier Nicolas. (2016). Le transect urbain, pour une écriture corrélée des ambiances et de l'environnement. [auteurs du livre] Barles et Blanc. Ecologies urbaines. Sur le terrain, Economica-Anthropos; PIR Ville et environnement, pp. 130-148.

SENSORY TECHNE: EXAMINING LABOR, PROCESS AND PEDAGOGY

TÉCNICA SENSORIAL: EXAMINANDO TRABALHO, PROCESSO E PEDAGOGIA

Adam Molinski
Core-Faculty
School of Landscape Architecture, Boston Architectural College
adam.molinski@the-bac.edu

ABSTRACT

The disciplines within the broader category of environmental design are now seemingly awash in literature and exhibitions extolling the virtues of designing from a multisensory perspective. Yet students in design school still typically encounter this as a fringe topic for a research class or perhaps a thesis project. It is still not experienced as part of their fundamental studio pedagogy and design process which remain highly visually biased. Yet there are other adjacent fields such as the culinary arts, film, fashion and sculpture that have long created rich multi-sensory, atmospheric experiences. What may we learn from them that can be applied to schools of the built environment? This paper examines one of these adjacent disciplines, the culinary arts, and applies it as a framework to rethink the design studio syllabus to see how we may be able to rethink studio pedagogy to more fully embrace multi-sensory design.

KEYWORDS: Sensory Design. Pedagogy. Landscape. Architecture. Urban Design. Ambiances.

RESUMO

As disciplinas dentro da categoria mais ampla de design ambiental estão agora aparentemente inundadas de literatura e exposições que exaltam as virtudes do design a partir de uma perspectiva multissensorial. No entanto, os alunos da escola de design ainda costumam encontrar isso como um tópico marginal para uma aula de pesquisa ou talvez um projeto de tese. Ainda não é experimentado como parte da pedagogia fundamental do estúdio e do processo de design, que permanece altamente tendencioso visualmente. No entanto, existem outros campos adjacentes, como as artes culinárias, o cinema, a moda e a escultura, que há muito criam ricas experiências atmosféricas e multissensoriais. O que podemos aprender com eles que pode ser aplicado às escolas do ambiente construído? Este artigo examina uma dessas disciplinas adjacentes, as artes culinárias, e aplica-a como uma estrutura para repensar o plano de estudos do estúdio de design para ver como podemos ser capazes de repensar a pedagogia do estúdio para abraçar totalmente o design multissensorial.

PALAVRAS-CHAVE: Projeto Sensorial. Pedagogia. Paisagem. Arquitetura. Design urbano. Ambientes.

1. INTRODUCTION

It has been nearly three decades since Pallasmaa (2012) called out the increasing visual bias of architecture that ignored the sensual, corporeal, tactile possibilities of design. Within the fields of architecture, landscape architecture, and urban design (referred to hereafter under the umbrella term of environmental design) the topic of designing for non-visual aspects of the environment has since received significant attention. There are now numerous conferences, student theses, books, articles and

even significant museum exhibitions like *The Senses: Design Beyond Vision* exhibition at the Cooper Hewitt (Lupton & Lipps, 2018) dedicated to the topic. Yet in mainstream design practice and studio pedagogy, the issue of design as "image products" detached from corporeal feeling persists and perhaps has even deepened with the increasing use of digital technology in both the design process and the consumption of environmental design. With visual bias so deeply ingrained in our design processes, how then can we re-imagine new ways of approaching environmental design, in all its complexity, from a fundamentally more sensual perspective? How do we embed atmosphere and corporeal feeling into the design process so deeply that it inescapably becomes a focus of all projects not just a novelty for students and practitioners to explore on the side? This paper proposes that the answer, or the road to it, may lie in the exploration of the design processes other adjacent disciplines such as fashion, the culinary arts, film and sculpture which are inherently multi-sensory. As a starting point, this paper looks at the field of the culinary arts to see what we can learn from the creative process of chefs and then attempt to translate these lessons to the structure and assignments of a proposed design studio.

2. LEARNING FROM THE CULINARY ARTS
2.1 Introduction

There is perhaps no creative practice that creates a more fully multisensory experience than that of the culinary arts. This of course stems from the fact that it is an artform that is ingested into the body. The culinary arts are ultimately about flavor, which Lupton and Lipps (2018) make clear is more than just taste. Flavor is first and most obviously a combination of smell and taste through retronasal olfaction, but it is also visual, tactile, aural, emotional and contextual. Eating is a whole body, multisensory experience and the most successful chefs are those who curate and engage all aspects of this corporeal experience carefully and intentionally. When looking for examples for how to make the creative processes of environmental design more inherently multisensory, the culinary arts is perhaps the obvious first place to look.

There are many similarities between the culinary arts and environmental design. Both have practical requirements fundamental to human existence such as nutritional value in food and shelter in environmental design and human safety in both. Both have craft traditions, cooking and building, that pre-date the professional discipline. Professional work in both exists on a spectrum from the purely practical to highly conceptual. Both professions have clients who pay for and will experience the product, and how much this client is considered and involved in the creative process for both varies widely. When Madeira et al. (2022) studied the creative process of Michelin Star chefs in Portugal, it is perhaps for these very reasons that architecture felt like a better comparison to the culinary arts for some chefs than fine arts such as painting.

However, there is no doubt that there are major differences between the two professions, the most significant for the purposes of this inquiry is the differences of scale, both physical and temporal. The culinary arts exists at a physical scale that can be carried out to its fully finished form by just one chef or a small number of collaborating chefs during the creative process. Environmental design with few exceptions exists at a scale that requires a much larger workforce, equipment and resources. One typically cannot build a building just to see how it turns out and then tear it down to rebuild it slightly differently. This applies to the temporal scale as well. With the exception of aging processes such as fermentation, food is cooked and consumed within a relatively short period of time. Environmental design is constructed over the course of months or years and meant to be used for decades or more. Move into larger scale disciplines like urban design, landscape architecture and urban planning and the difference in scale gets even larger. While scale is a difference inherent to the disciplines, other differences are perhaps more malleable and can help inform changes to the creative process taught in environmental design disciplines.

2.2 Memory and Intuition Through Techne

Open a culinary arts textbook like the *Professional Chef* published by The Culinary Institute of America (2011), the first college in the United States to teach the culinary arts, and there is an immediate and clear emphasis on the techniques, tools and labor required to craft cuisine. As Madeira et al. (2022) make clear, before chefs can be creative and innovate they must first master existing techniques and recipes. Chefs spend years, not to mention literal blood, sweat, burns and tears, developing a library of sensory rich memories that tie together the corporeal experience of different recipes with the techniques that are required to create them. Through repetition, technique and outcome become closely intertwined in memory. This allows high achieving chefs, like the Michelin Star chefs interviewed by Madiera et al. (2022) to conduct what they call "mental cooking" in the conceptual development of a dish prior to testing it out in reality:

> The great weapon of cooks and something that we could not live without it is the memory of the taste; if not, whenever we wanted to taste a dish, we would have to taste everything from the beginning. That is, I close my eyes. So, I would say that 90 or 95 percent of the dish is created mentally before going to the stove. (Maderia et al., 2022. P.271)

This technique transcends scale and could readily be applied to the environmental design conceptual process. It is no doubt a technique many architects and designers already use in the field when designing from a more sensual, atmospheric perspective. In fact, in *Thinking Architecture* Zumthor (2010) foregrounds the use of sensual memories as the driving force in his design process for conceptualizing architectural atmospheres. How then can the development of memory and intuition be more consciously embedded into environmental design education?

The established legacy of design-build studios and programs within architecture schools certainly offers one answer for how to establish a route for technique and sensory outcome to become connected in student's design education and this is certainly an approach worth pursuing further. However, as Canizaro points out architectural design-build programs have limitations such as financing that often constrain them to a singular moment in a student's education, thus missing the repetition required of chefs in their sensory training. It is perhaps then something more nimble, simple and easily repeated that must be incorporated into design education. Perhaps it is about helping students build a sensory palate by developing habits to consciously and repeatedly "taste" architecture. Site visits are already an established part of the studio design process, how could they be modified to help students build a sensory palate?

2.3 MISE-EN-PLACE

Alongside technique, the other prominent concept one encounters immediately in culinary textbooks and curriculums is that of "mise en place" a French term meaning "put in place". At many culinary institutions, like the Auguste Escoffier School of Culinary Arts(2024), it is in fact one of the first techniques students learn. It is believed that the term and technique was developed in 18th century French cuisine in relation to the kitchen brigade system created by Georges-Auguste Escoffier (Turner, 2019). It is certainly a western centric culinary concept and it stems from goals of organization and efficiency in the kitchen, but at its heart it speaks to the importance of gathering, preparing and thus knowing the ingredients and tools that create the whole. Chef Alex Atala who runs D.O.M., a restaurant widely considered one of the best in the world, expands the concept of mise en place even further saying:

> When we are training to be a chef...we learn that the most important moments of our day will be mise en place... prepping all the ingredients to make an amazing dish.
> Our mise en place doesn't start in the kitchen. It starts on the farm and in nature. (Jeter, 2016).

Atala makes it abundantly clear that his culinary innovation and creativity is tied directly to ingredients and experiencing them palpably through gathering, exploring, fishing and cooking in the places they originate from. There is a respect for and concentration on the ingredients and how they have been grown and cooked with traditionally that allows Atala to create rich, sensory dishes that are both innovative and grounded in place. South Korean Buddhist nun, Jeong Kwan, who has become world famous for her innovative dishes and flavors using only plant based ingredients, is even more explicit in using the meditation on ingredients and their origin as being the central driving process in creating dishes:

> When I think of making food, I empty myself first. Understanding the nature of the ingredient, I share my mind with its nature. I think about where the ingredient

comes from, how it was grown, what the environment was, how the soil was, how the weather was. From the leaves to the stem to the root ingredients must be thought of as a whole. This can't be learnt through culinary training, but is a constant attitude and state of mind. (Sgarbi, 2022).

Kwan grows much of her own produce in an intentionally messy garden that intermingles itself with the forest. Insects and animals are free to take their share from the garden without deterrence. Kwan spends a significant amount of time observing, tasting and being present with the ingredients she is growing and the conditions, weather and atmosphere they are growing in. In fact, she is so focused on intuition and meditation as a creative process, that she doesn't use recipes because she feels the seasonality of plants is so dynamic a single recipe for a dish would hinder her ability to discover and create (Choi, 2023).

Again, Zumthor (2010) gives us clues to how this may be integrated into environmental design pedagogy saying, "All design work starts from the premise of this physical, objective sensuousness of architecture, of its materials." How then does this translate in a practical sense to the design studio assignment? What would a studio look like if students first meditated on the essence of a site and its atmosphere, and then observed and gathered possible material samples, then moved to details that focused on creating corporeal feeling through these materials and then finally moved onto design of the site as whole?

3. A PROPOSAL FOR A NEW STUDIO

This paper takes these principles from the culinary arts and attempts to translate them into a new structure for a design studio. The proposed test studio is a third-year advanced studio in a Master of Landscape Architecture curriculum that focuses on developing a detailed site design and is meant to follow the process of professional practice. Situated within the academy but looking towards future professional practice, this studio presents the ideal scenario for testing how we can re-think the design process both within education and practice.

The site for the studio is Crystal Lake Park, a 2-acre park with a neglected bath house, that slopes steeply down into Crystal Lake a 33-acre natural great pond located in Newton, Massachusetts just outside of Boston. Open to the public for swimming and accessible by subway it is a rare site in the Boston area and is replete with opportunities for engagement with the senses.

Zumthor (2010) speaks of reversing the typical order of operations in design practice of "idea-plan-concrete object", this studio takes a similar tack and expands up on it aiming for an creative process of "site – material – technique – feeling - plan – idea". The studio will be broken up into five phases.

3.1 Phase I: Developing a Palate + Learning the Site

In the first phase of the studio project students will conduct multiple site visits at not only the studio site but also other sites of significance in the area. Students will conduct a series of exercises meant to help cultivate and increase corporeal mindfulness and sensitivity to site. This in turn will help students reflect on their own library of site based memories and add to them with each site visit. Students will focus on mapping and understanding the atmospheres and moods of each site through quiet observation, written observation and drawing with a focus on the relationship of body to site. The development of a sensory palate will be cultivated continuously through the keeping of a sensory journal which students are encouraged to add daily and share at the beginning of classes.

3.2 Phase II: Mise en place: Gathering of Materials and Techniques

Through a series of field trips and investigations into active construction sites and material suppliers such as stone quarries and plant nurseries students will gather samples and techniques to begin understanding how the parts become the whole. The investigations into techne will encourage students to reflect upon the labor required to gather, process and ultimately build with these materials. Understanding the specific physical acts required to assemble and maintain a constructed landscape will in turn begin to inform the creation of design details.

3.3 Phase III: Imagining Experience

With an initial palate of possible sensory experiences, materials and techniques at their disposal the students will then focus on crafting a new set of experiences, feelings and moods through drawings that mix written descriptors, collage, detail drawing and material exploration. Students will continue to develop this new set of experiences into a storyboard like sequence of detailed moments that are grounded in material, scale and feeling. Intuition will be encouraged to be the guiding principle in this phase.

3.4 Phase IV: Stitching Experience into Form

Only then after developing the sequence of detailed moments will the students take these discrete "parts" and begin to constitute them into "the whole" as a unified site design. Understanding how these moments come together in plan will require moving back and forth between the design of the overall site and the details to understand threshold, movement and sequence. In this phase students must also begin to integrate practical components such as stormwater management, grading and tree preservation with the experience of the site. Through an iterative process students will be encouraged to use these additional requirements to enhance their engagement with the experiential aspects of the design rather than diminish it.

3.5 Phase V: Writing the Recipe

In the final phase students solidify all aspects of the design into a set of drawings that act as both a narrative of their design and a set of instructions for the construction of the project. An emphasis on material and technique from the beginning will allow students to attempt to merge concept, construction and experience into one wholistic set of documents, questioning conventional distinctions between conceptual, schematic and construction drawings.

4. CONCLUSION

This studio will be carried out in the Fall of 2024, and only then will the results be known. The results will no doubt be imperfect, but it will be an attempt to approach the design process from fundamentally more human, sensitive perspective. The shortcomings from this studio will help us understand more about how lessons from other perspectives can and cannot be translated to the design studio. There is of course still numerous other adjacent disciplines, such as fashion, film, and sculpture, left to explore. To conclude this paper, a set of guiding principles summarized from Bruce Mau (2018) in his essay "Designing LIVE: A New Medium for the Senses", which will be posted in the studio and at all reviews for this proposed studio:

    1. To design for all the senses: start with a blindfold.
    2. Design the feeling of the idea.
    3. Focus on the visitors' experience, not our message.
    4. Orchestration is the big idea, the challenge, and the practice.
    5. What is for the eye must not duplicate what is for the ear.
    6. Design for each of the senses then synthesize
    7. Design for our sense of time.
    8. Design for our sense of touch.
    9. Design for our sense of movement.
  10. Design sound for emotional impact.
  11. Design for our sense of taste.
  12. Design for our sense of smell.
  13. Design for our sense of connection.
  14. Design for synesthesia.
  15. Design for the intersection of digital and physical.
  16. Finally, open your eyes and compete with beauty.
     (Mau, 2018)

BIBLIOGRAPHY

(2011). *The Professional Chef.* John Wiley & Sons.

Auguste Escoffier School of Culinary Arts. (2024). What Is Mise En Place and Why Is It So Important to Chefs?. *https://www.escoffier.edu/blog/culinary-arts/what-is-mise-en-place-and-why-is-it-so-important-to-chefs/*

Canizaro, V.B. (2012). Design-build in architectural education: Motivations, practices, challenges, successes and failures. *Archnet-IJAR: International Journal of Architectural Research*, 6(3), 20-36.

Choi, S. P. (2023, January 10). Monk Jeong Kwan highlights virtues of good food in modern society. Korea JoongAng Daily. *https://koreajoongangdaily.joins.com/2023/01/10/culture/foodTravel/korea-temple-food-jeong-kwan/20230110155300848.html*

Jeter, C. (Director). (2016). *Chef's Table* (Season 2 Episode 2). Netflix. *https://www.netflix.com/*

Lupton, E. & Lipps, A. (Eds.). (2018). *The Senses: Design Beyond Vision.* Princeton Architectural Press.

Madeira, A., Palrão, T., Mendes, A.S., & Ottenbacher M.C. (2022). The culinary creative process of Michelin Star chefs. *Tourism Recreation Research*, 47:3, 258-276. *https://doi.org/10.1080/02508281.2021.1958170*

Mau, B. (2018). Designing LIVE. In Lupton, E. & Lipps, A. (Eds.). *The Senses: Design Beyond Vision.* (pp. 20-23). Princeton Architectural Press.

Pallasmaa, J. (2012). *The Eyes of the Skin: Architecture and the Senses*. John Wiley & Sons Inc.

Sgarbi, G. (2022). A Buddhist nun has been named Asia's foremost culinary icon – here's why. 50 Best Stories. *https://www.theworlds50best.com/stories/News/asia-restaurants-icon-award-jeong-kwan.html#*

Turner, D. (2019) Kitchen Language: Mise en Place. Michelin Guide. *https://guide.michelin.com/en/article/features/mise-en-place-cooking*

Zumthor, Peter. (2010). Thinking Architecture. Birkhäuser Basel.

L23

RE-INVENTING SPACES – TEACHING AMBIANCE THROUGH FILMIC ARCHITECTURAL JOURNEYS

REINVENTADO ESPACOS - ENSINANDO AMBIÊNCIAS ATRAVÉS DE VIAGENS ARQUITECTÓNICAS CINEMATOGRÁFICAS

Gillian Treacy PhD
Lecturer
ESALA, The University of Edinburgh
gtreacy@ed.ac.uk

ABSTRACT

Physical architectural models are known to be catalysts for spatial experimentation in the architectural design studio. With a diverse selection of digital tools available for design creation and ideation the practice of physical making is in a state of flux. Physically experimenting with architectural volume, materials, light, colour and sound increases our experiential knowledge of spatial ambiance. This paper discusses the potential for revitalising the practice of scale model-making in design studio education through theoretical and physical "models for" filmic experimental practice and investigations into ambiance. The proposed video model format allows designers to play with Bergson's 'process of unfolding in space' as a physical experience through digital real-time investigation. The previously static physical model now expressed through filmic journey enhances opportunities to develop personal awareness of spatial ambiances and spatial experiences expressed and perceived by others through the diversity of understandings of the ambiances created.

KEYWORDS: ambiance. film. model. pedagogy. interiors

RESUMO

As maquetes físicas de arquitetura são catalisadores para a experimentação espacial nos ateliês de projeto. Com uma abundância de ferramentas digitais disponíveis na criação e conceção do desenho, a prática de fazer à mão encontra-se em transformação. A exploração física do volume arquitetónico, materiais, luz, cores e sons proporciona um melhor entendimento dos espaços e ambiências. Este artigo investiga o potencial de revitalizar a prática de construção manual de maquetes na educação nos ateliês de projeto, através de 'modelos' teóricos e físicos para prática experimental cinematográfica e estudos de ambiências. O formato de vídeo proposto permite aos designers explorar a teoria de Bergson do desdobramento espacial como experiência física, através de uma exploração digital em tempo real. A maquete física, antes estática, expressa-se agora numa viagem cinematográfica, ampliando as oportunidades de desenvolver uma consciência pessoal das ambiências e experiências espaciais, percebidas e expressas de forma diversa por outros.

PALAVRAS-CHAVE: ambiencias. filme. maquete. pedagogia. interiores

1. INTRODUCTION

> By necessity, if contemporary design is to remain relevant it must shift from the finite representational models of practice towards real-time collaborative ones. The shift conceptually is to move from 'models of' towards 'models for'. (Spyropoulos, 2023).

Physical architectural models are known to be catalysts for spatial experimentation in the architecture, interior and set design studio. With a diverse selection of tools available for our design creation and ideation the practice of physical making is in a state of flux. In response, this paper discusses opportunities for revitalising the physical practice of scale model-making in design studio education. It proposes theoretical and physical "models for" filmic experimental practice and investigations into ambiance, merging both physical making and digital experimental techniques for mutual benefit.

2. PHYSICAL MODEL AS ARCHITECTURAL TOOL

Physical models appear both in professional practice and in design teaching scenarios. Architectural design has a history of model-making. As a means of communication, the architectural model can provide information in relation to form, tectonics, materiality and light. Whilst the design focus and iterations may concentrate on individual characteristics in turn the architectural model is understood to provide a holistic representation of the design proposal. Current design pedagogy often encourages engagement with physical model-making throughout the design process; from conceptual studies to finished proposal. With the growing ease in use of digital modelling software, we might question the purpose and usefulness of the traditional physical scaled architectural model as a valid tool in the understanding and development of architectural space within design pedagogy.

Created during different parts of the design process the physical model demands haptic engagement and varied viewpoints that encourage and question speculation of design ideas with every move and manipulation. Digital models allow for quick manipulation, they encourage the designer to experiment quickly, errors can be 'undone' without trace, increasing efficiency in designing. But the speed of manipulation may not always benefit the design intent. With this fast paced design format we may lose out in the appreciation of the atmospheric qualities formed through protracted handcraft. As we create a physical model by cutting, moulding, carving and scribing each part, in its assembly we are, "compelled to feel our way into the spaces" (Stokes, 2004) with our hands and craft tools. Every physical model has a unique character, expressing the haptic engagement that has occurred through its making. It is through the making and haptic manipulation that the idea becomes a physical form.

A further theoretical understanding of this physical engagement is described by Hesselgren (1972), listing early concepts of Revesz (1938). He outlines haptic engagement as three different types of contact which can give rise to the experience of touch as follows: the stationary, the moving and the clasping hand. The stationary hand and clasping hand can provide a useful understanding of materiality and a stronger connection to our visual perception of the modelled material. The moving hand, in this case, the hand modelling the physical model, encourages three-dimensional exploration and a more holistic understanding of the form(s), proportion(s) and surface texture(s).

From a two-dimensional paper sketch of an architectural space we can enter a three-dimensional model. If this is a physical model we benefit from the evidence and memories of its making in the walls. These joints, gaps and textures invite physical engagement, as first ideas are enacted, formed or refined into polished visions, revealing architectural space with unique spatial ambiances. In digital models, previous histories can be seamlessly erased with a paralleled loss of uniqueness. However, in the making of physical models we invite an understanding of the character of the spaces as having already been 'lived within' through previous haptic interventions. A model for spatial ambiance cannot simply be "reproduced by the objective assembly of materials" and "spatial proportions" but by the manipulation of and the "ageing of materials, the connections of the materials and the connections to the place or other buildings, rhythms, light..."(Pallasmaa et al., 2013).

3. THE BRIEF – IN, THROUGH AND BEYOND THE FRAME OF THE ARTWORK

For this study project the brief was inspired by a set of perspective drawing and modelling workshops by Flores and Prats, "Through the Canvas", (2008). This project was simply based on evaluating a painting through perspective drawing and then, using the development of a physical model, the creation of a three-dimensional representation of the space(s) within the artwork. This technique of spatial manipulation between formats aligns closely with Kahn's concept of "Architecture as an art...you can be in" (1991). By interpreting a two-dimensional painting as a three dimensional model we use our understanding of spatial relationships to develop our architectural skills to inhabit the space. Rene Magritte in Fernandez Contreras (2020), proposed that, "images of things are not things themselves, but rather representations, and as such they do not need to respect the same rules". This is described as a "mediated experience" (Contreras, 2020) which is theoretically understood to develop imaginative thinking and multiple personal and shared interpretations of the space(s) – a valuable learning experience.

As development of the Flores and Prats project model our teaching commenced with the selection of a two-dimensional artwork chosen by each student individually to promote and encourage diversity in their selection. The artwork was required

to show i) an interior space and ii) a human character 'In the Frame', to allow simultaneous exploration of three-dimensional space and contextually grounded human inhabitation of the perception of the spaces investigated, navigating the complexity of designing for the users of their spaces, rather than the architectural interior as a standalone object.

Students then investigated their chosen artwork 'Through the Frame' seeking to interpret this two-dimensional artwork as a three-dimensional interior space through physical modelling. The brief challenged contextual issues and spatial ambiance through the differing spaces created using a relational scale. Finally, 'Beyond the Frame' investigations created interiors for the wider context, as students imagined 'beyond' the spaces included in the artwork by building additional rooms exploring the creative re-inventing of spaces.

5. THE FILMIC JOURNEY AS A METHODOLOGY FOR RE-INVENTING SPACES

This filmic journey started in January 2020 when our year one student project was altered to suit digital teaching delivery during Covid. As a teaching team we were suddenly aware of the barrier between the physical scaled models of our students and our dispersed locations as we no longer shared the same physical studio spaces. The haptic intervention or engagement we had previously enjoyed in the sharing and reading of design ideas through physical engagement with models was no longer possible. It became clear that the idea of the 'static' physical model created as part of the design process, shared through student self-selected still images, did not afford the same design or communication value without haptic engagement. As we reflected on the attributes of physical models we noticed that the previous rationale for this pedagogic approach relied on understanding a design's possibilities in relation to form and material choices through three-dimensional scaled representation. In consideration of the variety of ontologies proposed in relation to representations and objects we found a clue in the space 'between', questioning what we were making the models 'for'.

Bergson notes in Matter and Memory (1911) that our actions are "amassed in the body" and this identifies the need to reflect on the act of our experience, our past and present journeys. We therefore understand that we can become part of the physical model as we position ourselves between the representation and the object. We connect with the interior skin and are absorbed into the experience. Bohme in Pallasmaa et al (2013) describes atmospheres as "characteristic manifestations of the co-presence of subject and object". As we held the physical model or rotated it in our hands we had been engaging with the holistic experience, understanding the modelled spaces for their distinct atmosphere and finding and imagining ourselves in the space, between representation and the 'object', the model. The separation of the student's ideas and others (the class and the tutor team) was evident as students provided only static photos of the space from selected viewpoints. There

was frustration in the assessment of a model that could not be viewed from every angle and the assessor could not journey inside. The character of the spaces was suddenly hidden as students sought to make invisible the making process, avoiding the photographic evidence of joints, scores and gaps. Without tactile engagement the ambiance was less distinctive through the histories lost.

By examining these missing connections in relation to our students' models it was possible to propose key principles to embed in a new model for the project brief. McCarter (2016) proposes that we explore spaces through the, "rich interlacing of the visual and physical movement paths". We proposed that the models in their creation would not be built for static image but instead for filmic journey. If we were no longer required to move along a central axis or single framed view both the eye and body would be free to roam, enjoying a meandering sequence of spaces in both plan and section. What might this alternative route now offer as possibilities to the inhabitant? Free of a defined path of eye and body the subtler senses can engage, providing haptic possibilities and the flexibility of "bodily position in space" allowing opportunities for understanding of relational scale and "simultaneous perception of the spaces from varied viewpoints" (McCarter, 2016).

In addition, it was noted that the sound of the materials, the acoustic resonance supporting our understanding of the place, space and context had been lost. The experimental video journeys of the physical models would seek to invite us in to experience increased spatial ambiances, engaging with the senses through subtle changes in material, colour, volume, texture, light and sound. The models would be composed as journeys performed and represented through film, thereby developing the epistemological practice of model-making for spatial study, "blurring… disciplinary boundaries between architectural and scenic design" (Contreras, 2020). John Dewey in Shusterman (2010) defined the formation of interior space, "as opportunity for movement and action". With movement and action we would increase our opportunities for exploring the interior spaces created and the curation of experiences. Physical architectural models would therefore be developed and tested through filming the journey through the interior spaces 'Beyond the Frame' as an authentically invited inhabitant of the space with an expectation of sensorial engagement with ambiance.

5.1 Cinematic Viewpoints for Ambiance

The static model images obstructed our haptic needs to explore the model from a variety of viewpoints; angles and macro/micro examination therefore contradicting the experiential cues we required. As noted by Revesz (1938) the moving hand provides a more complete understanding of the form, proportion and surface texture of the model. Castle proposes in Preston (2008), "It is however the potential to create spaces that call on all our senses and seduce us with desire to simply reach out and touch a lumpy wall or a voluminous ceiling that is exhilarating…". Students were encouraged to consider cinematic views to ensure the recording of the spaces

revealed not only the overall spatial volumes but the textures, the light and the character achieved within the making process. Cinematic viewpoints and eye levels were designed through storyboarding curating camera angles, continuity, cutting, close-ups, and composition of the video journey.

5.2 Creating Models for an Architectural Journey – Mise en Scene

The model size was determined by the student but an overall dimension of A3 size maximum in any direction (x,y) was recommended to allow recording equipment to be placed within the model. Students created ceilings, walls and floors as required to provide the curated flow through the spaces. Entrances, exits and external views all had to be considered for access and to develop the sequence of the narrative to relate to an embodied scale. The use of set design methods with the room elevations in the method of Pierre-Francois-Leonard Fontaine (Percier & Fontaine, 1824) as fold-out elevations and added tabs to complete the spatial composition. The journey became the design as students sought to navigate around the model, inspired by the inhabitant through which the story would be told, with each developing their own interior topography to suit the narrative and promenade architecturale.

5.3 EXPANDING THE NARRATIVE FOR AN ACOUSTIC JOURNEY

The spatial ambiance requires all elements to interact on multiple layers simultaneously to allow us to 'listen' to the space holistically. If we define the space inbetween as located between the physical interior skin of the space and the external, permeable skin of the inhabitant with the addition of sound we allow the space to resonate and impart information about its character and distinctive ambiance. The rhythm of the forms and textures within the spaces (and in the adjacent exterior environment), the volume of the spaces, the compression and extension through thresholds and the contextual environment all support our listening process. A layer of acoustic intervention would seek to supplement the visual stimulus of the film format and support the understanding of materiality, place and context. Students were asked to develop a layer of acoustic monologue with digital software using one or more of the following approaches to signal the distinctive contextual ambiance of their spaces:

- Context of the place – sounds from the adjacent imagined spaces and the space
- Context of the inhabitant – their thoughts, ideas and experiences
- Context of the setting – the time period, political, memories of past experiences/stories

6. FILMIC OUTCOMES

The process, and final outputs are discussed as narrations of a series of short films resulting from the student projects of four artworks. The journey 'Through the Frame' is highlighted in the corresponding film strip image as curated views through each journey.

6.1 L'Atelier de L'Impasse - Raoul Dufy (1969), Figure 1.

Student 1 considered the vibrant colours carefully and sought to highlight the contrasting mood of Dufy in his atelier. Dufy was known to describe blue as the only colour that could hold on to its individuality and this colour is used in these spaces to represent the artist. The sound layer depicts the street, the external context of Paris and the changing light filtering into the space as Dufy wrestles with his inner anxieties. We view the studio as a settled environment with personal glimpses into private spaces through a slowly opening door suggesting 'Do not disturb'.

Figure 1/Figura 1. L'Atelier de L'Impasse Filmic Journey
Source: Student work.

6.2 Éléments In Her Finest - Cinthia Mulanga (2022), Figure 2.

Student 2 achieves a personal journey through the eyes of fashionista and photographer. Using camera angles so close they restrict our view we gain a view of the two worlds and the vibrancy of the surrounding space in an almost fluorescent world. The sound track explores the youthful vibes as the photo session takes place and the photographer demands our attention in a fast-paces environment.
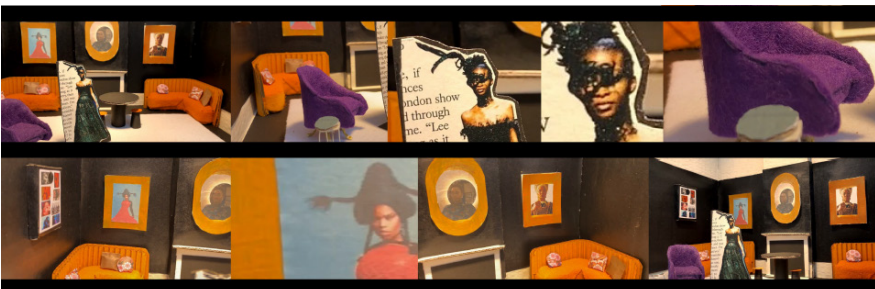
Figure 2/Figura 2. Eléments in her Finest Filmic Journey
Source: Student work.

6.3 Shirley Goldfarb + Gregory Masurovsky - David Hockney (1974), Figure 3.

Student 3 explores the intimacy and relationships between Goldfarb and Masurovsky, highlighted by the spatial separation by a dividing wall. The creative narrative in Table 1 challenges the goals and expectations of each character in the artwork, fighting to achieve an ambiance (and space) of their own.
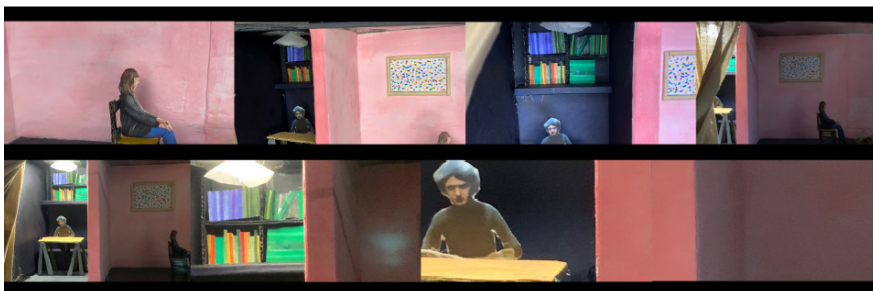
Figure 3/Figura 3. Shirley Goldfarb and Gregory Magursky Filmic Journey
Source: Student work.

6.4 Interior of a Yoshiwara Teahouse – Hokusai (date unknown), Figure 4.

Student 4 gently guides us into a Japanese teahouse. With muffled voices and a tea ceremony in the background we journey silently into the Edo world with close, tactile frames, depicting texture, making, painting and masking any harsh light or sound. The layering of views allows us to focus our gaze as the periphery becomes obscured from view in a gentle haze. Pallasmaa (2013) discusses the importance of our peripheral view, noting the possibilities of atmospheric creation at the edges of our vision. This journey uses filtered light to soften the view and obsure detail, challenging and subsequently heightening sensorial sensitivity as our brain works to decipher and encode the space.

Figure 4/Figura 4. Interior of a Yoshiwara Teahouse Filmic Journey
Source: Student work.

7. ANALYSIS AND CONCLUSIONS

> Atmosphere is created by the particular subject matter or place - it is given off from it – and corresponds to it like a sort of spirit that floats around, revealing, betraying a certain essence of the place or subject matter, but remaining ever visible. (Preston 2008).

A focus group and feedback forms supported the following findings. Re-visiting Hesselgren's definitions of, "the stationary, the moving" or "clasping hand" allowed us to analyse theoretical concepts as physical examples of haptic experience of atmosphere through the mode of digital filmic journey and screen presentation:

The stationary hand, "we only find out the position of the object and do not experience its shape" (Hesselgren, 1972). With only a stationary image of a model, as our previous brief required, we only found out the position of the room but did not experience its volume. The atmosphere was diluted or, at best misinterpreted as little relational information was imparted through this format. The filmic journey through the model gave opportunities for different viewing angles. The storyboarding technique required consideration and curated key views as signposts for each stage of the journey.

The moving hand is described by Hesselgren (1972) as, "the fingers glide over the edges". The video moving through the model allowed us to glimpse into other spaces and glide along the walls to understand the texture and porosity. Revesz (1938) noted from his experimental studies how, "form elements that were difficult to understand were touched more eagerly and frequently than simpler elements". Students discussed model elements and pace noting a desire to slow down or zoom in on complex model elements to allow this natural pause in the continuum of the filmic narrative. "This complex assessment also includes the dimension of time as experiencing implies duration and the experience fuses perception, memory and imagination". As we experience the movements and scenes within each film we are able to fuse elements together. Williams and Tsien in McCarter (2016) note the importance of pace in our experiential development as we are made to think harder in unfamiliar territories, "What lasts is ambiguity, and the slow revelation of materiality". We need time for the ambiance to surround us and to contextualise to new environmental situations.

The clasping hand, "a haptic perception of the proportions can be obtained". The video allowed proportions to be viewed through comparison of one element against another, through a variety of relationships as the camera passed by. This is a measuring sense and it was deemed important that the films would allow this natural ability to measure our context in order to understand the surrounding 'embodied' environment. Providing visual cues in the films such as understood eye level, a doorway or a step, a human figure all allowed us to grasp an understanding of the scale and depth of the spaces. Light provides us with shadows that tell us a story about the depth of an

object and the comparative objects in each space through the shadows. The lighting of key elements and the respective stories in the shadows were found to be important in the understanding of the space. McCarter notes, "In our embodied experience of an interior space, the room literally surrounds us, engaging all our senses – touch, hearing, smell, taste and vision – creating the feeling of embodied, haptic intimacy and bringing things near to us". When our viewpoint and filmic journey allowed for an embodied experience we were able to enjoy an individual understanding of the spaces the student sought to communicate to others.

Creating 'models for' filmic journey allows designers to play with Bergson's 'process of unfolding in space' as a real-time investigation. The physical model, no longer a static tool, can be experienced through the ambiances created, rather than objectively as a passive observer. The students who took part found the model-making process and the subsequent filming a rewarding experience with the expression of the ambiance challenging to convey to others. Post screenings students were given the opportunity to discuss their understanding of each modelled space. Students were surprised to find the variety of interpretations of their model video. and noted that they became aware of different cultural challenges, expressing their delight when a shared value or understanding had been achieved, even if only with one other. Comments noted that the different understandings of their work had inspired them to create further permutations.

The findings highlight the success of filming scale models as an experimental ambiance practice. This proposed practice and model for the analysis of ambiances allows us to take part in the experience of ambiances collaboratively (on screen, in real-time, as a presentation) and gain from our engagement; accepting our own perception of the spaces as relating to our individual previous experiences, sensory sensitivities, values and cultures. As designers we cannot aim to create the same experience for everyone but we can enable an awareness of diversity of perception of spaces and share the variety of experience. As we experience each of the design journeys differently, through discussion and discourse we can develop an awareness of spatial ambiances and experiences as perceived by others through the diversity of understandings and interpretations of the ambiances created. The new journey(s) we experience provide us with opportunities for new atmospheres. As we journey our brain seeks to validate familiar scenes yet finds new experiences to build upon and re-inform our knowledge of the spaces. Through this we can challenge our own familiar understandings and participate in new 'models for', disrupting the status quo.

Contreras (2020) proposes that when "Fiction, reality and representation" start to "mutually inform one another" such as using the filmic techniques presented, we can look to further blurring of boundaries, "rendering their borders ambiguous". Through this filmic process physical interior models allow a new type of expression and "imply an understanding of space as physically ephemeral and representationally desirable".

As we present these findings to others, further interpretations of and methodologies for space appear. If we continue to research methodologies for teaching ambiance in interiors and ensure evolving, rather than fixed and finite pedagogical approaches are disseminated, we can "anticipate the modern understanding of interiors as media and fundamentally multiply the directions in which representation, as tool and practice, operates" (Contreras, 2020).

8. BIBLIOGRAPHY

Bergson, H., Paul, N. M., & Palmer, W. S. (1911). Matter and memory / by Henri Bergson; authorized translation by Nancy Margaret Paul and W. Scott Palmer. G. Allen & Unwin.

Contreras, J. F. (2020). Manifesto of Interiors: Thinking in the Expanded Media. Manifestes 1. HEAD.

Flores, R., & Prats, E. (2008). Through the canvas : architectural design workshop / conceived by Ricardo Flores and Eva Prats. University of New South Wales.

Hesselgren, S. (1972). The language of architecture / Sven Hesselgren. Applied Science Publishers.

Kahn, L. I., & Latour, A. (1991). Louis I. Kahn : writings, lectures, interviews / introduction and edited by Alessandra Latour. Rizzoli International Publications.

McCarter, R. (2016). The space within : interior experience as the origin of architecture. London, UK : Reaktion Books.

Pallasmaa, J., Zumthor, P., Havik, K., Tielens, G., & Teerds, H. (2013). Sfeer bouwen / Building atmosphere / editors of this issue, Klaske Havik, Gus Tielens, Hans Teerds. Rotterdam: nai010 Publishers.

Percier, C., & Fontaine, P. F. (1824). Choix des plus célèbres maisons de plaisance de Rome et de ses environs / mesurées et dessinées par Percier et Fontaine (2e edition. ed.). Impr. de J. Didot aîné.

Preston, J. E. (2008). Interior Atmospheres. Architectural Design, May/June.

Revesz, G. (1938). Die Formenwelt des Tastsinnes.

Shusterman, R. (2010). Dewey's Art as Experience: The Psychological Background. The Journal of aesthetic education, 44(1), 26-43.

Stokes, A. (2004). The invitation in art: 1965. In (1 ed., pp. 110-122). Routledge.
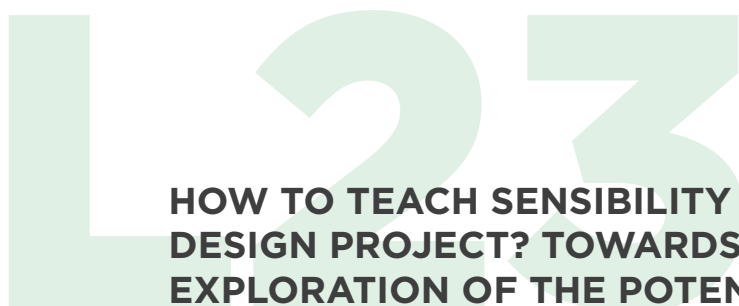
HOW TO TEACH SENSIBILITY IN THE DESIGN PROJECT? TOWARDS AN EXPLORATION OF THE POTENTIAL OF INTEGRATING BODILY ENGAGEMENT INTO DESIGN STUDIO TEACHING.

COMO ENSINAR A SENSIBILIDADE NO PROJETO DE DESIGN? PARA UMA EXPLORAÇÃO DO POTENCIAL DE INTEGRAÇÃO DO ENVOLVIMENTO CORPORAL NO ENSINO DO ESTÚDIO DE DESIGN.

Marie Tremblay-Laliberté
Assistant professor
University of Montreal
marie.tremblay-laliberte@umontreal.ca

ABSTRACT

This article reports on a pedagogical experiment conducted in an undergraduate studio course in interior design at University of Montreal, proposing an alternative teaching approach combining phenomenology of the body and project practice. Inspired by research-creation, the structure of this experimental workshop proposes a fertile dialogue between theory and practice which presents the potential for *bringing the body* into design education. The presentation of the three exercises and the three types of models created as part of this workshop highlights the potential of this alternative educational approach, as well as the challenges encountered in its teaching. The body and the investigation of its experience emerge as a promising avenue for teaching the sensitive dimension of the built environment, and as a basis for developing a pedagogical approach that extends established models.

KEYWORDS: design studio teaching. sensitive experience. body. phenomenology

RESUMO

Este artigo relata uma experiência pedagógica realizada num curso de estúdio de licenciatura em design de interiores na Universidade de Montreal, propondo uma abordagem de ensino alternativa que combina a fenomenologia do corpo e a prática do projeto. Inspirada na investigação-criação, a estrutura deste workshop experimental propõe um diálogo fértil entre teoria e prática que apresenta o potencial de trazer o corpo para o ensino do design. A apresentação dos três exercícios e dos três tipos de modelos criados no âmbito deste workshop realça o potencial desta abordagem educativa alternativa, bem como os desafios encontrados no seu ensino. O corpo e a investigação da sua experiência surgem como uma via promissora para o ensino da dimensão sensível do ambiente construído e como uma base para o desenvolvimento de uma abordagem pedagógica que alarga os modelos estabelecidos.

PALAVRAS-CHAVE: ensino de estúdio de design. experiência sensível. corpo. fenomenologia

1. INTRODUCTION

Several design researchers and teachers agree today on the idea that the body and phenomenological attributes that are central to the design of the built environment are undernourished in our current educational practice (Sweet, 2013). However, it seems natural to bring phenomenology into dialogue with this discipline insofar as it engages a sensitive relationship in which the role of the body is central (Holl, Pallasmaa, Perez-Gomez, 2006). Within a phenomenology perspective, the sensible evoked here refers to what is grasped by the senses and engages the whole body, not mechanically but fully and embodied. In this dynamic activity, the subject which *is* a body, perceives the world through a reciprocal exchange experienced between itself and the latter (Merleau-Ponty, 1945). But how can we teach sensibility in the design project? How can we encourage a fruitful dialogue between the discourse of phenomenology of the body and the practice of project-based teaching? This article reports on a pedagogical experiment conducted in an undergraduate studio course in interior design at the University of Montreal proposing an alternative teaching approach combining phenomenology of the body and project practice[1]. To encourage this intersection, pedagogical activities were created on the base of theoretical notions from phenomenology and architecture such as those of intersubjectivity (Husserl, 1966), perception (Merleau-Ponty, 1945) and atmospheres (Böhme, 2017,2018, 2020; Zumthor, 2008, 2010) and were taught around alternating moments of practice and group reflective feedback. Inspired by research-creation, this structure proposes a fertile dialogue between theory and practice which presents the potential for *bringing the body* into design education. Particular emphasis will here be placed on the presentation of the three exercises and three types of models created in the context of this experimental workshop in order to highlight the avenues for reflection and the potential arising from it.

2. PEDAGOGICAL CONTENT

Experimental in nature, this 15 weeks workshop focused on exploring the body's relationship to the built environment and aimed to develop a lived understanding of phenomena such as sensitive experience and atmospheres through direct bodily engagement. The aim was to (re)place the students at the center of their practice. Inspired by the iterative structure of research-creation, teaching was articulated around alternative moments of design practice and reflective feedback through group discussions. These discussions were also an opportunity to directly link observations from design practice with theoretical notions that support and illuminate them. This experimental workshop invited students to adopt a heuristic approach, in which the "finality" of the creations was not predictable, but rather became clearer along the way. In this sense, the propositions took the form of hypotheses concerning the relationship between the body and interior spaces. The aim of this iterative

---

1 This workshop was created and taught as part of a doctoral research entitled "The role of the body in design education: towards an introduction to research-creation" conducted by this article's author. It was taught in 2021 to 10 third-year undergraduate students.

structure was to foster the production of singular, original design proposals that cast a prospective light on the way we experience everyday places with our bodies and open up new possibilities for the design of inhabitable spaces. Three practical exercises were developed as part of this workshop. Based on a conceptual framework in phenomenology and architecture including notions such as sensitive experience, perception (as participation), the body as subject, intersubjectivity and architectural atmospheres, each exercise led to the realization of a specific type of model, which development involved a direct bodily relationship and a sensitive manipulation of elements of design language. In order to encourage physical and material contact, 3D visuals were not required in this workshop.

2.1 Exercice 1: Description of an experience and its formalization

This exercise focused on the role of the body and subjective sensitive experience in defining atmospheres in the design project. Initially, the students were asked to describe the memory of a significant place in writing. The idea here was to draw on the student's personal biography (Zumthor, 2010) and get them to verbalize the character of the remembered atmosphere (light, shadow, colors, textures, sounds, temperature, smells) and how these elements affected them (Böhme, 2020). Writing offered an accessible tool to start this exercise insofar as the "familiar presence of atmospheres provides a varied vocabulary with which to verbally articulate this type of experience" (Böhme, 2020, p.3). With the aim of transferring the verbal to the sensory vocabulary, the second part of the exercise involved designing a model to be worn on a part of the body that offered a sensitive formalization of the memory described. This formalization had to involve abstract manipulation of the language of design and engage the senses. Through this portable model, students designed an experience for others, starting from themself. This exercise also aimed to introduce students to the notion of architectural quality (Zumthor, 2008, 2010) and its concrete, lived dimension. The exercise concluded with a shared experience, during which each student experimented with the other's models. Once the experimentation was complete, the students discussed the experience and the origin of the memory transcribed in the model. The important thing was to experiment before explaining.

2.1.1 The portable model

The teaching of Exercise 1 sheds fruitful light on the question of intersubjectivity and the shared, mediated nature of sensitive experience. During a group discussion following the exercise, the students mentioned that the experience of wearing these models on the body activated the personal sensitive memory and the recollection of individual memory. These observations resonate with the concept of the poetic image which, according to Bachelard (2004) emerges and takes its place in the actuality of an image and an experience. Here lies the idea that the experience of a familiar image, a light effect for example, activates the embodied memory and triggers the reverberation of being. Wearing the portable models thus helped the students to understand the intersubjective nature of sensitive experience, and the possibility of

sharing their own experience with that of others. Here, the model becomes both a tool for expressing and extending the self, and for mediating sensitive experience. To this end, it formalizes the intersubjective nature of atmospheres and the interrelationship between the body and perceptive sensory elements. In this sense, the model reveals new possibilities for teaching, and becomes more than just an external representation of the project. It takes on an ontological dimension, materializing phenomenological theoretical notions such as intersubjectivity and promoting their understanding.

Figure 1-2-3 The shared experience of portable model
Source: Personal pictures (2021)

2.2 Exercice 2: Body experience in everyday life

The main aim of the exercise "Body experience in everyday life" was to gain an awareness of how the student relates to places in everyday life, and to understand the role of the body in this relationship. Based on the notion of perception as participation and dynamic conversation between the body and the world (Merleau-Ponty, 1945), this exercise invited students to question and investigate their concrete, lived relationship with the built environment. By encouraging the student's bodily engagement, it also aimed to help them "reconnect with gestures that have become mechanical" (Lebois and Laburte, 2018, p.304). Initially, the exercise involved direct experimentation with locations chosen from the University of Montreal Faculty of Planning, which presented a variety of spatial characteristics and atmospheres. Students were asked to settle in and spontaneously describe their experience. The aim was to qualify the sensory experience of the place, to make a sensitive survey of it. The next part engaged students in spending time in their place, varying activities and body positions. This stage focused on highlighting potential experiences informed by the spatial characteristics of the place and direct bodily engagement. The final part involved the design and production of a spatial device "for the body" enabling it to engage in an experience of the site and to allow its occupation. The installation produced had to give shape to the concrete relationship experienced on site through the students' repeated contacts. The rendering of the exercise concerned the creation of a 1:1 scale model/prototype made from recycled materials and installed on site.

2.2.1 The body model

The body model is the result of the students' direct interaction with their site during the exercise. They carried out various tests with recycled cardboard, using their bodies as measuring tools. In this way, the final prototypes gradually developed from within the relationship between body and place. As an exploratory model, the body model served as a sensitive measuring tool, allowing to become one with the architectural space. Its ease of handling offered a way of grasping and calibrating place with the body. It allowed to feel its corners, hollows and protrusions and experience it with different positions of occupation. All these corporeal measures led to a better understanding of its spatial characteristics and guided the conception of the design intervention. In this respect, the body model proves to be a tool to activate reflection in action (Schön, 1994) and design thinking. The way it moves with the body helped the students to conceive their proposition in action and to let discoveries arise from their experience. In the light of this exercise, the body model also appears as a mediating tool to make visible the body's search for a place. Its use highlights how the body seeks to install itself, and how this installation is active and reciprocal. The model becomes the support for this research, making it tangible and possible.
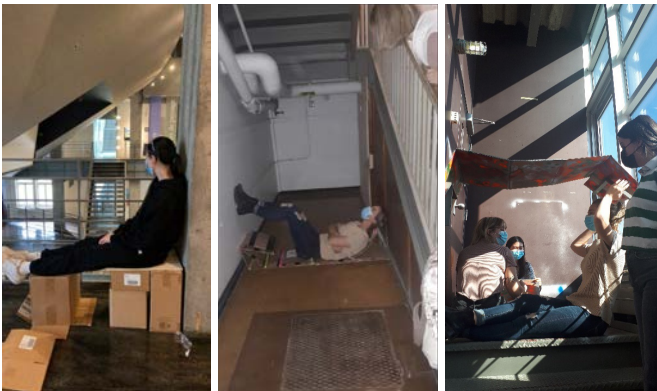
Figure 4-5-6 The body model as a corporeal measuring tool
Source: Personal pictures (2021)

Modular and transformable, the body model activates bodily creativity and gives shape to the dynamic character of the body's installation in the built environment, its "groping for a hold" (Arakawa & Gins, 2005). By merging with the body in the action it enables, the body model becomes part of the habitual and ceases to be an object perceived for its own sake (Merleau-Ponty, 1945). In this spirit, it expresses itself as a tool for extending the body's capacity to expand into the world, as a bodily extension that amplifies and transforms physical capacities in the activity of perception. Here again, the model becomes more than a spatial representation. It becomes a tool to formalize aspects of the bodily engagement within the built environment and enrich its understanding by making visible what's falls unnoticed in the everyday experience.

For the teacher, the body model revealed itself as a tool that facilitates the teaching of reflection in action. Faced with the incomprehension of some students during the exercise, its manipulation enabled the teacher to demonstrate how to engage in active reflection with the body, and to listen and allow oneself to be surprised by the action in progress (Schön, 1994). The body model experience thus facilitated the teaching of a notion that is more difficult to understand for students, who are used planning before acting in project situations.

2.3 Exercice 3: Creating a sensitive experience through the design of a scenographic space

The third exercise explored the sensitive experience of light and aimed to design a scenographic device to be installed in a space in the Faculty of Planning. Exploratory, this exercise encouraged students to adopt an interrogative and prospective position, through a project sequence that differs completely from that usually adopted in design studio. Instead of proposing to start from the unknown (the design problem) and move towards the known (the design answer), this project proposed to take the opposite route, i.e. to start from the known (the sensitive, concrete experience) and move towards the unknown (the design question) (Owens, 2022). This project also aimed to develop atmospheric skills by fostering the ability to perceive and produce atmospheres (Böhme, 2017) through direct manipulation of the elements of design language. The idea here was to probe the sensitive effects of the elements manipulated in order to observe their effects on the body, to draw out a question and to develop a spatial device that proposes a formalization of the latter, an experience to be lived out from this question.

The exercise started with an encounter with light. A manipulative workshop was offered to enable direct contact with light, and to promote understanding of it as a phenomenon that engages the body and the senses. This step invited to take a different look at everyday, habitual phenomena and to question the world from within one's sensitive, subjective relationship.
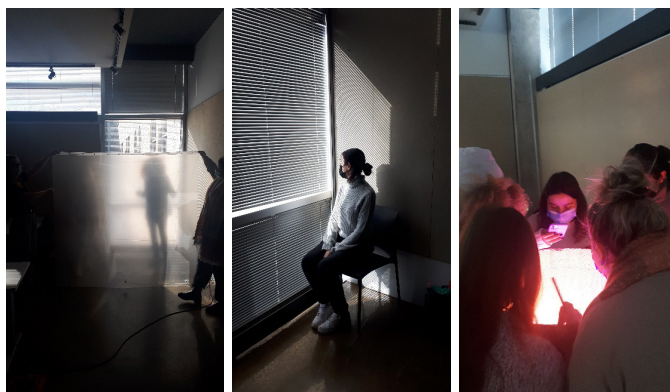
Figure 7-8-9 Stage 1 Encounter light
Source: Personal pictures (2021)

In a second stage, students were invited to investigate a perceptive phenomenon observed during the manipulative workshop in a more in-depth way through direct explorations involving the use of material samples, light, study model and bodily engagement. This step enabled to refine a question extracted from the direct experience of light by means of the language of design and to link it with a phenomenological theoretical concept to anchor the singular experience in a shared language. For example, one team identified the impression of earing light and seeing sound in perceptive experience and linked it to the concept of synesthesia. This theme/question based and oriented their subsequent explorations that they pursued with manipulative experiments with light, movement and sound. At this stage, the students were invited to discover light.
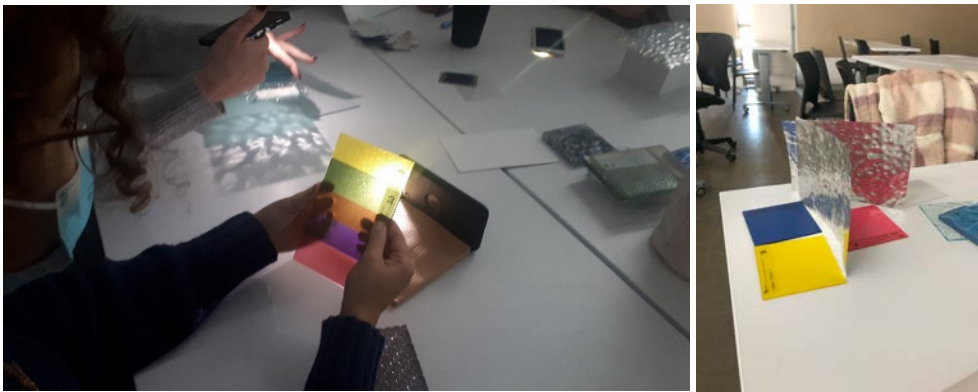
Figure 10-11 Stage 2 Discover light
Source: Personal pictures (2021)

The third stage of the project involved formalizing the investigated experience of light through the development of a scenographic installation. The design of the latter drew directly on the students' experiments and bodily research, which became the driving force behind the formalization of the proposed spaces. At this stage, the intentions had to be scaled to the site of the intervention, in order to develop a proposal that enters into a dialogue with its spatial features.

2.3.1 The ambiance model

A hybrid between study model and material board, the ambiance model appeared during experimental sessions, where the manipulation of material and light samples led to the formation of preliminary assemblages that were gradually refined and transposed into scenographic installations.

Figure 12-13 The formation of the ambiance model
Source: Personal pictures (2021)

The main feature of this model is its mismatch of scales. The material samples used in its conception are full-scale, while their assembly presents a reduced-scale spatial intervention. In this way, the ambiance model allows to synchronously experiment with the real effects of light, texture, color, movement and sound that makes up the design proposal[2]. It offers itself as a complete tool for perception, meaning that the person who experiences it gains an immediate understanding, a *single* perception that engages all the senses at once and solicits the whole body. In this sense, the ambiance model is a tool for perceiving and creating atmospheres. It allows us to become physically aware that "the 'first' object of perception is atmosphere" (Böhme, 2018, p.47). Far from replacing the various existing tools for representing and communicating the design project, the ambiance model is intended as a complementary tool whose sharing allows to experience the project's atmosphere and ambiance, its lived-in dimension.
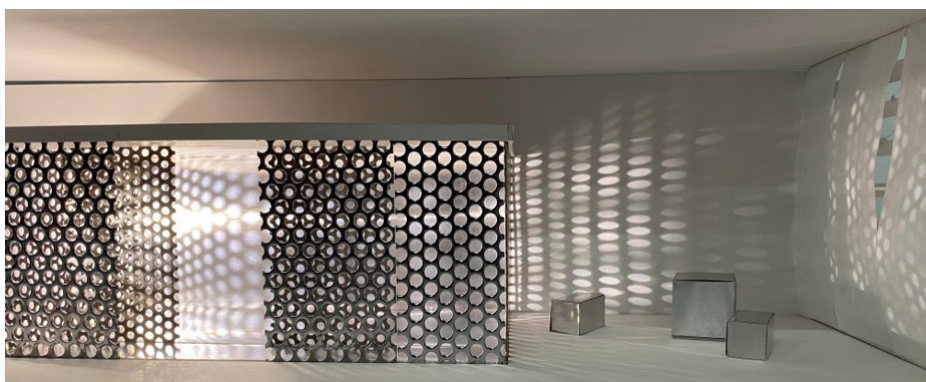
Figure 14 Experiencing real sensitive effects with the ambiance model
Source: Personal picture (2021)

---

2 A video presenting a student project is available at *https://vimeo.com/manage/videos/950061701*

3. CONCLUSION

Although this workshop experience unique format has not led to the development of a new pedagogical model in the strict sense of the term, its teaching has nevertheless revealed potential and opened up avenues for reflection that are worth mentioning. For the students, the benefits include the development of bodily awareness of everyday sensory phenomena, and the acquisition of design skills. Bodily involvement and direct manipulation during the development of the proposals led to a high level of precision and definition of the quality of the elements of design language. In this sense, the various works produced during this workshop presented a detailed level of sensitive effects and the use of a nuanced and refined design vocabulary. It also emerged from the group feedback that living and experimenting with the body encouraged students to assimilate theoretical knowledge.

For the teacher, direct manipulation and bodily engagement facilitated the teaching of theoretical notions difficult to verbalize, such as architectural atmospheres and intersubjectivity. Seeing the students physically engage in the various exercises also helped to clarify the teacher's understanding of the theoretical notions taught. In this sense, the teaching format which values exchanges and experiential knowledge, encourages the establishment of a learning framework in which each person learns from the other, revisiting the usual teacher-student relationship. This teaching experience also led to the discovery of three models that shed light on ways to teach sensitive bodily experience and to operate a mutual enrichment of theory and practice in design studio teaching. Conceived from theoretical concepts, the models allow to enrich the reflection regarding the relationship of the body and the built environment and to theorize the practical act from within the teaching field.

This experimental workshop, however posed certain challenges. The unusual and atypical nature of the teaching project sequence generated a feeling of discomfort and demotivation in some students. This situation reflects the solid anchoring of existing design teaching models, as well as the difficulty for students of going against the reflexes they induce. Furthermore, evaluation methods need to be rethought to better match the exploratory nature of this workshop, which values singular expression and research more than the achievement of a response to an order.

Despite these challenges, this experience reveals the potential of bodily engagement as a way of articulating corpus in phenomenology and design practice in the living field of teaching. The body and the investigation of its experience emerge as a promising avenue for teaching the sensitive dimension of the built environment, and as a basis for developing a pedagogical approach that questions and extends established models.

4. BIBLIOGRAPHY

Arakawa, S. & Gins, M. (2005). Le corps architectural (we decided not to die). Paris: Éditions Manucius.

Bachelard, G. (2004). La poétique de l'espace. Paris: Presses Universitaires de France.

Böhme, G. (2017). Atmospheric Architectures: The Aesthetic of Felt Spaces. London: Bloomsbury Academics.

Böhme, G. (2018). L'atmosphère, fondement d'une nouvelle esthétique? Communications, (102), 25-49. *https://doi.org/10.3917/commu.102.0025*

Böhme, G. (2020). Aisthetique. Pour une eshétique de l'expérience sensible. Paris: Les presses du réel.

Husserl, E. (1966). Méditations cartésiennes: introduction à la phénoménologie. Paris: J. Vrin.

Lebois, V., Laburte, D. (2018). Corps enquêteurs et lieux performés. Enseigner l'expérience sensible de l'architecture. Ambiances Revue internationale sur l'environnement sensible, l'architecture et l'espace urbain, 4. *https://journals.openedition.org/ambiances/1618*

Owens, S. (2022). Teaching incertainty, inviting the unknown. In L. Lechot Hirt (Ed.), Intelligence multiples du design: regards croisés sur une recherche (pp.165-169). Genève: Métis Presses.

Pallasmaa, J., Holl, S., Perez-Gomez, A. (2006). Questions of Perception: Phenomenology of Architecture. San Francisco: William Stout.

Merleau-Ponty, M. (1945). Phénoménologie de la perception. Paris: Gallimard.

Schön, D. (1994). Le praticien réflexif: à la recherche du savoir caché dans l'agir professionnel (J. Heynemand et D. Gagnon, trad. et adapt.). Montréal: Éditions Logiques.

Sweet, T. (2013). Instilling an Awareness of Phenomenology through a Craft-Centered Design Pedagogy. The International Journal of Design Education, 6(2), 31-39. 10.18848/2325-128X/CGP/v06i02/57905.

Zumthor, P. (2008). Atmosphères: Environnements architecturaux-ce qui m'entoure. Bâle: Birkhäuser.

Zumthor, P. (2010). Penser l'architecture. Bâle: Birkhäuser.

L23

UNDERSTANDING ARCHITECTURAL AMBIANCE THROUGH ASSEMBLAGE

COMPREENDENDO A AMBIÊNCIA ARQUITETÔNICA ATRAVÉS DO ASSEMBLAGE

İrem Karadeniz Dündar
Research Assistant
Karadeniz Technical University
iremkaradeniz@ktu.edu.tr

Edanur Fettahoğlu
Research Assistant
Karadeniz Technical University
edanurfettahoglu@ktu.edu.tr

Umay Bektaş
Research Assistant
Karadeniz Technical University
umaybektas@ktu.edu.tr

ABSTRACT

Architecture is an assemblage that has a sensational aspect beyond concrete. Architecture goes beyond concrete structures; it involves the interplay of material, color, sound, technical systems, lighting, users, and designers to create a captivating atmosphere. All these elements are essential in creating the atmosphere and ambiance of any place. However, generating an ambient project demands substantial effort due to its extensive aspects. This paper speculates the theatre as an assemblage for the architectural ambiance-making way. Considering that architecture has various possibilities for creating a built environment, the spatial organisation could be understood through the ambiance. The design resembles Deleuze's abstract machine, as its system is adaptable to changes in personae within its concrete structure. This paper explores the concept of creating ambiance, using Toyo Ito's Sendai Mediatheque as a case study. Examining architectural assemblage offers an alternative and effective approach to understanding the creation of ambiance in design.

KEYWORDS: assemblage. abstract machine. Toyo Ito. architecture. theatre.

RESUMO

A arquitetura é um conjunto que possui um aspecto sensacional além do concreto. A arquitetura vai além das estruturas de concreto; envolve a interação de material, cor, som, sistemas técnicos, iluminação, usuários e designers para criar uma atmosfera cativante. Todos esses elementos são essenciais para criar a atmosfera e o ambiente de qualquer lugar. No entanto, gerar um projeto ambiental exige um esforço substancial devido aos seus aspectos extensivos. Este artigo especula o teatro como um conjunto para a criação de ambiente arquitetônico. Considerando que a arquitetura possui várias possibilidades de criação de um ambiente construído, a organização espacial pode ser compreendida através da ambientação. O design se assemelha à máquina abstrata de Deleuze, pois seu sistema é adaptável a mudanças de personas dentro de sua estrutura concreta. Este artigo explora o conceito de criação de ambiente, utilizando a Mediateca de Sendai de Toyo Ito como estudo de caso. Examinar o conjunto arquitetônico oferece uma abordagem alternativa e eficaz para entender a criação de ambiente no design.

PALAVRAS-CHAVE: assemblage. máquina abstrata. Toyo Ito. arquitetura. teatro.

1. INTRODUCTION

Toyo Ito argues, "If we compare Western civilisation's architecture as a museum, Japanese architecture is like a theatre" (Lopes, 2007). Museums and theatres offer disparate experiences. Museums display artefacts and objects that have reached the end of their physical journey and are archived. On the other hand, theatre is able to attract audiences with its live performativity that unfolds in the moment that is lived.

Watching a theatre play as it evolves creates a productive experience that leaves an immersive impression. So, a question comes to making the ambiance: What is the advantage of considering architecture as theatre? Architecture can be understood as an assemblage with a layer of sensation beyond concrete. Design is about creating something visually appealing and generating a memorable experience that resonates with the milieu, consisting of relations of all actors and the environment. Designing is more than its concrete aspects; it is all about relations between material, textiles, colour, boundaries, sound, smell, technical systems, lightning, users (actors), designers, etc. All these aspects produce what makes the atmosphere and ambiance of any place. However, creating an ambient project requires a significant effort because of its extensive units and aspects.

An assemblage represents a complex unity of individuals, rather than just a mere collection of parts. When the elements of an assemblage are solely defined by their external relationships, they can be endlessly combined, removed, and reconfigured without impacting the overall unified whole. Deleuze and Guattari defined assemblage as a multiplicity that is more than its elements and structure. Thomas Nail discusses assemblage as having three features: conditions, elements, and agents (Nail, 2017). Deleuze and Guattari address these features through the notions of abstract machine, concrete assemblage, and personae. "Abstract machines" reveal the abstract relationships between concrete elements, highlighting their dynamics beyond their individual parts. All assemblages share a common feature: they are governed by their respective conditions. An assemblage's condition pertains to the specific external network of relations that binds its elements together. Deleuze and Guattari refer to this set of conditioning relations as the "abstract machine." The condition of an assemblage is abstract in nature, as it does not manifest as a tangible object in the world, but rather as a framework of relations within which concrete elements and agencies take shape (Nail, 2017). In theatre, all units, including equipment, actors, decor, and lighting, can be understood as parts of assemblage. Although they all have different senses and function individually, all parts form a set of relationships that is more than the sum of its elements, and this dynamic relationship unveils more meaningful interdependences, creating abstract machines. Likewise, the units formulate the spatiality of architecture through structural elements, furniture, lighting, colour, and sound. As the theatre script defines a situation beyond the independent parts, architectural units and their abstract machine also create an ambiance depending on these parts and the whole.

"Concrete assemblage" is not abstract but the tangible aspect of an assemblage. The second common characteristic of all assemblages is the presence of concrete elements. Just as each assemblage displays a set of conditioning relations, they also contain specific elements arranged within these relations. Deleuze and Guattari refer to this as the "concrete assemblage." (Nail, 2017). As mentioned before, it could be any part of the theatre or architecture.

a   b   c
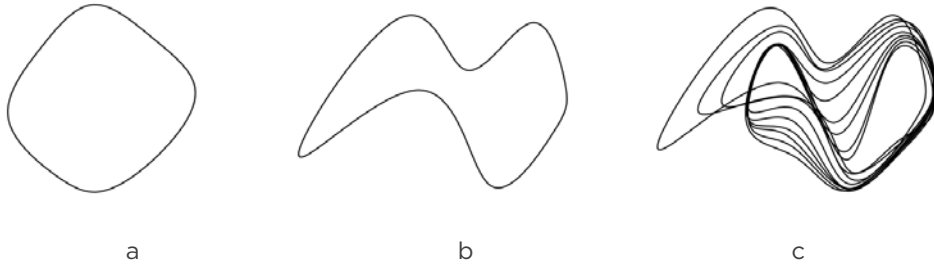
Figure 1. Three features of assemblage   a) concrete element   b) personae   c) abstract machine

The last feature is "personae", which provokes the bounds of the assemblage. All assemblages also involve agents, referred to as "personae" by Deleuze and Guattari. Personae are neither independent rational subjects nor merely decentralized or fragmented subjects that cannot act. Instead, the personae of an assemblage are the dynamic operators that connect the tangible elements based on their conceptual relationships (Nail, 2017). In other words, it gives the event an ambiance. Theatre involves an attractive display of live performances through the relationships of its actors; the scenario creates relations between the parts. Using the same units by changing the scenario, the relations would unfold with its potential. So, in architecture, personae transform a non-defined space into a meaningful place with identity and atmosphere. We could consider the architectural agents, such as dynamic features of a building capable of interlocking disparate individuals, behaviours induced by these agents, and design approaches as personae (Nail, 2017).

This paper speculates the theatre as an assemblage for the architectural ambiance-making way. Considering that architecture has various possibilities for creating a built environment, the spatial organisation could be understood through the ambiance. The design is similar to that of Deleuze's abstract machine. Its system is open to change regarding the personae with its concrete assemblage. The proposed perspective on creating ambiance in this paper is examined through Toyo Ito's Sendai Mediatheque. Understanding architectural assemblage would be an alternative and effective way to understand making ambiance in design making.

2. TOYO ITO'S SENDAI MEDIATHEQUE

Conventionally, architectural design is seen as embodying an idea in the built environment. The design process starts with imagining an atmosphere, specifying how the individuals could feel in accordance with the space's function. In theatre, the theme of the play creates the atmosphere, like an invisible element of any design. Toyo Ito examines the theme of the building as a bridge between nature and architecture, a "forest-like space within that building." (Dezeen, 2024; Stirworld, 2024).

While creating the atmosphere, designers use various elements. In design, line, shape, form, texture, colour, etc., are vital components that produce the meaning of the space (Andrew, 2015). The tangible elements of architecture can be seen as concrete assemblages with their concrete and specific features and characteristics. In the theatre, every element, including costumes, décor, music, and lighting, whereas, in architecture, bounder of space such as walls, floor, ceiling, light, colour, material, surface, smell, etc., could be seen as concrete assemblages. As a contemporary architectural example with ambiance, Ito's complex consists of three highlighted elements: tube, plate and skin (Figure 2). The idea of a forest-like space representation of the project is stylised with tree-like tubes as structure. Following that, the structure also becomes thematic. The three elements are the boundaries of the building, which transform a place into a building with an ambiance and allow the opportunity to design attuned to this flow.
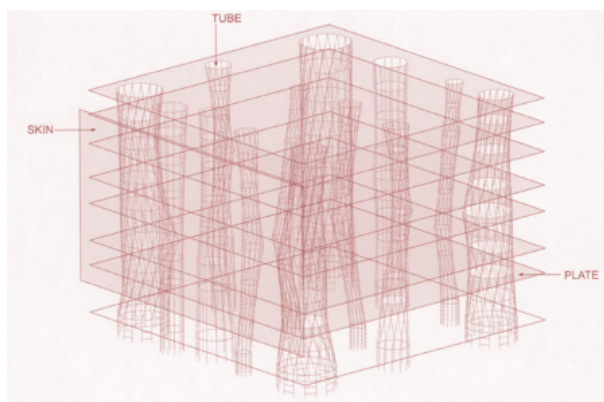
Figure 2. The Sendai Mediatheque's elements
Source: Arkitektuel (2024).

Each component holds its own unique significance, and when composed, they form a harmonious and impactful whole. For example, the scene décor in a living room may not seem so significant for the project before the theatre play, but it plays a meaningful role in setting the stage. Or if we see a messy living room, we could think of a place where some disturbance or conflict may have happened or is still happening, or an unconventional way of living. In contrast, if there is a tidy and clean room with soft colours and flowers, we can say that these give a clue about a balanced and peaceful style of living. Thus, even the basic living room furniture could be a key element to change to other details and make a different sensation of a space. All the effect of ambiance in assemblages is based on the relation that could be made between parts and the whole. In architecture, there are tall walls, and we can feel the sense of imposition and sovereignty, as churches do to us. The significant point is the type and amount of them. All the changeable things have different effects. So, the designer could decide how much, what kind, and which ones are used for the idea. For example, Ito designed the centre without walls; in other words, there are no divided rooms. He describes this aspect as "the biggest characteristic of the building" (Figure 3).
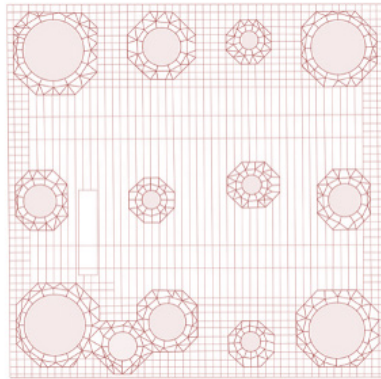
Figure 3. The Sendai Mediatheque without wall
Source: Dsign Something (2024).

This decision affects the users in an unexpected way that Ito says:

> …so after it opened, many interesting things happened. For example, there was a workshop by students, and just next to them there was a computer seminar for the elderly with no wall between them. The old people were actually very happy being with the young people…(Y'Now-Interviews, 2024).

That is the answer to the abstract machine. The architecture plays a role in creating relationships between people. Another point to focus on is the organisation of the elements. Each element could create a different sense together, creating the desired atmosphere. The different senses of each element could be categorised as personae, which could refer to the character of elements. For example, the tubes with glass skin allow daylight to enter. This makes the tubes fresh and visible, changing colour in accordance with the weather. If the tubes consisted of walls, they would be dark, skinny and irrelevant to the weather. Although they have the same form, material changes their personae of them. In addition to that, The Sendai Mediatheque consists of seven floors, and because of their changing size, each floor has different layouts (Figure 4). This gives a different design potential and areas with personae. Besides these elements, the users are also productive parts of the design. Interaction between space and people creates an abstract and vibrant part of space. In other words, a building turns into a living organism with actors.
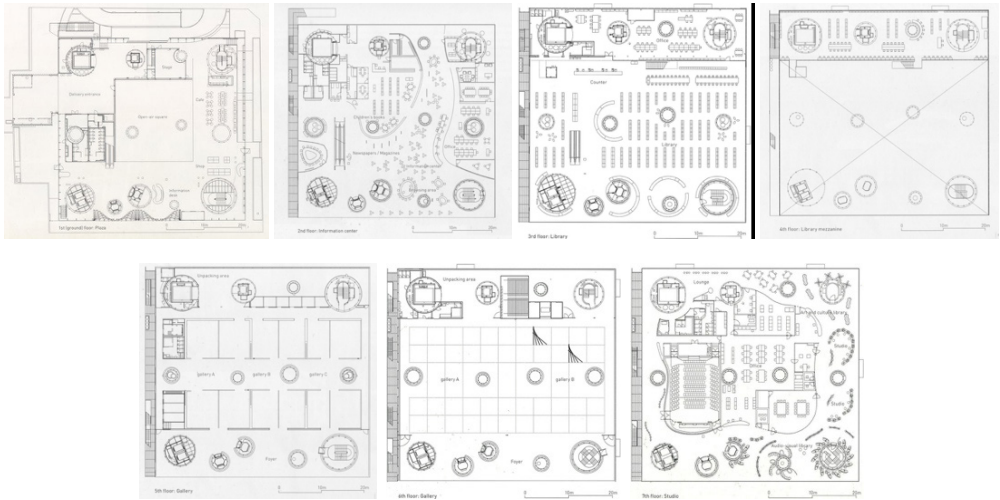
Figure 4. The Sendai Mediatheque floor plans
Source: Reddit (2024).

All their units and relations create unity. The unity is more than what consists of it. Thus, an abstract machine is created. In theatre, all components affect the others and create a bond so they would have new unfolding. After that, it could not be considered individual because of the lost meaning. In theatre, when the play begins, the atmosphere changes, and spectators find themselves in the play. We do not see the light alone; the light has a meaning in relation to others, whether it is lighted or not. Or a table has a mean with the actor or table cover or something else. In architecture, the walls have a meaning with a door. Shelves get a meaning with the light. The Sendai Mediatheque has no wall, which gives the space contingent meanings depending on the assemblages.
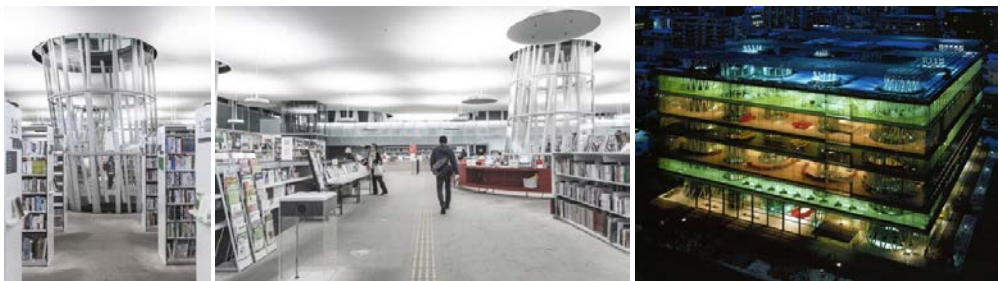
Figure 5. The Sendai Mediatheque photos
Source: Arkitektuel (2024).

As seen above, the first tube creates a circulation circle, and the second tube is the background of the information desk (Figure 5). The shelves are a platform for books and work as a separator, thus dividing the spaces. The tubes affect the abstract machine through their function, location, and relationships with other design elements and users.

3. CONCLUSION

Design is the puzzle(unity) of functionality, possibility, and feeling. This unity creates the atmosphere or ambiance of any space. To achieve that, the designer uses design elements, such as lines, shapes, dots, etc. This study categorizes them as concrete assemblages, only part of the design. The sense of the concrete assemblages could refer to personae. All elements and the bond of elements create an abstract machine. Thinking about the ambiance-making through the assemblage gives the opportunity.

There is a close relationship between theatre and architecture in the sense of ambiance-making. If we consider architecture like an event as theatre, we could make the connection between all the elements to achieve a desirable atmosphere of any building. Thus, while selecting and organizing these elements, also consider a part of creating an event. In design, elements such as line, shape, form, texture, and color are crucial for conveying the essence of a space. In architecture, tangible elements such as walls, floor, ceiling, light, color, material, and surface contribute to the overall experience. Each element carries its individual importance, and when combined, they create a unified and influential entirety.The different senses of each element could be categorised as personae, which could refer to the character of elements. All of their elements and connections form a sense of oneness. This sense of unity exceeds the sum of its parts. As a result, an abstract mechanism comes into being. In the realm of theater, each element influences the others, creating a connection that leads to new developments. Subsequently, it becomes impossible to view it as separate due to the loss of meaning.

7. BIBLIOGRAPHY

Arkitektuel. (2024). Sendai Mediatheque.

https://www.arkitektuel.com/sendai-mediatheque/

Andrew, E. H. (2015). *Essential elements of spatial definition in theatre architecture* (Unpublished master's thesis). Department of Theatre and Media Studies, University of Calabar, Nigeria.

Dezeen. (2024). Toyo Ito Architecture Clothing Wrap Around Human Beings.

https://www.dezeen.com/2014/07/31/movie-interview-toyo-ito-architecture-clothing-wrap-around-human-beings/

Dsign Something. (2024). Sendai Mediatheque.

https://dsignsomething.com/2021/06/04/sendai-mediatheque-toyo-ito/

Lopes, D. M. (2007). Shikinen Sengu and the ontology of architecture in Japan. *The Journal of Aesthetics and Art Criticism, 65*(1), 77-84.

Nail, T. (2017). What is an assemblage? *SubStance, 46*(1), 21-37.

Reddit. (2024). Sendai Mediatheque by Toyo Ito (sections and floor plans).

https://www.reddit.com/r/architecture/comments/s0ew7e/sendai_mediatheque_by_toyo_ito_sections_and_floor/

Stirworld. (2024). Toyo Ito Wants People to Be Able To Behave As Freely As Animals Behave In Nature.

https://www.stirworld.com/think-columns-toyo-ito-wants-people-to-be-able-to-behave-as-freely-as-animals-behave-in-nature

Y'Now-Interviews. (2024). Toyo Ito, architect (2)

https://yknow-interviews.blogspot.com/2019/06/toyo-ito-architect-2.html

FROM NATURAL LISTENING TO CRITICAL LISTENING ETHNOPEDAGOGICAL EVALUATION OF A SOUND POLICY

Patrick Romieu
Centre de recherche sur l'espace sonore et l'environnement urbain (Cresson)
romieu.p@wanadoo.fr

ABSTRACT

What place is given to the prerequisites of acoustic competence, such as implicit knowledge and spontaneous improvisations observed in the implementation of various objectives? Whether it is the development of a listening path, a performance evoking sound, or the writing of a personal record of sounds perceived during a day, do the normally neglected acoustic attentions and skills inform us about suddenly awakened specific cognitive and practical consistencies? On what types of dynamics do they depend? The contributions of the educational device, known to all, are thus easily evaluated based on their reuse by the actors and estimated in their generative power of improvisation, creation, both descriptive of situations and inventive of comments and other fictional narratives. In other words, what is the yield for the device, what pedagogical impacts are revealed? This evaluative pause will have the merit of reconsidering the ongoing exchanges between the theoretical moment (a theory of sound in continuous development) and the empirical moment (practical translation of provisional hypotheses) within a precise observational framework.

KEYWORDS: Sound Observatory, Sound Ethnography, Ambiance, Acoustic Experience, Situated Listening

RESUMO:

Que lugar é dado aos pré-requisitos da competência acústica, como o conhecimento implícito e as improvisações espontâneas observadas na implementação de vários objetivos? Quer se trate do desenvolvimento de um caminho de escuta, uma performance evocando o som, ou a escrita de um registro pessoal dos sons percebidos durante um dia, as atenções e habilidades acústicas normalmente negligenciadas nos informam sobre consistências cognitivas e práticas específicas subitamente despertadas? De que tipos de dinâmicas elas dependem? As contribuições do dispositivo educacional, conhecidas por todos, são assim facilmente avaliadas com base no seu reaproveitamento pelos atores e estimadas no seu poder gerador de improvisação, criação, tanto descritiva de situações quanto inventiva de comentários e outras narrativas ficcionais. Em outras palavras, qual é o rendimento para o dispositivo, quais impactos pedagógicos são revelados? Esta pausa avaliativa terá o mérito de reconsiderar as trocas em andamento entre o momento teórico (uma teoria do som em desenvolvimento contínuo) e o momento empírico (tradução prática de hipóteses provisórias) dentro de um quadro observacional preciso.

PALAVRAS-CHAVE: Observatório de Som, Etnografia Sonora, Ambiência, Experiência Acústica, Escuta Situada

1. A FRAMEWORK BETWEEN RESEARCH AND ACTION
1.1 Issues

The mission of Sound Observatories addresses numerous arguments. Here, we will only consider the most trivial of them: the opacity of existential atmospheres and their sonic expressions. These invisible levers of daily life, particularly due to their invisibility, are not easily grasped, as they are partly based on rhythms and durations, and consequently on temporalities. Hence, in our societies, non-musical sound cultures hold a particular status, seeming to evade solid capture. Awareness of temporal flows is indeed among the most complex. However, Social Sciences have since embraced a question that was previously the exclusive domain of formal sciences. Consequently, sensitive intermediaries, expressed through various regimes of sensory action, have gained a certain academic legitimacy, leading to numerous studies. Innovative issues have thus become legitimate. What, then, about these rudimentary instrumentalizations, so different in their perception of musical sounds due to their apparent lack of motivation, intention, and their quasi-waste status? How can awareness of these intangible realities contribute to what we will optimistically call a possible democracy of tuning? What might be the means, the potential tools? These questions are obviously too vast to be addressed here. We will limit ourselves to a critical review of modest experiments, conducted with the utmost possible rigor and supported by theoretically validated research. One of the interests of these existential experiments undoubtedly lies in the open, dynamic link that has been woven between the advancements in anthropological research and the experiential fields we present. The primary beneficiaries, as we hope, should be the public who engage with and demand these initiatives. We must also clarify that these mesological over-listening incentives are based on awareness and training objectives. They are not without utopia: the idea that the majority will take charge of the urgent adjustments required by ongoing environmental crises. However, the stance adopted here is unequivocally that of research.

1.2 Conceptual Foundation

As a framework, the Sound Observatory's mission is to ensure the transmission of essential knowledge for a precise and unequivocal "listening in" to existential spaces. Maximum clarity is imperative. Thus, a sort of continuous participatory workshop can justify the exchanges between academic worlds and citizens, with the Observatory (Observatoire Sonore de Haute Provence) serving as the mediator. In this perspective, academics propose provisional hypotheses and methods closely related to concrete situations, while citizens use or rediscover their own acoustic skills. The existence of a theoretical endpoint on the horizon coheres the whole. However, revisiting practices and attitudes that are felt to be natural is not so simple. Most of the time, the spontaneous uses acquired through culture and instinct are those that are prioritized and encouraged. Pedagogical gains will spontaneously superimpose, question, and thereby facilitate novel critical feedback on established auditory cultures. This is why the general methodological and conceptual lines of force are constantly reiterated

to the participants. Even though these introductory approaches obviously differ depending on the audiences, certain transversal conceptual constants are essential. We highlight the most prominent ones.

1.2.1 Sensory Evidence

Does the typical mode of sound turbulence not seem to resolve into a vague, almost imperceptible atmospheric murmur, with no notable effect on our ways of living? While a calm and balanced ambiance can indeed provide the illusion of an acoustic climate on the verge of silence, data on high noise exposure challenges the notion of sonic innocuousness: mood disorders, hypertension, cardiovascular diseases, and increased aggressive behaviors. This indicates that the usual maelstrom of soundscapes continually renews itself through countless variations in timbre, rhythm, and intensity. On the stairway of evident truths, the first step uncovered is that of dynamics: dynamics of timbres, frequencies, gestures, and bodies: "*Here I am carried away despite myself by the sound of voices, car horns, the wind's breath. I float above the sidewalk. Then calm returns, and I feel like I'm dragging my feet.*" (Participant, Soundwalk, Brussels, 2006). These modular effects impose themselves through sudden and unpredictable changes. Untamed sound opens onto entropy. Thus, an individual previously attuned to the ambiance of the moment may suddenly experience a feeling of oppressive immobility, unexpectedly engulfing them. Time then seems to solidify: noise sets in, difficult to dislodge. Such are the continuous juxtapositions of the usual contrasts of acoustic existence. "*The sound of a saxophone superimposes. Is it someone playing in the street or someone playing in a nearby apartment with an open window? Occasionally, the high-pitched noise of birds adds to it. We have a rather heterogeneous layering effect*." (Student, Listening Notebook, 2012). In this example, the firmness of the writing attests to an assured listening, undisturbed by the effects of mixing and ubiquity. For a less informed attention, this could result in a feeling evolving between fallacious obviousness and fatalism, modulating according to situations or psychic dispositions. Our living spaces are accustomed to this: places and spaces regularly attest to unique acoustic climates, distributing a remarkable geophonic partition to those who traverse them. This complexity makes the quest for listening very delicate. Initially supported, making a more sustained perceptual orientation difficult. Indeed, this type of approach is unusual outside certain well-documented situations with culturally regulated protocols. Can over-listening, therefore, be justified without descending into banality or charlatanism? What can be its objectives, the utility of its results, and the validity of its methods? These questions feed into the foundational steps of popularization efforts. They are often posed by the public, curious yet skeptical, sometimes showing a temporary reluctance before fully engaging in the acoustic experience: "*I'm sorry, this makes me anxious, excuse me, my husband will tell me about it*!" (Participant, Soundwalk, Marseille, 2005). Indeed, can one see without looking, hear without listening? This is generally the argument of the specialist facing the skeptic. Consequently, some simplification is required during these preliminary phases. It involves both courtesy and pedagogical concern. Is it not also the privileged moment, standing at the threshold of sound, to recall Nietzsche's famous phrase, "The

ear is the organ of fear"(Nietzsche, 2012)? Clearly, the field of perceptive evidence is far from evident! It is understood that awareness of the sensory experience cannot be approached without warning, nor without the person's full consent. While this issue is not central for voluntary collectives, it is different for curious but vulnerable audiences. These listening sessions indeed fit into very different individual projects, ranging from simple exploratory walks proposed to merely motivated audiences to academic objectives designed within student-supervised projects, or formative supplements, particularly in National Schools of Architecture or Universities. Such is the uniqueness of these educational actions, which are at the same time inseparable from personal research pursued for decades within the disciplinary framework of Sound Anthropology. They thus fit into a series of feedback loops to our methodological innovations, fueling the continuous renewal of our heuristic hypotheses. This dimension ensures a strong dynamic founded on a principle of uncertainty, a dynamic clearly felt by the participants. This weaving of experimentation and a prospective theoretical foundation contributes to the overall homogeneity.

1.2.2 An Immersive Experience

Every life requires an immersive mode, every society is an integral part of its sensory environment, following complex modalities that still largely remain to be described. It is therefore easier to highlight that the resonant threads imprint themselves on bodies due to, and despite, the often drastic repressions they undergo, condensing under the clear lines of consciousness into powerfully active memory reserves. Thus, we have developed the methodological habit, after traversing particularly dense events and various noises, of allowing a decontamination period in a quiet space for 15 minutes to facilitate a coherent repositioning of feelings. These regenerative pauses can, depending on the groups, lead to note-taking. "*I feel like I put my feet in a hot bathtub and now opened the cold water tap, it feels better!*" (Participant, Soundwalk, Brussels.2009) It is not only the random or chaotic noises, often spectacular and thus memorable, but even more so the unique inner partitions that deposit themselves, in a fragmented manner, unbeknownst to individuals whose conscious actions are invested in noble and urgent tasks. There is no doubt that this student, under normal circumstances, would not have reflected on her sound-induced stress. For common experience, these inner partitions develop during life experiences, socialization conditions, and cultural habits, being altered and rerouted by cultural carriers, civilizational constructs, until they condense into psychic imprints, reflexes, and imaginations. The literary references, fertile and numerous in this regard, constitute compelling examples. They are evoked and discussed as often as possible during conferences, seminars, and radio broadcasts, which usually accompany sensitization actions. This contribution forms the indispensable theoretical prelude to any auditory walk. This vivid aspect of acoustic expressiveness is essential. Depending on the terrain and the means available, we combine discursive expression, drawing, sound montage, and video. For example, we tasked a group of students, during a National Sound Week, with producing street theater scenes that referenced significant sound events in a city. Acoustic events and historical atmospheres were both evoked by

actors and manifested through recordings, and the sounds of the local dialect were not forgotten. This intuitive approach to anthropology differs from the positive analyses conducted by cognitive sciences and neurology. As François Laplantine continually reminds us, (Laplantine, 2003) writing, within the epistemic singularity of Social Sciences, serves as a powerful lever of knowledge, akin to literature and poetry. Ethnography has managed, over a few decades, to craft sufficiently nuanced descriptions of the ways of being present to sound, through sound, and by sound—not just musical or ritual sound, familiar to researchers for a long time, but the acoustic banalities that initially seem devoid of originality. These open up novel avenues. In this regard, the listening logs created by students in the folds of public or domestic spaces are quite explicit. Describing the sonic phenomenon is extremely challenging; the term "trace" aptly conveys this mesh of sketches of which we are both actors and bearers. These descriptive attempts, once completed, provide a powerful lever for the initial stages of fundamental research, despite their imprecision and gaps. They also serve methodological popularization and descriptive methodology, which must strive for a sufficiently solid foundation in capturing the complexities of auditory experiences. But they also serve methodological popularization, descriptive methodology. This must seek a sufficiently solid foundation in its grasp of the countless ways of dealing with trivial sound. Sound is indeed a very powerful societal connector. It is the subject of countless manipulations. Nowadays, questions related to noise nuisance or acoustic pollution easily testify to a negative awareness of sound invasions. Audiences are very sensitive to these issues, but one must be careful to correct simplistic dichotomies. Most of the time, the first exercises in active listening provide participants with elements of nuance that are highly relevant. *"Before the walk, I hadn't really paid attention to all the small moments of silence that one can achieve, sometimes without even looking for them, right in the heart of the city, that's amazing!"* (Student, Listening notebook, 2011).

2. A NECESSARY CONCEPTUAL OVERHAUL

As attention shifts towards ordinary sounds for analytical purposes, the categorizations in the conventional classifications need to be reconsidered. Descriptive tools are directly dependent on societal changes. What about today, then, of this audio-sphere whose territories have been expanding since the beginning of the industrial era? How to integrate it with other major environments whose evolution is also constantly expanding, how to think about it, analyze it, especially in light of the environmental issues we are now facing? A necessary involvement by citizen collectives also seems essential. In this case, as in many others, global, local, and individual aspects constantly interact in subtle processes. These scalar intermodalities must be understood at the most local level and individual behaviors. Ethnography is conceived in a minute mode. Initiation to listening can only operate in the intervals left vacant by noisy waves, meticulously timed acoustic calendars, backyards, and squares. In the case of so-called "natural" spaces, local listening becomes a necessity. Finesse and subtlety are required. On the other hand, ethnographic observation must be able to renew itself,

to increase its descriptive and interpretative powers. Overviews are closely linked to the minute scale of singular cases. Thus, Western cultures are historically based on relatively simple principles of division: sounds are assigned the beneficial part of listening, noises the malevolent part. It is immediately apparent that vocabulary cannot be ignored in this matter. "*All these sounds from everywhere tickle me, make me want to move forward, to go into the dark, I don't know how to say it, I lack the words!*" (Listening notebook, Student, 2015) This zoning of the sharing of the paradisiacal and the infernal, with its long history, has resurfaced in recent decades, notably in the realm of acoustic ecology. It has immediately imposed soft listening and other sound naps, thereby abandoning the scenes more tumultuous hearings. This is certainly not a general rule, but it is nonetheless difficult not to detect the influences of comfort ideologies, various naturalisms, and perhaps a more demagogic concern for the protection of today's dominant audiences. This remains to be analyzed more finely. It is therefore undeniable that a notion such as that of Sound/Noise, proposed by Luigi Russolo (Russolo, 2016) or the provocative postures of John Cage or Nicolas Frize, encouraging listening to noise like any other sound, is gleefully stepped over, even today. These attitudes, although they have become academic for specialists, remain fundamentally foreign to the small bourgeois conservatism of which Murray Schafer, M. Schafer, (2010), through the vague and deceptive notion of Soundscapes, has become the champion for many sound entrepreneurs. In fact, this acoustic dualism, emphasized by Jean François Augoyard at the dawn of CRESSON's innovative research in the late 1970s, has relentlessly expanded its influence over the most diverse actions in our field, distilling an acoustically correct approach in line with other conservatisms of the time. There are certainly active residues of neo-Kantian aesthetics, all the more present as the artistic world seems to have massively focused on Sound Arts, which, although diverse, have nevertheless brought back elements of naturalistic naivety. More decisively, one can easily detect active processes of guilt and reactive repression in relation to the auditory drive, which presents itself as a blend of aggressiveness, sexuality, and various obscurities. It is the responsibility of anthropology to clear these layers, coextensive with an infinity of acoustic situations, even the most seemingly mundane. Here we find the scalar requirement of a heuristic tension governing every auditory experience. Many nuances transit between the extreme poles of sonic experience. Sounds unfold, for the usual experience, between voice, speech, music, noise, and silence. Once again, common experience offers us a convenient platform in gaining access to the sharing of sonic flows, the distribution of their uses, their temporalities, their differences in societal objectives, and their reciprocal influences in the assembly of the most ordinary situations. It goes without saying that the period of redistribution of acoustic sources during the global pandemic of 2020 represented an exemplary staging in this regard. Drawing on such examples, it is not difficult to highlight the political, institutional, and authoritarian dimensions of the acoustic element. This can be pointed out in a few sentences, as is customary in auditory discovery walks, it can be further explored in the context of conferences with numerous examples provided for listening. Once tamed, the sonic seems to obey essentially constraints or construction rules: phonological, morphological for spoken languages; harmonic, melodic, sometimes timbral for music.

Any change, any innovation is immediately classified under noise, more or less parasitic. Sound operates in the mode of usage and code. It is assumed to carry meaning, albeit fragile or uncertain, but it also participates in the sign and signal. It is therefore dogmatic and institutional injunctions that exercise their semantic, semiological, and thus censoring power. Innovations in these areas are often slow, as they are politically antagonistic. It can be observed that many research efforts, even today, are developed based on these immutable categories, without furthering a critique often essential for a full understanding of their assertions. It can only be different for those who, following phenomenological orientations based on the methodological recourse of perceptual naivety, attempt to listen as devoid of prejudices as possible. A completely different difficulty will be encountered in the realm of music. Indeed, the first methodological concern will be to establish a connection with the sonic element as detached as possible from musical listening, its reflexes, prejudices, and aesthetic classifications. The cultural dominance of music being what it is, one can understand that it is impossible – and furthermore unnecessary – to completely break free from it, but to strive to set aside its most common listening protocols and reflexes. The same applies to linguistic sound. The vocal sound supports speech, but phonetics itself is asemantic, except for onomatopoeic exceptions. However, prosody, rhythm, the breath of intervals and silences, the clash of timbres, intensity accents, articulatory modalities, or even the distribution of nasals create intuitive networks of meaning for each language. Immersion in an unfamiliar language is exemplary in this regard. Conversely, just because common sense enjoys evoking the music of a language does not mean that it should be heard musically. Contrary to this aestheticizing attitude, it is worth highlighting that immersion in environments of intense vocal distortion—such as crowd noise—leads to interesting acoustic experiences: once linguistic meaning is veiled, the embodied structure of phonetic impacts, their trails, and their incisive divisions are revealed. The primitive rhythm of language briefly becomes within reach.

2.1 From natural listening to critical listening: synthesis

It is always disconcerting to reconsider, to reconnect with a part of oneself revisited by unprecedented considerations aiming to enrich natural and almost reflexive knowledge. Conversely, this strongly stimulates desire, curiosity, in other words, all the qualities essential for expanding knowledge. The active listeners we are dealing with willingly engage, sometimes with fear as emphasized, in this playful adventure of which sound constitutes the most anthropologically undeniable element. The contributions of research have, among other advantages, the ability to delve into the essence of the targeted domain. Acoustic spaces continuously activate and translate systems of forces, sometimes consciously acted upon by individuals, sometimes simply escaping any possibility of control. In order to be acted upon and experienced with maximum freedom and liberty, the sonic actor, whose role is distributed to everyone throughout their life, must possess the competence of placement. To position oneself within an acoustic space means both integrating as smoothly as possible into its rhythm as well as its rhythmic dominants, and depending on the devices and situations, adjusting

distances, postures, and bodily dispositions. Hence, in advanced training scenarios, we take care to offer genuine choreographic setups that allow participants to follow along with certain sound sources, to position themselves within the considered space based on a euphonic point, experienced as the most pleasant, or conversely to settle at the most repulsive point. In all cases, we constantly navigate within 'this intermediate area of experience to which the inner reality and outer life simultaneously contribute,' as Winnicott profoundly explored throughout his work. Winnicott, D.W. (1975) It is important to restore the auditory component of existential ambiences to the rightful place they deserve. Sound is just one element among others in sensory perceptions of existential experience. Attentive listening captures the nuances of sensory intermodality, the irreducible place of physical volumes, built and architectural arrangements, movements and displacements, aerological circulations of the instant. "*This cold is punctuated by the sound of the neighbor digging in his garden.*" (Student, Listening Notebook,2006) The cold here no longer seems to adhere uniformly to the body but is somehow cut by the sonorous spade of the neighbor. In a split second, the experience of life is reconfigured. Being carried by listening allows for a psychological transition from one spatiality to another, to expand or contract one's vital sphere: "*The ambiance of the street completely fills the room and is in opposition with the feeling one has in the bedroom, because of the sounds*". (Student, Listening Notebook, 2011) notes another student while listening to their living space. While these sensory disconnections are experienced within hearing distance, it is much more difficult to articulate them at the discursive level.

CONCLUSION

In our cultures, as a caricatured reminder, words fall short in terms of sensory and auditory expressiveness to describe the triviality of experience. This exhilarating challenge for the anthropology of sound represents, however, a certain difficulty for ordinary communication. Efforts must still be made to make the various powers acknowledge the seriousness of play, to combat the plaintive complacency of sono-induced grievances without finding satisfactory solutions, and ultimately to shed light on the obscure springs of a unique expressiveness for the most curious. For now, it seems that we are content with listening without truly wanting to hear. However, sound may ultimately just be this misunderstanding.

BIBLIOGRAPHY

Laplantine, F. (2003). De tout petits liens. Essai. Mille et une Nuits.

Nietzsche, F. (2012). Aurore. Flammarion

Russolo, L. (2003). L'Art des Bruits. Allia

Schafer, R.M (2010). Le Paysage Sonore. Le monde comme musique. Wildproject.

Winnicott, D.W. (1975) Jeu et réalité. L'espace potentiel. Gallimard.
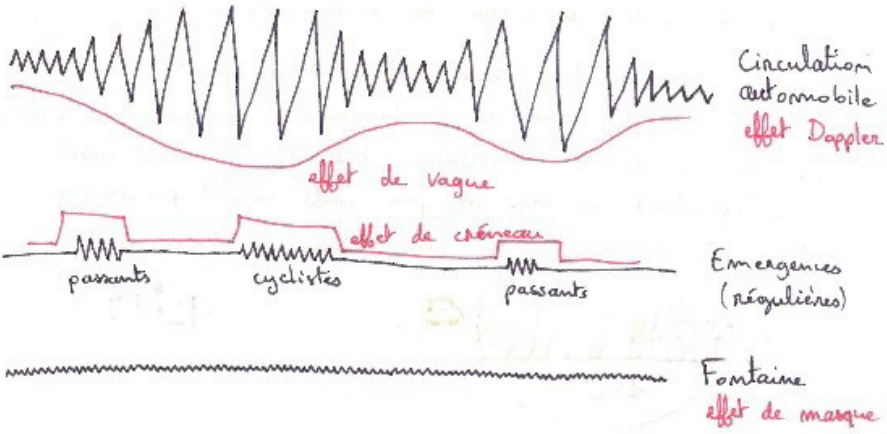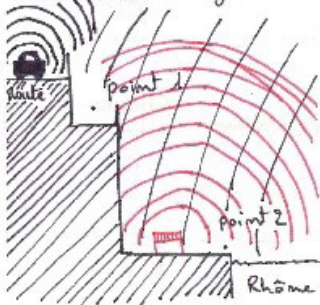
Listening Notebook, Student, 2011
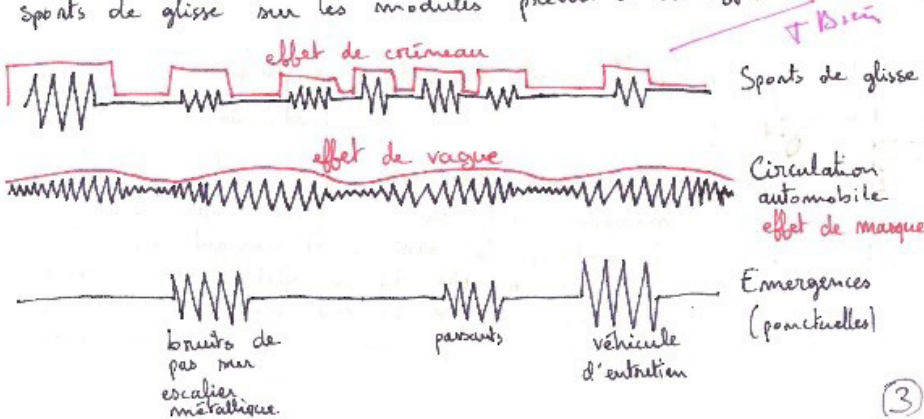
L24

THE FLUVIAL URBAN LANDSCAPE - IN SEARCH OF A NEW URBAN AMBIANCE FOR RIVERS

CHAIRS Marluci Menezes
Carlos Smaniotto Costa

The production of urban places enhances the creation of unique environments that reinforce people's connection to the environment—physical, natural, built, and social. Particularly through the appropriation and provision of cognitive, sensitive, sensorial, and sociocultural atmospheres that generate memories, as well as being and comfort, is an emerging challenge. Specifically, if we associate it with contemporary societal needs for more sustainable and resilient urban contexts, both aspects present themselves as challenges to which it is urgent to find answers that are more agile, flexible, and adapted to socio-spatial contexts. This session aims to provide a debate on these challenges based on the theme of urban rivers, mainly with regard to their (re)naturalization, socio-spatial contextualization, and the involvement and participation of riverside communities. Rivers are among the most endangered ecosystems in the world, although they play a fundamental role in the urban environment, for public health and well-being. It inquires about the perspectives of building scientific and social knowledge, the use and appropriation of river landscapes, and the respective recovery and creation of new memories, as well as the perspectives of co-creating approaches for the rehabilitation of rivers in urban contexts, transforming them into places.

THE RIVER AND THE METROPOLIS: FINDING AN EQUILIBRIUM BETWEEN PAST AND FUTURE USES OF THE ST-LAWRENCE RIVERSIDE IN MONTRÉAL.

O RIO E A METRÓPOLE: ENCONTRANDO UM EQUILÍBRIO ENTRE OS USOS PASSADOS E FUTUROS DA MARGEM DO RIO ST-LAWRENCE EM MONTRÉAL.

Anouk Bélanger
Professor
Université du Québec à Montréal, Atelier de chronotopies urbaines,
Centre de recherches interdisciplinaires en études montréalaises,
Montréal, Québec
belanger.anouk@uqam.ca

Maxim Bonin
Professor
Université du Québec en Abitibi-Témiscamingue,
Atelier de chronotopies urbaines, confluences.lab,
maxim.bonin@uqat.ca

Xavier Massicotte
Master degree student - Université du Québec en Abitibi-Témiscamingue,
Lab coordinator and project manager – Cooperative Le Comité,
Montréal, Québec
xavier@lecomitemtl.com

ABSTRACT

This article explores the transformation of urban blue spaces in Montréal, focusing on three riverside areas along the St. Lawrence River. Since the 1990s, Montréal has undertaken revitalization efforts, transforming post-industrial landscapes into dynamic public spaces that reconnect citizens with the river. These areas face challenges such as industrial legacies and pressures for reindustrialization versus green and blue public spaces. The study integrates cultural analysis, political ecology, design and counter-mapping to document historical uses, analyze cultural layers and propose future strategies for Montréal's waterfront areas. Although surrounded by 266 km of shoreline, Montréal faces access problems due to the industrial presence and privatization of the riverbanks. Projects such as "À nous les rives !" by the design coop Le Comité aims to reclaim these spaces, emphasizing sustainable development and community involvement. The analysis examines global variations in urban waterfronts, focusing on natural, landscaped and neglected environments shaped by historical, political and social contexts. This research highlights Montréal's evolving relationship with water, combining environmental management with public accessibility and cultural enhancement.

KEYWORDS: urban ambiances, cultural scenes, urban design, cultural transformation, cultural political ecology

RESUMO

Este artigo explora a transformação dos espaços azuis urbanos em Montréal, centrando-se em três zonas ribeirinhas ao longo do rio São Lourenço. Desde a década de 1990, Montréal tem empreendido esforços de revitalização, transformando paisagens pós-industriais em espaços públicos dinâmicos que reconectam os cidadãos com o rio. Estas áreas enfrentam desafios como os legados industriais e as pressões para a reindustrialização versus espaços públicos verdes e azuis. O estudo integra análise cultural, ecologia política, design e contra-mapeamento para documentar usos históricos, analisar camadas culturais e propor estratégias futuras para as zonas ribeirinhas de Montréal. Embora rodeada por 266 km de costa, Montréal enfrenta problemas de acesso devido à presença industrial e à privatização das margens do rio. Projectos como "À nous les rives !" da cooperativa de design Le Comité visam recuperar estes espaços, com ênfase no desenvolvimento sustentável e no envolvimento da comunidade. A análise examina as variações globais nas frentes de água urbanas, centrando-se em ambientes naturais, paisagísticos e negligenciados, moldados por contextos históricos, políticos e sociais. Esta investigação realça a evolução da relação de Montréal com a água, combinando a gestão ambiental com a acessibilidade pública e a valorização cultural.

PALAVRAS-CHAVE: ambientes urbanos, cenas culturais, design urbano, transformação cultural, ecologia política cultural

1. INTRODUCTION
1.1 Emerging interest for urban blue spaces in Montréal

During the 1990s, Montréal launched a major project to rejuvenate the Old Port in the city's historic district. The goal was to offer a landmark destination for consumer and tourists, yet also to generate a deeper appreciation for the city's industrial and colonial past and strengthen the connection with the waterfront. Subsequently, this has led to a renewed focus on the river, fostering urban settings that hightlights the city's relationship with the water and allow a more widespread appreciation its blue spaces. Urban revitalization plans target specific riverfront areas to re-engage citizens with the river, while other areas witness informal uses, such as river surfing subcultures.

This process is not simple, as there are conflicting views and uses of river, ranging from a industrial, commercial, recreational, natural preservation, etc. Moreover, the fluctuating seasonal changes of Montréal, ranging from hot summers to harsh winters, create challenges for using and developing the riverbanks. Hence, the city features monumental concrete docks connecting to its historic district and industrial wastelands have become focal points for debates.

This paper examines three specific riverside areas on the south side of Montréal bordering the Saint Lawrence River. These areas are currently undergoing redevelopment to establish a stronger connection with the water. They face the complex challenge of balancing this reconnection with sustainable development while also contending with existing industrial landscapes and pressures for reindustrialization. This situation offers a dynamic exploration of tensions, like what has been observed in other cities globally, such as Prague, Munich, Budapest, Saint-Louis, London, Paris, Berlin, and Venice. Our approach integrates cultural analysis, political ecology, design, and counter-cartography. The project aims to (1) comprehensively record and outline the historical utilization of various riverside areas, (2) dissect the multitude of cultural and environmental strata within these areas, and (3) demonstrate how a cultural and political ecology can be formulated to guide the future development and utilization of Montréal's waterfront.

2. CONTEXT

Montréal, the second most populous city in Canada after Toronto (ON) and before Vancouver (BC), faces challenges in providing access to waterfront areas. This is primarily due to the high industrial, and commercial demand in development. Similarly to other cities, Montreal's riverbanks are often areas of contention exacerbated by the issues of urban density and climate change, which significantly impacts and alters these areas (Lapointe et al., 2015). The impact of land use and public spaces legislation regarding access to riparian areas alongside factors related to climate

change is significant. In Québec, the absence of legislation ensuring public access to riverbanks and shorelines, despite incorporating "navigable and floatable waterways" in the public domain (Bouchard & Nault, 2020, p. 9, [translated by the authors]), restricts public access over private ownership and high real estate value. However, citizens, facing increasing densification, are more and more prone to be interested in riverbank access (Brenner & Keil, 2014).

2.1 The Cooperative Le Comité and the "À nous les rives!" Project

This text is part of the initial phase of a joint research project between our research team and Le Comité[1], an urban design cooperative interested in the impact of design on urban and territorial development and questioning design practices. Between 2020 and 2022, they released the manifesto "Reconstruire doucement" (Rebuild Slowly), which explores different forms of public space utilization in a post-pandemic context, with a specific section dedicated to reclaiming riverbanks. The collaborative research project at stake involves experts from design, architecture, cultural studies, and communication disciplines. We present here the preliminary results of the work carried out as part of new initiative, "À nous les rives !" (The Shores are Ours!), a research and experimental project with the aim of rediscovering and using riverbanks in urban environments. The focus will be on the development process rather than the outcome. The objective is to analyze power dynamics, stakeholder priorities, the role of a design cooperative in such projects, and its connection with the political ecology of the city. In this project, the coop is working with our research team to create a stakeholder map for a civic and federative planning project focused on socio-ecological transition. Our main objective is to improve access to the St. Lawrence River in Montréal by initiating project work at an early stage. The "À nous les rives !" project targets specific urban ambiance and landscapes within each sector. As part of our efforts, we aim to collaborate with researchers to conduct a counter-mapping of shoreline uses at various sites in Montréal.

2.2 Shoreline History in Montréal

Like canalized water, fresh water has been part of Montréal's urbanization. It is in fact a mutual process and it is important to consider the richly conflicting and contradictory role of bleu spaces here. Already, at the time of European colonization, the presence of water appeared as both an asset and a problem:

> As communication routes linking the city to the mainland and the rest of the world, the rivers encircling the island were also seen as obstacles when the metropolitan area grew, and bridges had to be built to cross them. These

---

1 Based in Montréal, this cooperative has spearheaded various urban development initiatives, including transitional urbanism, pedestrianization of commercial areas, and the establishment of public markets throughout Québec. The mission of *Le Comité*, established in 2016, is focused on promoting responsible urban development by implementing urban design projects and events. The aim is to enhance the quality of life for individuals in response to the challenges of modern societies (Le Comité, 2024).

tributaries have constituted a formidable resource for human consumption while being used as garbage cans and dumping grounds for waste, to the point of becoming a threat to health. The lure of the riverbanks has always generated its share of pleasures and worries.

(Dagenais, 2011, p. 11, [translated by the authors]).

Water has been perceived as a multifaceted element, simultaneously representing a source of enjoyment, a potential hazard, and a crucial resource for development and tourism. It has evoked various emotions in the collective imagination and has presented challenges for decision-makers.

In the 19th and 20th centuries, continental industrialization influenced Montréal's urbanization and significantly impacted its relationship with the riverbanks. The city is strategically positioned with a river connection for international trade and a railway connection for continental transportation, making it a pivotal hub for commerce and human mobility in North America. The city's connection to the St. Lawrence River carries a distinct emphasis on manufacturing and industrial efficiency. Some of the city's waterways have been buried, while others have canalized to preserve Montréal's original fortified city boundaries (Dagenais, 2011). The island's southern shores were extensively developed from east to west to support industrial port activities, including factories and warehouses, and to establish road and rail connections. This development occurred at a period where every city relied on technological advancements to modify natural and built environments.

In terms of social and cultural practices, this was a period when leisure time and spaces devoted to it were less central to the development of cities and more reserved for the elite. Green spaces, or large urban parks, first appeared in Montréal in the 1870s. The need for protected and sometimes partially landscaped natural spaces to enable sociability, leisure and recreation marked the face of the city in a context where a particular society of rights and democratization policies was asserting itself. Since the 1960s, there has been increasing pressure on public authorities to clean up rivers and lakes and restore people's access to natural spaces and green areas along the riverside (Dagenais, 2011). Slowly, and with the city's deindustrialization, the desire for access to the riverbanks and to the water became a political issue and a matter of rights. At the same time, the city was reimagining itself to compensate for the relocation of industrial activities to southern countries.

In many post-industrial cities such as Montréal, wharves, warehouses, and railway lines have been the focus of urban development projects to attract developers, tourists and consumers. At the end of the 1980s, the Old Port of Montréal Corporation undertook redevelopment work on the old city's industrial wharves. The New Old Port of Montréal was inaugurated on the city's 350th anniversary, restoring public access to these areas. This development opened new river views, unveiling a fresh perspective on the river. The project focused on reclaiming riverbanks once

occupied by industrial installations, such as the Lachine Canal, creating additional opportunities to enjoy the waterfront. During this time, the city shifted from being an industrial hub to being an attraction for recreation and tourism. Montréal was trying to carve out a place for itself in the interurban competition and to position itself among the many North American cities that, like Seattle, San Francisco, Philadelphia and Boston, were banking on revitalizing their port facilities (Marsan, 1994; T. A. Gibson, 2004). In the same period, though a few years later, in 1990, the then mayor suggested removing a highway (Bonaventure) southwest of downtown to create more access points to the St. Lawrence River. However, this proposal faced intense criticism and opposition, leading to the mayor's defeat in the municipal elections and the subsequent abandonment of the project.

The mutual development of the city and water banks reveals two key elements more distinctly in this context. On the one hand, "The municipalization of the territory of the city of Montréal unfolds through water services" (Dagenais, 2011, p. 13, [translated by the authors]). On the other hand, the various urban developments have the effect of ". . .transforming the island's hydrology by integrating secondary watercourses, along with part of the St. Lawrence River and Rivière des Prairies, into Montréal's drainage plan, and generating environmental inequalities." (ibid., p. 14, [translated by the authors]). Water, like landscapes, is political, and it is fascinating to see how urban blue spaces allow us to think about the city in the age of global urbanization. Politically, in design, widespread use, culture, entertainment and environmental justice.

During the 2002 Sommet de Montréal, an initiative was put forth to outline the city's future priorities, including the proposal to "protect and improve the natural heritage" by creating a comprehensive plan for water management. Related actions included increasing the contact points with the water and protecting/naturalizing riverbanks. Since 2007, the Blue Network has been committed to preserving the integrity of the aquatic environment and recognizing its invaluable benefits. This way, water is used to enhance Montréal's brand image as a marketing and tourism promotion tool, primarily when different groups advocate for reclaiming riverbanks for leisure and accessibility.

Today, water culture plays a significant role in discussions about access to riverbanks and to the water, prevalent in political documentation, development projects, and frequent media references to aquatic activities. People are increasingly focusing on utilizing, safeguarding, and improving the recreational value of the St. Lawrence River rather than its historical emphasis on economic potential seen in the 19th century. In this historical context, specific to Montréal but reflecting the urbanization process of many medium-sized riverside cities, the utilization of riverbanks, water activities, and landscaped spaces with views of the river has successfully integrated "blue" urban ambiance into the imagination of Montréalers. Several development projects are underway, but the process is long, and the resources must be improved. Informal uses open gaps and force other developments, and collectives want to contribute to this new Montréal ambiance.

2.3 Montréal and Shoreline Access

The city of Montréal is situated on an island surrounded by 266 kilometres of shoreline. Despite this, the island's population faces challenges in accessing the waterfront. The 2024 report from the Jacques-Cartier ZIP Committee highlighted that industrial presence and the privatization of waterfront land have restricted access to riverbanks in many areas. As a result, only 137 kilometres of the shoreline is accessible to the public through 114 riverside parks, limiting the various potential uses of the riverbanks. For example, the by-law concerning parks and public places (Ville de Montréal, 2015) stipulates that access to these spaces is prohibited between 11 p.m. and 7 a.m., thus limiting the possibilities for nighttime use of riverside spaces. Port infrastructures in the south of the Island of Montréal prevent access to a good part of the riverbanks (completely denaturalized), despite the requalification of some of these infrastructures near Old Montréal to enhance tourism development and festival activities. The most recent data from the City of Montréal (2024) reveals that this area boasts the highest population density, with multiple sectors averaging around 11,000 people per square kilometre. Additionally, many of these sectors are home to individuals living in more vulnerable conditions.

Several significant park development projects are underway on the island's eastern and western sides. One notable project is the Grand parc de l'Est, which aims to "safeguard and improve the remaining natural habitats in Montréal's east end" (Ville de Montréal, 2024b, [translated by the authors]). Other sites, notably the Parc naturel du Cap Saint-Jacques, have provided access to the shoreline for swimming and water sports requiring a boat for several decades, from paddleboarding to jet skiing. However, these resort-like spots, located in the far west and east of the city, are not easily accessible by public transit. For instance, someone living in the Mercier-Hochelaga-Maisonneuve borough would require over two hours of public transit to reach there. Unlike the regular bus system, the metro does not serve these areas of the island, making travel times much longer.

The "Projet de ville — vers un plan d'urbanisme et de mobilité" document (Ville de Montréal, 2024c) expresses concerns about the degradation of certain riverbanks due to erosion and the loss of wildlife habitats. It highlights the importance of maintaining and enhancing diverse educational, community, cultural, sports, and recreational activities in collaboration with the community to improve natural and aquatic environments (ibid.). While these are commendable goals of the current administration of the City of Montréal, few details are provided about the considerations regarding access to the riverbanks from downtown Montréal areas.

These multiple factors linked to the privatization of the riverbanks by the industrial sector, combined with the City of Montréal's legislation on usage, complicate the governance of these spaces and the possibilities for bottom-up projects. That is why, for several years now, the coop Le Comité has been keen to explore the various types of riverside uses, particularly those located on the south side of the Island of Montréal, bordered by the St. Lawrence River and the Prairie Basin.

Montréal experiences four distinct seasons, each characterized by significant temperature changes. Recently, numerous festivals and events have occurred in the city during winter. While many of these events, like Nuit Blanche à Montréal and the Montréal High Lights Festival, are hosted in the Quartier des Spectacles, others, such as the Igloofest electronic music festival, occur near the waterfront. While some promoters tend to move closer to the river, winter activities presented directly on the banks are rarer. Informal uses rooted in Québec heritage, such as ice fishing, are uncommon on the outskirts of Montréal. Although the City of Montréal prohibits certain water sports between October and April, some will brave the cold to surf the famous "Vague à Guy" (Guy's wave), an eternal wave accessible from the shores of Parc des Rapides. Furthermore, it is essential to consider the riverbanks' conditions for use in the winter. Historical images indicate that the river around the island of Montréal used to freeze partially, but due to the need for sea transport, the ice is now broken every winter. Additionally, climate change has caused even the river's tributaries to not wholly freeze during winter.

2.4 Description of Analyzed Areas

The two areas analyzed and presented in this article are in the south of the island of Montréal. They are the Sud-Ouest sector (Southwest borough), to which Parc des Rapides and the Plage de Verdun are linked, and the Old Port of Montréal sector, to which we have also linked the Parc Jean-Drapeau. These areas are characterized by uses that, recently, have both been requalified in a post-industrial context and rethought based on city initiatives and citizen appropriation of riverside spaces.

The Southwest Borough and Its Recreational Uses

In the southwestern part of Montréal, there is a significant area where the river's natural flow was disrupted. This area was vital to the city's establishment and is currently the location of a 30-hectare urban park. Historically, the rapids at this height in the river were challenging to navigate and forced ships to stop for portage, creating a place of trade and cultural exchange of all kinds. The importance of this site is thought to have played a significant role in establishing the city of Montréal. Downstream, the river was eventually modified to aid in the advancement of both commerce and urbanization.

This section of the river and its surrounding banks have served various purposes over time, including commercial, recreational, and hydroelectric activities. The "rocky beach" turned this area into a popular recreational spot, whereas it remained unused when the river itself was primarily used for transporting timber. Eventually, the river's strong current led to the construction of a hydroelectric power station and dam in the late 19th century, along with a series of mills. These installations were partly demolished to make way, in 1948, for a public green space. Named Parc des Rapides, a part of the Réseau des grands parcs Montréalais, this space faces the St. Lawrence River and seven small islands protected as a natural habitat for migratory birds and other species. The park is criss-crossed with trails that run along the riverbanks and extend into inlets surrounding the

rapids. From there, the river opens to reveal seven small islands, creating an ambiance far removed from the city's hustle and bustle. The park has preserved some urban history, including several water mills and a hydroelectric dam.

Small recreation and tourism businesses have sprung up on both sides of the park, allowing visitors to take advantage of the water's resources by renting boats, jet boating and rafting expeditions. Since the 2000s, more informal and subcultural uses have been added to this hybrid public/private offer, shaping or destined to shape the dominant uses of these banks and this part of the river.

The "Vague à Guy," an eternal wave in this part of the St. Lawrence River, was discovered about twenty years ago, like the wave at Habitat 67. It has quietly become a popular spot for river surfing and kayak freestyle subculture. Even though it is not officially part of Parc des Rapides, the city has recognized and developed it due to its popularity. In 2021, the city inaugurated improvements to direct user traffic and protect the weakened riverbank. They stabilized and naturalized nearly 150 metres of the bank to prevent erosion. This marks the city's first tangible step towards recognizing its river surfing culture, which aligns with the urban blue spaces trend for leisure, outdoor activities, and sports.

The 30-hectare park offers green space and features commercial and recreational facilities, along with surf spots. It embodies and modernizes the area's history, serving as a place dedicated to environmental preservation and nature observation. With a view of the river, it also contains commercial and recreational areas and informal micro-spaces for various uses. The ambiance here differs significantly from Montréal's Old Port area, even though the entire riverbank is united by a bicycle path, providing a complete riverfront experience.

The Old Port of Montréal and the Parc Jean-Drapeau Area

The Old Port area of Montréal, with its industrial docks and grain silos, was completely transformed for the celebrations of the city's 350th anniversary (1992). Consultations leading up to this requalification had begun much earlier, in the early 1980s, when specific infrastructures were demolished to open the docks and provide a window onto the river. Since the renovation, the docks have been used for events throughout the year. During the summer, Cirque du Soleil erects its tents there to showcase a series of performances. Some water-level-controlled basins are used for activities such as pedal boating in summer and skating in winter. Plage de l'Horloge, an artificial beach, is also accessible in summer, although swimming is prohibited. While the photos of Plage de l'Horloge offer a seaside ambiance with a view of the St. Lawrence River and the Jacques-Cartier Bridge, access is limited by the beach's capacity, opening hours, regulations and fees when event promoters occupy the site. The proposal to develop riverbank access for tourism has faced significant opposition from citizen groups like Les AmiEs du Courant Sainte-Marie. They suggest improving access by creating a large beach in the Old Port, accommodating up to 7,000 sunbathers on hot summer days.

The Old Port of Montréal has a resort-like ambiance geared more towards tourists than providing free access for citizens. A similar situation can be observed at Parc Jean-Drapeau, situated on Île Sainte-Hélène just south of the Old Port, in the middle of the St. Lawrence River. This island and its neighbour, Île Notre-Dame, are partly artificial and were built from residues left over from digging the tracks for the Montréal metro. The islands hosted the 1967 *Terre des Hommes* World's Fair and some of the competitions at the 1976 Summer Olympics. Over the past few decades, the islands where Parc Jean-Drapeau is situated have experienced significant growth, primarily due to the hosting of major concerts and festivals such as the Osheaga Music Festival and îleSoniq. These large-scale events, which draw tens of thousands of attendees annually, have profoundly impacted the new development initiatives launched in 2017 as part of the commemorative projects for Montréal's 375th anniversary. These examples illustrate how festival promoters wield significant influence over local urban development, often resulting in biased planning favouring larger events over smaller ones (Broudehoux & Bonin, 2021, p. 111, [translated by the authors]).

The islands of Parc Jean-Drapeau consist as well of artificial lakes and canals, limiting access to the shoreline. Consequently, the water-access facilities on the islands have needed to be more developed along the St. Lawrence River. Plage Jean-Doré, established in 1990, is situated on one of the artificial lakes on Île Notre-Dame. The 2020–2030 Park Master Plan introduces various initiatives to improve existing facilities and create passages to the river, including a 15 km riverside promenade. However, while efforts are underway to bring visitors closer to the river by enhancing access to the riverbanks, most areas will not allow swimming.

3. ANALYSIS

Riverfront characteristics can vary significantly from city to city (Domenech et al., 2008; Forgaci, 2018) and even along the same urban river stretch (Hofmann et al., 2012), ranging from a more natural setting to highly controlled and artificial environments (Manning, 1997). The preservation and ecological role of river corridors vary across different regions. Some areas maintain their natural state, while others are carefully landscaped (Gregory, 2006; Shi et al., 2018). In certain places, however, riverfronts are overlooked altogether. Understanding these riverfronts requires thorough consideration of the natural characteristics of the river stretch and the historical, political, and social context of the surrounding city (Gunn, 1977; Hussein, 2006; Timur, 2013; Gusmaroli, 2018). As such, both natural and human elements shape our analytical framework.

We will conduct a detailed analysis of the specified areas in July and August 2024. Our methodology will involve an in-depth and comparative examination of the two areas, utilizing a grid that encompasses various aspects, including morphology, centrality, accessibility, connectivity to the river, governance, land use, public space, temporality, spatial characteristics, emotional impact, relationship with nature, and

design. In our analysis, we will focus on the intersection of cultural dimensions and the physical and sonic experiences as they relate to the design of specific areas. We will employ a political ecology approach, as outlined by Keil (2020), and integrate it with cultural analyses to gain comprehensive insights. The urban political ecology perspective has attracted many researchers, although there needs to be more emphasis on cultural uses, design, and affects (Gandy, 2021). Drawing on political ecology, we can adopt what Latour calls "a new way to handle all the objects of human and non-human collective life" (Latour, 1998: p. 221, qtd. in Keil). We suggest a sensory and cultural counter-mapping of areas to enhance our understanding of deploying riverbanks-related ambiance.

The goal of this study is twofold. First, we aim to comprehend the ambiance, opportunities for action, and emotional impacts provided by Montréal's blue spaces. Second, we seek to examine how these factors influence the collective imagination and the overall ambiance of Montréal. As Keil points out, "The perception of what defines a city is intertwined with the understanding of urban activities that impact social interactions with nature at the urban level" (Keil, 2020, p. 2,364). This study will delve into the connection between symbolic, material, and sensory aspects within the political framework of Montréal, presenting a fresh interpretation of the resurgence of its island identity.

4. CONCLUSION

Ultimately, urban blue spaces will allow to integrate the ecological transition and respect for biodiversity into popular entertainment practices and the design of public spaces. In the process of achieving this, a multidisciplinary perspective is essential, as is collaborative research to understand Montréal's blue spaces and their ambiances. The seasonal aspect of the city is key, yet this first research phase focusses on the Summer uses of riverbanks as the City slowly integrates water sports, water views, and various water outdoor settings in its popular, commercial and touristic culture, as well as in its design and development. Winter shores offer different materials, possibilities, sound and light environments. Winter opens and closes the spaces we can walk in, making us aware of the pleasure and importance of blue spaces for the city. This Nordic aspect of riverbank uses and ambiances will be the object of a subsequent research phase.

BIBLIOGRAPHY

Bouchard, S. et Naud, L. (2001). Un fleuve inaccessible. *Téoros, 20*(1), 9–12. URL : https://doi.org/10.7202/1071904ar

Brenner, N., & Keil, R. (2014). *From Global Cities to Globalized Urbanization*. The City Reader Seventh Edition.

Broudehoux, A.-M. & Bonin, M. (2020) "Beyond the Scene Rethinking Event Assessment at Montreal's Music Festival." In *Planning and Managing Smaller Events: Downsizing the Urban Spectacle*, Routledge.

Dagenais, M. (2011). *Montréal et l'eau : une histoire environnementale*, Boréal

Francisco Durán Vian, Juan José Pons Izquierdo, Miriam Serrano Martínez. (2021)

River-city recreational interaction: A classification of urban riverfront parks and walks, Urban Forestry & Urban Greening, Volume 59. https://doi.org/10.1016/j.ufug.2021.127042

Forgaci, C. (2018). *Integrated Urban River Corridors: SpaHal Design for Social-ecological Resilience in Bucharest and Beyond*, Doctoral dissertayon, University of Technology, Delz *Securing the Spectacular City: The Politics of Revitalization and Homelessness in Downtown Seattle.* Lexington Books

Gandy, M. (2022). Urban political ecology: A critical reconfiguration. *Progress in Human Geography, 46*(1), 21-43.

Gibson, T. (2004) *Securing the Spectacular City: The Politics of Revitalization and Homelessness in Downtown Seattle.* Lexington Books.

Goodling, E. (2021). Urban political ecology from below: Producing a "peoples' history" of the Portland Harbor. *Antipode, 53*(3), 745-769.

Gregory, K.J. (2006). The human role in changing river channels. *Geomorphology*, 79 (3-4) (2006), pp. 172-191

Gusmaroli, G. (2018). *Urban river restoraHon X Aniversario de la Exposición Internacional 2018*, Zaragoza, June 14th 2018 . https://www.camarazaragoza.com/wp-

content/uploads/2018/11/Ponencia-Giancarlo-Gusmaroli.pdf

Hofmann et al. (2012). Percepyons of parks and urban derelict land by landscape planners and residents. *Urban For. Urban Green.,* 11 (3) (2012), pp. 303-312

Hussein, H. (2006). Urban recreayonal riverfronts: successful revitalisayon elements *J. Des. Built Environ.,* 2 (1)

Keil, R. (2020). An urban political ecology for a world of cities. *Urban Studies, 57*(11), 2357- 2370.

Lapointe, D.; Sarrasin, B et Guillemard, A. (2015). « Changements climatiques et mise en tourisme du fleuve St-Laurent au Québec », *VertigO - la revue électronique en sciences de l'environnement* [En ligne]. URL *http://journals.openedition.org/vertigo/16575*

Manning, O.-D. (1997). Design imperayves for river landscapes. *Landsc. Res.,* 22 (1) (1997), pp. 67-94

Marsan, J.-C. (1994). *Montréal en évolution. Historique du développement de l'architecture et de l'environnement urbain montréalais.* Méridien Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs. (2024). L'eau au Québec: une ressource à protéger. *https://www.environnement. gouv.qc.ca/eau/inter.htm*

Ville de Montréal (2015). Règlement concernant les parcs et endroits. publics*https://ville.montreal.qc.ca/pls/portal/docs/PAGE/ARROND_OUT_FR/MEDIA/DOCU MENTS/R_1107_201511.PDF*

Shi et al. (2018). Urban river transformayon and the Landscape Garden City Movement in China. *Sustainability,* 10 (2018), p. 4103

Timur, U.P. (2013). *Urban waterfront regeneraHons Advances in Landscape Architecture, IntechOpen* (2013). h{p://cdn.intechopen.com/pdfs/45422/InTech-Urban_waterfront_regenerayons.pdf

Ville de Montréal (2024a). Densite de la population. *https://ville.montreal.qc.ca/pls/ portal/docs/page/mtl_stats_fr/media/documents/DENSIT% C92K6.PDF*

Ville de Montréal (2024b). Grand parc de l'Est : protéger les milieux naturels de l'est de l'île. *https://montreal.ca/articles/grand-parc-de-lest-proteger-les-milieux-naturels-de-lest-de-lile- 63192*

Ville de Montréal (2024c). Projet de ville — vers un plan d'urbanisme et de mobilite. *https://montreal.ca/articles/demarche-du-plan-durbanisme-et-de-mobilite-2050-15575*.

Ville de Montréal (2024d). La Promenade Fleuve-Montagne. *https://montreal.ca/ articles/la- promenade-fleuve-montagne-24009*.

Gandy, M. (2022). Urban political ecology: A critical reconfiguration. *Progress in Human Geography, 46*(1), 21-43.

Goodling, E. (2021). Urban political ecology from below: Producing a "peoples' history" of the Portland Harbor. *Antipode, 53*(3), 745-769.

RIO PARAÍBA DO SUL: VESTÍGIOS E MEMÓRIAS NO TERRITÓRIO PAULISTA

PARAÍBA DO SUL RIVER: TRACES AND MEMORIES IN SÃO PAULO'S TERRITORY

Renata Rendelucci Allucci
Doutora em Urbanismo
Pontifícia Universidade Católica de Campinas - SP/ Brasil
rra.cultura@gmail.com

ABSTRACT

The Paraíba do Sul River, which traverses the Brazilian states of São Paulo, Rio de Janeiro, and Minas Gerais, holds historical importance for the country. In 1717, an image of Our Lady was found in its waters, later on. She became the country's patron saint. The river is associated with popular festivals, pilgrimages, professional activities. It was used as a driving force for the installation of factories along the Rio-São Paulo axis, one of the most important fronts of Brazilian industrialization. However, the degradation of its waters and the critical state of basic sanitation are well known. This research focus on eight cities in the Vale do Paraíba in São Paulo state, which, in addition to the river, had the railway as a key element in shaping the landscapes, the economy and the social life. The aim is to reflect on actions that can restore the physical and symbolic importance of this river and to discuss issues related to other sectors, with the perspective of supporting future environmental and cultural preservation policies.

KEYWORDS: Paraíba do Sul River. Vale do Paraíba Paulista. fluvial landscapes. memories. cultural preservation

RESUMO

O Rio Paraíba do Sul, que atravessa os estados brasileiros de São Paulo, Rio de Janeiro e Minas Gerais, tem importância histórica para o Brasil. Em 1717, foi encontrada em suas águas uma imagem de Nossa Senhora que, mais tarde, tornou-se padroeira do país. Ao rio estão vinculadas festas populares, romarias, profissões. O rio foi utilizado como força motriz para instalação de fábricas no eixo Rio-São Paulo, corredor dos mais importantes da industrialização brasileira. Porém, é notória a degradação de suas águas e a situação crítica do saneamento básico. A pesquisa tem como recorte oito cidades vale-paraibanas paulistas que, além do rio, tiveram a ferrovia como estruturadora das paisagens, da economia e da vida social. Espera-se refletir sobre ações que resgatem a importância física e simbólica desse rio e discutir questões sobre outros setores, com a perspectiva de amparar futuras políticas de preservação ambiental e cultural.

PALAVRAS-CHAVE: Rio Paraíba do Sul. Vale do Paraíba paulista. paisagens fluviais. memórias. preservação cultural

1. INTRODUÇÃO

Os eventos climáticos das últimas décadas têm levado à análise e à crítica sobre como lidar com as transformações profundas e, por que não, irreversíveis, em alguns casos, e o tratamento dado ao que se convenciona chamar natureza. Eles têm exigido tentativas de respostas por parte das ciências, das religiões, das políticas e das sociedades sobre novas formas de se relacionar com o mundo.

Há um "crescente reconhecimento de valores naturais e culturais associados aos rios e suas zonas de influência" (Saraiva, 1999, p. 80) e, portanto, um maior apelo a que se encontrem soluções para minimizar os impactos ambientais causados por ações antrópicas. Como predisse Schwenk (2009, p. 98), "onde a água está presente, a vida pode se manifestar na matéria, e onde ela está ausente, isso não é possível. A água é, portanto, o elemento secreto da vida". Preservar este segredo é o grande desafio.

O Rio Paraíba do Sul forma uma das paisagens mais importantes e simbólicas do Brasil. Em suas águas correm mitos e crenças profundos. Foi espinha dorsal do desenvolvimento econômico e vítima dele (Patriani & Cunha, 2010). É, ainda, motivador de causas ambientais que tentam sua sobrevivência, seja pelas mãos de técnicos, de urbanistas, de saudosistas, de cidadãos.

Como rio urbano, está à procura de uma reconexão com as pessoas e com os territórios que atravessa. Em sua Cátedra Cultura do Rio, a Unesco preconiza "redefinir valores e prioridades na gestão da paisagem fluvial em favor do bem-estar humano e uma coexistência harmoniosa do homem e da paisagem fluvial', sugerindo ainda "viver no ritmo das águas", ou seja, adaptar as opções de manejo de acordo com a dinâmica hidrológica ao invés de lutar contra ela. Continua com a proposta de "transformar o uso tradicional dos rios em atividades culturais modernas e opções de gestão".

Para seguir esses preceitos e estabelecer um convívio que proporcione a integridade da paisagem do Rio Paraíba do Sul, podem-se acionar diversas estratégias como protagonismo e capacitação de usuários, educação ambiental, fiscalização do uso do rio e cercanias, políticas mais severas para controle de sua degradação, entre outras. É necessário o diálogo entre diversos agentes, atuantes nos sistemas administrativo, socioeconômico e cultural, entendido este último como o que abarca valores, significados, atitudes, relações simbólicas e estéticas do rio com os habitantes.

Assim como o rio procura fluir por caminhos permanentes e mutáveis, este estudo busca, no reconhecimento da importância do Paraíba do Sul, discutir questões que possibilitem reflexões, com a perspectiva de amparar futuras políticas de preservação ambiental e do patrimônio cultural, revitalização de áreas rurais e urbanas, salubridade fluvial.

2. O RIO PARAÍBA DO SUL E SEU VALE

O Paraíba do Sul resulta da confluência dos rios Paraibuna e Paraitinga, ambos no estado de São Paulo, próximo ao município de Paraibuna, a 1.800 metros de altitude. Ele percorre 1.150 km até desaguar no Oceano Atlântico, no estado do Rio de Janeiro, na praia de Atafona, no município de São João da Barra. Sua bacia hidrográfica ocupa 62.074 km^2 e abrange 184 municípios de 3 estados – São Paulo, Minas Gerais e Rio de Janeiro. Estima-se que 5 milhões de habitantes vivam nela, cujo abastecimento atinge 14,2 milhões de pessoas (Ceivap, online).

Em tupi, Paraíba significa "rio que não se presta à navegação", e sua utilização sempre foi prejudicada em diversos segmentos, dificultada por acidentes como saltos, corredeiras, trechos com declive acentuado, assim como obras realizadas com fins hidroelétricos sem previsão de transposição de níveis. Outros fatores que dificultam a navegação é a existência de um grande número de pontes, a proximidade com rodovias e linhas de trem que ladeiam o rio, além da localização de várias cidades ao longo de suas margens.

Este rio, ao atravessar o vale que nomeia, o Vale do Paraíba, serviu de pouso para tropas e foi local de fundação de vilas e cidades; teve papel fundamental na irrigação das terras para cultivo da cana-de-açúcar e do café; foi usado para o transporte de materiais e pessoas; serviu de parâmetro para o traçado da ferrovia; viabilizou as lavouras de subsistência e as primeiras indústrias ainda incipientes da região; fez parte do processo de intensa industrialização e sobrevive até hoje, apesar do uso indiscriminado de suas águas.

Associadas ao rio, as serras também estão presentes no Vale do Paraíba, pois o Rio Paraíba do Sul "serpenteia entre a Serra do Mar, separando-a da Serra da Mantiqueira" (Tirapeli, 2014, p. 19) (Figura 1).
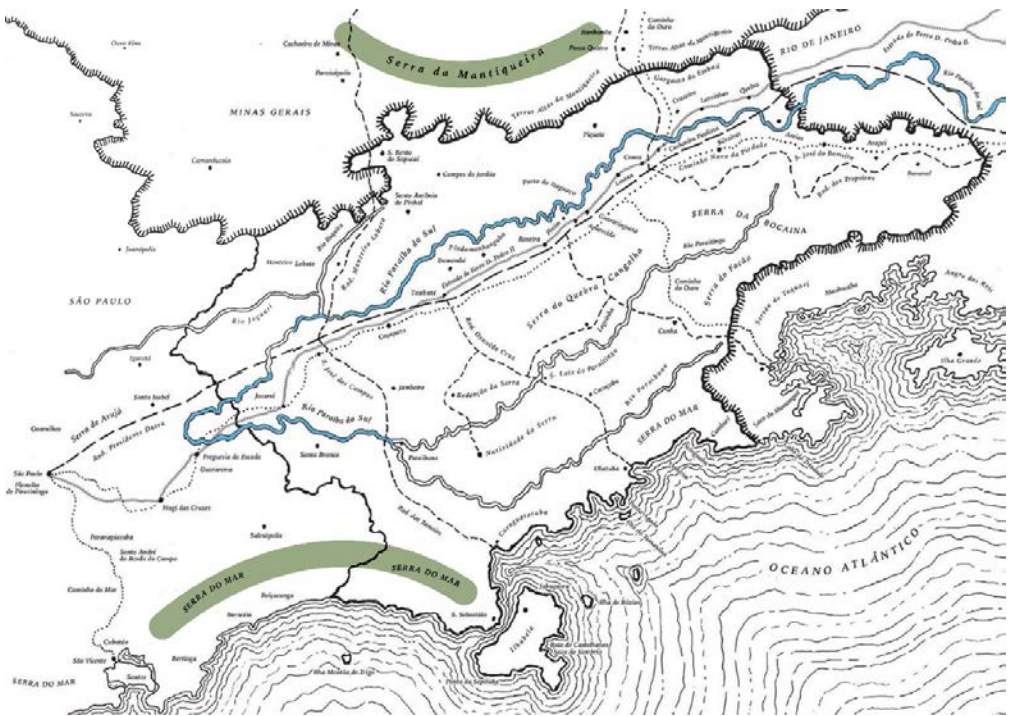
Figura 1. Bacia hidrográfica do Rio Paraíba do Sul e sua localização no estado de São Paulo.
Fonte: Editado pela autora do mapa original Arado (2017).

Entre os municípios paulistas do Vale do Paraíba, foi feito um recorte de pesquisa para um conjunto de oito cidades São elas Jacareí, São José dos Campos, Caçapava, Taubaté, Pindamonhangaba, Guaratinguetá, Lorena e Cachoeira Paulista. Foram selecionadas porque por elas passava a Estrada de Ferro D. Pedro II, posteriormente incorporada à Estrada de Ferro Central do Brasil.

Nessas cidades, rio e ferrovia, além de serem vetores de mobilidade, deixaram marcas perenes nos territórios, definidos por seus trajetos, construindo novas paisagens urbanas. Porém, ao longo do tempo, com as grandes transformações em função dos usos, alterações e abandonos, iniciou-se uma percepção contraditória dessas paisagens cotidianas, agora entendidas apenas como locais ordinários de vida e de trabalho, desvalorizadas pelas populações e vistas até mesmo com indiferença.

Para que se possa pensar em sua recuperação, as paisagens têm que ser compreendidas como "as expressões mais contundentes das relações materiais e simbólicas de uma sociedade com a natureza de um lugar. São bens de uso comum e, como tal, passíveis do estabelecimento de um pacto social para sua conservação e preservação" (Leite, 2021, p. 21).

3. A RELIGIOSIDADE QUE VEIO DO RIO

O episódio mais divulgado sobre o Rio Paraíba do Sul, e que deu a ele dimensão nacional, tem início quando "as partes, cabeça e corpo, da imagem de Nossa Senhora da Imaculada Conceição, padroeira de Portugal e de muitas cidades brasileiras, foram encontradas, em 1717, nas águas do rio Paraíba do Sul, presa nas redes de pescadores" (Moreira Neto et al., 2020, p. 109).

Na análise de Alvarez (2017, p. 38), essa aparição

> abre caminho para a construção dos símbolos da pátria: Aparecida foi a primeira imagem de união nacional. Depois dela vieram a bandeira brasileira, o café, o Hino Nacional, o samba, o Cristo Redentor e, claro, o eterno Pelé. Retratos e inspirações que conquistaram os brasileiros e ajudaram a moldar a nossa identidade, fazendo do Brasil, Brasil.

O autor atribui muito da popularização desta santa ao fato de ela ser considerada negra, devido à imersão da imagem no rio; por ser uma santa de barro frágil, pequena e quebrada – seu manto e sua coroa seriam acrescentados posteriormente. Mas, Alvarez (2017, p. 49) considera como decisivo o local de seu achado, "no importantíssimo Vale do Paraíba, perto de grandes fazendas [...] no caminho por onde passava o ouro [...] e por onde passavam também os escravos negros".

Isso se explica porque o Vale do Paraíba foi desbravado e urbanizado por meio dos caminhos e de seus respectivos contextos econômicos – ouro, açúcar, café e

indústrias, congregando influências culturais dos colonizadores, dos escravizados, dos migrantes, dos caipiras e dos povos originários, cuja presença pode ser verificada em todo o vale, na denominação das cidades, dos rios e ribeirões, das serras, dos bairros rurais e localidades, dos peixes, aves e animais, da alimentação, dos mitos (Pasin, 1992).

O achado da imagem deu origem à cidade de Aparecida. Em 1745, a santa se estabeleceu na Capela d'Aparecida, construída no Morro dos Coqueiros, de onde se avistava o porto de Itaguaçu, local de seu encontro e "à frente da capela, abria-se a praça que, do lado oposto, engastava a ladeira por onde se descia a colina em direção ao rio Paraíba" (Moreira Neto et al., 2020, p. 110). Em 1930, o Vaticano proclamou Nossa Senhora Aparecida como Padroeira do Brasil e o novo santuário, consagrado como Basílica em 1980, localiza-se no Morro das Pitas, inicialmente periférico ao centro urbano.

Em Guaratinguetá, no Vale do Paraíba, nasceu Frei Galvão, em 1739. Canonizado em 2007, como Santo Antônio de Sant'Anna Galvão, é o primeiro santo brasileiro. Na cidade de seu nascimento foi erguido um Santuário, cuja construção teve início em 1983.

Outra manifestação religiosa, a Canção Nova, comunidade carismática católica fundada por Padre Jonas Abib, antigo morador da cidade de Lorena, que depois de passar por Areias e Queluz, mudou-se para Cachoeira Paulista, onde foi construído o Santuário do Pai das Misericórdias, local de peregrinação e encontros.

Assim, há um percurso entre essas cidades, cuja ligação se faz por motivos religiosos, em uma rota de peregrinação que atrai pessoas de todo o país. Apesar de serem cidades e locais próximos ao Rio Paraíba do Sul, não há transporte fluvial para os romeiros. A ferrovia, que já foi uma opção, também não transporta mais passageiros e é uma reivindicação de governantes municipais, fiéis, pessoas ligadas ao turismo e comerciantes, que gostariam de ver concretizado um caminho da fé nos trilhos que os levaram no passado.

4. MITOS, CRENÇAS, IMAGINÁRIOS

Como explicita Saraiva (1999, p. 49), "a história dos rios está ligada à história da humanidade não só no que se refere à sua utilização como também nos mitos, valores, referências filosóficas e metáforas associados às águas, seus fluxos e ciclos".

Entre os mitos da água, "a cobra é um dos símbolos mais universais e antigos" (Cascudo, 1979, p. 235). No Rio Paraíba do Sul, viveria uma cobra gigante, assustando os ribeirinhos e todos que tentassem nadar ou pescar, servindo, ao mesmo tempo, como uma espécie de protetora, já que os moradores não jogariam lixo no rio com medo de provocá-la. Ainda viveriam neste rio o Ururau, um jacaré gigante, o Caboclo D´Água,

uma espécie de humano que atacava pescadores e um barqueiro que, atravessando pessoas de uma margem à outra, causava seus desaparecimentos.

A eles juntam-se seres da mata, em especial o Saci, um menino travesso de uma perna só e que, também, tinha por finalidade assustar os que queriam destruir as florestas. No Vale do Paraíba, ficou conhecido principalmente por meio do livro Saci Pererê, de Monteiro Lobato, escritor de Taubaté. Essa presença de personagens do imaginário popular são procedentes de antigas lendas, muitas vezes com a função de demonstrar que os monstros – dragões, serpentes, crocodilos – podiam sido domesticados (Priore, 2002).

A formação multiétnica do Vale do Paraíba proporcionou a existência de vários folguedos e festas como Folias de Reis, Congadas, Jongos, Moçambiques, Marujadas, provenientes de culturas indígenas, europeias e africanas, adaptadas ao ambiente valeparaibano.

Mesmo com o surgimento de um novo mercado voltado prioritariamente ao turismo, diversas culturas de matriz popular resistem e seguem se apresentando por todo o Vale do Paraíba, evocando elementos da natureza, do rio e das águas. São manifestações artísticas que abarcam tradições e identidades dessa região e que perduram, com adaptações e ocupação de novas espacialidades no território desse vale (Allucci, 2015) e que atestam o rio como força cultural em contraponto à sua valorização econômica.

5. A INDUSTRIALIZAÇÃO NO VALE DO PARAÍBA

A importância do rio não foi verificada apenas nas questões religiosa e simbólica. O Vale do Paraíba também ficou conhecido nacionalmente pelo corredor industrial que se formou no eixo Rio de Janeiro-São Paulo, ligando economicamente as duas maiores cidades brasileiras e a presença do rio foi fator primordial para essas instalações fabris. Como antecedente, a região havia sido, no século XIX, local da grande produção cafeeira do Brasil, que permitiu o crescimento e a diversificação de funções de seus centros urbanos (Muller, 1969).

Apesar de sua chegada em um momento em que a cafeicultura da região já estava enfraquecida, a ferrovia, cujo leito foi assentado em paralelo ao Rio Paraíba do Sul, formou o território onde se estabeleceram as primeiras indústrias, algumas ainda bastante precárias. Assim, estas utilizavam a força do rio para mover suas turbinas de água e para o despejo de sobras e refugos e as estações ferroviárias como pontos de referência para o transporte de passageiros e de mercadorias e o posterior desenvolvimento das cidades (Ricci, 2006).

A intersecção dos caminhos de água e de ferro modificou a paisagem do Vale do Paraíba (Figura 2); para Saraiva (1999, p. 47), rios e sistemas fluviais são "elementos

relevantes no ordenamento do território e da paisagem, destacando os valores culturais que estes sistemas têm representado para a sociedade ao longo dos tempos". Ligadas a processos econômicos e à produção e, portanto, resultantes da modificação da natureza pelo homem, essas paisagens têm ligação direta com a sociedade, com o trabalho, com as mudanças tecnológicas e dependem disto em grande parte.

Figura 2. A Estação Ferroviária de Cachoeira Paulista e a relação da cidade com o Rio Paraíba do Sul.
Fonte: Acervo da autora (2023).

As oito cidades pesquisadas abrigam um grande número de indústrias, das quais se destacam as indústrias têxteis, de eletrodomésticos e automóveis, papel e celulose, química, aeronáutica, bélica e espacial, entre outras. A construção de uma série de barragens e hidrelétricas, que controlaram as enchentes do Rio Paraíba do Sul, permitiram que as instalações fabris, e mesmo as cidades, não precisassem sair de áreas de várzeas, inclusive aquelas que necessitavam de grandes volumes de água em seu processo produtivo (Santos, 2006).

Naquele momento de intensa modificação, em que a agricultura, a pequena roça, os arranjos familiares foram substituídos em grande parte pela cena industrial, tentou-se deixar para trás a figura do caipira valeparaibano, "tido como o homem de hábitos tradicionais, supersticioso, ingênuo e crédulo, de aparência bruta e tudo o mais que significasse oposição a um mundo que se desejava moderno, culto e científico" (Ferreira, 2002, p. 70).

Verificou-se, também, mudança nas relações sociais ocorridas a partir dos anos 1970, com o crescimento das indústrias no Vale, que ficam nítidas nas palavras de Rodolfo Santos (apud Patriani & Cunha, 2010, p. 48), quando diz que "cresci ouvindo do meu pai que o Paraíba do Sul era a divisa entre o mundo bucólico do campo e a civilização".

A industrialização, especialmente em sua primeira fase, reverteu a relação das cidades com o rio. Houve uma inversão da percepção de sua presença e de sua utilização que, em momentos anteriores, permitia a pesca, navegação em pequenos trechos, o lazer. Os habitantes deram as costas ao rio quando este passou a ser objeto de intensas demandas e sua poluição ficou mais evidente, com as consequências nocivas que o mau uso acarretou.

6. A GESTÃO DO RIO: INICIATIVAS PÚBLICAS E PRIVADAS

Por sua dimensão territorial e sua importância econômica, foi criado por decreto federal, em 1996, o Comitê de Integração da Bacia Hidrográfica do Rio Paraíba do Sul (Ceivap). De acordo com o Comitê, entre os fatores que contribuem para a degradação da qualidade das águas estão o lixo, o desmatamento, retirada de recursos minerais, uso não controlado de agrotóxicos; extração de areia; pesca predatória. Com relação ao saneamento básico, quase 1 bilhão de litros de esgotos domésticos sem tratamento são despejados diariamente nos rios da bacia, além da carga poluidora derivada dos efluentes industriais orgânicos (Ceivap, online) (Figura 3).

Todos esses dados e, ainda, inundações resultantes da urbanização e dos processos de ocupação e utilização do solo, causam, na relação da sociedade com os sistemas fluviais, uma percepção que "envolve a avaliação estética, afetando emocionalmente os atores e derivando em valoração da paisagem, tanto na situação de deterioração como na fase de recuperação do ambiente" (Gorski, 2010, p. 40). Para essa autora,

> ao verificarem-se as situações de ruptura nas relações entre as cidades e os cursos d'água ou, mais amplamente, entre sociedade e natureza, percebe-se nitidamente que o desligamento físico do rio das funções urbanas acarreta num desligamento afetivo dos sistemas fluviais e de fundo de vale, e a eles se atribuem características de entrave e de elemento de depreciação do ambiente urbano (Gorski, 2010, p. 68).

Figura 3. A situação de degradação do Rio Paraíba do Sul. Fonte: Acervo da autora (2022).

Para tentar minimizar esses efeitos negativos, algumas propostas têm sido feitas por órgãos públicos, como o próprio Ceivap, pela iniciativa privada, por meio de instituições e pela academia, em um esforço para pensar a situação atual e futura do Paraíba do Sul.

Porém, ainda cabe às administrações municipais estabelecerem políticas urbanas e de proteção dos recursos hídricos e ambientais, que devem constar de seus planos diretores. Nas oito cidades de estudo, estes temas ainda não estão colocados com clareza nos documentos, e suas deliberações estão ligadas a planos regionais e estaduais, o que implica, muitas vezes, na falta de integração entre políticas de gestão, pois, "com entendimentos e práticas diferentes, esse conflito ainda não foi superado. Por esse pressuposto os Planos Diretores ainda não se articulam" (Vitale & Alvim, 2014, p. 11).

Em projeto recente, outro órgão, o Comitê das Bacias Hidrográficas do rio Paraíba do Sul (CBH-PS), por meio da instituição Iniciativa Verde, iniciou o processo do Plano Diretor de Restauração Florestal na Bacia Hidrográfica do Rio Paraíba do Sul no território paulista, entendida como a "primeira iniciativa regional que planeja dar escala para a restauração ecológica e influenciar a economia" (CBH-PS, online).

Entre as iniciativas privadas, destaca-se a Associação Corredor Ecológico do Vale do Paraíba (ACEVP), sem fins lucrativos, constituída em 2009, que tem como missão implantar corredores ecológicos no Vale do Rio Paraíba do Sul, conectando e conservando fragmentos de florestas entre as Serras da Mantiqueira e do Mar. A Associação trabalha no planejamento de paisagens, em um processo de restauração florestal e, para isso, apostam nos processos realizados em parceria com agricultores, proprietários de terras e prestadores de serviços na implantação florestal (ACEVP, online).

Outro exemplo é o Observatório da Paisagem, uma rede híbrida que conjuga profissionais e pesquisadores que atuam em instituições, órgãos públicos, universidades, arquivos, museus, fundações culturais, convidando mestres da cultura popular, estudantes e interessados "nas múltiplas interfaces entre patrimônio, natureza e cultura", com foco na Região Metropolitana do Vale do Paraíba e Litoral Norte (RMVPLN), que abarca 39 municípios.

O Observatório foi concebido e é coordenado pela Casa do Patrimônio do Vale do Paraíba como representante do Instituto do Patrimônio Histórico e Artístico Nacional (Iphan). Reforçam que o patrimônio e a paisagem cultural não podem ser entendidos de forma isolada do planejamento, da viabilização econômico-financeira e da gestão que formulam as diretrizes para o desenvolvimento territorial e os projetos estruturantes dessa região metropolitana.

Pode-se inferir que são muitos os órgãos, comitês, planos e documentos que tratam deste rio. Mas, ainda, os resultados não têm se mostrado eficientes; o rio luta por sua sobrevivência e paga pelas atividades humanas sem planejamento e controle.

7. EM BUSCA DE CONCLUSÕES

A dimensão cultural e patrimonial do Rio Paraíba do Sul pode ser entendida pela importância de sua presença de longa duração e pela ação humana, de onde surgem os numerosos elementos do patrimônio associados a ele.

As antigas povoações que se estabeleceram próximas às suas margens, embriões de vilas e cidades, nas quais o rio integrou-se à urbanização, deixaram vestígios em um farto patrimônio material, verificado na arquitetura, nos remanescentes de fazendas, em igrejas e outras edificações. Está presente, também, nos dispositivos que se valeram da corrente das águas, usados na agricultura e na primitiva indústria, em instalações que se favoreceram das condições fluviais e que, posteriormente, foram adaptados às novas tecnologias industriais.

O patrimônio imaterial está presente em lendas, fábulas, contos e mitos; na religiosidade; nos conhecimentos e técnicas utilizados no artesanato, na pesca, na pecuária; nas festas e comemorações; nas manifestações artísticas e na culinária. O Paraíba do Sul foi e continua a ser inspiração para músicos, escritores, pintores, poetas.

As paisagens fluviais representam uma diversidade de significados para diferentes grupos sociais, fazendo com que sejam profundamente incorporados na cultura, consagrando sua riqueza simbólica no imaginário popular (Bochi, 2013).

Mas, é flagrante a degradação de suas águas e a situação crítica do saneamento básico neste rio. Os desafios ambientais requerem profundas mudanças, principalmente nos

âmbitos decisórios e de gestão, cuja ação ainda local e desarticulada não consegue operacionalizar com eficácia as demandas que se impõem. A essa integração, é necessária a participação da sociedade, para o que se esperam ações de educação ambiental e resgate dos valores históricos, culturais e sociais da presença do rio nas cidades.

Se a apropriação dos lugares de água tem sido uma constante na história, será necessária a compreensão de sua finitude para que eles possam se reconverter em importância e vitalidade, sem querer afastá-los da cidade, com um planejamento que promova a sustentabilidade, transforme-os em paisagens e os reabilitem para que sejam, novamente, lugares.

8. BIBLIOGRAFIA

ACEVP - Associação Corredor Ecológico do Vale do Paraíba. *Linhas de conectividade.* *https://corredorecologico.com.br/imprensa/transparencia/#metodologia*.

ALLUCCI, R. R. (2015). *Carnaval de São Luiz do Paraitinga: conflito entre isolamento e abertura da cidade*. (Dissertação em História). São Paulo: Pontifícia Universidade Católica de São Paulo. *https://bdtd.ibict.br/vufind/Record/PUC_SP-1_3bea7556e902f2838 0a9817e096baa1f*

ALVAREZ, R. (2017). *Aparecida: a biografia da santa que perdeu a cabeça, ficou negra, foi roubada, cobiçada pelos políticos e conquistou o Brasil*. 3ª ed. São Paulo: Leya Brasil.

BOCHI, T. C. (2013). *Corredores fluviais urbanos: percepção ambiental e desenho urbano*. Dissertação [Arquitetura]. Universidade Federal do Rio Grande do Sul.

CASCUDO, L. C. (1979). *Dicionário do folclore brasileiro.* 4ª. edição revista e aumentada. Brasília: Melhoramentos.

CBH-PS. Plano Diretor de Restauração Florestal na Bacia Hidrográfica do Rio Paraíba do Sul no território paulista. Consultado em junho de 2024 em *https://comiteps.sp.gov. br/2023/09/plano-diretor-de-restauracao-florestal-bacia-hidrografica-do-rio-paraiba-do-sul-no-territorio-paulista-e-a-primeira-iniciativa-que-planeja-dar-escala-a-restauracao-ecologica-e-influenciar-na-economia/*

CEIVAP. *Comitê de Integração da Bacia Hidrográfica do Rio Paraíba do Sul*. Consultado em junho de 2024 em ceivap.org.br.

FERREIRA, A. C. (2002). *A epopéia bandeirante: letrados, instituições, invenção histórica (1870-1940)*. São Paulo: Editora Unesp.

GORSKI, M. C. B. (2010). *Rios e cidades: ruptura e reconciliação.* São Paulo: Editora Senac.

LEITE, M. A. F. P. (2021). Criar paisagens: expressão artística ou instrumento civilizatório? Em MOL BESSA, A. S. (org.). *A unidade múltipla: ensaios sobre a paisagem.* Belo Horizonte : Escola de Arquitetura da UFMG.

MOREIRA NETO, P. R., GUIMARÃES, A. C., ZANETTI, V. R. (2020). *Fronteiras da Fé: Disputas Socioespaciais em Aparecida, Terra da Padroeira do Brasil. Espaço Aberto,* PPGG - UFRJ, Rio de Janeiro, V. 10, N.2, 107-127. DOI: 10.36403/espacoaberto.2020.29786

MULLER, N. L. (1969). *Industrialização do Vale do Paraíba*. São Paulo: Instituto de Geografia/USP.

PATRIANI, L., CUNHA, V. (2010). *Paraíba do Sul: história de um rio sobrevivente*. São Paulo: Horizonte.

PASIN, J. L. (1992). *A formação histórica e cultural do Vale do Paraíba paulista*. Scribd. *https://pt.scribd.com/document/109255501/A-formacao-historica-e-cultural-do-vale-do-paraiba*.

PRIORE, M. del (2002). *Festas e utopias no Brasil Colonial*. 1ª. ed. 1ª. reimp. São Paulo: Editora Brasiliense.

RICCI, F. (2006). *Indústrias têxteis na periferia: origens e desenvolvimento – o caso do Vale do Paraíba.* Taubaté: Cabral Editora e Livraria Universitária.

SANTOS, A. P. dos. (2006). *Arquitetura industrial: São José dos Campos.* São José dos Campos: A.P. dos Santos.

SARAIVA, M. G. A. N. (1999). *O rio como paisagem: gestão de corredores fluviais no quadro do ordenamento do território.* Lisboa: Fundação Calouste Gulbenkian / Fundação para a Ciência e Tecnologia.

SCHWENK, T. (2009). *El caos sensible.* Madrid: Editorail Rudolf Steiner.

TIRAPELI, P. (2014). *Arquitetura e urbanismo no Vale do Paraíba: do colonial ao eclético*. São Paulo: Editora Unesp/Edições Sesc São Paulo.

VITALE, S. P.S. M., ALVIM, A. A. T. B. (2014). *Conflitos e interfaces entre a política ambiental e a política urbana: os casos de Guaratinguetá e Jacareí, no Vale do Paraíba, SP*. APP Urbana, UFPA, Belém/PA.

AGRADECIMENTOS

L24

VALUEING THE WATER THAT FLOWS THROUGH CITIES – A PROJECT FOR QUALITY OF LIFE

A VALORIZAÇÃO DAS ÁGUAS QUE CORREM PELAS CIDADES – UM PROJETO PARA QUALIDADE DE VIDA

Luiz Cláudio Corrêa Fortes
Master's student in Project and Heritage / Mestrando em Projeto e Patrimônio
Federal University of Rio de Janeiro / Universidade Federal do Rio de Janeiro –
UFRJ/FAU/PGPP
luiz.fortes@fau.ufrj.br

ABSTRACT

The coexistence of urban concentrations with rivers is a classic theme in city planning. It is timely given the climate change emergency and recent disasters. The use of water in addition to collecting and disposing of inconsequential, incorrect actions causes catastrophes, such as devastating floods. The banks, surroundings and beds of water courses are unique environments, in addition to visual, well-being and comfort, they are also places where living beings are close to nature. Knowledge and technology, adequate zoning and stress on land use restrictions, combined with awareness, the participation of riverside communities and everyone's efforts towards sustainability and resilience, defining the quality of life for several generations. This work is focused on the urban river environment. It presents some case studies in Brazil and references in the rest of the world, whether successful or problematic, as well as those that call for solutions.

KEYWORDS: depollution. drainage. landscaping. urbanism. sustainability.

RESUMO

O convívio de concentrações urbanas com os rios é tema clássico no planejamento das cidades. É oportuno, dada emergência das mudanças climáticas e recentes desastres. O uso inadequado das águas na captação e descarte além das ações inconsequentes, não acertadas, causam catástrofes, como enchentes devastadoras. As margens, entornos e leitos dos cursos de água são ambientes singulares, além do visual, bem estar e conforto também locais de aproximação dos seres vivos com a natureza. Conhecimento e tecnologia, zoneamento adequado e rigidez nos regulamentos de uso do solo, aliados à consciência, à participação das comunidades ribeirinhas e ao esforço de todos para a sustentabilidade e resiliência definirão a qualidade de vida para várias gerações. O presente trabalho está voltado para o ambiente fluvial urbano. Apresenta alguns estudos de caso no Brasil e referências no resto do mundo, bem sucedidos ou problemáticos, assim como os que clamam por soluções.

PALAVRAS-CHAVE: despoluição. escoamento. paisagismo. urbanismo. sustentabilidade.

1. INTRODUÇÃO

A cidade que já acontece desde os primórdios com a ocupação das áreas próximas aos rios pelos povos originários, em busca da água doce e limpa, principal insumo para vida humana. Nutriente, instrumento de cocção, higiene e saúde. Os romanos[1] desenvolveram técnicas para condução das águas até localidades distantes das margens, os aquedutos que ajudaram na expansão das zonas urbanas e criação

---

1 VITRUVIUS, M. - De Architectura. Fontes de água e aquedutos. – LIVRO VIII

de novos núcleos de aglomeração de pessoas. Os centros urbanos representam o desenvolvimento da vida das populações que habitam uma vez que o básico necessário para sobrevivência passa a ser compartilhado. Reservatórios e tratamento da água captada são partes do sistema de abastecimento em escala maior.

Com o crescimento demográfico, o impacto causado é evidente e algumas consequências geradas são problemáticas as quais sem o devido tratamento de resposta afetam a vivência no lugar por onde passamos, os bairros nas cidades onde habitamos. Até mesmo o desenho e a forma do lugar próximo as águas. Assoreamento, consequência da captação impacta no fluxo do volume de águas. A retenção contribui para os transbordamentos na ocorrência de chuvas, portanto enchentes. Sintoma das mudanças climáticas no clima Tropical, longos períodos de chuvas torrenciais num curto período, monções, potencializam o problema.

Fonte de abastecimento de água para a população das cidades, os rios e suas nascentes merecem estudo, atenção, trabalho e dedicação. A promoção da valorização do curso d´água no visual e ambiente urbano é uma das tarefas do escopo para realização. A união dos esforços com estrutura organizacional multidisciplinar amplia o raio de ação do objetivo final com atuação nas causas dos problemas não apenas diretamente nos efeitos.

2. CENÁRIO ATUAL

A expansão imobiliária urbana muitas vezes encontra o caminho natural dos leitos hidrográficos, assim como ruas por onde o sistema de transporte metropolitano optimizado em função da rotina do cidadão que circula, olha para o relógio suando frio com pressa. Sistemas pendulares dos bairros de passagem desconsideram os caminhos aquáticos. Manilhas de concreto subdimensionados, regras de construção desrespeitadas. Lançamento de dejetos, os rios como vasos sanitários. A transformação de um cenário caótico não é nada fácil. No Brasil, a Lei 14.285 de 2021 publicada no Diário Oficial da União determina: "os municípios terão o poder de regulamentar as faixas de restrição à beira dos rios, córregos, lagos e lagoas nos seus limites urbanos".

Segundo Dagnino (2001), "...os rios e córregos das áreas urbanas foram muito mais modificados do que os das áreas rurais.". Vejamos o que ele diz:

> A urbanização desenfreada vem ocupando áreas naturais de alagamento e atingindo diretamente as funções naturais dos fluxos de água assim prejudicando as próprias populações. Esta ocupação com casas, indústrias e vias de transportes vem estreitando as áreas naturais de escoamento e ampliando o perigo das enchentes. Com isso, as frequências de inundações e os danos causados aumentaram e ainda aumentarão se permanecer esta situação (Dagnino et al., 2001).

Quando na descrição da sessão L24 se comentou sobre comunidades ribeirinhas, a questão em debate se tornou delicada pois estamos pensando juntos a vida das pessoas, famílias. A moradia em área de risco e sem saneamento básico é um dos desafios do planejamento urbano. Saneamento básico e coleta de lixo com separação e reciclagem, são os dois primeiros passos para revitalização das margens. Na publicação da Secretaria Estadual de Meio Ambiente do Estado do Rio de Janeiro "Revitalização dos rios – orientação técnica", a falta de saneamento nas ocupações das faixas marginais é descrita como um dos protagonistas do agravamento da situação ecológica e o tratamento de esgotos vem sugerido como etapa número 1 (um) para solução. A seguir a citação sobre o tópico:

> O lançamento de esgotos in natura agrava a situação ecológica e sanitária dos rios e córregos. Existem zonas urbanas onde os rios e córregos deixam de cumprir suas múltiplas funções e usos e passam a ser receptor de dejetos. A população ribeirinha, sofre com o mau cheiro e com o perigo de doenças de veiculação hídrica. Essas águas não podem ser aproveitadas para lazer, pois o contato torna-se um risco a saúde pública. Com isso, verifica-se que a primeira etapa para recuperação de rios e córregos, tornando-os mais naturais, é sanear e tratar os efluentes antes de lançá-los. As inúmeras "fontes" de esgotos devem ser coletadas, tratadas e depois lançadas corretamente aos cursos d´água (Dagnino et al., 2001).

3. PROPOSTA PRELIMINAR

Em paralelo a uma revisão de toda a infraestrutura de saneamento, nas margens dos rios, a proposta aqui apresentada é de um projeto de despoluição e revitalização que possa ser aplicado em qualquer bacia hidrográfica urbana. A cada 500 (quinhentos) metros de rio, duas estações de monitoramento. Bases contendo abrigo para os profissionais especialistas, biólogos, ambientalistas, arquitetos urbanistas e sociólogos. O programa prévio com vestiário, escritório e banho. Instalação de grandes peneiras para retenção de detritos físicos, com âncoras ao fundo e boias na superfície, respeitando a fauna. Ao longo da descida do rio, plantio de vegetação para fito remediação como manguezal, Aguapés e outras espécies, além de implantação de cinturão de captação de poluição e esgoto. Na jusante do trecho de rio, monitoramento programado com análise biológica da qualidade da água ao longo do tempo e comparação com a amostra à montante. Às margens dos mananciais, sempre que possível dos dois lados, implantação de projeto paisagístico com ciclovias, jardins filtrantes, pontes como uma "pintura de Monet".

4. METODOLOGIA

Em cada estudo de caso como objeto para desenvolvimento de proposta para intervenção nos ambientes singulares e com objetivo de transformação do degradado para o mais que digno, algumas etapas são consideradas obrigatórias como

premissas. É claro que considerando as diferenças e particularidades dos locais, cada caso sendo um caso, demandas exclusivas conhecidas ou desconhecidas deverão estar no planejamento. A seguir uma lista de tarefas comum a todos exemplos:

- Vistoria no local incluindo: conversa com associação de moradores (participação da comunidade ribeirinha), levantamento fotográfico, identificação dos problemas e carências da região.
- Identificação dos casos de sucesso, precedências, referências projetuais com lições aprendidas em situações análogas.
- Entrevista com profissionais responsáveis pela realização de projetos anteriores bem sucedidos.
- Documentação e publicação do plano contendo a localização, fotos, relatórios de vistoria e projeto.
- Projeto contenplando: cinturão de captação de esgotos e águas pluviais para ETE (estação de tratamento de esgotos), programa de coleta de lixo com separação e reciclagem, cisternas de acumulação, jardins filtrantes, áreas de contemplação e aproximação da população com o rio, lazer e ciclovia ou ciclofaixa, arborização e fito remediação. Revisão no sistema viário, maior permeabilidade do solo e arborização.
- Divulgação, conscientização, educação patrimônio-ambiental.
- Parcerias.
- Equipe multidisciplinar: arquitetos urbanistas, paisagistas técnicos, biólogos, engenheiro ambiental, geógrafo, sociólogos e gerente de projetos.
- Sempre após cada etapa preenchimento de relatório com lições aprendidas e documentação fotográfica e laudo conclusivo.

Alguns problemas	Algumas possíveis soluções
Enchentes	Drenagem do solo, jardins filtrantes, bueiros livres de detritos, coleta, separação e reciclagem do lixo.
Poluição	Tratamento de esgoto, dejetos industriais, retirada de resíduos sólidos
Construções irregulares	Uso do solo de acordo com o zoneamento urbano, saneamento.
Mortandade de peixes	Monitoramento dos índices de medição da qualidade das águas.
Assoreamento	Dragagem continuada.
Lixo	Coleta, separação e reciclagem.

Tabela 1. Problemas e soluções. / Fonte: Do autor.

A lista de problemas é extensa (tabela 1), alguns deles já identificados com possíveis soluções. A partir da análise, um escopo de trabalho a ser dimensionado em custo e tempo detalhadamente no desenvolvimento de um macro projeto executivo. Os mesmos obstáculos muitas vezes se repetem podendo uma experiência servir a outras próximas até mesmo através de um relatório de lições aprendidas, partindo então para um novo caso não mais da estaca 0 (zero). Como forma de organização a respeito das variadas situações das águas correntes nas cidades uma vez que desde a nascente de um rio até os oceanos, essas águas estão interligadas sendo importante considerar que para despoluição completa por exemplo da Baía de Guanabara no Rio de Janeiro – RJ, Brasil, os rios afluentes deverão estar despoluídos, daí a classificação dos diversos mananciais ou corpos de água (tabela 2).

Tipologia das margens citadinas	Exemplos no Brasil	Cidade/ Estado
Rio	Rio Tietê	São Paulo SP
Canal	Canal do Mangue	Rio de Janeiro RJ
Lago/Lagoa	Lago Paranoá	Brasília DF
	Lagoa Rodrigo de Freitas	Rio de Janeiro RJ
	Lagoa dos Patos	Pelotas RS
Braço de mar/Barra de Lagoa	Quebra Mar	Rio de Janeiro RJ
Baía	Baía de Guanabara	Rio de Janeiro RJ
Estuário/Delta ou Foz	Delta do Parnaíba	Parnaíba PI
Orla marítima	Praia de Copacabana	Rio de Janeiro RJ

Tabela 2. Tipos de orla nas cidades. / Fonte: Do autor.

5. ESTUDOS DE CASO NA CIDADE RIO DE JANEIRO – RJ

A análise da relação atual do cidadão com as águas em curso nas cidades fica bem exemplificada no Rio de Janeiro onde desde a ocupação ainda no Brasil-colônia, a natureza impõe dificuldades isolando bairros e desafiando o povo que busca soluções nem sempre adequadas, muitas vezes para um curto prazo ou não definitiva melhor dizendo. Cercada por relevo acidentado e limitada pelo oceano Atlântico, a cidade tem um amplo histórico de alagamentos (figura 1). Outros problemas se manifestam em um cenário longe do ideal.

Figura 1. Mapa de localização – Rio de Janeiro - RJ. / Fonte: Edição do autor sobre mapa arcgiz.

5.1 Caso canal do mangue e seus afluentes

O Canal do Mangue (figura 2) fica no bairro Cidade Nova no Rio de Janeiro RJ, que sempre foi caracterizado pelos sistemas pendulares das grandes cidades, ou seja, um bairro de passagem. Os principais cursos d'água da bacia hidrográfica do Canal do Mangue são os rios Maracanã, Joana, Trapicheiros, Comprido e Papa-Couve, os quais têm suas nascentes no Maciço da Tijuca. Na sua história, um braço de mar dificultava a ocupação e o caminho do Paço de São Cristóvão ao Centro da cidade. Pouco a pouco assoreando até que aquele mangue fosse canalizado. Suas águas e de seus afluentes seguem até a Baía de Guanabara. Porém já não se pode mais chamar de água o que se encontra no Canal. Em localização estratégica na entrada da cidade, alguns quilômetros de poluição. A empresa concessionária de saneamento "Águas do Rio" vem monitorando a saída do canal próxima a Baía de Guanabara. A proposta aqui é para implantação de uma Estação de tratamento de Esgoto bem antes do deságue, na região onde no passado ficava a Praça 11 (onze) e hoje é apenas um canteiro central entre as vias da Avenida Presidente Vargas. Um cinturão de captação dos lançamentos de águas pluviais e esgoto clandestino em toda margem dos dois lados, reforma do passeio com colocação de ciclovia ou ciclo faixa nas vias e atualização do paisagismo incluindo a fito remediação e jardins filtrantes. Como referência para a recuperação do Canal do Mangue, um bom exemplo é o caso do rio Cheonggyecheon em Seul na Coréia do Sul[2].

---

2 _https://www.cidadessustentaveis.org.br/boas-praticas/132_
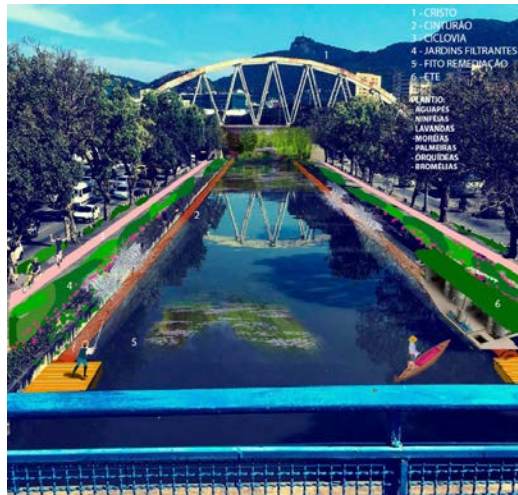
Figura 2. Projeto sobre foto Canal do Mangue com Cristo Redentor, Rio de Janeiro RJ.
Fonte: Composição do autor cidade (2024).

5.2 Sistema lagunar da baixada de Jacarepaguá

Atualmente, essa bacia lacustre apresenta um cenário desanimador. Composto por três lagoas interligadas por canais, recebem as águas de diversos rios e córregos tanto da Floresta da Tijuca como da Pedra Branca, dois dos três maciços que compõem a geografia da cidade, sendo o terceiro o Mendanha. As lagoas de Jacarepaguá, da Tijuca e de Marapendi estão comprometidas com poluição por lançamento de esgoto e lixo. Como é possível notar no mapa de localização (figura 1), muitos bairros ocupam a baixada por trás das lagoas da Tijuca e de Jacarepaguá, mas a ocupação irregular as margens com dejetos de esgoto *in natura*, deve ser controlada se iniciando com a condução através de captação com cinturões para estações de tratamento do fluido a ser tratado, ou seja, saneamento. O plano apresentado acima é confirmado pelos técnicos e deve ser tratado como prioridade pela Prefeitura da cidade para um resultado em tempo real. Saneamento, coleta, separação e reciclagem de lixo, fito remediação e urbanismo/paisagismo aproximando as pessoas aos ambientes singulares das margens e despertando a consciência ecológica. Para essa situação, a precedência de um modelo apelidado de "Cidade-esponja" que vem sendo implantado em Sanya no sul da China pelo arquiteto paisagista Kongjian Yu [3] pode ser considerada análoga.

---

3 *https://oglobo.globo.com/brasil/sos-rio-grande-do-sul/noticia/2024/05/30/criador-das-cidades-esponja-chines-diz-que-segredo-e-absorver-e-nao-conter-aguas-das-chuvas.ghtml*

Figura 3. Afluentes poluídos do Sistema Lagunar de Jacarepaguá. / Fonte: Mário Moscatelli. (2024).

5.3 Lagoa Rodrigo de Freitas

O questionário (tabela 3) com as perguntas enumeradas foi encaminhado ao Biólogo Mario Moscatelli[4] com referência ao trabalho que vem sendo realizado na Lagoa Rodrigo de Freitas (figura 4), Rio de Janeiro-RJ. As perguntas são de certa forma provocativas com a intenção de linkar a recuperação da lagoa aos rios afluentes. Também é importante documentar a relevância da atuação na causa. Obras de "maquiagem" com fins eleitoreiros por exemplo apenas disfarçam os problemas com soluções temporárias, não é o caso aqui apresentado.

Perguntas ao Especialista	Caso Lagoa Rodrigo de Freitas e outras lagoas
1	É possível tratar as águas dessa lagoa sem cuidar dos rios afluentes?
2	Qual a natureza dos poluentes da Lagoa Rodrigo de Freitas? Dejetos humanos, industrial ou resíduos sólidos?
3	A lagoa está balneável para a prática de esportes aquáticos?
4	Quando ocorreu a última mortandade de peixes e qual foi sua causa?
5	Quais principais espécies para fito remediação?
6	Qual o prazo para a recuperação completa da biossistema lagunar?
7	Considerando os rios afluentes, Rainha, dos Macacos e Cabeça, como acontece a gestão desses cursos d´águas?

---

4 http://lattes.cnpq.br/9044200769966631

8	E os outros sistemas lagunares da Região Metropolitana do Rio de Janeiro, quais são os problemas identificados e as soluções?
9	Os processos realizados no caso bem-sucedido da Lagoa Rodrigo de Freitas, podem ser repetidos em outras Lagoas ou cada caso é um caso?
10	Poderia resumir essa metodologia em 10 passos como um roteiro?

Tabela 3. Entrevista com biólogo. / Fonte: Do autor.

A seguir as respostas do entrevistado:

1 - As bacias hidrográficas nas regiões metropolitanas do Brasil foram transformadas em valões de esgoto e lixo, sem vida pelo que dependa de oxigênio da coluna d´água. Por conta da falta de ordenação do uso do solo e da ausência de políticas habitacionais. No caso da Lagoa RF, a bacia hidrográfica local já estava extremamente alterada pelo homem, e o esgoto que vinha da mesma não tinha relevância como a contaminação proveniente do sucateado sistema de saneamento existente há cinco anos.

2 - A Lagoa RF foi contaminada de diversas maneiras conforme o período analisado, principalmente por aporte de esgoto sem tratamento.

3 - As águas da Lagoa RF melhoraram de forma indiscutível, no entanto, o contato com a água deve ser ainda evitado junto ao sistema de águas pluviais, visto que mesmo com hipotéticos 100% de controle, sempre haverá contaminação por conta de vetores biológicos que possam gerar problemas de saúde como urina de roedores. Fora desses trechos de mistura, a situação tem se mostrado segura e possibilitando inclusive esportes onde não raro, os praticantes têm contato direto com a água. Destaca-se que apenas por meio de medições periódicas efetuadas por órgão ambiental, as condições de balneabilidade podem ser asseguradas.

4 - Mortandade significativa de peixes, ocorreu pouco antes das olimpíadas no Rio de Janeiro.

5 - Espécies vegetais arbóreas exclusivas de manguezal - "Laguncularia racemosa", "Avicennia schaueriana", "Rhizophora mangle". Espécies vegetais de transição - "Paspalum vaginatum", "Acrostichum sp.", "Typha domingensis".

6 - Não há data para isso. Ecossistemas situados em áreas urbanas principalmente em países onde a cultura é normalmente predatória com os recursos naturais, como é no nosso caso, a gestão precisa ser permanente, buscando um órgão ambiental que deverá ser sempre perseguido diante de uma cultura que historicamente sempre esteve voltada para o uso até o esgotamento dos recursos naturais.

7 - Desconheço a gestão deles.

8 - Desde 1992 trabalho na recuperação do sistema lagunar de Jacarepaguá e atualmente com a nova concessionária de água e esgoto (IGUÁ), estou à frente do projeto de recuperação das margens das lagoas locais. Da mesma

forma, com o mesmo protocolo que vitimou a Lagoa RF, o sistema lagunar foi transformado numa imensa latrina e lata de lixo, o mesmo destino de sua bacia hidrográfica. Simplesmente as leis ambientais e de ordenação do uso do solo, HISTORICAMENTE, não são executadas eficientemente pelo poder público, portanto, quem paga a conta pelo crescimento urbano ordenado e desordenado é o ambiente. A degradação não é fortuita, sendo que grupos econômicos e políticos são diretamente beneficiados com a degradação ambiental. O mesmo ocorre no sistema Itaipu-Piratininga em Niterói.

9 - O caso da Lagoa RF é um estudo de caso concreto onde ecossistema considerado IRRECUPERÁVEL, após 35 anos de batalhas intensas contra grupos políticos e econômicos que se beneficiavam economicamente de sua degradação, atualmente é um centro econômico e ambiental da cidade do Rio de Janeiro. O que muda do caso da Lagoa RF para o sistema lagunar por exemplo é o tamanho da área e tamanho do problema, mas as causas e consequências são exatamente as mesmas, bem como os delinquentes ambientais que a geraram por ação e omissão.

10 - Simples! a-ordenação do uso do solo; b-gestão ambiental das bacias hidrográficas; c-punição de quem não cumprir o que está determinado em lei; d-políticas habitacionais e de saneamento como políticas de estado; e-recuperação ambiental seja em rios, lagoas e baías. (Moscatelli, 2024).

Tanto em Jacarepaguá como na lagoa da Zona Sul da cidade (figura 4), segundo Moscatelli (2024), o biólogo entrevistado (tabela 3), a maior causa do principal problema é o lançamento clandestino de esgoto *in natura.* Vem de encontro a etapa número 1 do manual "Revitalização dos rios – orientação técnica". Comparando as duas lagoas, na Rodrigo de Freitas o saneamento vem sendo bem-sucedido devido relevância menor da poluição proveniente dos afluentes enquanto nas águas da zona oeste a contribuição da rede hídrica contaminada (figura 3) é percentualmente a maior dentre todas identificadas.

Figura 4. Lagoa Rodrigo de Freitas e Cristo Redentor – Rio de Janeiro - RJ. / Fonte: Do autor.

5.4 Rio Faria Timbó

O Encantado é um bairro de subúrbio na Zona Norte do Rio de Janeiro, onde cruza o rio Faria. A infraestrutura de saneamento é escassa, com águas do rio poluídas, o que denuncia o despejo de dejetos na rede hídrica. O solo predominantemente impermeável e a topografia heterogênea, somada à insuficiência do sistema de drenagem, resultam em bolsas de inundações, alagamentos nas partes mais baixas em dias de enxurradas, chuvas torrenciais em períodos de no máximo 6 horas. A manifestação do aquecimento global no clima tropical da cidade do Rio de Janeiro é marcada por longos períodos de estiagem e curtos períodos de muita chuva. Os bairros da cidade são caracterizados pelo relevo acidentado com variações de cota e alagamentos nos períodos de chuvas intensas. Infraestrutura de saneamento, escoamento e drenagem das águas pluviais não são eficazes. Lançamentos de esgoto causam poluição e nas cheias com enchentes, as consequências são negativas. No verão, calor intenso, temperaturas altas e poucas árvores. Calçadas estreitas na rua Goiás ao lado da linha do trem, demonstram preferência do movimento de carros em relação ao passeio dos pedestres, somando-se ao excesso de gás carbônico na atmosfera, a poluição dos rios, e o solo impermeável. Há poucas áreas com qualidade para lazer. Para adaptação climática, são necessárias a melhoria do ambiente nas áreas livres, arborização e despoluição das águas do rio Faria, aproximando a população das margens com a criação de parques públicos. As propostas incluem: revitalização do rio, infraestrutura de saneamento, drenagem do solo, melhoria na qualidade da mobilidade urbana, plantio de árvores e ciclovias (figura 5). Mudança nas leis urbanísticas para verticalização, diminuindo a taxa de ocupação e aumentando a permeabilidade do solo e um programa habitacional social. Para revitalização do rio:

- a remoção residual que seria a retirada dos detritos físicos;
- a despoluição das águas dos rios com estações de tratamento;
- a restauração da vegetação ribeirinha e manutenção do plantio;
- a redução do impacto antrópico[5];
- elaboração de um programa de monitoramento;
- instalação de uma galeria de cintura para captação de dejetos poluentes;
- eclusas com peneiras, para detritos físicos.

---

5 desmatamento, a poluição do solo, dos rios, do ar e o agravamento do efeito estufa

Figura 5. Projeto esquemático para recorte de uma Marginal no Rio de Janeiro - RJ. / Fonte: Do autor.

6. CONSIDERAÇÕES FINAIS

O objetivo é a recuperação e revitalização das margens, incluindo a despoluição das águas não apenas no encontro com os estuários na baía ou no mar, aproximando os transeuntes citadinos ao convívio com a natureza. Como mais um caso de sucesso, a recuperação do Rio Tâmisa[6]. Para tanto, a educação e o acesso à informação a todas as pessoas principalmente crianças nas escolas, conhecimento e o "saber fazer".

7. BIBLIOGRAFIA

Abbud, B (2006). Criando paisagens: guia de trabalho em arquitetura paisagística. Editora Senac São Paulo.

Ainbinder, R.; Várzea, M. & Duarte, C. (2005). Árvore Cidade. Editora Desiderata.

Cardeman, R. & Cardeman, D. (2019). Rio de Janeiro nas Alturas. Editora Mauad X.

Costa, L. Registro de uma vivência. Editora Editora 34.

Dagnino, R. & Selles, I. (2001). Revitalização de rios - orientação técnica. Editora SEMADS.

Lerner, J. (2005). Acupuntura Urbana. Editora Record.

Margulis, S. (2020). Mudanças do clima: Tudo que você queria e não queria saber. Editora Konrad Stiftung.

Moscatelli, M. (2000). 500 Anos de Degradação. Ciência Hoje, v. 27, p. 42-45.

Tafuri, M. (1976). Architecture and Utopia: Design and Capitalist Development. Editora MIT Press.

Tschumi, B. (2010). Event-cities 4: concept-form. Editora MIT Press.

Wallace-wells, D. (2019). A Terra Inabitável: uma história do futuro. Editora Companhia das Letras.

6 https://www.cidadessustentaveis.org.br/boas-praticas/87

L24

VERNACULAR ADAPTATION IN AMAZONIAN SOCIAL HOUSING

ADAPTAÇÃO VERNACULAR EM HABITAÇÃO DE INTERESSE SOCIAL AMAZÔNICA

Danielle C. Guimarães
Doutoranda
Universidade Federal do Pará – UFPA/ITEC/FAU/PPGAU, Brasil
dcguimaraes@gmail.com

Ana Kláudia de A. V. Perdigão
Professora Doutora
Universidade Federal do Pará – UFPA/ITEC/FAU/PPGAU, Brasil
klaudiaufpa@gmail.com

ABSTRACT

Over the last six decades, state programs that have sought to resolve the housing issue in Brazil have generally adopted a standardized form of offer without any relation to place, and in the Amazon it has been no different. The aim is to gain a global understanding of the spatial changes that have taken place in the Riacho Doce, Pantanal and surrounding areas to indicate adaptations and resistance. It was possible to interpret, with the help of the term adaptation, how living in these areas undergoes transformations and how residents make adaptations so as not to disconnect from their original way of living, linked to the Amazonian riverside way of life. A narrative literature review was carried out, as well as qualitative research, with non-participant observation and analysis of photographic records at various times during the occupations. As a result, architectural, spatial, cultural and social expressions were identified, which have resisted time and external interventions, highlighting the relationship between living and the waters of the igarapé.

KEYWORDS: adaptation. housing complex. interventions. vernacular housing. riverine way of life. Amazônia.

RESUMO

Ao longo das últimas seis décadas, os programas estatais que procuraram resolver a questão habitacional no Brasil têm adotado geralmente uma forma padronizada de oferta sem qualquer relação com o lugar, na Amazônia não foi diferente. Objetiva-se compreender, de forma global, as mudanças espaciais ocorridas nas áreas do Riacho Doce, Pantanal e adjacências para indicar adaptações e resistências. Foi possível interpretar, com auxílio do termo adaptação, a forma como o morar nessas áreas sofre transformações e como os moradores realizam modificações para não se desconectar com sua forma de morar original, vinculado ao modo de vida ribeirinho amazônico. Realizou-se uma revisão bibliográfica narrativa, pesquisa qualitativa, com observação não participante e análise de registros fotográficos em vários momentos das ocupações. Como resultado, identificou-se expressões arquitetônicas espaciais, culturais e sociais, que resistem ao tempo e às intervenções externas, destacando-se a relação do morar com a águas do igarapé.

PALAVRAS-CHAVE: adaptação. conjunto habitacional. intervenções. habitação vernacular. modo de vida ribeirinho. Amazônia.

1. INTRODUÇÃO

A produção habitacional para a população de baixa renda no Brasil é realizada principalmente por meio de programas governamentais federais há algumas décadas. Desde 1964, quando da criação do Banco Nacional de Habitação (BNH), a produção tem se baseado em estudos sobre o déficit habitacional, que se aprimorou ao longo das últimas seis décadas (Buonfiglio, 2018). Entretanto, a literatura que estuda esta produção habitacional no Brasil demonstra que ainda existem barreiras para

alcançar os benefícios reais desses programas. De fato, os programas de habitação social têm contribuído positivamente para a redução do déficit habitacional e da vulnerabilidade das populações de baixa renda, porém os estudos realizados no país também revelam os impactos negativos da habitação de interesse social (HIS) (Muianga & Kowaltowski, 2024; Muianga et al., 2022).

No estudo de Muianga & Kowaltowski (2024) baseado em revisão sistemática da literatura sobre o panorama da habitação social no Brasil, com o objetivo de compreender quais são os impactos negativos dessa produção, é revelado por meio de estudos de Avaliação Pós Ocupação (APO) as transformações e as possibilidades de melhoria em HIS são as principais questões apontadas pelos usuários. Nesse sentido, em observações sistemáticas realizadas em um dos locais que tem recebido atenção e intervenções estatais ao longo das últimas duas décadas, em Belém, percebeu-se que nas áreas estudadas, ainda que tenham sofrido muitas intervenções, persistem modos de vida originais, alcançados por novas ocupações ou intervenções que adaptam as unidades habitacionais e os espaços do entorno às suas demandas reais e cotidianas.

Este artigo parte da questão: como o modo de vida local se mantém de forma adaptada, apesar de intervenções externas e ao longo do tempo? Tendo, portanto, como objetivo compreender, de forma global, as mudanças espaciais ocorridas nas áreas do Riacho Doce, Pantanal e adjacências para indicar adaptações e resistências. Busca-se, para isso, registrar a observação de um fenômeno que passou a ser comum nos conjuntos habitacionais brasileiros, a adaptação dos espaços, que aqui se focará apenas nos espaços externos, realizando-se uma breve discussão sobre o conceito-chave utilizado, a adaptação. Foi realizada uma pesquisa qualitativa, que incluiu observação não participante e análise de registros fotográficos em vários momentos das ocupações assim como imagens do Google Earth para se construir uma linha do tempo da ocupação das áreas. Constatou-se que, além de construir habitações, é crucial compreender a vida espontânea em ocupações informais e como os moradores mantêm suas formas de viver como resistência às intervenções externas, destacando a relação com as águas do igarapé.

2. ADAPTAÇÃO E HABITAÇÃO

Pesquisas recentes sobre a habitação produzida na Amazônia demonstram que as unidades habitacionais sociais entregues por programas governamentais brasileiros na região, sendo abrangentes e genéricas para atender ao território nacional, não se adequam às diversas necessidades dos moradores, resultando em tentativas dos próprios residentes de adaptar os espaços para melhor adequação (Costa et al., 2015; Trindade & Perdigão, 2016; Oliveira et al., 2016). Ao longo da segunda metade do século XX até hoje, esses programas padronizados desconsideram as especificidades locais.

O presente artigo faz parte de uma investigação maior do Laboratório de Desenvolvimento Humano, do Programa de Pós-graduação em Arquitetura e Urbanismo da Universidade Federal do Pará (LEDH/UFPA) que tem por objetivo realizar aprofundamentos no conhecimento entre os espaços e as pessoas na Amazônia para subsidiar o avanço nos processos projetuais no ensino de arquitetura e nas atividades profissionais. Desse modo, busca-se aqui por subsídios para a elaboração de propostas projetuais mais adequadas para a escala local dos assentamentos humanos na Amazônia. É com base na observação das estratégias utilizadas pela própria população e/ou dos elementos formais utilizados por ela para se manter numa habitação considerada adequada ao seu modo de vida que se utiliza o conceito de adaptação como estrutura conceitual para compreender como essas estratégias de manutenção do seu modo de vida, ainda que no decorrer do tempo tenha sido transformado.

Muianga et al. (2022) realizaram um estudo com revisão sistemática da literatura sobre transformações nas habitações de interesse social (HIS) no Brasil, analisando 47 estudos que incluíam diversas modalidades de transformações nessas habitações. Na pesquisa, foram identificadas várias nomenclaturas utilizadas para se referir, quase todas, ao mesmo movimento dos usuários de adaptar os espaços às suas necessidades. Além do termo «transformação», apareceram termos como «aprimoramento», «modificações», «modernização», "adaptações" e "atualização". O termo «modernização», no trabalho, refere-se a programas de apoio de governos de países desenvolvidos para melhorar a performance das edificações, especialmente em relação à eficiência energética, padrões sustentáveis e mudanças climáticas. O termo «aprimoramento» foi indicado como podendo se referir tanto a intervenções mais invasivas quanto a pequenas obras de manutenção. Destaca-se dois pontos: 1) nos países em desenvolvimento, como o Brasil, as iniciativas são individuais e voltadas para ampliar as unidades e melhorar a qualidade do projeto e da construção, ocorrendo tanto em habitações autoconstruídas quanto naquelas fornecidas por programas públicos e 2) as transformações se referem não apenas a aspectos técnicos, mas também àqueles que os autores chamam de subjetivos (Muianga et al. 2022).

O que se nota em todos os processos adaptativos, é que eles surgem a partir de alguma mudança. No caso das questões habitacionais de que se trata aqui, essa mudança pode ser devido à migração, à realocação ou a ampliação das necessidades familiares. A adaptação é uma característica do ser humano, ele se adapta e adapta o ambiente às suas particularidades de vida, o mundo está em constante transformação e os seres humanos se adaptam constantemente a essa transformação. No entanto, na arquitetura, é mais frequente a necessidade cotidiana de transformação nas habitações entre pessoas mais carentes, portanto "a adaptabilidade humana, a arquitetura e as desigualdades sociais devem ser tratadas como uma tríade em fluxo constante, na qual a adaptabilidade é o fator comum que as relaciona" (Moreira & Henriques, 2019, p.2).

Viver em processo de adaptação, que ocorre constantemente em conjuntos habitacionais no Brasil, gera grandes custos para as pessoas que passam por elas, de tempo, de trabalho e de energia vital. As evidências apresentadas pelas pesquisas em HIS afirmam que conjuntos que exigem transformações a posteriori pelos moradores não alcançam os benefícios socioeconômicos pretendidos e podem provocar impactos negativos, ainda que diminuam o déficit habitacional quantitativo (Muianga & Kowaltowski, 2023).

Os estudos em HIS indicam que as transformações nos conjuntos habitacionais multifamiliares (verticais) buscam adaptações e individualização (decoração, pinturas das esquadrias, mudança de cores das fachadas etc.). Há o desejo por mais espaço e cômodos, mas são realizados, apenas em alguns casos, em unidades térreas ou em plantas que permitam essa ampliação do pavimento superior. São também registrados descontentamentos com a paisagem externa nas áreas públicas, principalmente nos conjuntos verticais, nos quais encontram-se em raros casos, iniciativas de transformação também nesses espaços. Os padrões das transformações e das reclamações podem indicar caminhos para melhorias (Muianga et al. 2022). King et. al. (2014) ressalta a necessidade de enxergar a modernização (adaptações) dos assentamentos informais como oportunidades, não como problemas, e de buscar soluções cocriadas que envolvam o conhecimento e visão da comunidade. As evidências indicam que a modernização *in situ* é preferível à relocação, a menos que haja riscos significativos de localização ou um objetivo público que se sobreponha e compense.

3. RIACHO, PANTANAL E O TUCUNDUBA

As áreas do Riacho Doce e Pantanal são duas áreas habitacionais no bairro do Guamá, contíguas à Universidade Federal do Pará, em Belém-PA, Brasil. As duas áreas se caracterizam por serem áreas de várzea, localizadas ao longo da margem direita de um trecho do igarapé (rio) Tucunduba. Elas foram ocupadas por pessoas sem teto no ano de 1990 e receberam esses nomes em homenagem às duas novelas de sucesso na época na tv brasileira. As duas áreas foram bastante adensadas, recebiam constantemente muitos novos moradores, muitos oriundos das áreas ribeirinhas de municípios insulares próximos a Belém, locais em que grande parte dos moradores são ribeirinhos e possuem um modo de habitar com a tipologia em palafita. Desse modo, quando ocupavam a cidade, de forma similar, procuraram as margens do igarapé com casas em palafitas, tipologia que se repetia adentrando-se as duas áreas, pois, por estarem na área de influência do rio, se caracterizava como área alagável, conforme as marés (Guimarães, 2005).

No início da década dos anos 2000, as duas comunidades receberam um projeto de urbanização e produção habitacional de um programa do governo federal em parceria com o Banco Interamericano de Desenvolvimento (BID), chamado Habitar Brasil-BID, administrado localmente pelo governo municipal. O programa

passou por algumas dificuldades e foi encerrado posteriormente, dando lugar em 2009, com vistas à continuidade, ao Programa Minha Casa Minha Vida (MCMV) do governo federal (Guimarães, 2005). Ao longo das duas décadas seguintes, diversas intervenções foram realizadas em toda a área, como a retirada de todas as casas em palafitas que estavam localizadas em cima do igarapé, aterramento e construção de uma via margeando o igarapé, a construção de blocos habitacionais em alguns pontos das duas áreas e a construção de um grande conjunto habitacional no lado oposto da margem do igarapé, chamado Liberdade.

No próximo tópico serão exploradas imagens que comunicam as transformações pelas quais as áreas passaram e, a partir dos movimentos dos moradores, a observação das permanências, sua resistência cultural e espacial, e adaptações, que mantém o modo de morar mesmo diante de adversidades e de intervenções estatais, ao longo dos anos. Para este trabalho, foi utilizada a observação não participante nas áreas em estudo, além de fotografias em um momento passado em comparação ao presente, analisando aspectos de soluções espaciais criadas e/ou mantidas pelos moradores conforme o tempo avança. Essas análises levaram ao estabelecimento de processos adaptativos e de elementos marcantes e potentes que permanecem e resistem, são aspectos do modo de vida das pessoas que as conectam a quem são, suas origens e permitem que a vida continue, apesar das mudanças ocorridas no espaço)

4. RESULTADOS E ANÁLISES

Este estudo foi realizado de forma qualitativa, com análises das áreas a partir de fotografias de dois momentos históricos da ocupação, análise de fotografias do Google Earth em variados anos ao longo das duas últimas décadas, sendo escolhidas imagens de anos/meses considerando a qualidade da foto aérea e um interstício de pelo menos dois anos. Realizouse também análise de comportamento e uso do espaço a partir de observações não participantes, como parte de estudos preliminares para investigação de doutoramento.

Como já explicitado, as áreas do Riacho Doce e Pantanal são áreas na cidade de Belém, que se organizaram à margem direita do Rio Tucunduba, ao lado da Universidade Federal do Pará, construindo-se habitações por pessoas oriundas de diversas ilhas e municípios do interior do Estado. A forma de ser viver nestas ilhas está inteiramente ligada às águas, aos rios e se adaptou de forma incrível a todas as adversidades que o homem da cidade poderia se queixar, às formas e composição do solo, ao movimento das marés dos rios, às chuvas fortes e ao sol equatorial.

Para além dessas e outras questões materiais, há que se registrar que muitos vivem em pequenas vilas à beira rio ou em casas isoladas, o que destaca as distâncias entre casas vizinhas e forma de se deslocar entre essas construções, sempre com pequenas e médias embarcações. Enfim, um modo de vida à parte que se construiu

dentro dessa cosmologia amazônica. Essa informação é importante porque a forma de viver das pessoas neste local à época das primeiras fotografias, e ainda hoje, possui relação direta com a forma de viver das pessoas em habitações ribeirinhas nos seus locais de origem.

Na figura abaixo (figura 1) é possível observar vários momentos da ocupação das duas áreas e das áreas adjacentes. Constata-se as mudanças nas ocupações nas áreas em estudo a partir de 2002. Infelizmente não existem imagens disponíveis em anos anteriores para que fosse possível a comparação do início da ocupação até o momento. Porém, é possível perceber que houve adensamento das ocupações, principalmente por ação estatal, com inserção de um novo conjunto habitacional ao longo do trecho, à margem esquerda do igarapé, o Conjunto Liberdade. Ainda que o principal ator responsável pelo adensamento seja o estado, houve também o crescimento de uma ocupação informal à margem esquerda do rio, que hoje apresenta similaridade àquela que existia nos primeiros anos das duas ocupações, com características de habitações em palafitas. No interior da área do Riacho Doce, foi inserido um conjunto de blocos multifamiliares (verticais) que hoje convive com casas que estão na área há mais de 30 anos[1].

Perdigão (2016) destaca que a cultura amazônica está enfrentando mudanças devido às forças que desafiam suas tradições e estilo de vida únicos na região e que o modo de morar em palafitas, uma tipologia frequentemente vista como construção precária, mas que desempenha um papel crucial e é culturalmente reproduzida nos solos alagados do norte do país. No contexto amazônico, a associação da palafita à precariedade tem enfraquecido a região, afetando políticas habitacionais que podem ser inadequadas para a realidade local e extrapolam o contexto específico das palafitas. Porém há muito que se entender e aprender com essa prática que resiste.

As transformações nas áreas têm sido acompanhadas ao longo das décadas pelos autores, que realizaram incursões na área em três momentos, nos anos de 2000, 2005 e 2023. Nas imagens abaixo (figuras 02, 03 e 04), observa-se uma fotografia vista do alto da rua principal logo quando a ocupação do Riacho Doce iniciou, ao lado uma fotografia feita à altura humana da rua principal no ano de 2000 e a terceira (abaixo e à direita) uma fotografia realizada no primeiro semestre de 2023.

---

1 Boa parte da área ocupada pelos blocos de HIS se refere a uma área que sofreu um incêndio no ano de 2001 e que não foi mais ocupado, porque se esperava a construção de blocos de habitação multifamiliar a partir do projeto do Habitar Brasil-BID, à época.

Figura 1 - ocupações nas áreas estudadas ao longo de duas décadas. Fonte: Google Earth, adaptado pelas autoras, 2024.
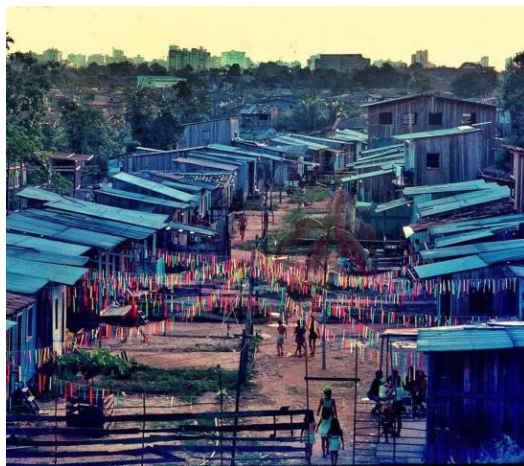
Figura 02 - Rua da Olaria, via principal do Riacho Doce, no ano em que a ocupação iniciou. Fonte: realizada por Luiz Braga, 1990. Disponível em *https://fragmentosdebelem.tumblr.com/post/657414868698349568. Acesso em 17/07/2023*

Figura 03 - Rua da Olaria em 2000, ano da primeira incursão na área pelos autores. Fonte: foto realizada pelos autores, arquivo pessoal, 2000.

Figura 04 - Rua da Olaria em 2000, ano da primeira incursão na área pelos autores. Fonte: foto realizada pelos autores, arquivo pessoal, 2000.

Observe nas imagens como o desenho da rua, a delimitação das casas e a forma como as construções "conversam" com a rua se dá. Ao longo dos anos esta área sofreu inúmeras intervenções de políticas públicas, prevendo inclusive a eliminação desta rua principal, a princípio, o que não ocorreu, felizmente. No entorno, foram construídos blocos coletivos de HIS (do lado esquerdo, após a faixa de casas) e ao lado direito, muitas habitações foram removidas, inclusive as que avançavam por cima do Rio Tucunduba, para se realizar a urbanização da via ao longo do rio. Nas casas, chamam a atenção elementos externos das habitações, sacadas, soleiras, acessos, relações espaciais topológicas que unem o dentro e fora e o fora considerado é aquilo que está imediatamente após a habitação em si e as imediações, rua, calçadas etc. O asfalto em 2023 já aparece, um Ipê foi plantado, o espaço disponível para a rua ou o espaço entre a fachada da casa e a área de circulação de pessoas parece ter diminuído sutilmente, porém as relações topológicas entre o dentro e o fora do habitar permanecem as mesmas.

Há uma aproximação entre espaços nas habitações ribeirinhas e ocupações informais na cidade na região amazônica. Os estudos Ledh têm promovido a identificação de elementos e relações espaciais fundamentais para serem utilizadas em projetos diversos que levem em conta a forma de viver dos ribeirinhos amazônicos. Identificou-se o *tipo palafita* que reúne diversos elementos tipológicos uteis à compreensão desta forma de viver, dos hábitos e principalmente das relações espaciais estabelecidas (Perdigão, 2016). Estas relações identificadas nas imagens aqui analisadas são algumas das quais se tem investigado. A riqueza da contribuição destes estudos está na diminuição da necessidade de adaptação dos espaços pelas pessoas que passam a viver em lugares projetados por arquitetos e produzidos pelo estado, que não revelam e nem consideram em nenhum aspecto os modos de vida locais. Em vista disso, a fragilidade e a necessidade de intervir nas casas surge. nesta pequena investigação observou-se como esses aspectos foram sendo mantidos apesar das transformações no espaço e como isso é de fato o seu maior fator de resiliência urbana.

De forma geral, em conjuntos habitacionais no norte do país, observadas especialmente entre o Pará e o Amapá (Guimarães; Perdigão, 2024), os moradores possuem um interesse constante em ter vistas para o exterior das unidades habitacionais, especialmente em ambientes coletivos. No entanto, também é comum o abandono dessas novas habitações, com algumas pessoas optando por viver ao longo dos cursos dos rios ou sobre os "canais" urbanos. Por outro lado, nas áreas de habitação informal, geralmente situadas em áreas alagadas e em cima desses cursos d'água, os moradores costumam utilizar os espaços públicos como uma extensão dos espaços internos das suas habitações. Essas características são especialmente evidentes nas habitações ribeirinhas e nas habitações urbano-ribeirinhas, que refletem a linguagem, o simbolismo e os valores das habitações das cidades ribeirinhas em geral.

As figuras 05 e 06 revelam essas relações importantes com o espaço público e principalmente com o rio. Foram realizadas adaptações pelos moradores com seus próprios recursos para terem acesso a várias vistas para o rio. Ao longo de toda a via beira rio, sobretudo na área do Pantanal, foram criados espaços de socialização, em que homens fazem churrascos, famílias estendem as roupas e moradores plantam espécies ornamentais amazônicas para decorar a beira-rio.

Figura 05 - trapiche na rua beira-rio, Pantanal.
Fonte: acervo dos autores, 2023.

Figura 06 - trapiche na rua beira-rio, Riacho Doce.
Fonte: acervo dos autores, 2023.

É importante destacar que iniciativas adaptativas das áreas externas à habitação foram encontradas apenas nas áreas do Riacho Doce e Pantanal, em que foram mantidas características de rio nas suas margens. Em contraste, trechos do igarapé Tucunduba mais acima, em que foram realizadas obras de macrodrenagem, ficaram com características de canais, totalmente concretados e sem arborização em suas margens. Nesses trechos não foram encontradas intervenções e nem uso de qualquer tipo pela população. Isto pode revelar a importância da relação das pessoas com o rio, conforme sejam mantidas suas características naturais.

5. CONSIDERAÇÕES FINAIS

Neste trabalho, procurou-se demonstrar importância de reconhecer a resistência do modo de vida e forma de se relacionar com o espaço à medida que o tempo passa, como uma forma adaptativa às interferências externas. Moradores de conjuntos habitacionais e de áreas de ocupação informal - ainda que vulneráveis do ponto de vista econômico e como sujeitos que recebem constantemente interferências do estado em sua forma de viver - se mantêm construindo e reconstruindo suas vidas em torno daquilo que tem valor para eles, suas relações espaciais, seus modos de vida e seus hábitos.

As áreas em estudo oferecem muitos elementos culturais, arquitetônicos e relacionais entre pessoas, espaço e natureza que são potentes para instruir pesquisadores e projetistas em como oferecer projetos adaptativos ou projetos adequados, no futuro. Com o passar do tempo, das intervenções e das mudanças espaciais, materiais e na própria paisagem, as casas das áreas estudadas mantêm sua ligação com as casas originais dos rios da região. A arquitetura vernacular impõe aquilo que se observa em povos e grupos que vivem de forma tradicional trazem em si a capacidade de operacionalizar adaptações do espaço para a sua forma de viver. Os valores parecem não se modificar conforme o tempo avança, portanto o sentido essencial está sempre presente.

Se for factível auxiliar arquitetos a compreenderem a essência dos modos de vida das pessoas, por meio da tradução das relações topológicas ali existentes, será possível realizar operações projetuais que transfiram essas relações – espaciais e com a natureza - para os projetos públicos. Nesse sentido, aumentam as chances de eliminar ações de iniciativa dos moradores, para adaptação espacial, e de haver maior sustentabilidade nos espaços, em todos os sentidos. Assim sendo, o foco se volta para o poder do modo de viver dos povos da região e como sua relação com a natureza e as formas de solucionar essas questões pode conter soluções para a produção mais sustentável, adequada economicamente e a longo prazo, porque menos transformada com o tempo e com mais possibilidade de resolução de problemas relativos à sobrevivência dos grupos, por estarem mais organizados no uso do espaço, em suas vulnerabilidades e capacidades adaptativas.

7. BIBLIOGRAFIA

Buonfiglio, L. V. (2018). Habitação de interesse social. Mercator (Fortaleza), 17, e17004.

Costa, S. M. G.; Perdigão, A.K.A.V.; Cavalcante, L. I. C. Política habitacional em Belém (PA): estudo sobre adaptação habitacional em tipologias multifamiliares (2015). Argumentum, vol. 7, núm. 2, julio-diciembre.

Guimarães, D. C. O desafio da habitação digna como condição para o desenvolvimento sócio-espacial. Um estudo sobre o PDL Riacho Doce e Pantanal (Belém – PA) (2005).

Dissertação de mestrado – Programa de Pós-graduação em Arquitetura e Urbanismo, Universidade de Brasília. Brasília.

Guimarães, D. C.; Perdigão, A. K. A. V. . Adaptações na habitação social. Estudo de subsídios para melhorias do projeto formal de habitação na Amazônia brasileira (2024). In: I Congreso

Iberoamericano de Vivienda Social Sostenible, Ciudad de México

King, R. et al. Confronting the Urban Housing Crisis in the Global South: Adequate, Secure, and Affordable Housing (2017). Working Paper. Washington, DC: World Resources Institute. <www.citiesforall.org>.

Moreira, F. D., & Henriques, J. E. D. M. R. (2019). Adaptabilidade na arquitetura: um protótipo para comunidades carentes no Recife. Revista Projetar-Projeto e Percepção do Ambiente, 4(1), 126-140.

Muianga, E. A. D., & Kowaltowski, D. C. C. K. (2024). A panorama of Brazilian social housing research: scope, gaps and intersections. Ambiente Construído, 24, e130925.

Muianga, E. A. D., Kowaltowski, D. C. C. K., Silva, V. G. D., Granja, A. D., Moreira, D. D. C., & Ruschel, R. C. (2022). Housing transformations and their impacts on the well-being of dwellers. Ambiente construído, 22, 255-274.

Oliveira, L. F.; Felisbino, D. A.; Perdigão, A.K.A.V.. Adaptação habitacional na produção formal de moradia: Vila da Barca (Belém, PA) (2016). Revista Nacional de Gerenciamento de Cidades, v. 4, n. 25.

Perdigão, A. K. A. V.. O habitat amazônico sob o enfoque da sustentabilidade: entre arquitetura erudita e vernacular (2020). Revista Latina-americana del Entorno Construido y Sustentabilidad. ISSN 2675-7524 / v. 1, n. 4.

Perdigão, A.K.A.V.. Tipo e tipologia na palafita amazônica da cidade de Afuá (2016). V!RUS, São Carlos, n. 13.

Trindade, R. P.; Perdigão, A.K.A.V.. Adaptação habitacional no Projeto Taboquinha, Icoaraci, Belém, Pará (2016). Revista Nacional de Gerenciamento de Cidades. v. 04, n. 27.

LANDSCAPE AND SENSITIVE APPROACHES IN FLOODSCAPE URBANISM. GRENOBLE METROPOLITAN AREA AS A "LABORATORY" OF ECOLOGICAL URBAN PLANNING ?

PAISAGEM E ABORDAGENS SENSÍVEIS NO URBANISMO DE ÁREAS INUNDÁVEIS. ÁREA METROPOLITANA DE GRENOBLE COMO UM 'LABORATÓRIO' DE PLANEJAMENTO URBANO ECOLÓGICO?

Simeon Naydenov
Architect, Urban Planner, PHD Candidate
Laboratoire Pacte, Université Grenoble - Alpes
simeon.naydenov@univ-grenoble-alpes.fr

ABSTRACT

In a context of increasing ecological concern among territory planning stakeholders, the tools and processes shaping urban practice are expected to evolve. Landscape theory and its associated sensitive approaches are gaining momentum in both design practices and urban planning processes. This communication aims to present the example of Grenoble's history with its rivers and the new approaches in urban planning, aiming to introduce ambiances and landscape as a framework for floodscape urbanism.

KEYWORDS: Ecologization of urban planning / Landscape and sensitive approaches and urban planning tools

RESUMO

Num contexto de crescente preocupação ecológica entre as partes interessadas no planeamento do território, espera-se que os instrumentos e processos que moldam a prática urbana evoluam. A teoria da paisagem e as abordagens sensíveis que lhe estão associadas estão a ganhar força tanto nas práticas de design como nos processos de planeamento urbano. Esta comunicação pretende apresentar o exemplo da história de Grenoble com os seus rios e as novas abordagens no planeamento urbano, com o objetivo de introduzir os ambientes e a paisagem como um quadro para o urbanismo de paisagem inundável.

PALAVRAS-CHAVE: Ecologização do planeamento urbano / Abordagens paisagísticas e sensíveis e instrumentos de planeamento urbano

1. INTRODUCTION. ENVIRONMENTAL URBAN PLANNING ARISING THROUGH SENSITIVE AND LANDSCAPE APPROACHES.

In a context where the ecological concerns of the actors in territorial development are becoming increasingly evident, the tools and processes that shape urban planning practices are bound to evolve. Today, we are witnessing a true ecological shift in urban planning (Rode, 2022), which is expressed through a variety of new forms of action, both theoretical and operational. However, the boundaries and meanings of this process remain difficult to identify, as there is a wide diversity of understandings when it comes to making urban planning more ecological.

For a long time, the question of environmental urban planning has arisen because of the contradictory nature of these two notions: urbanization, as the act of anthropisation of the environment and a major reason for its destruction (Gandy, 2022), and environmentalism, as the consideration of living systems. Lewis Mumford even mentions the possibility that the city was born in opposition to nature, minimizing its effects on the human condition as much as possible (Mumford, 1956).

However, over the years, the disciplinary field of urban planning has shown a constant opposition between actions of territorial transformation advocating total control over nature and human domination of the environment (the modernist movement) and others promoting a more complex and harmonious relationship between human settlement and the environment (regionalist and territorialist movements). Even though the notion of urban ecology appeared in the mid-1980s (Coutard and Lévy, 2010), it is important to remember that ecological approaches to human settlements have existed for much longer and have accompanied the entire evolution of urban planning thought (Berdoulay and Soubeyran, 2002).

We propose, therefore, to focus on the effects of the historical predominance of the approach of controlling nature and technical progress on our river spaces today and on current trends in urban planning that are favorable to the environment. This, without the ambition to "reinvent" or "revolutionize" the field, considering the deep historical foundation that ecological urbanism has established (ibid). It is rather a matter of offering an interpretation of this environmental dynamic of urban planning through the lens of the scientific framework of landscape sensitive and sensory approaches which, in our opinion, are a key element for understanding these dynamics.

This communication is an extension of certain reflections and observations described by Charles Ambrosino in his book "The Geographical Metropolis and its Urbanisms: Grenoble or the (Forgotten) Art of Inhabiting the Plain" (Ambrosino, 2022). By taking some local examples, we will first see how Grenoble is a classic example of a technical approach to river management that results in the total invisibility of water. The ongoing local projects that fall within the field of ecological urbanism struggle to demonstrate a more systematic approach to the Grenoble river territory and to move beyond a technocratic vision. We hypothesize that ecological urbanism must further embrace landscape (and thus sensitive) approaches in order to surpass the technocratic and material approach to river spaces and to mobilize symbolic, cultural, and sensory registers in the transformation and management of these spaces. This happens through the introduction of new regulatory tools such as the Grenoble example of a Landscape and Biodiversity Programmatic Guidelines[1] and new actors (landscape architects and ecologists) in urban project teams.

2. RIVER SPACES, A HISTORY OF TOTAL CONTROL. THE EXAMPLE OF GRENOBLE

Our rivers and streams can be considered among the "victims" of the modern drive to subject natural spaces to human will. Today, we know that for centuries there were traces of positive cohabitation between humans and rivers (Rossano, 2021), thanks to

---

1 In french, Orientation d'Aménagement Programmatique (OAP) is an urban planning tool which aims to qualitatively express, for neighborhoods or sectors or on territorial issues, the ambitions and territorial strategy in terms of urban development. In the Grenoble Metropolitan Area there are 3 thematic OAPs - "Landscape and biodiversity", "Résilence" and "Bioclimate". For more simplicity in this communication we will call it Landscape and Biodiversity OAP. n.a

the fertilizing effects of floods. However, starting in the 19th century, the progressive discourse changed the paradigm by promising more stability, order, and reliability in the face of floods and nature's unpredictability, radically transforming river landscapes. Henceforth, a binary situation arose where natural fluctuations and wetlands were restricted and isolated from inhabited areas through major embankment and marsh drainage projects. This landscape transformation is "the result of a gradual shift from decentralized, rural, and adaptive social organizations to urbanized organizations with a capitalist economy, seeking to secure and intensify production and transport, possibly at the expense of local uses" (Rossano, 2021, p. 39).

Today, we can call this approach to our rivers "engineering" or "technical," and it is present throughout our urban areas in the Western world. The city of Grenoble and its evolution are quite a caricature of this culture of dominance over natural elements. The city, located at the confluence of torrential rivers fed by alpine glaciers, the Drac and the Isère, was built around a survival game with devastating floods (Coeur, 2008)[2]. Today, the city has "turned its back" on these significant geographical features, including its rivers (Ambrosino, 2022), through a series of large infrastructures such as dikes and dams, as well as the complete drying out of its alluvial plain, long fed by thousands of river braids. Water has gradually disappeared from the urban landscape of Grenoble or has been channeled and confined behind retention and energy production infrastructures. This is why all urban development in Grenoble for decades has treated this hidden presence of water as a threat or completely forgotten it, along with its beneficial effects on urban living conditions.

These large infrastructures, such as dikes, have a major impact on the ecological state of the alluvial plain. Alluvial forests have decreased by more than 70% due to variations in the groundwater table (Girel, 2016), and species poorly adapted to the imposed stress have gradually disappeared from the local ecosystem. Moreover, local actors realize that these technical systems fail to address the new ecological and climatic emergencies that threaten the territory, which is highly exposed to the effects of climate change.

A change in our relationship with water in the current urban and territorial projects, but still limited.

Today, we witness some attempts to bring visibility back to Grenoble's unique geographical situation (and its hydrographic landscape in particular) while addressing the needs for resilience. For example, the major development project "Isère en amont" places significant emphasis on environmental enhancement and

---

2 In his book "La plaine de Grenoble face aux inondations. Genèse d'une politique publique du XVIIe au XXe siècle" (The Grenoble Plain Facing Floods: Genesis of a Public Policy from the 17th to the 20th Century), Denis Coeur provides an overview of the most devastating floods in the Grenoble plain and the technical efforts made to control this natural force. Raoul Blanchard also reminds us of the flood of September 14, 1219, "the most furious flood that has besieged Grenoble," with thousands of people dead (Blanchard, 1914).

restoring it to a better ecological state[3]. The primary goal of the project is flood protection, achieved through a new approach that allows the river space instead of containing it at all costs, "accompanying and guiding it in its natural bed."[4]

It is therefore conceived as an example of resilient development of flood-prone areas where we accept nature as dynamic, unstable, changing, and thus potentially risky for human settlements" (Rode, 2021, p. 159). This project outlines what Rossano calls "a cultural shift in our relations with the river space" (Rossano, 2021, p. 143). Nevertheless, we do not witness a true paradigm shift towards a culture of more restrained, resilient land and nature management capable of creating new ways of living with water (Cordobes et al., 2022). A common feature of such projects, which start from a need for security and technical solutions (in the case of Isère en amont, a more effective flood prevention system), is that they do not always manage to integrate flood management with the functioning of all other urban systems (mobility, ecology, urban quality, landscape, accessibility, housing, public space, etc.) (Gralepois, Rode, 2017).

We highlight the effort made by Isère en amont to go beyond merely addressing flood protection, but this systemic approach remains rather marginal compared to the technical complexity such a project represents. For instance, Isère en amont calls for a triple approach linking hydrology, ecology, and leisure, which could be a good basis for a systemic approach to the valley. However, the effort is mainly limited to the first approach, even though the valley has real difficulties and untapped potential regarding, notably, accessibility between the left and right banks[5] and landscape coherence between different sectors[6] (Rossano, 2021, p. 136).

This "confinement of the project to primarily hydraulic discussions" (ibid) allows for faster and more efficient implementation compared to a more comprehensive approach to the sector, which can be deemed unrealistic given the sectoral and territorial complexity. The project stakeholder[7] also has exclusive competences in hydraulic management without real power to coordinate more global actions. Thus, we find that the ecological potential remains unachieved, even if the cited examples no longer follow a modernist logic of "independence" from the environment (Berdoulay, Soubeyran, 2022, p. 172).

---

3 By recreating alluvial forests, as well as reshaping the banks and beds of ponds in the plain to promote the development of aquatic life, while providing a place for reproduction and food for peri-aquatic fauna. Source: Symbhi

4 Source : Symbhi , presentation of "Isère en amont" project *https://symbhi.fr/nos-territoires/le-gresivaudan/isere-amont/*

5 In a 25 km sector, there are currently only 4 bridges in total. However, the project area hosts several zones with high demand (leisure bases, campgrounds, cycling routes, hospital, park, etc.).

6 Historically marked by a lack of development projects encompassing the entire valley, today the Grésivaudan Valley is a patchwork of various heterogeneous sectors (residential areas, natural areas, industrial zones) poorly connected to each other and without an assessment of the effects caused between them.

7 The Syndicat Mixte des Bassins Hydrauliques de l'Isère (SYMBHI) manages daily the rivers, their tributaries, and their infrastructures, primarily with the goal of reducing flood risk.

Figure 1. The project "Isère en amont" completing the bank protection in a sector of the project. Primarily driven by a quest for better flood management, the project struggles to truly integrate the river as a major component in territorial development. Source : Symbhi/SO Dupontrenoux (2018)

3. NEW APPROACHES TO RIVER PROJECTS THROUGH LANDSCAPE AND SENSITIVITY METHODS

The ecologization of planning practices cannot start from technical and security issues alone, but must instead be based on a search for co-evolution between society and nature, and on the reconstruction of humans' relationship with the territory "in its complexity, challenging all elements of space production" (Magnaghi, 2022, p. 16). River urbanism could further rely on what Magnaghi calls a "territorial principle," where the project treats the territory as "an entity open to processual relationships," through a "network of interconnected knowledge" (Magnaghi, 2022, p. 31). Fine knowledge about the environment, its functioning, condition, and pathologies guides action systemically to achieve co-evolution between humans and their environment (Berdoulay and Soubeyran, 2022, p. 172). Thus, a shift in understanding spaces is necessary, defining them not only as physical but also as appropriated, sensitive, and controversial (Gralepois and Rode, 2017).

The issue of river spaces is as much environmental and spatial as it is cultural and sensitive. Territorial projects cannot solely focus on creative new forms of physical intervention but must transform design processes, practices, and outcomes into explicitly public and collective exercises (Silva et al., 2024). We thus hypothesize that

through a landscape (and thereby sensitive) approach, we can rediscover project frameworks that establish "encounters between the natural and human" (Touchard, 2019) and a process of interface that is both subject and object, natural and cultural, individual and social (Bertrand, 2020).

We define the landscape approach as any process emphasizing reflection centered on both the immaterial and material landscape. These are very broad reflective frameworks with a wide variety of understandings, which we will not fully explore in this communication, but all assert the limitations of an infrastructural and engineering approach to planning.

It seems to us that the landscape is capable of embodying this need in territorial projects because it is "the sensitive result (perceptible by the senses) of the long-term territorialization process that establishes the structural and status characteristics of the territory (...)" (Magnaghi, 2022, p. 63). Landscape approaches would be "the outcome of an awareness of place(s), territories; a process of appropriation of these" (Manola, 2013). "Individuals seek to recognize themselves in the landscape of the space/place/territory where they live. The landscape would then be a collective form, shaped by social practices and representations" (ibid). Landscape approaches are "events," sensitive experiences of the territory (Besse, 2010) that allow for situated and systemic reflection.

We will therefore see how these notions - landscape, sensitivity, ecology - jointly define a sensitive river urbanism, or an urban transformation action that is attentive to environments, starting from them.

These alternative proposals to the current situation in Grenoble's development of river spaces are neither innovative nor nonexistent. Urban planning projects focused on river landscape are increasingly spreading across Europe. However, it is necessary to emphasize the difficulty that this type of project represents in terms of introducing "qualitative, more subjective questions than those usually manipulated by civil engineering" (Rossano, 2021, p. 234). Landscape allows us to connect with river space, to establish "engagement of the body" (Besse, 2018) with it, and thus to produce new forms of spatial and territorial project and action.

This is why we focus more specifically on the sensitive aspect of Grenoble's landscape practices to see how local actors manage to introduce subjectivity, quality of use, aesthetics, and personal sensitivity into river urban planning

4. IN GRENOBLE, IT'S STILL DIFFICULT TO INTRODUCE LANDSCAPE INTO RIVER URBAN PLANNING, BUT THE FIRST STEPS HAVE BEEN TAKEN.

As we saw earlier, the Grenoble area suffers from a systematic neglect of its landscapes in the face of evidence of strong hydraulic risk. This "constraining geography" of the "'cuvette" attributes to strong landscape elements such as water, mountain slope and plain either a function of decorum (the surrounding mountains), or that of receptacle (the plain) of modernity (Ambrosino, 2022, p. 37). Today, those involved in urban planning collectively acknowledge a crucial lack of projects and methods that are based on a sensitive landscape composition with the environment, and an understanding of local ambiences. "Above all, we realize that we've lost things," asserts a landscape architect working for the Metropole while studying Grenoble's river landscape.

A good example of how landscape can be taken into account in urban planning is the planning tool created on a metropolitan scale - the OAP Paysage et Biodiversité (Landscape and Biodiversity OAP). This regulatory tool is of interest to us because it successfully introduces a series of sensitive methods, such as detailed knowledge of the environment and its ecological and landscape features, as well as subjective appreciation of the environment linked to these geographical and cultural characteristics. The OAP is addressed to all those involved in property development, construction and planning, both public and private. It presents a number of guidelines localized by landscape sector in the Grenoble metropolitan area, indicating measures and recommendations that enable each project to think more closely in terms of urban form and biodiversity and their respective impacts. The document is divided into seven parts, each presenting a specific territory with its own landscape identity. The document also identifies 14 landscape ambiances present in these areas (suburbs, urban foothills, urban plains, valley bottoms, agricultural plains, pastoral mountains, wooded slopes, etc.). The purpose of this planning tool is to reveal the uniqueness of all types of local fabric, and to reinforce continuity, in order to achieve a territorial fabric conceived through quality, through the senses. Water is central to this objective. The OAP Paysage et Biodiversité (Landscape and Biodiversity OAP) allows us to think of the soil in terms of its capacity to contain water, and the quality of the urban void as a key guideline for all new projects. The documents also include maps of old streams that have been buried for decades, which developers and designers are encouraged to note and use as a basis for designing urban form.

Another distinctive feature of this planning experiment is the way it was drawn up. The OAP is the result of a long-term process of collective surveying of the Grenoble area, involving the five design offices commissioned to create it, as well as elected representatives, technicians, architects and landscape architects. These immersions and in situ workshops enabled a wide range of sensitive knowledge of the area to

be gathered, in order to draw up a landscape portrait of this diverse and little-known fabric. We therefore stress the importance of sensory approaches to understanding the site, such as walking, physical immersion, observation and the gathering of sensitive narratives. The presence of water in this document would not have been possible without identifying the phenomenon of invisibilization of this natural element of the local landscape by the actors involved. The OAP Paysage et Biodiversité (Landscape and Biodiversity OAP) is quite innovative in that, through landscape, it introduces the notion of ambiance fully into planning documents. This planning tool resonates well with the ongoing dynamics of a "general movement to open up to the sensory" (Tallagrand et al., 2021) among actors in the territorial fabric, aiming for "the explicit creation of original sensitive environments" (Thibaud, Duarte, 2013).

But there are also limits identified by those involved in the territorial fabric. The OAP remains a good first step towards revealing Grenoble's landscapes and ecologies, but more generally, the area is still strongly marked by a logic of securing and creating infrastructural macrosystems. The main river areas, such as the Isère and Drac, remain a territory reserved for the strict jurisdiction of engineers, where more qualitative and sensitive planning tools such as the OAP Paysage et Biodiversité (Landscape and Biodiversity OAP) have little effect. Where the OAP does come into its own is on the scale of real estate, public space and urban renewal projects, but local stakeholders point to a major difficulty in making the OAP more appropriable in operations. The lack of a real common culture of Grenoble's landscapes is leading to a lack of interest on the part of stakeholders in carrying out projects that integrate or transform space in a harmonious way. Landscape architects working in urban planning departments see a real need to rehabilitate the river space in the plain, to get people involved in a dynamic of appreciation and symbolic and cultural attachments. For example, the time devoted to raising the awareness of elected representatives to the tool proposed by the landscape services remains at the goodwill of individuals, and is therefore mainly attended by people who are already sensitive to the landscape issue. In fact, the water ambiance doesn't really exist, as the diagnostic section clearly demonstrates, as the designers of the OAP were unable to identify it. Water remains an infrastructure, far removed from any urban function. Talking about aesthetics, sensibility and use in the context of urban water projects that are not based solely on economic, rational and safety logic is often stigmatized as "dirty words" that should not guide the action of spatial transformation. Mediation and gradual appropriation are therefore the means favored by those involved in territorial planning, so that one day they can build a common project around water and rehabilitate this element in the collective imagination.
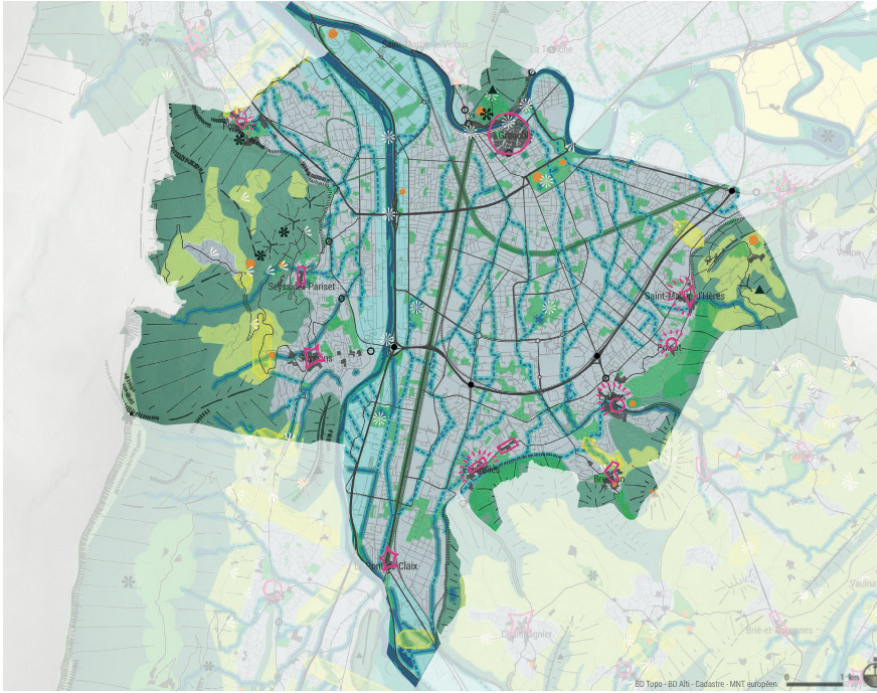
Figure 2. The OAP Landscape and Biodiversity main map of the plain ambiances.
The invisibilized rivers are mapped as well as the zones near the main rivers where a prior actions should be made.
source : Grenoble Metropolitan Area, Urban planning direction (2019)

5. CONCLUSION

In this paper, we have attempted to demonstrate the first faint signs of a paradigm shift that is taking place in the way we plan our territory and, more specifically, our river systems. We took the example of the Grenoble metropolitan area and its strong relationship with water, yet one that has been rendered invisible by hydraulic macrostructures and the quest for permanent environmental stability by draining all the watercourses on the plain. Using the example of the OAP Paysage et Biodiversité (Landscape and Biodiversity OAP) as a planning tool, we show that local stakeholders are looking for new ways to move beyond the technical and safety-oriented approach to water towards a more sensitive consideration of Grenoble's landscapes. We see these innovations as part of a broader desire to reintegrate our inhabited territories more adequately with the biosphere, or "processes of transforming the design, management and development of territories by taking account of their ecological functioning" (Bognon, 2020, p.59). Landscape and the sensory approaches associated with it enable just this, as they are very powerful registers of action that manage to unite and involve stakeholders around a shared and collective project and understanding of the territory. The difficulties of legitimizing these approaches are still largely present, due to a broader cultural issue that "forces us to revisit ideological schemes that divide nature and culture" (Blanc, 2009).

6. BIBLIOGRAPHY

Rode, S (2023). Écologiser l'urbanisme: Pour un ménagement de nos milieux de vie partagés. Le Bord de L'eau Editions.

Gandy, M. (2022). Urban Political Ecology: A Critical Reconfiguration. Progress in Human Geography 46(1) 21–43. *https://doi.org/10.1177/03091325211040553*.

Mumford, L (1956). Histoire naturelle de l'urbanisation. Repubishled by PUF (2023)

Coutard, O. & Lévy, J.P. (2010). Écologies urbaines. Économica Anthropos.

Berdoulay, V. & Soubeyran, S (2002). L'écologie urbaine et l'urbanisme: Aux Fondements Des Enjeux Actuels. Découverte

Choay, F (2006). L' urbanisme: utopies et réalités; une anthologie. Éditions du Soleil.

Rollot, M (2018). Aux origines de la « biorégion ». Métropolitiques, *https://metropolitiques.eu/Aux-origines-de-la-bioregion.html*.

Rossano, F.L.M (2021). La part de l'eau: vivre avec les crues en temps de changement climatique. Éditions de la Villette.

Coeur, D (2008). La plaine de Grenoble face aux inondations. Genèse d'une politique publique du XVIIe au XXe siècle. Quare

Ambrosino, C (2022). La métropole géographique et ses urbanismes: Grenoble ou l'art (oublié) d'habiter la plaine. Autrement.

Blanchard R (1914). Le lac de l'Oisans. Recueil des travaux de l'institut de géographie alpine (p. 427-449), IUGA

Girel, J (2016). Les endiguements de l'Isère au xixe siècle : Impact géomorphologique, écologique et social en Savoie et Grésivaudan. In Fornier, P & Massard-Guilbaud (Ed.) Aménagement et environnement : Perspectives historiques, (pp. 149–61). Presses universitaires de Rennes

Madec, P (2021). Mieux avec moins: architecture et frugalité pour la paix. Terre urbaine.

Cordobes, S. & Desjardins, X. & Vanier, M. & Aubert, P. (2020). Repenser l'aménagement du Territoire: Colloque de Cerisy. Berger-Levrault.

Gralepois, M. & Rode, S. (2017). L'urbanisme résilient déforme-t-il la ville ? Flood resilient city and urban distortion. Risques urbains, 2017

Berdoulay, V. & Soubeyran, O. (2020). L'aménagement face à la menace climatique: le défi de l'adaptation. UGA éditions, Université Grenoble Alpes.

Magnaghi, A (2022). Le principe territoire. Eterotopia France.

Silva, R.H. & Zwarteveen, M. & Stead, D. & Kuzniecow, T B. (2024). Bringing Ecological Urbanism and Urban Political Ecology to Transformative Visions of Water Sensitivity in Cities. Cities 145.

Touchard, O. (2019). L'action urbaine écologique de Bordeaux Métropole : le plafond de verre de la nature ou la conflictualité tacite des pratiques de l'aménagement. (Doctoral dissertation) Université Michel de Montaigne - Bordeaux II.

Bertrand, Georges. « Le paysage ou l'irruption du sensible dans les politiques d'environnement et d'aménagement ». In Sempre los camps auràn segadas resurgantas : Mélanges offerts au professeur Xavier Ravier, édité par Jean-Claude Bouvier, Jacques Gourc, et François Pic, 647-53. Méridiennes. Toulouse: Presses universitaires du Midi, 2020. *http://books.openedition.org/pumi/43038*.

Manola, T. (2013). La sensorialité, dimension cachée de la ville durable. Métropolitiques

Besse, J.M. (2018). La nécessité du paysage. Paranthèse.

Tallagrand, D. & Thibaud, J.P. & Tixier, N. & Hadbi, R. (2021) L'usage des ambiances: une épreuve sensible des situations. Les colloques Cerisy. Hermann.

Thibaud, J.P. & Duarte, C.R. (2013). Ambiances urbaines en partage: pour une écologie sociale de la ville sensible. MétisPresses.

Blanc, N. (2009) Vers un urbanisme écologique ? URBIA. Les Cahiers du développement urbain durable (8), pp.39

L25

THE SENSORY AND SENSITIVE IDENTITY OF MEDITERRANEAN CITIES

CHAIRS Noha Gamal Said
Toumadher Ammar
Philippe Liveneau

The Mediterranean has always been a hub for multiple exchanges and transfers between civilizations. It has consistently beckoned its inhabitants to travel, meet, and explore, encouraged by the apparent benevolence of its waters. The timeless call to venture beyond, recounted in mythology or etched onto the boats of ferry operators, has facilitated connections across diverse sensory universes. These universes resonate with each other and echo. There exists a palpable porosity between the ambiances of different regions that define its boundaries and extend even beyond.

These ambiances, resonating among themselves, embody a Mediterranean way of life that implies a particular conception of time.

Today, questions of Urban Identity and City Branding emerge in various cities around the Mediterranean. These themes are gaining prominence both in architectural and urban planning education and in urban policies. This interest has been cultivated in different southern Mediterranean countries to address the significant urban transformations affecting both formal and informal aspects of cities. The consequence is an erasure of the primary urban and sensory characteristics of these cities, along with a fading of their inhabitants' memories. This prompts us to reflect on the evolving identity of Mediterranean cities.

How can we first define the urban and sensory identity of Mediterranean cities? What are the foundations for creating and/or preserving an identity rooted in duration, history, and the flow of evolution? What role does ambiance and sensory space play in shaping the unique urban character of these cities?

In this session, we propose to explore cross-cutting issues that may reveal characteristics of an ambiance specific to the Mediterranean context. How does ambiance manifest and integrate into the treatment of Mediterranean cities today? Where does the Mediterranean space extend to? Is it perceptible in practices beyond the presence of a climate and conditions typical of "waterfront" cities? We ponder whether there truly exist distinctly Mediterranean ambiances. What elements constitute these ambiances? Can we identify sensitive qualities and atmospheric traits that distinguish the Mediterranean character of an ambiance?

(1) Thibaud Jean Paul in « Il faudrait se demander s'il existe des ambiances proprement méditerranéennes » entretien croisé avec Jean Paul Thibaud et François Laplantine, propos recueillis par Toumadher Ammar, in Méditerraner, tête à tête n°9, Rouge Profond, 2018.

DYNAMIC DAYLIGHT, ATMOSPHERE AND PERCEPTION: EXPLORING THE QUALITIES OF DAYLIGHT APERTURE IN ISMAILIA CITY

LUZ NATURAL DINÂMICA, ATMOSFERA E PERCEPÇÃO: EXPLORANDO AS QUALIDADES DA ABERTURA DA LUZ DO DIA NA CIDADE DE ISMAILIA

Heba Essam
Teaching Assistant
Architecture and Urban Planning Department, Faculty of Engineering,
Suez Canal University
Heba_Essam@eng.suez.edu.eg

Mahmoud Fouad
Professor
Architecture and Urban Planning Department, Faculty of Engineering,
Suez Canal University
mafouad66@hotmail.com

Mahmoud Elghawaby
Assistant Professor
Architecture and Urban Planning Department, Faculty of Engineering,
Suez Canal University
mahmoud_elghawaby@eng.suez.edu.eg

ABSTRACT

This article examines apertures as key architectural elements for addressing daylight in Ismailia City, Egypt. It is known for its diverse architectural styles in residential buildings and employs distinct approaches to daylight through various aperture features. The outcome is a rich typology of forms. These apertures influence daylight's physical and non-physical atmospheric qualities, impacting users' subjective experiences including perception and emotional status. This study analyzes how daylight quantity and quality affect residential spaces, focusing on dynamic daylight's impact on atmosphere and user experience. A 3D model with fixed parameters and various apertures was used for experimental analysis, employing simulation software, 360° photos, VR headsets, and questionnaires. Results reveal the complications of achieving both quantitative daylight measures and qualitative user needs. Findings reveal newer buildings may meet physical metrics but fail in user atmosphere evaluations, highlighting apertures' role in enhancing dynamic daylight and thus atmosphere, which is crucial in residential design.

KEYWORDS: Dynamic Daylight. Atmosphere. Perception. Ismailia aperture. Virtual Reality.

RESUMO

Este artigo explora as aberturas como elementos arquitetônicos cruciais para o uso da luz natural em Ismailia, Egito, conhecida por sua diversidade arquitetônica em edifícios residenciais como o colonial francês, o islâmico e o Art Déco, cada um com características distintas de abertura. Essas influenciam tanto as qualidades físicas quanto atmosféricas da luz natural, afetando a percepção e o estado emocional dos usuários. O estudo analisa o impacto da quantidade e qualidade da luz natural nos espaços residenciais, focando na luz dinâmica e sua influência na atmosfera e na experiência do usuário. Utilizando um modelo 3D com parâmetros fixos e diversas aberturas, a pesquisa usou software de simulação, fotos 360°, realidade virtual e questionários. Os resultados revelam desafios na medição quantitativa e qualitativa da luz natural, enfatizando o papel vital das aberturas em aprimorar a luz dinâmica e a atmosfera no design residencial.

PALAVRAS-CHAVE: Luz Natural Dinâmica. Atmosfera. Percepção. Abertura em Ismailia. Realidade Virtual.

1. INTRODUCTION

Apertures can be considered the primary architectural element for addressing daylight aspects in a space. This study analyzes the interplay between quantity and quality aspects of daylight in residential spaces while exploring the relationship between dynamic daylight's impact on space atmosphere and users' subjective experience.

1.1 Apertures in Ismailia City

Ismailia City is located along the banks of the Suez Canal in Egypt. It was designated as the center of the canal within the concession boundaries granted to Ferdinand de Lesseps. The company started constructing all the necessary buildings for exploiting the Suez Canal in 1862. (Piaton, 2009).

This continued until the mid-20th century when eclectic buildings became more common. However, during the war from 1967 to 1973, all new construction was paused. After the war, there was a rapid reconstruction with a focus on social buildings, and the appearance of diverse architectural styles that continue to the current day. As shown in Figure 1.
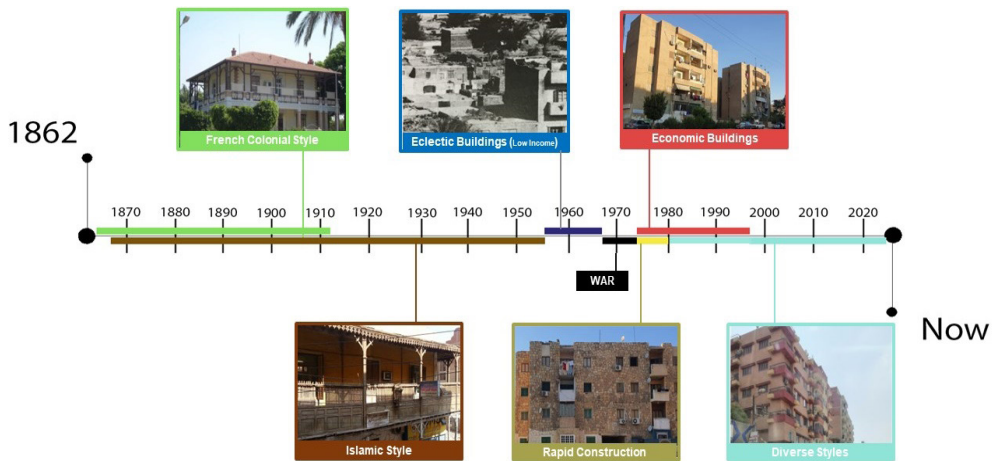
Figure 1/Figura 1. Architecture styles' timeline in Ismailia City
Source: Researcher (2024). / Fonte: Investigadora (2024).

Ismaila City is currently renowned for its diverse architectural style in residential buildings, ranging from French colonial style in the European neighborhood, to Islamic style in the Arabic neighborhood, and Art Deco style in the Greek neighborhood. Each architectural style employs distinct approaches to daylight through various aperture features. The outcome is a rich typology of forms, including vertical wooden windows, horizontally oriented windows, Mashrabya-shaded aperture, square windows with wooden shutters, and wide metal/glazed windows. It is noticeable that nowadays the diversity in architectural opening styles has been lost. Recent housing has increasingly relied on aluminum openings. According to in-field research, apertures can be categorized into 9 unique styles and can be indicated as shown in Table 1.

	French colonial	Islamic style	Authority buildings	Economic buildings	Eclectic style
Style					
Aperture					

Table 1./tabela 1. Ismailia's Aperture typology in Each Architectural Style.
Source: Researcher. (2024)./ Fonte: Investigadora. (2024).

Aperture forms include rectangles, squares, and horizontal oriented forms. Their dimensions vary, ranging from 1 x 2.7 m to 2.50 x 1.60 m, with different heights. Opening ratios vary with the WWR ranging from 15% to 38%. Different materials are used in the construction, including white-colored wood, brown-colored wood, light blue-colored wood, and white-colored aluminum. Additionally, the glass utilized in these apertures varies from single-layer smooth transparent glass to double-layer smooth glass with a gap between them.

1.2 Qualities of Daylight

The most commonly used metrics by lighting professionals focus on ensuring adequate daylight and the distribution of light. Other considerations include user preferences and daylight's impact on subjective experience (Thuillier, 2021). These metrics are grouped into two categories: daylight quality and subjective experience, both are complementary and used to assess daylight quality. (AMORIM, et al., 2021). Apertures directly influence daylight's quality, affecting the atmosphere it creates, which can significantly impact users' subjective experiences, including their perception and emotional status.

1.2.1 Dynamic Daylight

Dynamic daylight refers to the changes in natural lighting that mimic a natural environment. These variations can be assessed by evaluating the surrounding atmosphere. Gandy (2017) defined the atmosphere as a direct form of perception, identified through subjective experience.

1.2.2 Physical Factors for Daylight Quality

Physical factors are measurable elements that affect daylight and are based on the physical quantities describing the amount and distribution of light in space. (Carlucci, et al., 2015). Based on the (U.S. EPA Green Lights Program, 1995), some of the most influential main daylight factors affecting daylight quality include Daylight Level (illuminance), Luminance, Glare, Light Color, and Daylight Distribution and Uniformity.

1.2.3 Non-Physical Factors for Daylight Quality

Non-physical daylight factors are sensory elements experienced by users, which do not rely on physical quantities. They are studied alongside physical factors to create a comprehensive concept based on both measured quantities and user opinions.

The subjective experience of daylight can be evaluated by using techniques that according to Laike (2020) include physical technique that involves using the Perceived Indoor Lighting Quality (PILQ) for Lighting Experience assessment, and psychological technique that utilizes Semantic Differential Environmental Description (SED) assessment. The physical technique measures visual interest of daylight on users, while the psychological technique measures the psychological orientation of users. (Gentile, et al., 2018).

Moreover, non-physical effects of dynamic daylight can be assessed by measuring its impact on the surrounding environment's atmosphere. It can be assessed based on (Vogles, 2008), (wang, et al., 2014), and (Sawyer & Chamilothori, 2019) using five basic dimensions, with 13 attributes in total. A 5-point Likert scale questionnaire is used for evaluation.

Therefore, 3 main evaluation forms are used to assess non-physical daylight factors. PILQ evaluation form ranges from 1 to 7 and includes PCQ (perceived comfort quality), PSQ (perceived strength quality), PAQ (perceived appearance quality), and PDQ (perceived distribution quality). Secondly, BEPs range from 1 to 4 and include Activation, Orientation, Evaluation, Control, and Emotional Status. The third is a Dynamic Daylight Effect on Atmosphere with a score range from 1 to 5 and includes Coziness, Liveliness, Enjoyment, Attachment, and Ambience.

1.2.4 Measuring the Qualities of Daylight

The following sub-elements of the main daylight quality elements were evaluated in Table 2:

	Factors	Metric	Standard
Physical Factors	**Daylight Level** / Illuminance	Mean Illuminance in LUX	200:500 LUX
	Uniformity / Uniformity	Uniformity Ratio	< 0.3
	Glare / Glare	DGP	DGP<0.35 Imperceptible - DGP>0.45 Intolerable
	Luminance / Luminance	--	Analyzing Luminance Questions in Questionnaire Forms
	Light Color / Light Color	--	Analyzing Light Color Effect Questions in Questionnaire Forms
Dynamic Daylight	**Physical Metrics** / Daylight Variability	sDA	> 40%
	Sunlight Exposure	ASE	> 50% of Occupation Hours
	Non-Physical Effect / Effect on Atmosphere	--	50% of the Following: Liveliness =5 Coziness=5 Attachment=5 Enjoyment=5 Ambience=5
Non-Physical Factors	**Perception** / Visual Interest	--	50% of the Following PSQ=7 PCQ=7 PDQ=7 PAQ=7
	Subjective Experience / Psychological Orientation	--	50% of the Following Orientation=4 Activation=4 Control=4 Evaluation=4 Emotional Status=4

Table 2./tabela 2. Evaluated Daylight Factors Used in the Study.
Source: Researcher. (2024)./ Fonte: Investigadora. (2024).

2. METHODOLOGY

The analysis of aperture typology presented challenges in making direct comparisons in its present state. Therefore, an experimental study was conducted to compare physical and non-physical daylight factors among these various apertures. This involved designing a 3D digital model of a space with fixed parameters such as dimensions, and opening location, and then identifying the main variable factors for comparison.

2.1 Simulation Process

A multi-layered approach is adopted to facilitate a comprehensive analysis, employing daylight simulation software, 360° rendered photos, VR headsets, and verbal questionnaires during VR experiments to evaluate daylight characteristics.

2.1.1 Analyzing Daylight Physical Qualities

The physical factors for each model were analyzed by measuring dynamic daylight quality using simulations and comparing them to the standards. HDR images for each space were analyzed. The following describes the steps:

Step one: A 3D virtual model was designed using Autodesk Revit, with architectural elements from Ismailia city, and then the model was imported into Rhinoceros 3D using Climate Studio tool, with all the detailed and accurate dimensions. Finishing materials were added from the Radiance Materials Library. Ismailia City was selected as the location for the 3D model in the software, and the real sky conditions were taken from weather files for measurements.

Step Two for analyzing daylight, illuminance, uniformity, sDA, ASE, and UDI, were selected as metrics for analysis in the software. Simulations were performed for each model, and annual values were extracted. The simulations were repeated for each of the four main orientations, and the results were recorded.

Step Three: HDR simulations were conducted at 9:00 AM and 3:00 PM. to capture morning and afternoon lighting conditions for each model and orientation to obtain DGP values.

2.1.2 Analyzing Daylight Non-Physical Qualities

User evaluations were recorded using a comprehensive questionnaire derived from the three evaluation forms, utilizing VR. This process can be described as follows:

The output of the simulation process is 360-degree images from Climate Studio, representing the space within each model. The image was used for evaluating the non-physical factors. As shown in Figure 2.

Figure 2/Figura 2. Examples of 360 images used in users' evaluations.
Source: Researcher through Climate Studio. (2024). / Fonte: Investigadora através Climate Studio. (2024).

On September 21st, 360-degree images were simulated under real sky conditions at 5:00 PM in the west orientation. This time was chosen as it reflects peak occupancy during daylight hours in residential models according to housing patterns.

360-degree images were assembled in a sequential experiment where navigation between them was possible through the orbix360 platform and displayed to users via VR Box headsets.

The overall atmosphere was moderate to warm. Participants were quickly briefed about the experiment's purpose and measurement protocol. They were given at least 15 seconds to adjust to the scene before evaluation, followed by 30 seconds to explore before assessment.

Each participant was provided a link to the questionnaire on their phone to answer personal questions before wearing the headset. During the experiment, questions were asked questions by the researcher.

User subjective experiences within the models were evaluated using a questionnaire for each space, conducted to a sample of 15 residents of Ismailia, consisting of 40% females and 60% males, all architects aged between 20 and 25 years old. This indicates sample homogeneity and an appropriate sample size.

2.1.3 Analyzing the results
The results from Climate Studio and the questionnaire were compiled into tables using MS Excel and then used to create graphs for analysis and comparison. The combined results from the simulations and questionnaires were analyzed to determine averages, exceedances, and deficiencies, HDR images were also analyzed. Non-physical factors from VR questionnaires were analyzed using graphs.

2.2 Parameters Used in Simulation
There are several parameters used in the experiment that can be identified as fixed parameters and variables.

2.2.1 Fixed Parameters Used in Models
The factors fixed in the experiment include selecting aperture models through which daylight measurements are conducted, derived specifically from apertures in Ismailia city. These data incorporate the average values prevalent in Ismailia city, with consideration given to factors derived from Egyptian codes and laws.

In external factors, the surrounding environment includes a building opposite, creating an obstruction, the road has a width of 12.5 meters and a tree. Regarding reflections from the surroundings, the walls of the opposite building are semi-gloss painted in a beige color, the building has square windows with white aluminum frames and smooth transparent glass, and the old asphalt road is gray. The space is placed on the second floor with a height of 6.5 meters from the ground.

Internally, the space measures 3.5 x 3.5 x 3 meters and has a square proportion. The opening is located in the middle of the wall, the floors are Glossy ceramic with

a beige color, and the walls are painted with a glossy finish in a beige color. Model dimensions as shown in Figure 3.
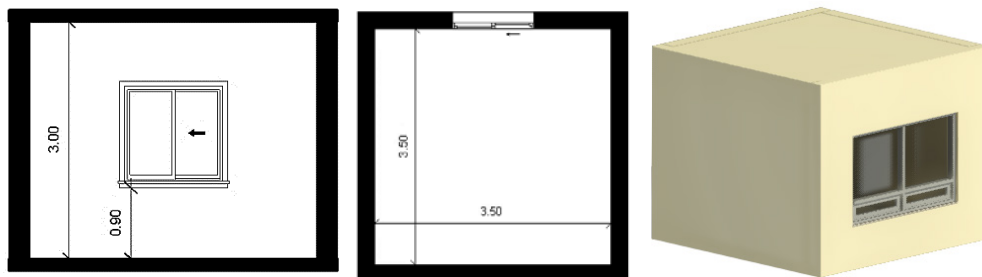
Figure3/Figura 3. Model Dimensions in Plan and Section.
Source: Researcher through Autodesk Revit. (2024). / Fonte: Investigadora através Autodesk Revit. (2024).

2.2.2 Variable Influencing Daylight in Models

Measurements were taken in all four orientations. Several factors affecting daylight varied in the experiment. These elements are as follows:

- Orientation: During the experiment, orientation was varied to obtain results for all four directions (North, South, East, and West) to assess the impact of orientation on daylight.

- Analysis and comparison of various opening models derived from apertures in Ismailia city. Each model was described in terms of design and glazing, reflecting architectural elements typical of Ismailia city housing, aligned with Egyptian codes.

3. RESULTS AND DISCUSSION

Through 64 model simulations, this study investigated the relation between physical factors and non-physical factors. Results from the experiments reveal the complications of achieving both quantitative measures of daylight and the qualitative needs of space users.

3.1 Physical Qualities Results

Physical qualities results are gathered and displayed in radar charts for each orientation. Each chart illustrates the maximum standard values for each metric in the red zone and the minimum standard value in the blue zone. The results for each aperture are represented on a line to indicate compliance with the standards, as shown in Figures 4 & 5.
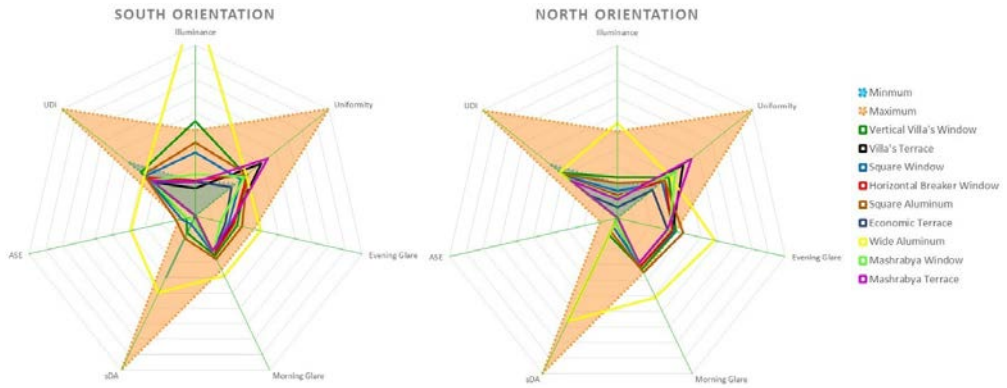
Figure 4/Figura 4. Radar Charts Illustrating Physical Qualities in South & North Orientations.
Source: Researcher through MS EXCEL. (2024). / Fonte: Investigadora através MS EXCEL. (2024).
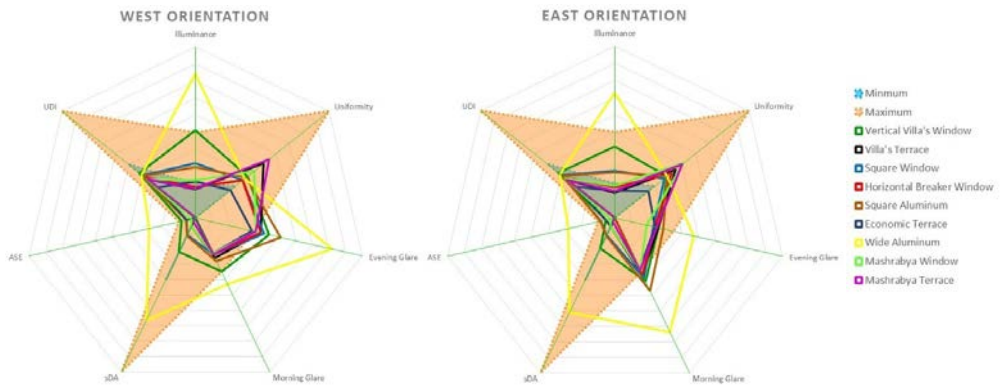
Figure 5/Figura 5. Radar Charts Illustrating Physical Qualities in East & West Orientations.
Source: Researcher through MS EXCEL. (2024). / Fonte: Investigadora através MS EXCEL. (2024).

Results show that newer buildings have performed well in physical factors. The use of horizontal breakers has effectively reduced light levels and improved uniformity. Among different window models, the one with a horizontal breaker is the most effective in minimizing glare. Longitudinal window ratios have shown better results compared to wide ratios in terms of both values and distribution within the space, making them more suitable for use. However, managing excess glare when using longitudinal windows in southern, eastern, or western orientations is important.

3.2 Non-Physical Qualities Results

Non-physical qualities for each form in the questionnaires are gathered and displayed in different charts. Each chart illustrates the minimum required standard in a red vertical line and the result for each aperture is represented with horizontal bars which indicate compliance with the standard. The following Figure 6 shows the results for the PILQ form for both windows and terraces.
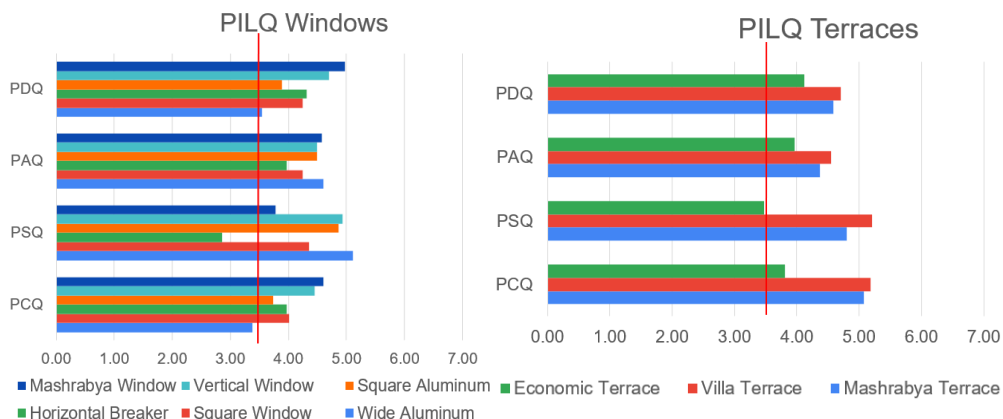
Figure 6/Figura 6. Charts Illustrating PILQ Results from Non-Physical Qualities.
Source: Researcher through MS EXCEL. (2024). / Fonte: Investigadora através MS EXCEL. (2024).

Results indicate that newer buildings did not meet standards regarding non-physical factors. When it comes to perception, achieving a suitable visual space for users does not rely on increasing the lighting intensity, and it is preferred to use a longitudinal ratio and incorporate arboreal elements to enhance perception. In terms of subjective experience, users generally prefer the model with a longitudinal windows ratio over those with a square ratio. Also, having a wide wall opening that leads to high daylight levels can harm psychological well-being.

In terms of dynamic daylight evaluations, the ambiance created by the interplay of light within the space as it passes through the wooden details is exceptionally comfortable. There is a correlation between the proximity of light intensity to the required physical levels and users perceiving it as dynamic. However, the daylight resulting from windows treated with conventional shutters creates a more enjoyable atmosphere within the space but is not perceived as dynamic.

3.3 Comparing physical and non-physical factors results

From the analyses, and after comparing both physical and non-physical factors, results can be drawn. Interestingly, the results yield contradictory findings: while newer buildings may achieve satisfactory physical daylight metrics, they may not meet user satisfaction evaluations regarding atmosphere. This suggests that certain parameters of aperture play a pivotal role in enabling daylight to create a pleasant indoor atmosphere, leading to more favorable user perception and overall satisfaction within residential spaces.

Generally, window models provided better daylight results compared to terrace models, which had lower lighting levels as shown in Figures 4 & 5. In light level factors, user evaluations were in line with the measured illuminance values, and it

was noted in the results indicated in previous figures that longitudinal windows created a perception of higher light levels than real measurements within the space. In glare, there were differences in the evaluation between physical and non-physical measurements, and it was observed that the presence of arboreal elements reduced users' perception of glare, even when glare levels were high within the space. Users indicated a preference for the Mashrabya model based on the alignment between the perception of glare and its actual presence.

In uniformity measurements, minor differences were observed between physical and non-physical factors, with terraces allowing for more uniform and evenly distributed light within the space. Additionally, low light levels made users feel that the lighting was more uniform. In color, higher light levels from openings resulted in clearer and more natural color perception.

The study also found in the overall atmosphere that the more details light passed through before entering the space (arboreal elements, wooden details), creating contrasts between light and shadow, the more users felt that the daylight was dynamic.

4. CONCLUSION

Through the comparison, many findings were revealed regarding the qualities of daylight provided by apertures in Ismailia City. A deeper understanding and comparison of aperture and their qualities in terms of daylight and the atmosphere they generate can help to enhance dynamic daylight, and thus internal atmosphere, a crucial architectural element in residential design. It was found that having multiple openings in a single space yielded better results in both physical and non-physical factors, especially when the openings are on two perpendicular walls rather than on the same or opposite walls. Additionally, Small openings and terraces negatively affect the penetration of daylight into the depths of large spaces.

High light levels inside the space cause visual discomfort, negatively impacting the user's subjective experience. Moreover, Windows with a vertical ratio, are among the best models for meeting standards but require adjustments for excessive glare in certain orientations. Conversely, the wide aluminum window model is the worst in all orientations, both in physical and non-physical factors.

In terms of user satisfaction, it was noted that variety in daylight is more important than intensity, as dynamic daylight positively affects users' perception.
The more external details the light passes through before entering the space, such as tree elements, visual barriers, wooden details, and semi-open louvers, creating contrasts between light and shadow, the more users feel the dynamism of daylight inside the space.

5. BIBLIOGRAPHY

AMORIM, C., GARCIA-HANSEN, V., GENTILE, N., OSTERHAUS, W., & PHAM, K. (2021). Task 61: Evaluating integrated lighting projects, A Procedure for Post-Occupancy Evaluation of Daylight and Electrical Lighting Integrated Projects. Europe: IEA SHC.

Carlucci, S., Causone , F., De Rosa , F., & Pagliano, L. (2015). A review of indices for assessing visual comfort with a view to their use in optimization processes to support building integrated design. Renewable and Sustainable Energy, 47, 1016-1033.

Gandy, M. (2017). Urban atmospheres. Cultural Geographics, 24(3), 353-374.

Gentile, N., Goven, T., Laike, T., & Sjoberg, K. (2018). A Field Study of Fluorescent and LED Classroom Lighting. Lighting Resources and Technology, 50, 631-651.

Laike T.(2020) Observer-Based Environmental Assessments (OBEAs). [Assessment Methods Course, B1.3]. NLITED Platform, 22 July

Piaton, C. (2009). Ismailia, Architectures xIXe-xxe siècles. Ismaila: École de Chaillot, Cité de l'architecture et du patrimoine.

Sawyer, A., & Chamilothori, K. (2019). Influence of Subjective Impressions of a Space on Brightness Satisfaction: an Experimental Study in Virtual Reality. USA: SimAUD.

Thuillier, L. (2021). Saint Gobain. Retrieved 2021, from *https://multicomfort.saint-gobain.co.uk/recommended-level-of-light-into-a-building/*

U.S. EPA Green Lights Program. (1995). LIGHTING FUNDAMENTALS. Retrieved 2021, from *http://www.boles.de/teaching/mm/pages/light-fundamentals.html#selc*

Vogles, I. (2008). Atmosphere Metrics: Development of a Tool to Quantify Experienced Atmosphere. In J. Westerink, M. Ouwerkerk, T. Overbeek, P. W., & B. de Ruyter (Eds.), Probing Experiences: From Assessment of User Emotions and Behavior to Development of products (pp. 25-41). Netherland: Springer.

Wang, H., Ronnier, M., Liu, P., Yang, Y., Zheng, Z., & Liu, X. (2014). A study of atmosphere perception of dynamic coloured light. The Society of Light and Lighting(46), 661-675.

L25

SENSORY IDENTITY OF MEDITERRANEAN CITIES: FOSTERING ARCHITECTURAL, URBAN, AND CULTURAL DIVERSITY. EXPERIENCES PEDAGOGICAL IN EGYPT AND LEBANON

IDENTIDADE SENSORIAL DAS CIDADES MEDITERRÂNEAS: PROMOVENDO DIVERSIDADE ARQUITETÔNICA, URBANA E CULTURAL. EXPERIÊNCIAS PEDAGÓGICAS NO EGITO E NO LÍBANO

Noha Gamal Said
Associated Professor
Ain Shams University- Department
of Urban Design and Planning
noha.gamalsaid@eng.asu.edu.eg

Nina Zeidan
Associated Professor
Lebanese University- FBAA-
Department of Landscape
Architecture and Environment
nhakim@ul.edu.lb

Marwa Khalifa
Professor
Ain Shams University- Department
of Urban Design and Planning
Marwa_khalifa@eng.asu.edu.eg

Samar Makki
Associated Professor
Lebanese University- FBAA-
Department of Landscape
Architecture and Environment
Samar.makki@ul.edu.lb

ABSTRACT

This article explores urban identity in Mediterranean cities facing rapid urbanization and transformation, which threaten their unique historical, cultural, and environmental characteristics. Focusing on Egypt and Lebanon, the study highlights the role of governmental and academic initiatives in preserving urban identity through a multidimensional approach that integrates participatory engagement, cross-cultural exchange, and sensory exploration. Workshops in Cairo and Saida emphasize tangible and intangible urban experiences, capturing elements like the sacred ambiances of Cairo's Pyramids Plateau and the sensory features of Saida's urban terraces. The study aims to deepen understanding of urban identity, foster culturally resonant urban development, and empower communities to actively participate in heritage preservation, ultimately creating inclusive and sustainable urban spaces in the Mediterranean region.

KEYWORDS: Ambiances. Sensory Identity. Urban Terraces. Saida. Pyramids Plateau. Mediterranean Cities. Cross-Cultural Pedagogical Exchange. Participatory Approach.

RESUMO

Este artigo explora a identidade urbana nas cidades mediterrâneas que enfrentam rápida urbanização e transformação, ameaçando suas características históricas, culturais e ambientais únicas. Focando no Egito e no Líbano, o estudo destaca o papel das iniciativas governamentais e acadêmicas na preservação da identidade urbana através de uma abordagem multidimensional que integra engajamento participativo, intercâmbio cultural e exploração sensorial. Workshops realizados no Cairo e em Saída enfatizam as experiências urbanas tangíveis e intangíveis, capturando elementos como as ambiências sagradas do Planalto das Pirâmides do Cairo e as características sensoriais dos terraços urbanos de Saída. O estudo visa aprofundar a compreensão da identidade urbana, promover um desenvolvimento urbano culturalmente ressonante e capacitar as comunidades a participarem ativamente da preservação do patrimônio, criando, em última instância, espaços urbanos inclusivos e sustentáveis na região mediterrânea.

PALAVRAS-CHAVE: Ambiências. Identidade Sensorial. Terraços Urbanos. Saída. Planalto das Pirâmides. Cidades Mediterrâneas. Intercâmbio Pedagógico Intercultural. Abordagem Participativa.

1. INTRODUCTION

The concept of landscape or urban identity encompasses "the set of qualities, beliefs, personality traits, appearance, and expressions that characterize a person or a group" (Citeau & Engelhardt-Bitrian, 2014). This identity, which begins in childhood and evolves throughout life, is shaped by social and cultural factors and manifests at various levels from neighborhoods to broader regions. A critical question arises: does local or territorial identity shape the landscape, and in turn, how does the landscape shape place?

Urban identity in Mediterranean cities, characterized by a blend of historical, cultural, social, and environmental factors, is under threat from rapid urbanization and significant transformation. These cities, rich in heritage and distinctive ambiances, face the risk of losing their unique visual and cultural identities. The sensory dimensions of urban environments—sounds, smells, and visual impressions—are critical in defining urban identity (Thibaud, 2001). Preserving these sensory landscapes requires innovative urban planning that prioritizes sensory experiences alongside functional and aesthetic considerations, employing methodologies like participatory engagement, cross-cultural exchange, and sensory exploration.

Urban ambiances, blending measurable physical concepts with significant subjectivity, necessitate a holistic understanding of social and landscape ambiances. Key considerations include light ambiance (light quality and distribution), thermal ambiance (temperature variations and microclimates), olfactory ambiance (odor management), tactile ambiance (textures and materials), and visual ambiance (relationship between visual perception and actual visibility). Acoustic ambiance highlights the shift from noise management to enhancing comfort and mastering the sonic environment. Urban ambiances also significantly impact mental health, influencing residents' psychological well-being. Urban design must address these aspects to foster environments conducive to mental health.

The study explores the intersection of space, time, and culture across cities on different continents, emphasizing commonalities in their landscapes and urban frameworks. It highlights the importance of multisensory perception in urban planning and how historical events shape a place's identity. A significant effort in preserving urban identity is the collaboration between academic institutions in Lebanon and Egypt, including Lebanese University's Faculty of Fine Arts and Architecture and Ain Shams University's Faculty of Engineering. This partnership aims to understand and preserve urban identity through workshops, interdisciplinary dialogues, and empirical investigations. By engaging residents, scholars, practitioners, and policymakers, these initiatives strive to develop culturally resonant urban development strategies.

2. METHODOLOGY

The study employs a comprehensive and multidimensional methodology designed to explore and preserve urban identity through participatory engagement, cross-cultural exchange, and sensory exploration. Our approach employs a participatory approach, engaging diverse stakeholders, including residents, scholars, practitioners, and policymakers. Intensive workshops conducted in Lebanon and Egypt facilitate interdisciplinary dialogue and sensory exploration, focusing on the sights, sounds, smells, and textures that define urban experiences. This methodology aims to unravel the tangible and intangible dimensions of urban identity, providing a deeper understanding of place.

Exploring and understanding cities has historically relied on mapping, textual descriptions, and theorizing (Mayer 2021, 23). We chose mapping as our primary tool to reveal lived space, which includes lived experiences, memories, dreams, and aspirations. Lefebvre observed that the way we physically experience space as we live in it is "strangely different" from how we conceive or perceive it. (1991, 40). Building on Lefebvre, Kinkaid (2020) argues that lived space is the ground of space, where differential embodiment can drive political change. Our methodology combined sensory mapping with a cross-cultural, multidisciplinary approach, including historical mapping, documentation, regulations, field trips, and focus group interviews. This approach aims to capture diverse perceptions of space, challenging dominant social orders and envisioning future cities through maps and 3D views.

The methodology comprises three interrelated components: participatory stakeholder engagement, cultural exchanges between experts, and sensory exploration. The participatory stakeholder engagement component involves actively involving various stakeholders to ensure their perspectives and insights are incorporated. The cultural exchanges between experts facilitate the sharing of knowledge and practices, enriching the overall understanding. Lastly, the sensory exploration focuses on the multisensory experience of the place, leading to the creation of sensory maps and targeted interventions. These components work synergistically to provide a comprehensive and nuanced approach to the study and enhancement of the place.
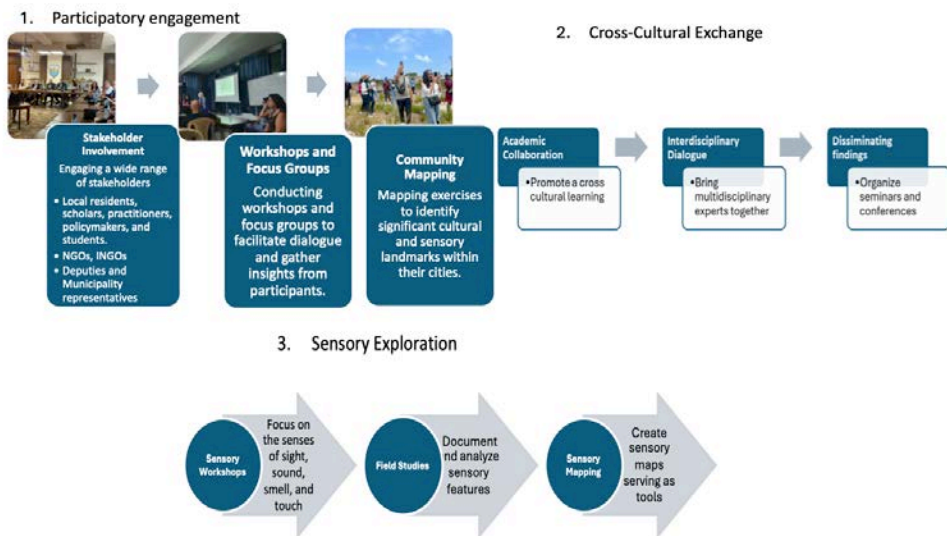
Figure 1: Methodology
Source: Authors (2024)

3. CASE STUDIES: SAIDA (LEBANON) AND PYRAMIDS PLATEAU (EGYPT):
3.1 Saida's Workshop

The approach to developing Saida's city brand utilized a multidisciplinary framework that highlighted its rich historical and cultural heritage. Known for its coastal charm and 6,000-year history, Saida (Sidon) is one of the oldest continuously inhabited cities. Its unique identity includes vibrant souks, green hills, the blue sea, and the scent of orange blossoms and fish. The city was chosen as a case study for its distinct identity amidst urban development and historical preservation challenges.

Under the project "Saida: Embracing Coastal Heritage Treasures and Enchanting Villages Landscapes," a comprehensive analysis examined both tangible and intangible aspects of Saida's landscape. This included its historical evolution, role during conflicts, and its function as a host for Palestinian refugees. The initiative aimed to enhance Saida's brand through sensory experiences, with workshops exploring the city's distinctive character. Participants engaged with the environment, experiencing sensory dimensions like the scent of lemon trees in old souks and the sounds of the Mediterranean Sea. Key strategies included stakeholder engagement, investments in cultural events, and architectural interventions that respected and enhanced Saida's heritage.

Collaboration with local authorities and community stakeholders, including Dr. Bizri and NGOs like the Zeidan Foundation, ensured diverse perspectives. The methodology proposed academic collaborations between Lebanon and Egypt, interdisciplinary dialogues, and national conferences. Sensory workshops and field studies documented sensory characteristics, creating maps to preserve cities' sensory identities. This systematic approach blended rigorous research, community engagement, strategic branding, and thoughtful design to elevate Saida's brand and enhance visitor experiences while preserving its unique identity and heritage.

Our methodology for developing Saida's city brand included several key steps. We began by conducting thorough research into the city's history, culture, demographics, strengths, and weaknesses. This foundational knowledge helped us define Saida's unique attributes, including key features, attractions, strengths, and values. We then developed a visual identity comprising a logo, color palette, and visual elements that represent Saida's brand, incorporating local landmarks. Additionally, we enhanced the visitor experience by investing in cultural events and public spaces, ensuring a rich and engaging environment for all visitors.
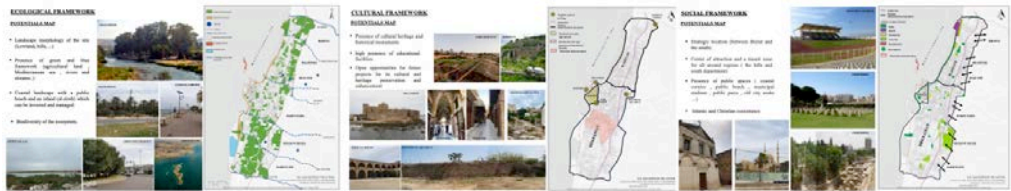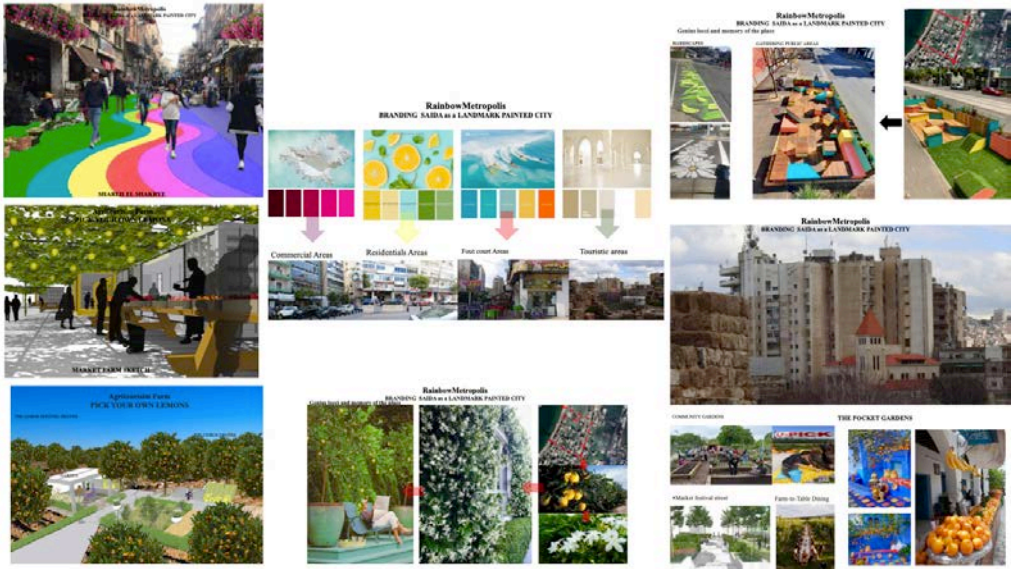
Figure 2: Branding Saida,
Source: Students' work (2023)

3.2 The Giza Pyramids Plateau in Egypt:

The Pyramids Plateau in Egypt, home to the iconic pyramids and the upcoming Grand Egyptian Museum (GEM), faces significant urban challenges, including environmental, social, and economic pressures from urban growth and infrastructure deterioration. Revitalizing this area is a top priority for the Egyptian government to enhance its visual identity and reinforce its status as a symbolic gateway for Egypt and Greater Cairo. This project involves participants analyzing the site's potential and surrounding context, integrating sustainability principles with design, and building codes. The collaborative effort between Ain Shams University and Lebanese University emphasizes a multidisciplinary approach, combining expertise from Agronomy, Urban Planning, and Architecture to formulate a visual identity and a metaphoric gateway for the region.

Under the project "The Pyramids Plateau: Creating a Visual Identity and a Metaphoric Gate of Cairo," a comprehensive analysis was conducted, focusing on blending history with modernity to craft a harmonious tapestry around the Pyramids. This initiative emphasized sensory experiences through workshops that explored the site's distinctive character, involving visual, soundscape, scent, and texture analysis. Key stakeholders, including the Ministry of Housing, Utilities and New Urban Communities (MHUNC), the General Organization for Urban Planning (GOPP), Mahmoud Yousry & Associates, and Orascom Pyramids Entertainment, played crucial roles in shaping the project. The analysis, based on GOPP documents and site visits, identified major interventions like enhancing connectivity between the Pyramids Plateau and the GEM, removing deteriorated areas for touristic services, and redeveloping façades

and visual axes. This approach aligns with UNESCO's strategic objectives, ensuring the site's preservation and creating a visual identity and symbolic gateway for Cairo. The site analysis of the Pyramids Plateau and its surrounding to explore the urban and visual characteristics of the site was based on the documents received from the GOPP, particularly the Redevelopment Plan of the Context surrounding the Pyramids Plateau and the Grand Egyptian Museum, in addition to the site visit by the Egyptian and Lebanese participants to explore the area. Figure 3 indicates the main interventions/decisions included in the Redevelopment Plan, such as emphasizing the connectivity between the Pyramids Platuea and the GEM; removal of some deteriorated areas (Nazlet Elseman, Sen Alaagouz, and El-Remaya Club) and reuse the land for providing touristic services; Identifying visual axis to attractive touristic destination and forbidding of any establishments that can obstruct the cone of vision; Façade redevelopment of the residential area of Hadaeq Elahram; and constructing the southern connection of the Ring Road. These interventions highly influenced the conducted site analysis and the concluded visual and urban characteristics of the study area.
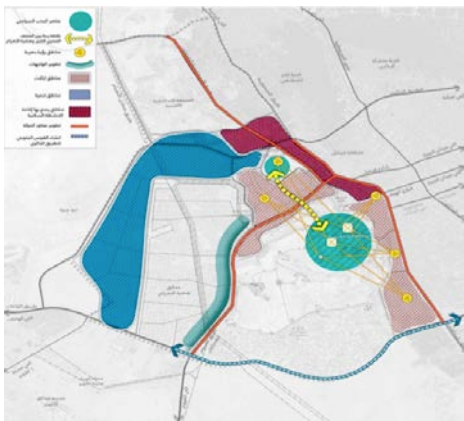
The main interventions included in the Redevelopment Plan of the Context surrounding the Pyramids Plateau and the GEM

Arial Photo of the Pyramids Plateau

Location, Accessibility, and Spatial Context
Macro Scale

The map highlights major routes providing macro-scale accessibility to the Pyramids Plateau, including connections from Sphinx and Cairo International Airports via Cairo-Alexandria Desert Road, Sahara El-Ahram Road, Ring Road, and El-Mansouria Road.

Micro Scale

The micro-scale map shows that the Pyramids Plateau is primarily accessible via bus stations, with main roads including Al Fayoum Desert Road, Al Mansoureya Road, Al Haram Street, El Malek Fouad, and Abo El Hool El Seyahy Road.

Location, Accessibility, and Spatial Context
Land Use

The land uses surrounding the Pyramids Plateau and the GEM are diverse, as shown in the following figure. The majority is dedicated to archaeological purposes, housing the renowned pyramids of Giza, the Sphinx, and other significant sites. It is a major tourist destination attracting millions annually. The surrounding villages, like Nazlet el Semman, primarily serve residential purposes.

Land uses surrounding the site
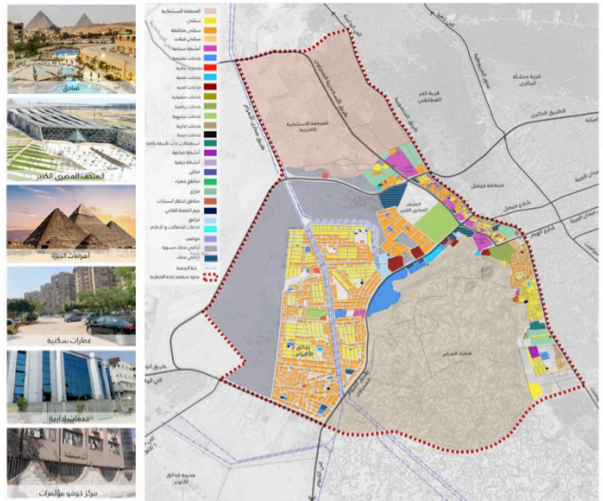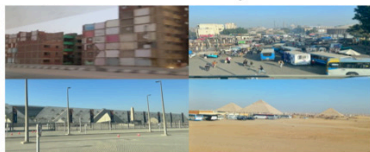
Visual Analysis

The Pyramids Plateau site features three distinct scenic layers: a clear blue sky, the iconic pyramids of Khufu, Khafre, and Menkaure, and the vast desert with golden sands and rippling dunes, enhancing the area's overall visual appeal.
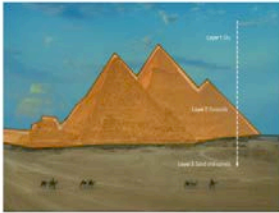
Sound Analysis

The Pyramids Plateau soundscape blends the lively chatter of visitors, diverse languages, and vendor calls with moments of tranquility, allowing appreciation of the site's historical grandeur.

Scent Analysis

The Pyramids Plateau has its own distinct scent that adds to its sensory allure. The animals' scents and wastes are very dominant.

Texture analysis

The Pyramids Plateau site offers diverse textures - shifting sands, smooth limestone, crafts - providing a rich tangible experience, deepening visitors' connection to its ancient appeal.
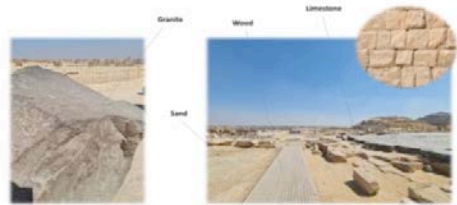
Figure 3: The Pyramid's plateau.
Source: Students' work (2023)

4. DISCUSSION

The visual identity of Saida and the Pyramids Plateau in Cairo is profoundly shaped by their historical depth and heritage, reflecting different cultural and environmental contexts. Saida, with its lush green landscapes, coastal ambiance, and rich historical layers, contrasts with the desert environment of the Pyramids Plateau, dominated by the monumental pyramids. In Saida, the temporal depth is evident in its vibrant souks, historic architecture, and the pervasive scent of lemon trees, symbolizing continuity, and resilience. Conversely, the Pyramids Plateau's identity is rooted in its ancient pyramids, which stand as timeless guardians of history, surrounded by an expansive desert landscape. These distinct landscapes and historical dimensions highlight the unique visual identities of both sites, shaped by their environmental and cultural legacies.

In Saida, the connection to nature and the sea plays a crucial role in shaping its sensory and visual identity. The coastal city is marked by the scent of lemon trees at its entrance, embedding a sense of place in the memory of its inhabitants and visitors. The city's geography, with its mountains and urban terraces, offers panoramic views that enhance the visual experience of Saida. These urban terraces, adorned with dominant trees and scents, along with the sound of crickets, create a multisensory environment that is central to the city's identity. The visual overexposure from these elevated points provides a unique perspective, reinforcing the connection between the body and the visual landscape. As Saida develops, these sensory elements— especially the scents and views—will continue to be integral to its urban identity, influencing future urban planning and preservation efforts.

In Cairo, the sacredness of the Pyramids Plateau is derived from the sheer power of the pyramids' existence, size, and placement. The extended vision offered by the desert environment creates a sacred ambiance that is unmatched. Unobstructed by any modern structures, it emphasizes the pyramids' dominance and the profound sense of place they evoke. The desert soundscape, with its silence and vastness, enhances the sacredness and historical weight of the area. To maintain this sacred ambiance, any new developments must be understated, blending with the desert landscape. Buildings should be constructed using materials that harmonize with the surroundings and remain unobtrusive. Services should be positioned along the periphery, respecting the visual axis of the pyramids. This approach ensures that the pyramids remain the focal point, preserving the sacred visual identity of the Pyramids Plateau.

5. CONCLUSION

The research highlights a distinction between objective and subjective ambiances in urban environments. Objective ambiances refer to the measurable physical aspects of an environment, such as light, temperature, sound levels, and material textures. These factors can be quantitatively assessed and standardized across different locations. In contrast, subjective ambiances arise from individual and collective experiences and perceptions, which are influenced by personal feelings, cultural backgrounds, and social interactions. Despite their inherent variability, analyzing subjective ambiances can reveal underlying objective characteristics of a region. For instance, consistent patterns in residents' and visitors' perceptions of comfort, safety, and aesthetic appeal can point to specific environmental features that contribute to these feelings, such as effective lighting, optimal temperature regulation, and pleasant soundscapes. By systematically studying subjective responses, urban planners can identify and enhance the objective qualities that define and enrich the unique identity of a place.

REFERENCES:

Ateliers de l'Atlas. (2014). Identity and the landscape: Local and territorial perspectives. In Proceedings of the International Conference on Urban Planning and Landscape.

Citeau, J., & Engelhardt-Bitrian, T. (2014). Urban identity and landscape: A sociological perspective. Sociological Studies Journal, 32(2), 113-129.

Kinkaid, E. (2020). Re-encountering Lefebvre: Toward a critical phenomenology of social space. Environment and Planning D: Society and Space, 38(1). *https://doi. org/10.1177/0263775819854765*

Kunnen, E. S., & Bosma, H. A. (2006). Identity and place: The role of historical events. Journal of Environmental Psychology, 26(2), 153-162.

Lefebvre, H. (1991). The production of space. Oxford: Blackwell.

Lefebvre, H. (2009). State, space, world. London: University of Minnesota Press.

Lefebvre, H. (2014). Toward an architecture of enjoyment (Ł. Stanek, Ed.). Minneapolis: University of Minnesota Press.

Mayer, F. (2021). Landmarks in a history of spatial mapping. In Mapping urban spaces: Designing the European city (pp. 15–25). New York: Routledge.

Thibaud, J.-P. (2001). The sensory dimensions of urban space. Architectural and Environmental Psychology Review, 18 (4), 45-59.

ENHANCING URBAN GREEN AMBIANCES: AN EXAMINATION OF PUBLIC GREEN AREAS IN ISMAILIA CITY

MELHORANDO AMBIENTES VERDES URBANOS: UM EXAME DE ÁREAS VERDES PÚBLICAS NA CIDADE DE ISMAILIA

Sara Samy
Master Student
Architecture and Urban Planning Department,
Faculty of Engineering, Suez Canal University
sara.samy17771@gmail.com

Usama A. Nassar
Professor of Architecture and Urban Design
& Vice Dean of Graduate Studies and Research
Architecture and Urban Planning Department,
Faculty of Engineering, Suez Canal University
Usama.nassar@eng.suez.edu.eg

Mahmoud M. Elghawaby
Assistant Professor of Architecture and Urban Planning
Architecture and Urban Planning Department,
Faculty of Engineering, Suez Canal University
mahmoud_elghawaby@eng.suez.edu.eg

Sara M. Atwa
Assistant Professor of Architecture and Urban Planning
Architecture and Urban Planning Department,
Faculty of Engineering, Suez Canal University
SaraAtwa@eng.suez.edu.eg

ABSTRACT

Public green areas are vital for vibrant cities, influencing urban character and inhabitants' well-being. Ismailia, an Egyptian city, was designed as a garden city, incorporating greenery as a defining feature. However, these green areas have been neglected, leading to underutilization despite landscaping elements like greenery and benches. This study examines Ismailia's public green areas to understand the cause of their underperformance. The analysis examines not just the landscape elements but also the ambiance they create and their role in enhancing green spaces. For example, densely tall trees may offer shade in hot climates like Egypt but also dim ambiance by reducing light and scattering artificial lighting, creating a fearsome atmosphere that discourages use. Additionally, a comprehensive analysis of sensory elements and social activities in these areas was undertaken to understand the physical framework that shapes their sensory experience and provide landscape design recommendations to enhance their overall ambiance.

KEYWORDS: Green areas, Ambiance, Landscape, Ismailia City, Sensory Experience.

RESUMO

Este estudo analisa as zonas verdes públicas na cidade egípcia de Ismailia e a razão pela qual elas estão subutilizadas. Embora Ismailia tenha sido concebida como uma cidade-jardim, as áreas verdes têm sido negligenciadas, apesar de conter elementos paisagísticos como vegetação e bancos. A análise examina não apenas os elementos físicos das zonas verdes, mas também o ambiente que criam e como isso influencia sua utilização. Por exemplo, árvores altas proporcionam sombra em climas quentes, mas elas também podem diminuir a iluminação e criar uma atmosfera assustadora, desencorajando as pessoas a usarem esses espaços. Além disso, o estudo analisa os elementos sensoriais e as atividades sociais nessas áreas, a fim de compreender sua experiência sensorial global e fornecer recomendações para melhorar o design paisagístico. Em suma, o estudo busca entender os problemas das zonas verdes em Ismailia e propor soluções para melhorar sua utilização e ambiente.

PALAVRAS-CHAVE: Espaços verdes, Ambiente, Paisagem, Cidade de Ismaília, Experiência Sensorial.

1. INTRODUCTION

As Ismailia city is full of green areas and parks it has a special sensory experience related to green areas. Green areas are places that can stimulate and enhance the sensory experience and memory of people. The green areas offer a rich and diverse array of sights, sounds, smells, tastes, and textures that can evoke different emotions and memories in people (Roehr, 2022). For example, a sense of freshness and vitality in the color of trees and flowers, a sense of relaxation and harmony from the sound of birds and water, a sense of naturalness and authenticity from smelling the fragrances

of herbs, a sense of sweetness and nourishment in the flavors of different food, a sense of softness and comfort in the textures of leaves, grass. These sensory experiences can influence the perception and appreciation of green areas in the present and future (Journal et al., 2020).

2. AMBIANCE IN GREEN AREAS

To begin with, the notion of ambiance postulates the unity of the senses. Hence, any ambiance involves all the senses at once (hearing, seeing, smelling, touching, tasting, moving...) and relies on a multisensorial experience. Ambiance implements the transaction between the properties of the built environment and the lived experience of users. The notion of ambiance relies on a transversal approach at the crossroads of the sensitive, the social, the built, and the physical (Jean-Paul Thibaud,2020). As Böhme writes, "By feeling our own presence we feel the space in which we are present" It is the mood that allows us to sense where we are and to sense architecture, to fully experience architecture (Louis Chiodo Architects, 2020). Also, Peter Zumthor describes the architectural atmosphere as an intensity of feeling or mood invoked by the physical characteristics of space (Botsford, 2020), And green areas create a soothing ambiance that connects people with nature (Bahriny & Bell, 2020), they can also be beneficial as open social centers that strengthen people's integrity and sense of belonging as they define the shape and ambiance of the city and its neighborhood (Ismail et al., 2018).

3. ISMAILIA CITY

Ismailia is a city in Egypt that lies on the west bank of the Suez Canal as shown in (Figure 1). It is the capital of the Ismailia Governorate. It is known for its historical and cultural attractions, such as the Ismailia Museum, the De Lesseps House, and the International Film Festival for Documentaries and Shorts. However, Ismailia is also well known for its natural and recreational attractions: the green areas and parks in Ismailia provide a variety of benefits and opportunities for the city and its residents (Abbas et al., 2009).

Figure 1. Location of Ismaïlia City to Egypt.
Source : by Ingo Menhard (Dreamstime.com)

3.1 Historical Background of Ismaïlia City

Ismailia City was built on the idea of having gardens and green areas in a noticeable way with the concept of the garden city, it was designed so that all the houses meet in the form of squares with a garden in the middle as shown in (Figure 2). The gardens were planned to be an outlet for the city and its people, which became a piece of Paris and was called Little Paris. When designing the villas in Ismailia, the French engineers stipulated that the percentage of buildings did not exceed 25% of the land surface and the garden extends three times the area of the villa but as time passed this concept faded significantly until there were areas built without any green areas among it, green areas are getting smaller and not taking care of what remains and also not taking into account the construction of new spaces in parallel with increasing the density of buildings, and this negatively affects the natural environment and the human and his psychological, social, health and physical needs, there have been feelings of dissatisfaction and belonging, and loss of identity among the residents of this region (Abbas et al., 2009).
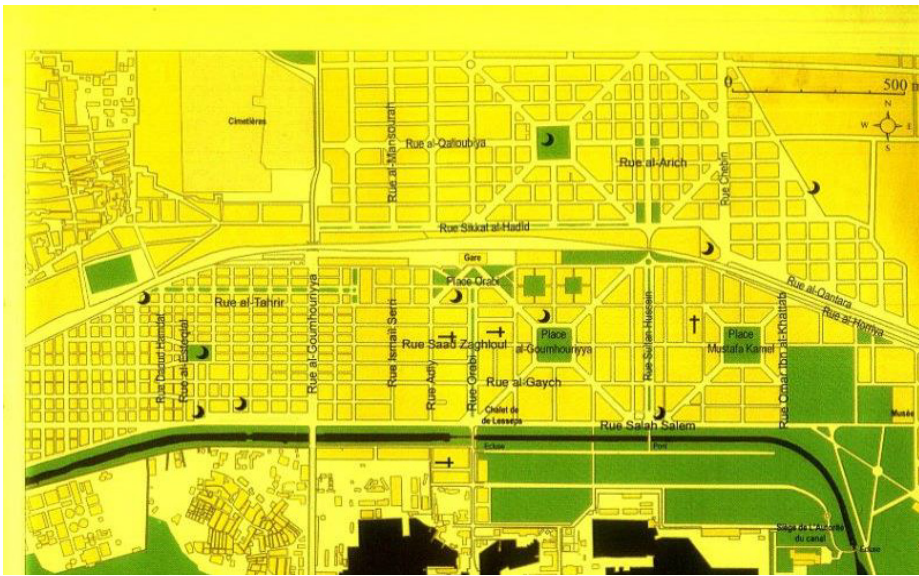
Figure 2. Map of Ismailia City in the past decades
Source: Ismailia architectures XIX-XX siecles

3.2 Sensory experience in Ismaïlia City

Living in a city like Ismailia can be a stimulating and enriching experience for the senses. The city offers a variety of sights, sounds, smells, tastes, and textures that can evoke different emotions and memories. For example, one might see the colorful plants and flowers in green areas, creating a sense of excitement and wonder. One might hear birds singing, children playing, and people, creating a sense of movement and diversity. One might smell the aromas of different flowers and nature, creating a sense of curiosity and contrast. One might taste the flavors of street food, coffee

shops, and ethnic restaurants, creating a sense of satisfaction and exploration. One might feel the textures of grass, concrete, metal, glass, and fabric, creating a sense of solidity and variety. These sensory experiences can shape one's perception and appreciation of the city as a dynamic and vibrant place to live (Samy, 2024) as shown in (Figure 3).

Figure 3. Sensory experience in Ismaïlia City-Mohamed Ali St.
Source: by Emad Raúf from (www.flickr.com)

4. ANALYZING CASE STUDIES IN ISMAILIA CITY

Analyzing sensory elements in green areas involves a multi-layered approach. First, a site walk was done, taking notes of the visual aspects (textures, colors, shapes), while listening to the soundscape (water, leaves, and voices), catching the smells of flowers, grass, and soil, and feeling the touch of grass, bark, and paths). Finally, documenting these observations was done and how they interact together, also a picture of the sensory experience in a green area was built.

The research aims to draw a picture of the green areas in Ismailia city, after conducting comprehensive site visits to 21 public green areas in Ismailia city. A variety of factors were considered during the visits, like the green area type, sensory landscape elements, and social activities in the area and its background, and as a result, it was decided to take two case studies with different shapes and contexts to enrich the research.

The following case studies represented in (Figure 4) were selected in Ismailia City and will be analyzed according to the methodology discussed before.

The two case studies are:
1. The Golf Park.
2. The Forest Park.
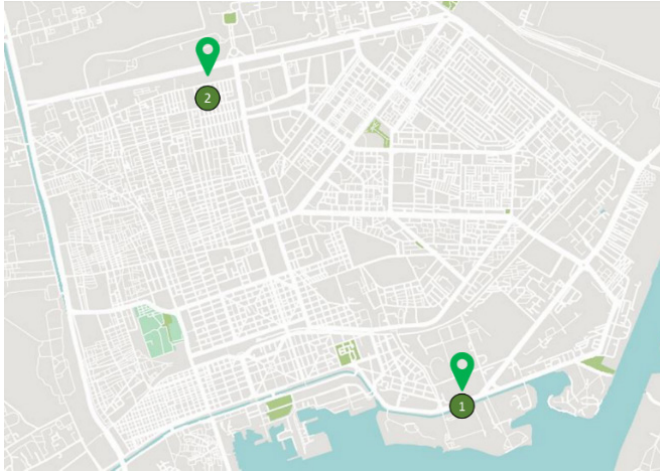
Figure 4. Case studies in Ismaïlia City
Source: The Researcher (Google maps)

4.1 The Golf Park

The Golf Park is one of the most famous parks in Ismailia. It covers an area of 23.480m^2 and is in front of the Ismailia water canal. The Golf Park is a popular destination for all locals and tourists alike, as it offers an open area for all activities, such as family picnics, and friends gathering, playing area, horse riding, and barbeque parties. The Golf Park is a place for such a great variety of activities (Samy, 2024), see Scene 1 in (Figure 5).

Figure 5. Scene 1- The Golf Park in Ismaïlia City
Source: The Researcher

Visual: The Golf Park as shown in (Figure 6) excels with its wide view and large area of green landscape, in spring the red color of trees is dominant. The park shows a lack of furniture elements as no sitting elements exist, only lighting units and rubbish bins.

Figure 6. The Golf park in spring and the dominant color is red flowers in the trees
Source: The Researcher

Tactile: The Golf Park stands for its natural landscape touch more than hardscape touch as there is only a pavement around the park and the park itself is a wide area of natural green grass with different textures illustrated in dead leaves, mud, and sand in some areas, as shown in (Figure 7).

Figure 7. Different textures in the park between the touch of grass, dead leaves, mud, and soil
Source: The Researcher

Olfactory: The Golf Park shows a great example for the olfactory senses as it has a strong natural odor from the grass and plants especially when becomes wet and humid, as well as the smell of barbeque parties that take place a lot in this park, especially at weekends, the park is always clean and well taken care of, also the wide area of the softscape make the emissions from cars despairs before reaching the users, as shown in (Figure 8).

Figure 8. olfactory sensation in the Golf park vary between natural odor and smell of barbeque parties
Source: The Researcher

Auditory: The Golf Park stands out as a very livable park full of activities and the voices of humans talking and laughing are mostly dominant in the park, it's quite relaxing during the day but at night especially at weekends most weeding sermonizes pass by the place making a loud noise of traffic, as shown in (Figure 9).

Figure 9. mostly the voices of humans activities and at busy nights the sound of traffic is dominant
Source: The Researcher

Taste: The park didn't simulate the sense of taste.

The analysis of the park's landscape elements employs a multi-sensory approach, the park's impact on multiple senses: sight, sound, smell, touch, and also activities. This comprehensive assessment delves into the visual appeal of the park, including a lack in a variety of plant life, water features, and landscape furniture elements. The soundscape analysis explores the presence of natural sounds (birdsong, rustling leaves) and man-made sounds (traffic noise, gathering families and children playing) and their impact on the overall ambiance. The olfactory experience identified the dominant scents, such as wet grass and soil, and barbeque parties in the park. The analysis also considers the tactile qualities of the park's surfaces, from the softness of grass underfoot to the roughness of tree bark. The park's overall landscape quality is well taken care of but in need of more sensory landscape elements as it's poor with it.

4.2 The Forest Park

The forest park was established in the 1980s on the ring road in front of the headquarters of the new Suez Canal University. The aim was to create windbreaks to protect the city from dust. It was planted along with a group of wooden trees and it covered an area of about 20 acres but by time it turned into a public park for different users but still not widely used (Samy, 2024), as shown in Scene 2 in (Figure 10).
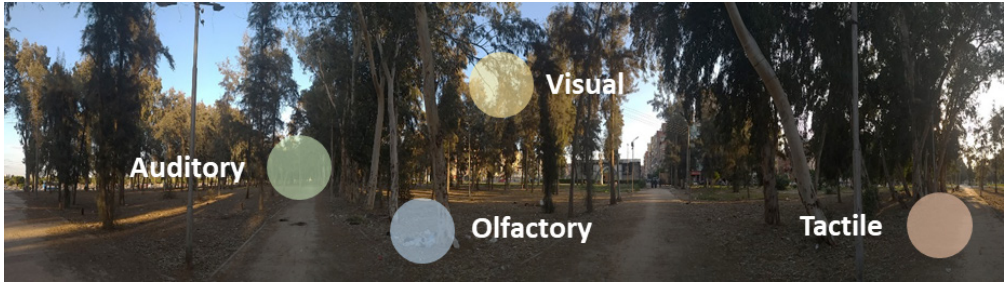
Figure 10. Scene 2- The Forest Park in Ismaïlia City
Source: The Researcher

Visual: The Forest park is characterized by its dense heavy trees that block the view, the tree spacing makes the light filtered as pathing by tree branches, and the landscape furniture elements in the park almost don't exist as the lighting units are mostly broken and no sitting benches inside the park only at the edge of the park and rubbish bins are found, as shown in (Figure 11).

Figure 11. Dense trees with light filtering through them as Sun sets
Source: The Researcher

Tactile: A small range of natural landscape touch is represented in the grass at the edge of the forest and soil, stones, and dead leaves inside the forest, and hardscape touch is represented in paved paths and tiles mostly exist at the pathways of the park, as shown in (Figure 12).

Figure 12. natural touch represented in soil, dead leaves, stones, and grass.
Artificial touch is represented in different textures of paved pathways
Source: The Researcher

Olfactory: The dominant smell in the forest is the smell of waste and the bad smell due to the lack of cleaning, some areas are full of rubbish and waste, but in spring and cold days, the natural smell of plants appears and makes an experience of walking in the woods last in the memory with a timeless fragrant of nature, as shown in (Figure 13).

Figure 13. different smells in different seasons, in spring the smell of natural plants is dominant,
and on hot days the smell of waste is dominant
Source: The Researcher

Auditory: The forest has very special ambient sounds as it has a wide number of birds in its trees and the natural sound of the wind flowing between tree branches makes what I call echoes of nature, it's a quiet place so the sounds are very clear, also the dense trees blocked the traffic noise coming from the street and keep the park very quiet, but all of this makes a scary feeling to users when they are alone in the forest especially at night when no voices of humans exist and almost no lighting, as shown in (Figure 14).

Figure 14. wide dense trees that contain many birds and block the noise from the street
Source: The Researcher

Taste: The park didn't simulate the sense of taste.

The analysis of the park's landscape elements employs a multi-sensory approach, the park's mostly impact on senses like sight and sound more than smell, touch, and activities. This represents into the visual appeal of the park, including mostly tall thick trees and paths between it and a play with light and shadow as sunlight filters through the trees creating a unique ambiance. The soundscape analysis explores the presence of natural sounds (birdsong, rustling leaves) and man-made sounds rarely exist and their impact on the overall ambiance of the park in a feeling of Mistry. The olfactory experience identified the dominant scents, such as the natural smell from trees especially in spring, and the smell of waste especially at hot days. The analysis also considers the tactile qualities of the park's surfaces, from the dead grass underfoot and damaged pavement in the paths to the roughness of tree bark. The park's overall landscape quality is not taken care of and needs more attention as it offers a unique ambiance different from any other green areas in Ismailia city.

5. RESULTS AND RECOMMENDATIONS
5.1 Tree spacing:

The following (Figure 15) shows the difference between the Golf Park and the Forest Park at three different times (Day-Sunset-Night), it illustrates the main difference in tree spacing which affects the intensity of sunlight coming into the park.
The Golf Park shows an open area that is very exposed to sunlight and in weather like Ismailia in Egypt it is hot during the day, especially at day time, and as a result, it has low intensity of users during the day.

The Forest Park shows a dense area of wide thick trees that block most of the daylight and affect the intensity of artificial light during the night, creating a fearsome ambiance deterring people from using the space.

(a)   (b)

Figure 15. (a) Three panoramas show the difference in the Golf park between day, sunset, and night (b) Three panoramas show the difference in the Forest park between day, sunset, and night
Source: The Researcher

It is better in weather like Ismailia the tree spacing is not too wide which leads to exposure to sunlight most of the day and leads to disused especially on hot days, and also not arranged too close which can negatively affect the overall ambiance by reducing light intensity coming into the park and scattering artificial light at night and leads to evoking fear and unease, as (figure 15). The spacing ratio of 1 to 3 between trees best suits the weather in Ismailia city, as shown in (Figure 16).
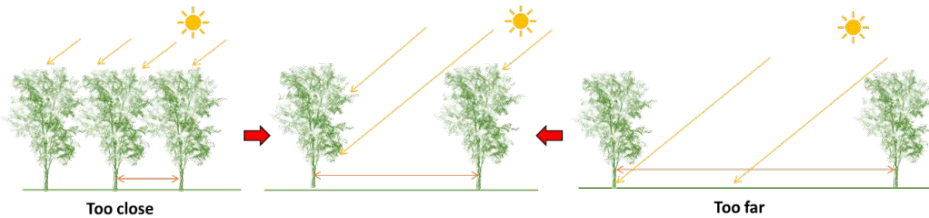
Figure 16. Tree spacing strategy
Source: The Researcher

5.2 Taste blending:

Ismailia, as a garden city, is widely known for its mangos and strawberries. However, the green areas lack a connection to this aspect. There is not a single garden that has been analyzed has a noticeable connection to the taste sensation. So, when designing green areas in Ismailia City, it is supposed to have (mangos, strawberries, or even guava), as shown in (Figure 17), the famous fruits in Ismailia are part of its ambiance, to make a connection between the green areas and Ismailia City.

(a)   (b)
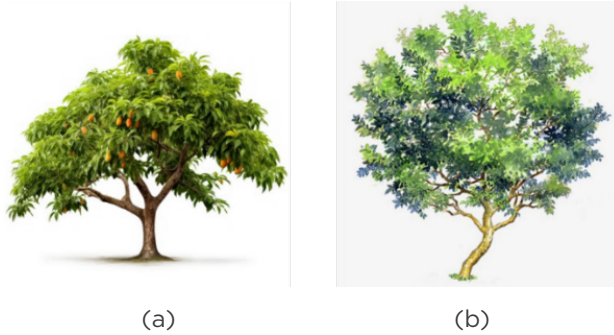
Figure 17. (a) Mango tree (b) Guava tree
Source: First Satida, rawpixel.com; pngtree

The taste zone can be placed in the further end of the green area away from the road and pollution. The tree's height should be suitable for different users to easily pick fruits from it, see (Figure 18).
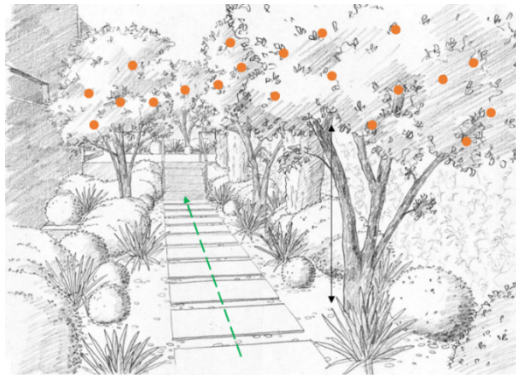
Figure 18. Taste blending in green areas
Source: The Researcher

6. BIBLIOGRAPHY

Abbas, R., Frémaux, C., Boistesselin, D. A., & Piaton, C. (2009). Ismaïlia: Architectures xixe-XXE siècles. Institut français d'archéologie orientale.

Architects, L. C. (2020, July 7). Architectural atmospheres: How spaces make us feel. Retrieved March 20, 2024, from *https://www.louischiodo.com.au/journalpost/atmospheres*

Bahriny, F., & Bell, S. (2020). Patterns of urban park use and their relationship to factors of quality: A case study of tehran, Iran. Sustainability (Switzerland), 12(4). *https://doi.org/10.3390/su12041560*

Botsford, S. (2020). Peter Zumthor: A Study of Atmosphere in Architecture.

Ismail, A. S., Haja, H., Mohidin, B., Syafiq, M., & Sani, M. (2018). The Effectiveness Of Public Park Management And Design For Sustainable Livelihood In Malaysian Context.

Journal, S., Ragab, F., Sarhan, A. E., & Farghaly, Y. (2020a). Towards Evaluative Framework of Multi-Sensory Landscape Elements. SJFA-Scientific Journal of the Faculty of Fine Arts Alexandria University, 8(2), 40–52.

Roehr, D. (2022). Multisensory Landscape Design. In Multisensory Landscape Design. Routledge. *https://doi.org/10.4324/9780429504389*

Samy,S. (2024). Towards Landscape Design Guidelines to Enhance Ambiance in Public Green Areas (Case Study of Ismailia City) (Master thesis). Suez Canal University, Egypt.

Thibaud,J.P. Ambiance. Environmental psychology: 100 key concepts , 2022. (hal-03500397)

CULTURE REDEFINED: PHANTOM LIMBS OF ALEXANDRIA.

Mohamed Selim
mohamed.selim@uniroma1.it
Universit`a degli Studi di Roma "La Sapienza"
= Sapienza University [Rome] – Italy

ABSTRACT

Located along the northwestern shore of the Delta in Egypt, serving as evidence to the rich tapestry of human civilization lies the city of Alexandria, Egypt. Aging back millennia, integrating together the legacies of ancient Egypt, Macedonia and Roman conquests, Islamic caliphates, Ottoman empire and the modern Arab influence. This research focuses on a journey to redefine spatial perception within the context of Alexandria's cultural heritage, recognizing the relation between tangible architectural forms and intangible narratives that form the city's identity. At the heart of this attempt lies a profound appreciation for the complex layers of Alexandria's history. Each architectural element stands as a testament to the city's illustrious past. However, Alexandria's cultural heritage extends beyond physical and built objects, encompassing intangible elements such as language, traditions, religions and beliefs and collective memories. Inspired from Aldo Rossi's vision on urban memory concept, this research seeks to clear out the importance of architectural artifacts as cache of collective identity and a trial to understand whether the concept of multiculturism has impacted the city's identity in a positive or negative manner. By conducting cultural and historical surveys, tangible and intangible heritage artifacts classifying and documenting them in a trial to provide a comprehensive understanding of Alexandria's cultural landscape. These surveys will serve as a vital foundation for the virtual representation of Alexandria's heritage for the sake of commemorating the city's legacy.

Al Manshiya square is a compelling case study that illuminates the consequences of neglecting cultural preservation within Alexandria's urban fabric. A once vibrant heritage site, buried in the echoes of the past centuries, now stands neglected and forgotten. This transformation underlines the urgent need for new means of conservation efforts that safeguard Alexandria's cultural heritage for future generations. Utilising the exclusive technologies we own these days; this research harnesses the capabilities of virtual and augmented realties along with the AI tools to create immersive experiences that invite users to engage with Alexandria's heritage in new and meaningful ways. Creating an interactive simulation through virtual representation of the built heritage and integrating the sensory experience of the intangible heritage, visitors can explore the city's iconic landmarks and scrabble around its rich history, bridging the gap between past and present. Reinforcing the community engagement and raise awareness through the lens of the technological innovations in digital preservation, each phase contributes to a comprehensive strategy for safeguarding Alexandria's cultural legacy. In conclusion, this research underscores the enduring importance of Alexandria's cultural heritage as a source of inspiration, and connection. By reimagining spatial perception and embracing new technologies. Ensuring that Alexandria's story continues to inspire generations to come.

KEYWORDS: human, perception, culture, heritage, image, Alexandria, digital cultural heritage.

THRESHOLDS, POROSITY, INFORMALITY: THE IMPACT OF COVID-19 ON FOODSCAPES AND CITY HOSPITALITY

LIMIARES, POROSIDADE, INFORMALIDADE: O IMPACTO DA COVID-19 NAS PAISAGENS ALIMENTARES E NA HOSPITALIDADE DAS CIDADES

Emmanuelle Cheyns
Researcher
CIRAD, UMR MoISA, Univ Montpellier, CIHEAM-IAMM, INRAE,
Institut Agro, IRD, Montpellier, France
emmanuelle.cheyns@cirad.fr

Tarik Harroud
Professor
Institut National d'Aménagement et d'Urbanisme (INAU),
Rabat, Maroc
harroud.t@gmail.com

Noha Gamal Said
Associate Professor, Department of Urban Design and urban Planning,
Ain Shams University, Cairo, Egypt
Researcher, Univ. Grenoble Alpes, CNRS, ENSAG, AAU-CRESSON
n.gamalsaid@gmail.com

ABSTRACT

Flux and movements are notions that describe the contemporary urban life underscoring the important dimension of mobility. During the Covid-19 pandemic, the lockdown of cities has created an unprecedented urban atmosphere. It disrupted the normal rhythms of city creating a break, decelerated rhythms and offered new sensory experiences within the city. The health crisis led to a reorganization of cities, with various adjustments affecting city hospitality. Some changes aimed to create a more welcoming environment while others caused a decrease in social interactions and increased voids and interstices within the urban landscape. This paper focuses on the qualities of the urban environment in three Mediterranean cities that made it possible to (re)inhabit the city. Porosity of thresholds, informality, appropriation of public spaces and some other specific qualities of the urban environments typical in the Mediterranean architecture played a role in reassuring residents and encouraging breaks and public interactions.

KEYWORDS: Ambiances. Porosity. Thresholds. Foodscape. Adaptability. Informal uses. Covid-19. Sensory Experience.

RESUMO

Fluxo e movimento são noções que descrevem a vida urbana contemporânea sublinhando a importante dimensão da mobilidade. Durante a pandemia de Covid-19, o confinamento das cidades criou uma atmosfera urbana sem precedentes. Perturbou os ritmos normais da cidade criando uma pausa, desacelerou os ritmos e ofereceu novas experiências sensoriais dentro da cidade. A crise sanitária levou a uma reorganização das cidades, com vários ajustes que afetaram a hospitalidade urbana. Algumas mudanças visaram criar um ambiente mais acolhedor, enquanto outras provocaram uma diminuição nas interações sociais e aumentaram os vazios e interstícios na paisagem urbana. Este artigo centra-se nas qualidades do ambiente urbano de três cidades mediterrânicas que permitiram (re)habitar a cidade. A porosidade dos limiares, a informalidade, a apropriação dos espaços públicos e algumas outras qualidades específicas dos ambientes urbanos típicos da arquitetura mediterrânica desempenharam um papel importante na tranquilização dos residentes e no incentivo às pausas e às interações públicas.

PALAVRAS CHAVE: Ambientes. Porosidade. Limiares. Adaptabilidade. Usos informais. COVID-19. Experiência sensorial.

1. INTRODUCTION. THE SENSORY TRANSFORMATION OF PUBLIC SPACES

The Covid-19 health crisis and successive lockdowns constituted an unprecedented situation. They have resulted in a "great slowdown" of the urban economy and an alteration of urban environments. Cities were reshaped by numerous micro-modifications, some intended to guide and reorder the bodies, with the effect of fading a city's hospitality. Others aimed to create a more welcoming and friendly atmosphere.

The lockdown has created an unprecedented urban ambiance. Lockdowns disrupted the usual rhythms of city, decelerating them and offering new sensory experiences within the city. In these typically bustling environments, residents experienced a decrease in spatial and sound "saturation", as well as "vacancies" (Antonioli et al., 2020): voids, gaps, breaks and silences. These offered a new kind of experience within the city, a quieter and more contemplative space.

Sanitary barriers have also disrupted our familiar attachments to the city and the way we inhabit it (Breviglieri, 1999, 2006). Dwelling involves engaging our bodies in a familiar space, which provides stability and a sense of security (Breviglieri, 1999). How have these changes in urban environments and atmospheres influenced the ways we dwell in and experience public spaces? What qualities of the urban Mediterranean city environments allowed residents to (re)inhabit the city? What elements fostered a sense of recovered hospitality (Stavo-Debauge, 2018), welcoming the one who comes with its vulnerabilities, towards more resilient and inclusive urban forms?

These questions were the heart of a two-years research project (2021-2023) investigating how three Mediterranean cities – Montpellier, Cairo, and Rabat – adapted their foodscapes and public spaces during the crisis (UrbaSens Project[1]).

2. METHODOLOGY

For the fieldwork, we have chosen to conduct it in two types of urban spaces: five boulevards in Cairo, and five squares in Montpellier, with Rabat featuring a mix of both. Data collection relied on photographic and sound recordings of these urban environments, alongside interactions with residents (in Cairo and Rabat) and "commented-walks" in Montpellier (Thibaud 2001). This aimed to understand the pre- and post-crisis transformations in these spaces, with a particular focus on "forms, formers, and formalities" (Chelkoff, 2001).

In Cairo[2], we have selected five boulevards in five neighborhoods which represent a diversity of spaces and architecture (Haussmannian, socialist period, colonial

---

1 The project "Approaches SENSibles and Effects of the COVID-19 Health Crisis on Mobility and Ambiances in Urban Food Landscapes" was funded by the MSH-SUD and included researchers and students in a transdisciplinary perspective (See more details: *https://www.mshsud.org/projets/urbasens/*).

2 In Cairo, the study was carried out as part of an urban sociology course with master's students from the Urban Design Course, Architectural Engineering Program, at Ain Shams University, directed by Noha Gamal Said.

period, etc.). A spatial and architectural study of the ambient situations of these boulevards was carried out. In terms of temporality, the situations were observed and photographed repeatedly over periods of 10 minutes, and during 3 key moments: the usual situation, during Ramadan, and during Covid-19 health restrictions.

In Montpellier, the survey took place between February and July 2021. This period covers in particular the third lockdown in France, then, from 19th May 2021, a post-lockdown period with an end of restrictions. We made sound recordings of the ambiances and photographed the uses in public spaces in five squares. The recordings were spread over a period of 5 hours repeatedly, at two key moments: during and after the third lockdown.

We also carried out "commented walks" (Thibaud, 2001) with residents within the "1 km radius" near their homes, a major measure of the strict first lockdown. During the walk, residents revisit their routes during the first lockdown, and clarify their perceptions of the ambiance in the space they pass through. The stories are recorded and the walks are photographed; they feature the inhabitant, the use of the place and their interactions with urban materiality during the lockdown.

We paid attention, during this period of lockdown, to the uses of urban space by the inhabitants, their interactions, body postures, mobilities, etc., but also to the urban forms which shape the atmosphere and to the formers of the atmosphere (light, sound spaces, tactile and visual materials) (Chelkoff, 2001).

3. FINDINGS
3.1 Lockdown and public space
The research findings revealed a multi-layered impact of the pandemic on public spaces. Lockdowns led to a decline in the city's hospitality and a reorganization of movement patterns. The vibrant intermingling of bodies, the sounds of bustling squares, and the sensory experience of markets all gave way to a sanitized atmosphere. Frequent cleaning procedures, imposed walking directions, spaced-out stalls, and protective barriers separating vendors and customers became the norm. The so-called "barrier" measures thus had repercussions on all formats of hospitality, transforming the usual atmospheres of the city, which ceased to be "familiar" (Stavo-Debauge et al., 2022). This shift was particularly evident in emblematic spaces known for their multi-sensory experiences, such as charity tables in Cairo during Ramadan, which traditionally offered close physical proximity and shared meals. These tables were replaced by take-away options distributed along major roads, fundamentally altering the social and sensory experience. Also, open-air food markets in Montpellier underwent similar transformations. Stalls were relocated and reconfigured to maintain physical distance, sacrificing the labyrinthine layouts and sensorial contact with food.

Figure 1 is evocative of the atmosphere of charity tables before the Covid-19 health crisis in Cairo during the Ramadan period. Charity tables make it possible to offer meals to people passing through during the break of the fast. These are long tables decorated in multiple colors, for sharing a meal, seated, in close physical proximity, meeting and resting. These charity tables are generally installed in intermediate spaces between public spaces and private spaces or next to mosques. During the health crisis, these tables could not be deployed. Instead, take-away meals were placed along major roads and distributed by volunteers. The colors are more sober (Figure 2). Everyone eats their meal alone.

Figure 1. Charity tables.
Source: Journal Independant Arabia (URL: *https://www.independentarabia.com/node/115611/*)

Figure 2. Distribution of food in Ramadan during lockdown on 9th STREET-Maadi, Cairo.
Source: Student work, course urban sociology, 2021.

In Montpellier, open-air food markets have been relocated or reconfigured in order to space out the stalls. The arrangements between stalls and the circulation aisles have taken square and aligned shapes, erasing the irregularities and the old labyrinthine shapes, sources of proximity and strolling. Sensory contact with exposed food has been reduced.

Conversely, resource places have proven to be particularly hospitable in crisis situations. New forms of appropriation of public space have appeared on sidewalks, terraces, squares, church steps, etc. Taking the opposite approach to guidance and social distancing measures, inhabitants have reactivated old uses and developed new ones. The city has become a vast field of experiences of another appropriation of space, of another atmosphere.

3.2 Re-appropriation of public space

In the three cities studied, a newfound adaptability was particularly evident in the way residents utilized public furniture. Public benches, stairs, low walls, and amphitheater-style church steps transformed into vibrant social hubs. In the absence of open terraces and restaurant seating, these spaces offered places to sit, rest, chat, or enjoy take-away meals, fostering a sense of community (Figure 3).
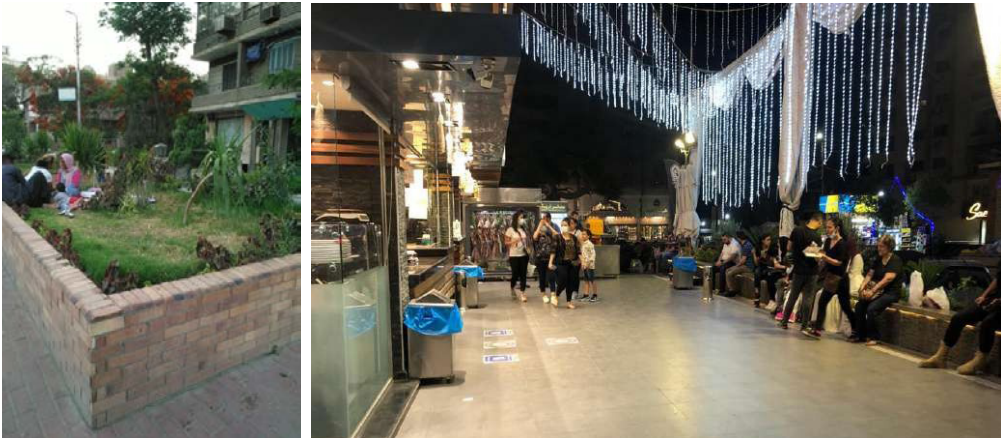
Figure 1. People sitting on the space edges at Abbas Elakad Street to the right and in elevated gardens on Ahmed Tayser Street - Masr Al-Gadida to the left, Cairo.
Source: Student work, course urban sociology, 2021

In Montpellier, the third lockdown saw residents flock to welcoming public spaces that encouraged connection. The steps of the Saint Roch church became a popular spot for socializing and enjoying a sense of shared community, offering an escape from isolation and a chance encounter with others (Figure 4). The amphitheater-like design of the steps facilitated conversation and interaction, fostering a lively atmosphere. More than an atmosphere of public intimacy, the place responds to a fundamental need for public encounter, to vibrate together in public space. Installed in groups, spread out on the steps which act as amphitheater-shaped stands, the users blend together as the steps fill up. Chance encounters are again possible. For some, these steps allow them to endure a distressing situation of lockdown and find a "dose of normality". For others, it is a welcome manifestation of micro-resistance to body guidance. While it is still compulsory in public spaces, very few people wear a mask.

Figure 4. Occupation of the steps of the Saint Roch church at lunchtime during the third lockdown, Montpellier. Source: E. Cheyns, avril 2021.

The Saint Roch church and its surroundings form a partition (Amphoux, 2001) composed of several parts providing a variety of atmospheres. The walker passes from one atmosphere to another, on a site which offers a plurality of uses (church steps, square with a fountain and benches in the shade behind the church, children's play area, forecourt, etc.). Outside of the lockdown period, the forecourt at the bottom of the church steps and the adjacent streets are bar and restaurant areas with very popular terraces. During lockdown, when these bars and restaurants had to close, the steps of the church welcomed the inhabitants. The steps were occupied from midday until the curfew at 7 p.m., alternating times for lunch, rest (nap, games, reading), and, between 5 p.m. and 7 p.m., having drinks with friends. With an amphitheater shape, the steps allow a reciprocal gaze between seated spectators and passers-by, between those who stop and those who pass. The shape of the steps allows users to arrange themselves in groups without pre-defined limits and with a moving shape. The sound effect resonance of the place reinforces the feeling of common vibration. The reduction in saturation of the square space and of the sound saturation (closure of the numerous terraces) creates a new appropriable zone, where seating is pleasant. Little by little the bodies come closer, relax, the groups merge, converse. Bodies are no longer ordered, the borders between groups becomes porous. The residents may sit there as if on their own terrace, sometimes with animals and objects brought from home (some came in slippers or with their bird. Figure 5).

Figure 5. Occupation of the steps of the Saint Roch church at lunchtime during the third lockdown, Montpellier. Source: E. Cheyns, avril 2021.

3.3 Informal innovations: Café-cars

The flexibility and adaptability of the so-called "informal" uses have made it possible to reoccupy public space, with the emergence for example of mobile "café-cars" in the streets of Cairo or the expansion of informal food markets in Rabat.

Figure 6. Café-cars on El Merghany Street-Masr Al-Gadida, Cairo.
Source: Student work, course Urban Sociology, 2021.

In Cairo, the number of café-cars increased during the Covid-19 crisis. The latter set up in the streets, on the sidewalks, with a few chairs to receive customers (Figure 6). Some café-cars have developed with a design and brand, with the same type of cars, colors and logos, such as the "Coffee-Jeep" brand. These cars are installed in different neighborhoods. Most café-cars users are young people who get together to have coffee together.

3.4 Blurring the lines: Thresholds' porosity

The impact of lockdown led to the emergence of new uses in the city and a blurred distinction between public and domestic or private spheres due to the expansion of thresholds, for example through the deployment of bank "waiting areas" on the sidewalks, juice or coffee bar counters at the thresholds of administrative buildings, the opening of doorways, garage or windows in residential spaces. This expansion of thresholds promoted porosity with public space.

In Cairo, during the lockdown, banks moved their waiting rooms outside onto the sidewalks, installing chairs and umbrellas. Café-cars have been set up nearby to serve customers in bank "waiting rooms", which have been moved to public spaces. In Rabat, street sellers were invited by residents to enter more widely into the interior common inner courtyards.

In the three cities, some bars and restaurants have chosen to remain open by taking out their counters at the threshold of their business, while extending on the sidewalk, to serve take-away meals, coffees or drinks. They invite a re-occupation of public space, although still uncomfortable (standing), and testify to an art of expansion of thresholds which maintains an experience of social links (Melliti, 2002; Breviglieri et al., 2021).

Figure 7. Moving the counters to the sidewalks at the thresholds of the business, Montpellier
Source: E. Cheyns, mars-avril 2021

The porosity or openness of the thresholds between the interior and exterior (thresholds of doors, garages, food shops, windows or balconies) contributed to forming an atmosphere. They signal the presence of others and provided security of existence and emotional comfort (Gamal Said, 2014, 2020). In Montpellier, the opening of the thresholds, particularly marked in the *Mediterranean district,* has contributed to providing security to its inhabitants, by maintaining forms of living together. The doors of buildings frequently remain open and the greening of the sidewalks and the square by its inhabitants accompanies this plasticity of the thresholds. A street intersection was nicknamed the "chat corner" during the first lockdown. The occupants of the balconies had installed a ritual of conversations from balcony to balcony, in a face-to-face and square situation, inviting passers-by to take part. This porosity of the thresholds contributed to an intensity in the levels of protection of others, with residents going to check on a neighbor who had not opened her shutters. Food solidarity was particularly evident there, sometimes as a pretext to take care of others.

The opening and personalization of thresholds have also allowed an extension of the domestic life into the public space, which provided security, through the presence of others, in squares and in the streets. In Montpellier, in this *Faubourg de la Méditerranée* district, some residents went to the public square with their coffee-cups of home. A street was transformed into a children's play area and was almost closed to cars. A garage threshold was used to set a table and bring together neighbors from the street for an aperitif, every evening, during the first lockdown, between home and outside. A piano was "invited" in the street for a concert. A family set up a camping table on the sidewalk for lunch.

The architectural irregularities in this district are particularly conducive to the integration of different common spaces and practices of thresholds (Breviglieri,

2018): facing balconies and proximity to facades, nooks and crannies, "hill streets" creating differentiated spaces with the difference in level, arcs of vegetation growing from wall to wall facing each other, etc.

These results invite us to rethink thresholds as an element of resilience and a challenge of living together. They emphasize the importance of thresholds and adaptable spaces in fostering social connection and resilience within cities. Rethinking public furniture and urban design to create spaces that encourage interaction and social gathering can contribute to a more vibrant and inclusive urban experience.

4. CONCLUSION

The development of new centralities in the public space in times of lockdown invites us to rethink furniture and urban forms, in arrangements conducive to rest and public meetings and towards an enrichment of uses and atmospheres.

The porosity and dilation of thresholds, their plasticity as a living structure (Breviglieri 2018) become an issue of living together, of existential security provided by others (Gamal Said, 2020). They are, just like the amphitheater steps in front of the churches, markers of Mediterranean cities.

By reimagining future thresholds and new forms of street furniture, this may create cities that are able to accommodate new uses that encourage break, social interactions, and communal activities. This research underscores the significance of adaptable urban practices and spatial design in shaping the city of tomorrow, fostering resilience and enhancing societal well-being.

5. BIBLIOGRAPHY

Antonioli, M., Drevon, G., Gwiazdzinski, L., Kaufmann, V., & Pattaroni, L. (2020). L'épreuve des saturations. In Saturations. Individus, collectifs, organisations et territoires à l'épreuve (pp. 19-22). Elya éditions.

Amphoux, P. (2001). L'observation récurrente. In M. Grosjean & J-P. Thibaud (dir.), L'espace urbain en méthodes. Éditions Parenthèses, Marseille.

Breviglieri, M. (2018). L'affadissement des villes méditerranéennes et la désacralisation de la figure de l'hôte. SociologieS, *http://journals.openedition.org/sociologies/6821*.

Breviglieri, M. (2006). Penser l'habiter, estimer l'habitabilité. 2006. Tracés, 23, 9-14.

Breviglieri, M. (1999). L'usage et l'habiter. Contribution à une sociologie de la proximité (Doctoral dissertation). EHESS, Paris.

Breviglieri, M., Gamal Said, N. & Goeury D. (Eds). (2021). Résonances oasiennes. Approches sensibles de l'urbain au Sahara. MētisPresses.

Chelkoff, G. (2001). Formes, formants, formalités: catégories d'analyse de l'environnement urbain. In M. Grosjean & J-P. Thibaud (dir.), L'espace urbain en méthodes (pp. 101-124). Éditions Parenthèses, Marseille.

Gamal Said, N. (2014). Vers une écologie sensible des rues du Caire : le palimpseste des ambiances d'une ville en transition. Architecture, aménagement de l'espace. (Doctoral dissertation). Université de Grenoble.

Gamal Said, N. (2020). Sonic Affordances of a Sacred Spring. The Urban Courtyard as a Figure of Rehabilitation of the Medina. Journal of Sonic Studies.(hal-02998784)

Melliti, I. (2002). Seuils, passages et transitions. La liminarité dans la culture maghrébine. In Kerrou M. (dir.), Public et privé en Islam. Espaces, autorités et libertés (pp. 177-199). Paris, Éditions Maisonneuve & Larose-IRMC.

Stavo-Debauge, J., Felder, M. & Pattaroni, L. (2022). L'hospitalité urbaine au risque de la contagion. EspacesTemps. net.

Thibaud, J-P. (2001). La méthode des parcours commentés. In M. Grosjean & J-P. Thibaud (dir.), L'espace urbain en méthodes (pp. 63-78). Éditions Parenthèses, Marseille.

L27

THINKING AMBIANCES THROUGH EXPERIMENTATION: A RESEARCH AND TEACHING RESOURCE THROUGH EXPERIENCE

CHAIRS Théo Marchal
Philippe Liveneau
Amal Abu Daya

Over the past few years, the concept of experimentation has emerged as a central theme in the exploration of ambiances, particularly for its role in testing and experiencing situated actions and their effects. This strong emphasis on the embodied experience, whether by a designer, actor, user, or a combination of these roles, positions experimentation as a pivotal tool in thinking about spatial design's impact on ambiances.

Despite its significance, the concept of experimentation remains relatively underexplored and inadequately acknowledged as a distinct methodological approach within our research domain, even though it bridges pertinent questions and approaches relevant to both pedagogy and research.

This session aims to present experimentation as a dedicated "ambiance practice", providing a framework for the systematic exploration of ambiances through design, fabrication, and the corporeal engagement with constructed spatial environments thus establishing an essential link between the initial concept and the perceptive reality of the built space.

This comprehensive process involves reflecting on the diverse range of tools available and their interplay with design (manual tools, digital tools, algorithms, artificial intelligence, etc.), realization (conventional tools, numerically controlled machines, customized tools, etc.), and evaluation (perception, metrology, surveys, etc.). Encouraging an inquiry into the diverse array of tools, this discourse invites an examination of their impact and contributions to the overarching "practice of ambiances" encapsulated by the concept of experimentation.

Furthermore, this session provides an opportunity to scrutinize the direct or indirect links between teaching, research, and/or professional applications. Participants can highlight connections between various fields of application, whether identified retrospectively or prospectively, and identify reciprocal or distinct "inputs".

In summation, this session is intended as a time and a place for exchanging ideas and presenting the current state of contemporary thought on the subject. It aspires to showcase new concepts and practices emerging at the intersection of issues related to ambiances and experiences, while exploring areas that bind pedagogy, research, and the professional world

L27
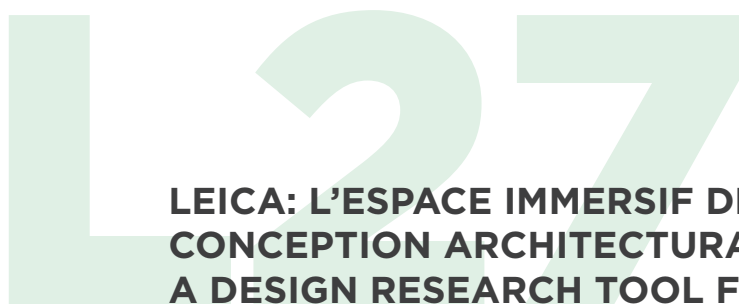
LEICA: L'ESPACE IMMERSIF DE CONCEPTION ARCHITECTURALE, A DESIGN RESEARCH TOOL FOR EXPERIENTIAL TEACHING AND EXPERIMENTATION

LEICA: L'ESPACE IMMERSIF DE CONCEPTION ARCHITECTURALE, UMA FERRAMENTA DE INVESTIGAÇÃO EM DESIGN PARA O ENSINO EXPERIMENTAL E A EXPERIMENTAÇÃO

Amal Abu Daya
Senior Lecturer
ENSAG, UGA, AAU-CRESSON
DIGITAL RDL, partnership chair, French Ministry of Culture
abudaya.a@grenoble.archi.fr

ABSTRACT

This paper sets out to present LEICA, *l'Espace Immersif de Conception Architecturale,* the immersive architectural design space, an educational design research tool installed in 2016 at the ENSA Grenoble and developed within the framework of the Digital RDL chair within the Digital Research by Design Lab, a digital manufacturing laboratory and space dedicated to the master's program 'Architecture, Ambiance and Digital Culture'. The role and aim of this immersive tool is to introduce a reflection-in-action stage in the creative design process where students can experiment, test, prototype, transform, experience and evaluate design ideas and their effects through an embodied experience. It gives students the opportunity to design atmospheres and explore ambiances through experimentation, thus introducing ambiances and a sentient lived experience in the design process.

KEYWORDS: Immersive experience. Research by design. Experiential pedagogy. Prototyping atmospheres.

RESUMO

Este artigo tem como objetivo apresentar o LEICA, *l'Espace Immersif de Conception Architecturale*, o espaço imersivo de conceção arquitetónica, uma ferramenta educativa de investigação em design instalada em 2016 na ENSA Grenoble e desenvolvida no âmbito da cadeira Digital RDL dentro do Digital RDL, um laboratório de fabricação digital e espaço dedicado ao programa de mestrado "Arquitetura, Ambiente e Cultura Digital". O papel e o objetivo desta ferramenta imersiva é introduzir uma fase de reflexão-em-ação no processo de design criativo, em que os estudantes podem experimentar, testar, criar protótipos, transformar, experimentar e avaliar ideias de design e os seus efeitos através de uma experiência incorporada. Dá aos alunos a oportunidade de projetar atmosferas e explorar ambientes através da experimentação, introduzindo assim ambientes e uma experiência vivida senciente no processo de design.

PALAVRAS-CHAVE: Experiência imersiva. Pesquisa por design. Pedagogia experiencial. Prototipagem de ambientes.

1. A DESIGN RESEARCH TOOL

L.E.I.C.A. is an acronym that stands for «L'Espace Immersif de Conception Architecturale».

LEICA is part of an iterative process within Digital RDL: from design to manufacturing to experience to redesign of architectural projects in a pedagogical context. Digital RDL, under the scientific direction of Philippe Liveneau is a digital manufacturing laboratory and space. It is equipped with digital manufacturing tools (laser cutting machine, 3D printers, a robotic arm and a CNC) which allow students to rapidly prototype at different scales, build models and implement their design ideas.

From thinking, to making, to adjusting, the prototyping activity at the scale of the moving body allows each student to build and experience a spatial and sentient situation, a projected atmosphere, whether associated with a device or a determined architectural configuration. Experiential feedback informs the design activity, promoting its adjustment and completion in drawing as well as specifying the level of technical, functional and sentient definition of the project. Looking for an immersive experience, design ideas are tested, incorporated and implemented moving from a design space, to a built space, to a lived space. The immersive space is 7m long, 3 m wide and 3 m high, and is adjacent to the studio workshop where students design, model and draw their projects in order to create a continuity between the two spaces and also set up a specific working atmosphere. The workspace in itself creates a unique atmosphere linked to the iterative design process.

We will present the principle of LEICA, the methodological framework for immersive testing we have developed in different pedagogical situations in the master course with examples and how we have explored the notion of ambiance through its atmospheric dimension referring to the question of affects and the sentient perception of architecture.

Through experimentation, students introduce variants to adapt the design to different situations and usages. They start by defining an issue, formalizing a hypothesis, a way of thinking, then a way of implementing and concretizing to finally test numerous configurations and evaluate the aesthetic and immersive experience so as to be able to choose the most accurate configuration (corresponding to the intended uses, landscape, climate ... or simply the desired and imagined effect and atmosphere) that is then included, developed and presented in their project.

This process also encourages students to develop critical thinking skills and a reflective posture, teaching them to analyse, judge and evaluate design ideas and their potential to fabricate atmospheres and living spaces.

Figure 1. L.E.I.C.A. The immersive space is 7m long, 3 m wide and 3 m high
Source : Digital RDL
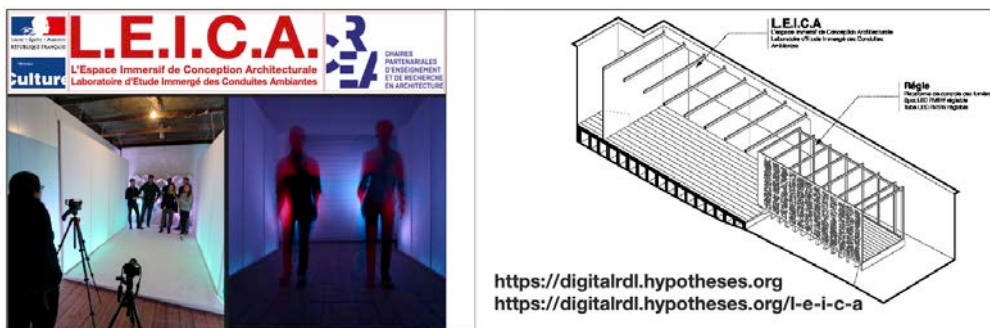
2. EXPERIENTIAL PEDAGOGY: THE ARCHITECTURAL PROTOTYPE

The experiential pedagogy developed in Digital RDL is based on the architectural prototype, defined as a thought experience, a physical experience and a sensory experience. (Abu Daya, 2016). The disciplinary model below (figure 2) presents the architectural prototype as a conceptual and operational tool for the convergence of different notions. It also presents the architectural prototype as a tool for integrating four dimensions of architecture: a situated spatial configuration, technical instrumentation, material morphogenesis, and perceptual effects. The design process is thus a process of self-correlation of those four dimensions: ecological, technical, compositional, and aesthetic.

2.1 Disciplinary Model: The architectural prototype
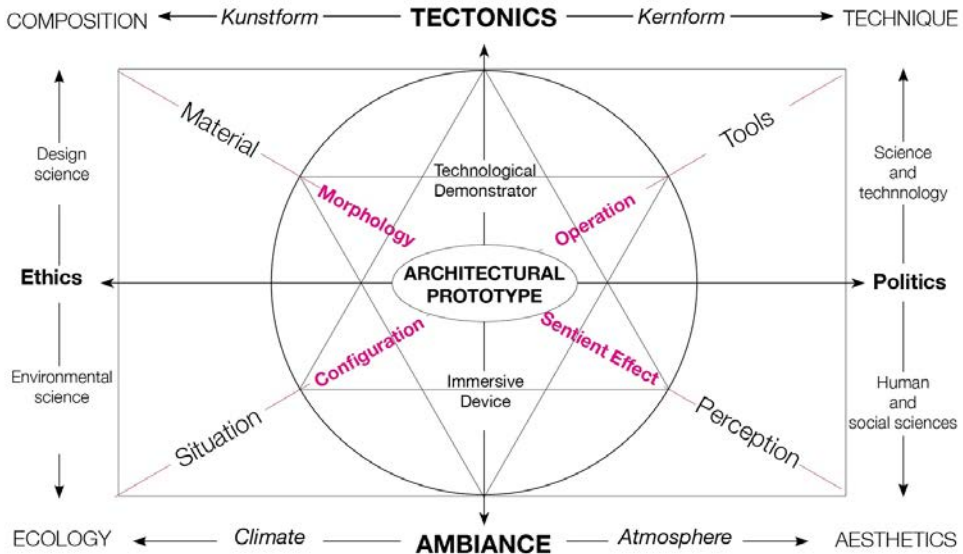
Figure 2. Disciplinary Model : The Architectural Prototype in the Digital Age.
Source: A. ABU DAYA Doctoral Research (Cresson UMR AAU) / Tenure Competition (2019).

In addition to the notion of prototype, I draw on two notions, both theoretical and operational, the notion of tectonics and the notion of atmosphere.

Through the notion of tectonics, (Frampton, 1995) we may question the ways in which architects fabricate, manipulate, assemble and organise matter. How do these gestures become an art, an art of construction that articulates the poetic, the technical, the aesthetic and the operative? Karl Botticher's distinction (in the mid-19th century) between the artistic or expressive form, *Kunstform*, and the intrinsic and operational form, *Kernform*, provides a way of examining the ways in which

architecture is made. In a pedagogical context, it is a question of the dialogue that emerges between the constructive form linked to the material worked and the self-referential expressive form linked to the technical methods of production chosen. This ties in with Botticher's argument that architects should develop a contemporary architectural expression that reflects the given material and technological context.

Through the notion of atmosphere (developed over more than 40 years at the Cresson laboratory - UMR CNRS), we may question the ways in which architects create, configure and organise environments. How can the environments that are the condition for the emergence of architecture be characterised according to their twofold dimension, environmental on the one hand, associated with climate and the control of the physical dimensions of architecture (sound, light, ventilation, heat), atmospheric on the other, referring to the question of affects and the sensitive perception of architecture. The physical and sensitive dimensions of ambient environments and architecture take on their meaning through use and bodily experience within specific courses of action.

2.2 Teaching architectural design: Thinking and Doing
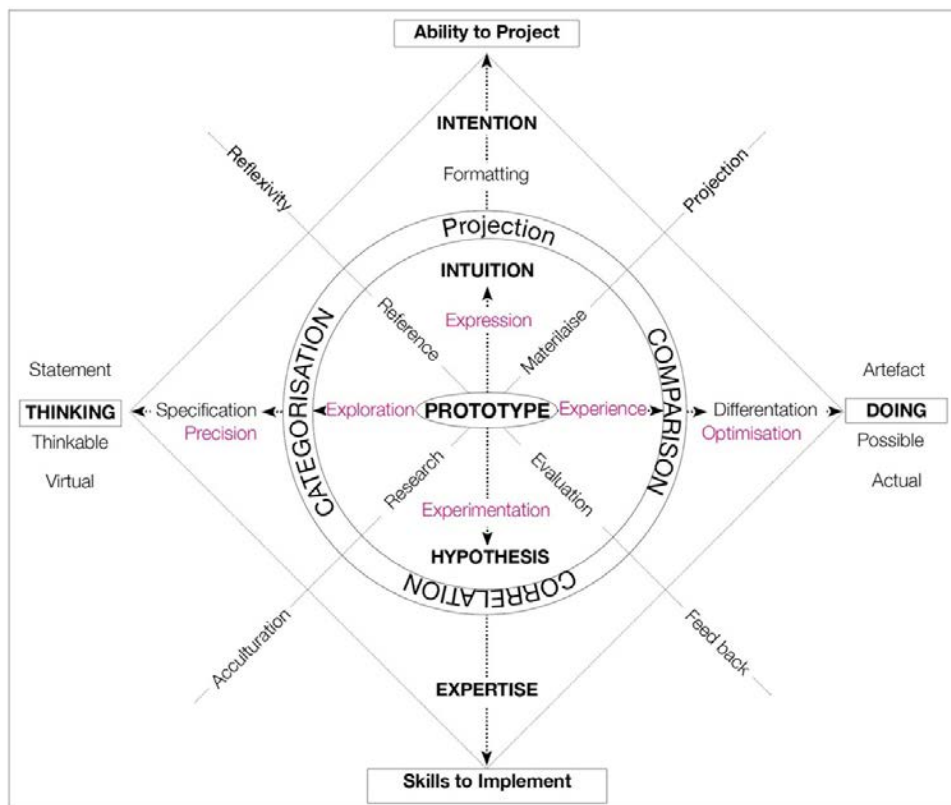
Didactics of serialization: categorize / specify & compare / differentiate
Source: A. ABU DAYA Doctoral Research (Cresson UMR AAU) / Tenure Competition (2019).

From a theoretical point of view, as we have just seen, I articulate around the notion of prototype, four dimensions correlative to any architectural morphogenesis. From a didactic point of view, through the diagram I present below (diagram of the design process), the prototype, and more precisely the prototyping process, is a means of teaching architectural design in its theoretical and practical dimensions to students, and the development of an ability and a skill to think and to do.

These two skills are distinguished first and foremost by the nature of their object: on the one hand, a cognitive aptitude for the production of statements capable of constructing architectural thoughts; on the other, a gestural aptitude for the production of artefacts that make architectures possible. The virtual nature (potential) of the statement is complemented by the actuality of the artefact. What is important is the reflexivity that takes place between the two types of production as a springboard for design and creative activity.

In his book, *La matière de l'invention,* E. Manzini explains the fundamental nature of the 'heuristic strategy' or self-discovery that accompanies the creative process. In the teaching method I use, exploring and discovery through action is achieved through the activity of prototyping. "From this knowledge of the relationship that can be established between ideas and matter, the project takes shape, both in its praxis, which goes from idea to matter, and in the opposite direction, from matter to idea." (Manzini, 1989)

To encourage this back-and-forth process (between doing and thinking), has led me to develop a systematic approach to serial productions. This serial production for comparative purposes, through the differentiation introduced by the pluralities constituted (versions or variations), enables students to develop the ability to materialise on the one hand, and to evaluate on the other. Feedback from evaluations enables the iterations needed to develop projects, for qualitative or quantitative optimisation. Prototyping here is based on the development of a physical and sensitive desire to experience.

3. AN IMMERSIVE PROTOTYPE TEST PROTOCOL

I have elaborated a five step protocol in the form of writing and drawing that students follow before building, testing and evaluating their prototype in LEICA.

1. Defining the issues and challenges of the experimentation. They begin by formulating a hypothesis, expressing an intention and the desired effect. Formulating the right hypothesis based on an architectural and atmospheric question is one of the challenges of this protocol.
2. Creating a reference field by selecting images that illustrate the issue. This step helps to clarify the issue and to illustrate it with examples, ideas and knowledge that the students possess.

3. Situating the architectural element in the project using a plan and section.

4. The implementation phase which describes how the prototype will be built and with which tools. How do I make the prototype? It is about defining the frameworks of the experience. Plan, section or front view or axonometry in the LEICA space.

5. Lastly comes the evaluation and testing phase which describes the experimentation protocol, the evaluation tools, the different settings and variations of the prototype followed by the methods of transcription of the experience.

After those 5 phases, comes the immersive experience feedback and conclusion of the experimentation. It is about how the experimentation has enabled the students to choose a specific setting out of the multiple settings that were tested and how did this experience allow them to redesign their project. This lived experience at the scale of the moving body is not an isolated experience, it allows the students to also draw on their previous architectural, aesthetic or everyday life experiences. In the same way as John Dewey writes about an art critic: " The material from which the judgment is formed is the artwork, the object, but it is the object as it penetrates the experience of the critic through the interaction with his sensitivity, his knowledge and everything he has stored during his past experiences."(Dewey, 2010, p497)

4. AMBIENT, SPATIAL, MATERIAL PROTOTYPE

LEICA has set up different teaching formats, for example: an intensive 5 day experimentation " Focus on Architectural Ambiances" workshop with 65 2nd year students, Master 1 students working on the material, sensitive and ambient dimension of spatial devices for open spaces in collaboration with GEM and GEMLabs of the Grenoble Management School, the future users and Master 2 graduation students investigating an issue related to their project like the determination of pattern density of the building skin.
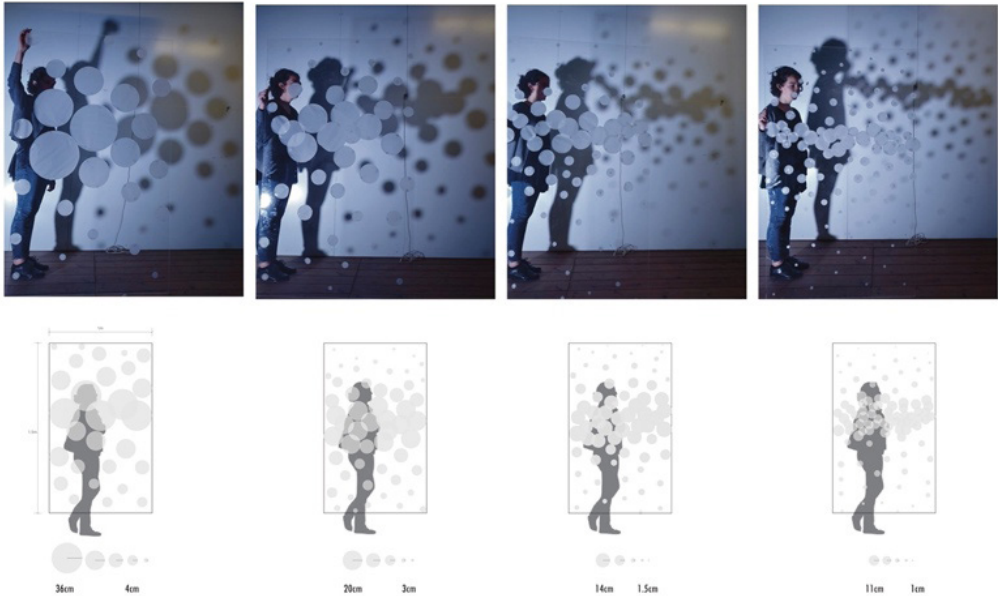
Figure 4. Immersive Ambient Prototype - From Translucency to Transparency
Source: Digital RDL

We will present 3 pedagogical situations from the Master 2 graduate course to illustrate the experiential pedagogy in LEICA, where students are centered on the relationship between spatial and material composition, light quality and a sensory experience through the creation of adjustable devices where dimensions and proportions of the designed space or device can be varied. In the context of this article, the hypotheses relate to issues of perception of space, lighting and sound effects, and opportunities for social interaction.

Three examples of immersive prototypes:

6. an ambient prototype testing atmospheres and perception related to the building skin,

7. a spatial prototype testing spatial issues related to the degree of inclination of the wall,

8. a material prototype testing atmospheres and perception linked to the material surface imitating a digitally machined stone wall.

4.1 Immersive Ambient Prototype

There are 2 examples of an ambient prototype testing different settings in the building skin (figure 4 and 5). The scale and density parameters change the status of the building skin.

4.1.1 From translucency to transparency

In the above example (figure 4), Master 2 students tested in LEICA variations in the phenomenological status of glass partitioned walls in their project going from translucency to transparency. They tested how the diameter, the density and the position of the screen printed circles on glass affected their experience of the wall questioning intimacy issues, social interaction opportunities and the aesthetic quality of the partitioning wall. A grasshopper script was first used for digital modelling and to choose the 4 versions that could be tested physically.
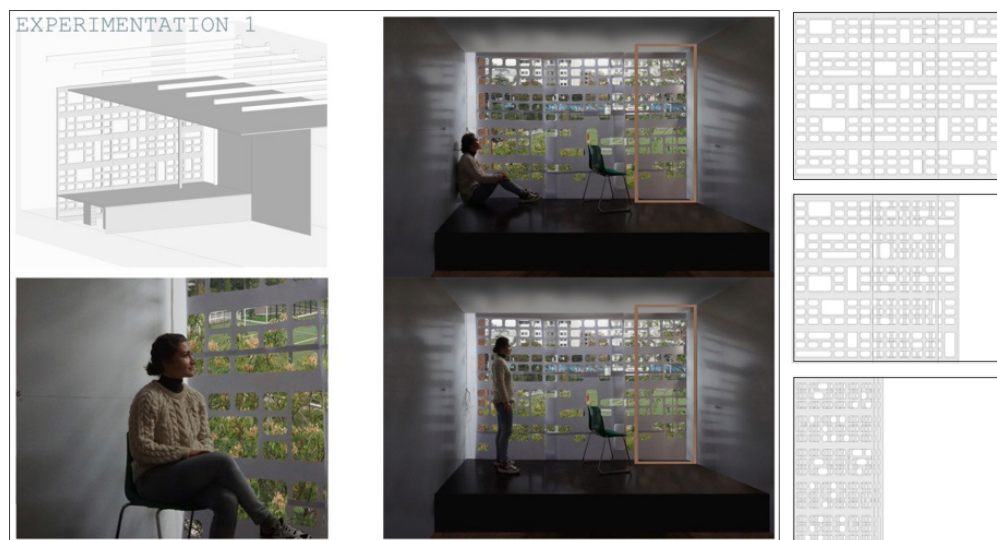
Figure 5. Immersive Ambient Prototype - From Pattern to Intimacy
Source: Digital RDL

4.1.2 From pattern to intimacy

In the above example, (figure 5) a student tested the scale of the rectangular pattern in sliding panels, whose function is to control the relationship to the landscape, the level of light in the room and to vary it according to activity in a room in a student residence in Paris. The initial pattern corresponded to the width of the face and in height the equivalent to half the face. The different combinations of the three panels allow a regular rhythm or a denser fabric to create privacy or a darker area, but also give the possibility to have a clear opening to the outside. When three panels overlap, there is no longer a rhythm or a pattern, but a lace-like effect creating intimacy and depth. The student used a video projector to simulate the outside landscape.

4.2 Immersive Spatial Prototype

A spatial prototype focuses on architectural elements like the wall, the floor or the ceiling and the way they are laid out and how they work together. The student engages with the body to fully experience the spatial configuration and uses different body postures.

4.2.1 Accompanying the gaze and the body posture

In the example below, (figure 6), students tested different settings of inclined openings and sloped walls in their project. Projects of the architect Zaha Hadid were used as a spatial reference in this case. Various degrees of inclination were tested at the scale of the moving body revealing each time a new relationship to the landscape and to uses. Students tested not just one inclination of the floor or wall, but 10 inclinations in order to determine the accurate degree of inclination in relation to the programmed usage of the space.

Paroi droite
angle : 90°

Paroi inclinée
angle : 120°

Paroi inclinée
angle : 135°

Paroi inclinée
angle : 60°
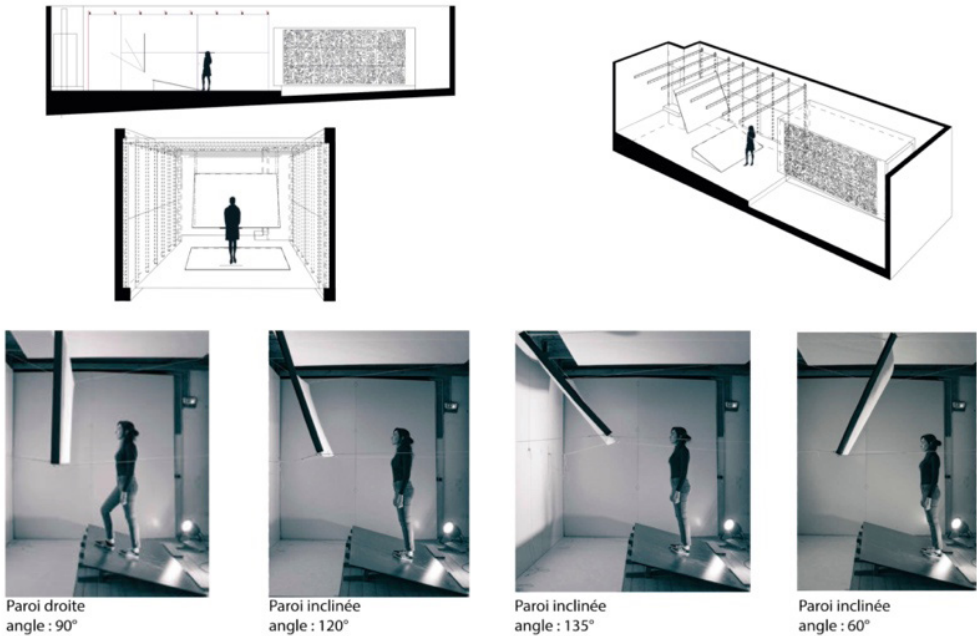
Figure 6. Immersive Material Prototype – From Surface to Structure
Source: Digital RDL

4.3 Immersive Material Prototype

In the example below, (figure 7), the prototype tested surface finishes exploring the phenomenological dimension as well as the haptic, tactile and visual effects in the student's project while milling expanded foam by a robot in order to express the thickness of a stone wall, whether functional or constructive. The mass of stone itself evokes thickness. Testing digital stone ornamentation to create a folded surface at different scales was therefore the aim of this experiment.

4.3.1 From surface to structure to ornament

To determine the density of the pattern, three prototypes were produced. The density was characterised according to the narrowing or widening of the pattern. The pattern was generated digitally. The narrowing of the pattern evoked movement, while the play of light between the edges stimulated the surface and made it lighter. Machining

marks on the material raised the question of the tool, how does the tool track create a specific materiality and ornamentation, a trajectory that evokes the way the material was implemented? "Today the tool, the tool path and the implementation method used in digital fabrication is part of the expressive, symbolic and ornamental dimension, inheriting (and redirecting) modernist notions of ornament resulting from manufacturing processes." (Abu Daya, 2020)
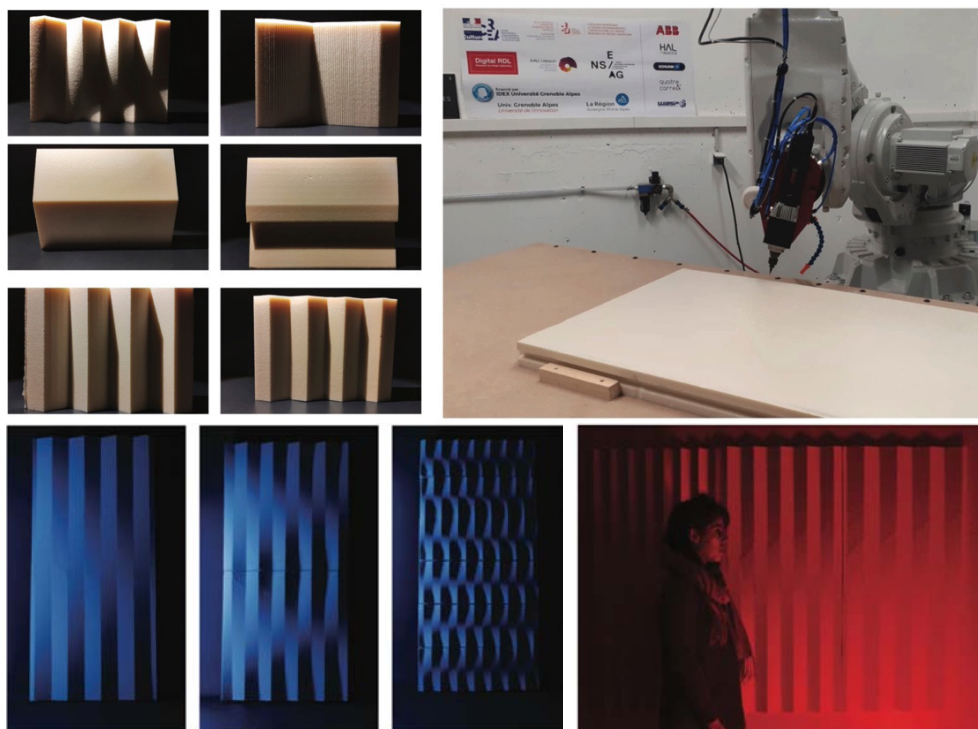
Figure 7. Immersive Material Prototype – From Surface to Structure
Source: Digital RDL

5. CONCLUSION

This paper set out to examine the role of experiential pedagogy and experimentation in the design process in a pedagogical context. We believe that teaching architectural design today should include thinking and doing and involve a process of investigation or a design research phase "creating new insight and knowledge through experimentation to generate new concepts, methodologies and understanding for students". (Crouch & Pearce, 2014)

Creative fields such as architecture are characterised by the making and manufacturing of objects for reflection and evaluation, and not just for representation. In a pedagogical context, prototyping generates an activity of research and exploration

that is both formal and material, technical and instrumental, perceptive and aesthetic, by configuring a spatial situation to be experienced. The immersive test can be an individual experience, or done in work groups of 2 or 3 students, or even as a collective group experience.

Our design methodology through immersive prototyping presented in this paper allows the experimentation of ambiances firstly, by defining an architectural design issue which impacts the quality of the ambiances and our perception of the architectural space that is designed, built and experienced. The nature of architectural design issues are ambient issues and define the subject of the experimentation, that is what we are going to experiment and test and its multiple configurations. Secondly, by developing and creating LEICA, the framework for experimenting, a tool within the Master work space, in proximity to the lecture area and the fabrication area where students think, develop ideas, draw, make models and prototypes. These different activities are correlated and intertwined. This pedagogical tool and protocol innovate and renew in a unique way the way of thinking about teaching and atmospheres in the field of architectural design and design research.

6. BIBLIOGRAPHY

Abu Daya, A. (2016). Prototyper les ambiances de demain. Le prototype : Expérience de pensée, expérience physique, expérience sensible. In N. Rémy (dir.) & N. Tixier (dir.) (Éds.), Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances. Septembre 2016, Volos, Greece (Vol. 1, p. 3944). International Network Ambiances.

Abu Daya, A., & Saïd, N.G. (2020). Ornamental Atmosphere & Digital De-lights, The Reactivation of Light Ornaments through Digital Design. Proceedings of 4th International Congress on Ambiances. International Network Ambiances.

Creswell, J. W. (2013). Research Design : Qualitative, Quantitative, and Mixed Methods Approaches (4e édition). SAGE Publications Inc.

Crouch, C., & Pearce, J. (2014). Doing research in design (Reprint). Bloomsbury.

Dewey, J. (2010). L'art comme expérience. Folio.

Frampton, K., & Cava, J. (1995). Studies in tectonic culture: The poetics of construction in nineteenth and twentieth century architecture. MIT Press.

Manzini, E. (1989). La matière de l'invention. Editions du Centre Pompidou.

Vial, S. (2015). Qu'est-ce que la recherche en design ? Introduction aux sciences du design. Sciences du Design, 1(1), 2236.

METHODOLOGY FOR THE ESTIMATION AND INTEGRATION OF OCCUPANTS' PSYCHOLOGICAL ADAPTATION IN INDOOR PERCEIVED COMFORT EVALUATION

Denis Bruneau
Professor
Univ. Bordeaux, CNRS, Bordeaux INP, I2M, UMR 5295, F-33400, Talence, France
Arts et Métiers Institute of Technology, CNRS, Bordeaux INP, Hesam Université, I2M, UMR 5295, F-33400 Talence, France
École Nationale Supérieure d'Architecture et de Paysage de Bordeaux, I2M (UMR 5295), 33405 Talence, France
denis.bruneau.bordeaux.archi.fr

Tosin Omoya
Post-Doctoral researcher
Univ. Bordeaux, CNRS, Bordeaux INP, I2M, UMR 5295, F-33400, Talence, France
Arts et Métiers Institute of Technology, CNRS, Bordeaux INP, Hesam Université, I2M, UMR 5295, F-33400 Talence, France
École Nationale Supérieure d'Architecture et de Paysage de Bordeaux, I2M (UMR 5295), 33405 Talence, France
tosin.omoya@u-bordeaux.fr

Thomas Recht
Lecturer and Researcher
Univ. Bordeaux, CNRS, Bordeaux INP, I2M, UMR 5295, F-33400, Talence, France
Arts et Métiers Institute of Technology, CNRS, Bordeaux INP, Hesam Université, I2M, UMR 5295, F-33400 Talence, France
thomas.recht@u-bordeaux.fr

Aline Barlet
Lecturer and Researcher
École Nationale Supérieure d'Architecture et de Paysage de Bordeaux, I2M (UMR 5295), 33405 Talence, France
Aline.barlet@bordeaux.archi.fr

ABSTRACT

The objective of this paper is to develop a methodology of thermal comfort evaluation that takes into account the psychological adaptations of occupants in indoor spaces. An existing adaptive comfort model (Yao et al., 2009) was adopted and enhanced which take into account the physiological and adaptive component of thermal comfort. As a result, a psychological adaptive comfort model is proposed. To derive the closure equation of this model, some experimental protocols were done. These experiments involves placing some subjects in various thermal "hot" and "cold" conditions in an indoor space and collecting both the physical thermal measurements and the quantifiable thermal perceptions of the subjects. Therefore, psychological adaptation is evaluated based on the deviation between physiological thermal evaluation and the actual thermal perceptions of the subjects. This evaluation is linked to the influence of the physical thermal stimuli experienced by the subjects and psychological "information" in the subjects' cognitive memory (subjects' representations). To simplify this evaluation, this psychological adaptation is further linked to the indoor operative temperature and the outdoor air temperature.

KEYWORDS: psychological adaptation, thermal perception, perceived comfort, adaptive component, modeling.

1. INTRODUCTION

The evaluation of thermal comfort in buildings is increasingly becoming significant to architects, building engineers and professionals, to enable them produce designs that can provide occupants their desired comfort and satisfaction and ensure their well-being during their period of occupancy. Also the issues of climate change and global warming have made it essential for building professional to ensure that occupants are safely protected and shielded from the adverse effect of climate change. Therefore researches and studies are ongoing in determining the relevant factors that influence the perceived comfort of occupants so that these parameters can be redirected to enhance their comfort and satisfaction.

The American Society of Heating, Refrigerating and Air- Conditioning Engineers (ASHRAE) define thermal comfort as "*that state of mind that expresses satisfaction with the thermal environment and is assessed by subjective evaluation*" (ASHRAE 55:2017, p.4). This definition specifies the importance and necessity of human satisfaction as a criterion of thermal comfort. However, human satisfaction is subject to many conditions related to the environment, the human body and the psychological functioning of man. This encompasses the physical and thermal conditions ambient to the human body, the mechanism of the human body such as metabolism, physiology, anthropometry and anatomy as well as the psychological state of the human mind. Thus, the elements influencing thermal comfort belong to different domains, exploring the physical and non-physical aspects influencing occupants' perceptions. Nevertheless, all the factors involved must be considered

and the complex relationship between them must be modeled accurately. This factors include, but are not limited to (i) environmental thermal factors, such as air temperature and relative humidity, radiant temperature, air velocity, clothing insulation, (ii) physiological factors, such as convective, radiant, evaporative and respiratory heat exchange , and the metabolic rate linked to the thermoregulatory system of the human body mechanism, and (iii) psychological factors including experiences, representations, expectations, perceived control, emotions, attitude, habituation and personal behaviors of the occupant complemented by some socio-cultural factors including culture, standard of living and technological advancement (Rijal etal., 2017; Lenzholzer et al., 2020).

Two types of approach exist in the assessment of thermal comfort: (1) the heat balance approach based on laboratory studies and (2) the adaptive approach based on field studies. The heat balance approach primarily considers the thermal balance and heat exchange between the occupant's body and its environment, while the adaptive approach considers the adaptive feedbacks and occupant behavior as a significant component in the evaluation of thermal comfort. The heat balance approach is based on the principle that to achieve thermal balance in the body, the rate of heat produced by the body's metabolism must equal the rate of heat loss to its external environment via the body surface, respiratory system and all other physiological heat transfer medium. Based on this principle, Fanger (1970) carried out some experimental studies on the thermal sensation of subjects and was able to generate a set of equations for the predicted mean vote (PMV) model. Nevertheless, the Fanger's PMV model cannot be considered as universal, due to some fundamental discrepancies between the field studies and Fanger's laboratory studies. Therefore, the concept of "adaptive thermal" comfort approach was developed.

The fundamental principle of the adaptive approach states that, *"if any change occurs such as to produce discomfort, people react in ways which tend to restore their comfort"* (Nicol et al. 2002, p. 568). Based on this fundamental principle, researchers were able to categorize the adaptive factors into two main categories: (1) physical and (2) psychological adaptation. The physical adaptive factors refers to physical changes a person makes, in order to adjust oneself to their environment conditions (reactive adaptation), or the changes a person makes in order to alter the environment conditions to his needs (interactive adaptation) (Nikolopoulou et al. 1999). The psychological adaptation refers to an altered perception of, and reaction to, sensory information due to subjective past thermal experiences and expectations (de Dear et al. 2002). Some of the psychological adaptive processes include; (1) expectations and experience (2) perceived control (3) environmental stimulation (4) place factor and much more (Yun, 2018; Romina etal., 2022). Thus to integrate some of these adaptive factors into thermal comfort evaluation some models were developed. These include models based on the correlation between outdoor air temperature and indoor operative temperatures (Humphreys et al., 2007; Mui & Chan, 2003; Humphrey & Nicol, 2000), the extended PMV model by Fanger and

Toftum (2002), known as the PMVe, and many more. It also includes the adaptive predicted mean vote (aPMV) model of Yao et al. 2009 which relates PMV to the thermal sensation vote (TSV) of subjects using a "black box" model approach. Thus, the enhancement and integration of these models can result into a suitable method of evaluating the psychological component of occupant's perceived comfort.

Adaptive predicted mean vote (aPMV) model

Yao et al. (2009) was able to enumerate theoretically that Fanger's PMV model is mainly a relationship between the physiological processes of the human body and the thermal conditions of his environment, thereby omitting the adaptive and psychological factor that influences the thermal perception of the occupant. Therefore Yao postulated that, similar to the steady state theory, physiological processes are contained within the "Black Box", but psychological and behavioral processes will give an ''Adaptive (contrary) Feedback'' (Yao, 1997). This implies that the physiological component () that exist in the "black box" () responds proportionately to the thermal load influencing the physical thermal stimuli (). While the adaptive component () acts adaptively contrary to the value of the physiological component () when weighed on a thermal sensational scale (TSS), as illustrated in **Error! Reference source not found.** below.
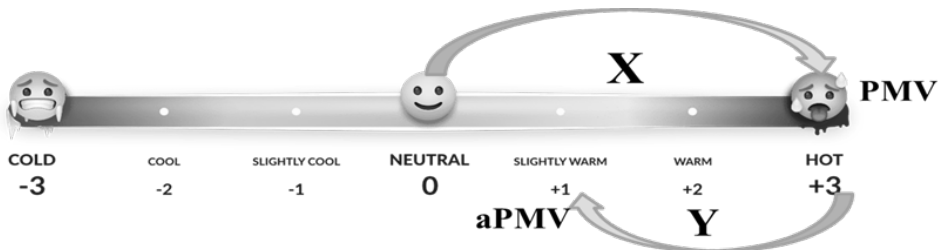
Figure 1: Reaction between the physiological X and adaptive Y component of thermal comfort.

Thus, the mathematical expressions below define Yao proposed model:

$aPMV = X - Y$ (1)

where the physiological component has been proposed by Yao as follows:

$X = G \times \delta = PMV$ (2)

and the adaptive component has been proposed by Yao by introducing a psychological coefficient $K\delta$:

$Y = G \times K\delta \times aPMV$ (3)

Yao also proposed the adaptive factor η as a function of physical thermal stimuli δ and $K\delta$:

$$\eta = \frac{K_\delta}{\delta}$$ (4)

Then Combining equations 1-2-3-4

$$aPMV = \frac{PMV}{1 + \eta \times PMV} \tag{5}$$

In this case, aPMV model was used by Yao to evaluate and predict the thermal sensation of occupants while considering their behavioral adaption. In our case, we wish to evaluate the magnitude of psychological adaptation of the subjects and integrate it into perceived comfort evaluation. Nonetheless, some of the qualities of Yao's model validate its use in quantifying the psychological component of occupants' thermal perception. Therefore, some modifications were made to enhance the results from this model.

2. PROPOSED MODELING-EXPERIMENTATION METHODOLOGY

Firstly, to evaluate the physical thermal stimuli δ we propose that the operative temperature T_{op} is a more relevant parameter than the air Temperature T_a (proposed by Yao) because it takes into account more thermal parameters influencing the stimuli of the human body as depicted in the equation (6):

$$T_{op} = \frac{T_{mrh}h_r + T_a h_c}{h_r + h_c} \tag{6}$$

Where T_{mrt} is the mean radiant temperature, h_c and h_r are the heat transfer coefficient due to convective and radiant heat exchange respectively.
Thus we proposed the physical thermal stimuli to be:

$$\delta = T_{op} - T_{op}^n \tag{7}$$

Where T_{op}^n is the neutral operative temperature, instead of the neutral air temperature proposed in Yao's model. Hence, T_{op}^n is the operative temperature when the subject neither feels hot or cold nor have any impulse to adjust himself or his environments' thermal conditions. Therefore, it is the operative temperature where $aPMV = 0$

$$T_{op}^n = T_{op} \Leftrightarrow aPMV = 0 \tag{8}$$

Thirdly, the Yao equation (5) implies that when $PMV = 0$ then $aPMV = 0$. This Yao's expression could not efficiently evaluate the adaptive behavior of the subjects when $PMV = 0$; because the aPMV outcome from the equation in this case is always nil. Therefore, we chose to modify equation (5). Thus we proposed that;

$$aPMV = PMV - \eta \tag{9}$$

This equation (9) respects the Yao (1997) postulation that the physiological evaluation and adaptive factor reacts contrary to each other as graphically expressed in Figure 1; and the fundamental principle of adaptive comfort by Nicol et al. (2002).

The physiological component of equation (9) is evaluated via fanger's PMV equation (Fanger, 1970):

$$PMV = (0.303e^{-0.036\mathbb{Q}} + 0.028) \times (\mathbb{Q} - L) \tag{10}$$

To calculate for the total heat loss L from the subjects body;

$$L = \mathbb{Q}_{cl}^{Conv} + \mathbb{Q}_{cl}^{rad} + \mathbb{Q}_{sk}^{Sw} + \mathbb{Q}_{sk}^{Diff} + \mathbb{Q}_{res}^{Conv} + \mathbb{Q}_{res}^{evap} \tag{11}$$

Where $L = \mathbb{Q}_{cl}^{Conv}, \mathbb{Q}_{cl}^{rad}, \mathbb{Q}_{sk}^{Sw}, \mathbb{Q}_{sk}^{Diff}, \mathbb{Q}_{res}^{Conv}, \mathbb{Q}_{res}^{evap}$ are the heat loss via the clothing surface cl, skin surface sk and respiratory tracks res by convection, radiation, sweating, diffusion, and evaporation (ASHRAE 2017).

Then to evaluate the values of the physical thermal stimuli δ and the psychological coefficient , equation (7) and (4) were used respectively.

Based on the model equations above (equation (9), (10), (11), (7) and (4)) there are 6 unknown variable namely aPMV, PMV, L, T_{op}^n, K_δ, δ in 5 equations. Therefore, obtaining the 6th equation for closure is needed; this "closure equation" was obtained by conducting some experiments and evaluating its results. Hence, this equation formulates the relationships that exist between the psychological coefficient K_δ and some physical thermal parameters.

2.1 Modeling Protocol
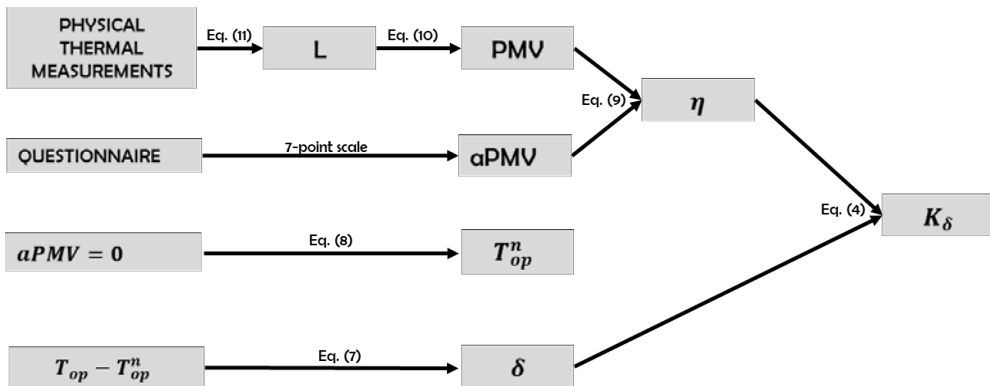
Figure 2: Chart of the combined experimental-modeling protocol; up to the values of psychological coefficient

Figure 2 above illustrates the operation that leads to the evaluation of the values of psychological coefficient which was eventually calibrated with the physical thermal stimuli $K\delta$ to derive the 6th or closure equation.

The physical measurements collected from the experimental cell and the subjects clothing were utilized to calculate the PMV values using equations (10) and (11); then the questionnaires' results were evaluated into thermal sensational votes (TSV), used specifically as the experimental aPMV values. According to equation (9) the adaptive

factor η values were obtained. After which, the value of the neutral temperature is determined in accordance with the definition given in equation (8); making it possible to obtain the value of the physical thermal stimuli δ via equation (7). Then the values of the psychological coefficient $K\delta$ were calculated using equation (4). Subsequently, the graphical correlation of the psychological coefficients $K\delta$ and the physical thermal stimuli was plotted.

2.2 Experimental Setup

The objective of the experiments is to create an indoor space with precise and measurable surface characteristics such that the magnitude of the thermal factors and temperatures can be modified and measured accurately. Then the information about the thermal flux reception and thermal perception of the subjects within the enclosure can be obtained simultaneously.

Three forms of experimental protocol were conducted; this includes (1) the "autumn (20/10/2022 to 26/10/2022)" (2) the "winter (30/01/2023 to 03/02/2023)" and (3) the "summer (05/07/2022 to 08/07/2022)" experiments. These experiments were carried out in a naturally ventilated room with no insolation for the winter conditions. Also, in a dedicated experimental cell of about 2.5 m x 4 m rectangular floor area which was built in the Institute of Mechanics and Engineering-I2M (a CNRS laboratory in Bordeaux, France) for the autumn and summer conditions. The walls of the experimental cell are made of uniform and conductive surface material (metallic plate of relatively high emissivity at indoor ambient temperature) in order to have an efficient radiant emission from the walls. The ceiling and the floor are made up of gypsum board and terrazzo floor finish respectively. Direct solar radiations (which constitute short wave radiations) were not allowed into the experimental cell, so as precisely account for the radiant load.

Hence, the subjects were instructed to complete a questionnaire as they perceive the thermal condition within the enclosures. This questionnaire was structured to provide information and data of the thermal sensation vote (TSV) of the subjects so as to evaluate the aPMV values. It also includes questions that will provide qualitative information about the psychological adaptation of the subjects.

3. EVALUATION OF PSYCHOLOGICAL COEFFICIENT

The values of the psychological coefficient $K\delta$ were calculated via equation (4) as described in Figure 2. Then the regression graph of the psychological coefficient $K\delta$ versus the physical thermal stimuli δ was plotted to determine the function of the adaptive factor η. This was done for the autumn, winter and summer thermal conditions as represented in Figure 3. According to the graphs below, the psychological adaptive factor of the subjects was deduced to be -0.7, -1.4 and 0.5 respectively, via the regression for the three seasons as enumerated in equation (12), (13) and (14) as shown on Table 1 :
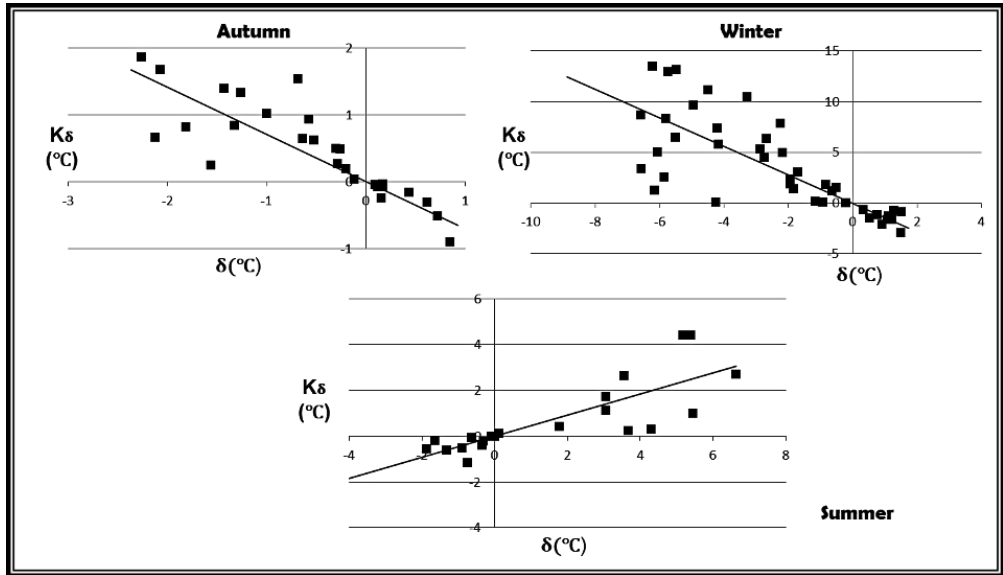
Figure 3: Psychological coefficient and physical thermal stimuli

SEASON	REGRESSION	ADAPTIVE FACTOR	EQUATION
AUTUMN	$K\delta = -0.7 \cdot \delta$	$\eta = -0.7$	(12)
WINTER	$K\delta = -1.4 \cdot \delta$	$\eta = -1.4$	(13)
SUMMER	$K\delta = 0.5 \cdot \delta$	$\eta = 0.5$	(14)

Table 1. Regression equation and adaptive factor for each season

These adaptive factors can be referred to as the average adaptive factor for each season. Therefore we further examined the relationship between the adaptive factor and some physical thermal parameters

Relationship between adaptive factor and physical thermal parameters

According to equation (4), the adaptive factor η is a function of the psychological coefficient $K\delta$ and the physical thermal stimuli δ, hence the thermal stimuli is a function of the neutral temperature T^{n}_{op} which is observed to be influenced by the evolution of the outdoor temperature T_{out} (Humphreys et al., 2007). Therefore the relationship between the outdoor temperature and the neutral temperature was examined as shown in Figure 4 and its regression equation (15).
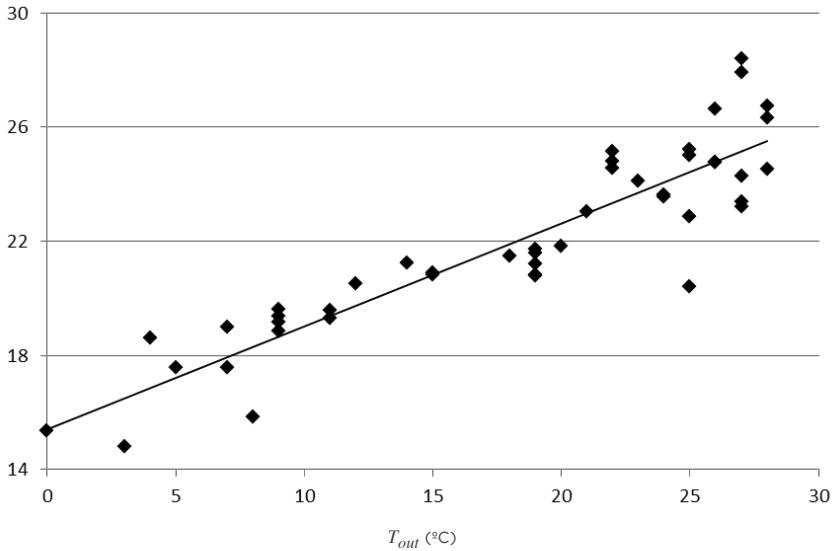
Figure 4: Neutral temperatures versus the outdoor air temperature

$$T^n_{op} = 0.36\ T_{out} + 15 \tag{15}$$

Hence the regression equation can be infused into the adaptive factor equation (4):

$$\eta = \left(\frac{K_\delta}{T_{op} - 0.36\ T_{out} - 15.4} \right) \tag{16}$$

Furthermore, the relationship between the psychological coefficient and the operative temperature was investigated and the correlation was significant for each of the season as shown in the linear regressions in Figure 5 with the corresponding equations in Table 2.
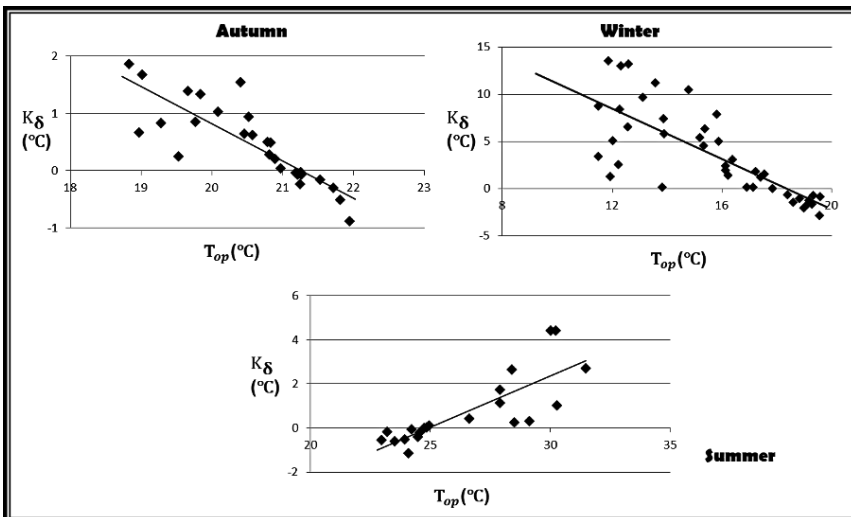
Figure 5: The correlation of psychological coefficient and operative temperatures

SEASON	REGRESSION	EQUATION
AUTUMN	$K\delta = -0.7 \cdot T_{op} + 13.8$	**(17)**
WINTER	$K\delta = -1.3 \cdot T_{op} + 24.3$	**(18)**
SUMMER	$K\delta = 0.5 \cdot T_{op} - 11.6$	**(19)**

Table 2. Regression equation of psychological coefficient and operative temperature for each season

Therefore, to be able to evaluate the psychological adaptation of the subjects using physical thermal parameters, we substituted equation (17), (18) and (19) into (16) and the result is shown in Table 3:

SEASON	REGRESSION	OUTDOOR TEMPERATURE RANGE	EQUATION
AUTUMN		$15°C \leq T_{out} \leq 22°C$	**(20)**
WINTER		$0°C \leq T_{out} \leq 14°C$	**(21)**
SUMMER		$23°C \leq T_{out} \leq 30°C$	**(22)**

Table 3. Resultant equation of the psychological adaptive factor for each season

4. CONCLUSIONS

In this research, we considered the relevant parameters influencing the thermal comfort of occupants with focus on their psychological adaptive capacity. In the physical realm, the air and radiant parameters were systematically evaluated, which informed us of the significance of the operative temperature in the evaluation of the thermal stimuli of the occupants. Also, we were able to evaluate the adaptive factor for each climate season considered. According to equation (4), these adaptive factors are psycho-physical quantities because they were influenced by both physical thermal factors () in the occupant's environment and psychological codes in the occupant's memory (), especially the outdoor memory. On further investigation the main physical thermal parameters influencing the subjects' psychological adaptation are the indoor operative temperature and the outdoor air temperature (equation (20), (21) and (22)). This implies that apart from the influence of the indoor thermal load on the subject's body, the outdoor thermal conditions induce some psychological 'resistance' or 'adaptive information' in the human cognition, which influences the magnitude of the adaptive factor of the subjects and consequently their thermal perception. In the psychological realm, the recall of the outdoor thermal conditions (which formulates the seasons) is initiated by some cognitive codes in the subjects' long-term memory called "schema". This schema consists information about some stimuli that has been categorized or organized in the human cognitive (long-term) memory, such that the result of this categorizations are discernible pattern which can be used as the basis for future judgments, decisions, inferences, or predictions (Markus, 1977). Therefore, the cognitive codes in the long-term memory, initiated by schema are major determinant of the magnitude of the adaptive factor in the psychological realm.

The result of this model-experimentation methodology is limited to Bordeaux geographical location, climate variation, culture and lifestyle. It will be interesting to explore other regions and continents to characterize the thermal and psychological parameters in these regions. Consequently, the results from these models can be applied to thermo-dynamic simulations of buildings where the psychological adaptive capacity of occupants is being considered; of course these thermal simulations may vary for different geographical regions.

REFERENCES

ASHRAE (2017). *Thermal environmental conditions for human occupancy, ASHRAE Standard 55.* Atlanta, Georgia: American Society of Heating, Refrigerating and Air-Conditioning Engineers.

De Dear, R. J., & Brager, G. S. (2002). Thermal comfort in naturally ventilated buildings: revisions to ASHRAE standard 55. *Energy and Buildings*, 34(6), 549-61.

Fanger, P. O. (1970). *Thermal comfort analysis and application in environment engineering*. Copenhagen, Denmark: Danish Technical Press.

Fanger, P. O., & Toftum, J. (2002). Extension of the PMV model to non-air-conditioned buildings in warm climates. *Energy and Buildings*, 34(6), 533-536.

Humphreys, M. A., & Nicol, J. F. (2000). Outdoor temperature and indoor thermal comfort: raising the precision of the relationship for the 1998 ASHRAE database of field studies. *ASHRAE Transactions*, 206(2), 485-492.

Humphreys, M. A, Nicol, J. F, & Iftikhar, A. R. (2007). Field studies of indoor thermal comfort and the progress of the adaptive approach. *Advances in Building Energy Research, https://doi:10.1080/17512549.2007.9687269*.

Lenzholzer Sanda & Sjerp de Vries, (2020). Exploring outdoor thermal perception—a revised model, *International Journal of Biometeorology,* 64, 293–300. *https://doi.org/10.1007/s00484-019-01777-z*

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 35, 63-78.

Mui, K. W. H., & Chan, W. T. D. (2003). Adaptive comfort temperature model of air-conditioned building in Hong-Kong. *Build Environment*, 38(6), 837-852.

Nicol, J. F., & Humphreys, M. A. (2002). Adaptive thermal comfort and sustainable thermal standards for buildings. *Energy and Buildings*, 34, 563-72.

Nikolopoulou, M., Baker, N., & Steemers K. (1999). Thermal comfort in urban spaces: different forms of adaptation, *Proceedings of the REBUILD 1999 on Shaping Our Cities for the 21st Century,* Barcelona, Spain.

Rijal, H. B., Humphreys, M. A., & Nicol, J. F. (2017). Towards an adaptive model for thermal comfort in Japanese offices. *Building Research & Information, 45*(7), 717–

729. *https://doi.org/10.1080/09613218.2017.1288450*

Romina Rissetto, Riklef Rambow, Marcel Schweiker, (2022). Assessing comfort in the workplace: A unified theory of behavioral and thermal expectations, *Building and Environment*, 216. *https://doi.org/10.1016/j.buildenv.2022.109015*

Yao R. (1997). *Study on Indoor Climate Simulation and Thermal Comfort.* PhD thesis. Chongqing Jianzhu University, Chongqing, China.

Yao, R., Baizhan, L., & Jing, L. (2009). A theoretical adaptive model of thermal comfort – Adaptive Predicted Mean Vote (aPMV), *Building and Environment*, 44, 2089-2096.

Yun G.Y., (2018). Influences of perceived control on thermal comfort and energy use in buildings*, Energy Build*, 158, 822–830. *https://doi.org/10.1016/j. enbuild.2017.10.044*.

TEACHING AMBIANCES THROUGH IMMERSIVE EXPERIENCE: THE REPRESENTATION SEMINAR AS A MEDIUM

AMBIENTES DE ENSINO ATRAVÉS DA EXPERIÊNCIA IMERSIVA: O SEMINÁRIO DE REPRESENTAÇÃO COMO MEIO

Malek Derouiche
Architect, Ph. D. in architecture, university assistant
University of Carthage, ENAU, LR21ES20, LaRPAA,2026, Tunis, Tunisia
malek.derouiche@gmail.com

Sana Layeb
Architect, Ph.D. in architecture, Assistant Professor
ISTEUB, ENAU, LR21ES20, LaRPAA, Tunis, Tunisia
sana.layeb@isteub.ucar.tn

ABSTRACT

Our project summarizes the results of a pedagogical experiment designed to raise awareness of sensory perception among first-year architecture students, focusing on the body's interaction with the surrounding space. The exercise, entitled "Spatial Experiments", comprises four stages. The first, "Errance Intuitive", encourages students to explore various spaces and express their sensations through different modes of representation. The second, "Attentive immersion", asks them to identify and describe qualitatively the sensory parameters of the spaces they visit. The third stage, "Representation ", invites students to create models simulating the effects observed. The final stage, "Transposition", involves designing an abstract model (as mind map, transect) expressing their sensory experiences. This educational experience enabled the students to progress in their understanding of architectural and urban environments, developing their analytical and creative skills, as well as their ability to represent these environments using different drawing techniques.

KEYWORDS: immersive experience. atmospheres. Education. pedagogical tool. Sensory perception.

RESUMO

Este artigo apresenta os resultados de uma experiência pedagógica destinada a sensibilizar os alunos do primeiro ano de arquitetura para a perceção sensorial, centrada na interação do corpo com o espaço envolvente. O exercício, intitulado "Experiências espaciais", divide-se em quatro fases. A primeira, "Deambulação Intuitiva", incentiva os alunos a explorar vários espaços e a expressar as suas sensações através de diferentes modos de representação. A segunda, "Deambulação Atenta", pede-lhes que identifiquem e descrevam qualitativamente os parâmetros sensoriais dos espaços que visitam. A terceira etapa, "Experiências físicas sobre o envelope", convida os alunos a criar modelos que simulem os efeitos observados. A última etapa, "Conceptualização", consiste em conceber um modelo abstrato que exprima as suas experiências sensoriais. Esta experiência pedagógica permitiu que os alunos progredissem na sua compreensão dos ambientes arquitectónicos e urbanos, desenvolvendo as suas capacidades analíticas e criativas, bem como a sua capacidade de representar esses ambientes.

PALAVRAS-CHAVE: experiência imersiva. atmosferas. Educação. Perceção sensorial.

1. INTRODUCTION

We base our educational experimentation, dedicated to first-year architecture students, on the immersive experience as a scientific, educational and creative tool. Our approach is based on exploring shared atmospheres through the movement of our students. Journeys, stops, moments of observation, attentive listening and even

imagination offer students a new way of occupying and inhabiting worlds. Indeed, the question of memory, heritage and vestiges has always been a subject of particular interest in our teaching approach. For beyond technical concerns, we strongly believe that it stimulates the minds and imaginations of the most sensitive of our students. In a second phase, students were invited to explore new tools (sometimes hybrids) that enable them to transcribe the intangible, imaginary world into a concrete, tangible one.

2. CONTEXT OF THE EXPERIMENTATION

The representation seminar is a pedagogical moment of sharing among all first-year students, calling upon the coupling of various workshops on architectural shaping, drawing and plastic expression. It is a key pedagogical moment based on a collective and convivial approach that recreates the sensory and physical atmosphere of a place (whether architectural or urban). The immersive experience enables students to become more conscious of their tangible and intangible environment. On the one hand, it develops students' specific and unique imaginative and expressive capacities. On the other hand, in order to be able to transpose their feelings, this exercise creates a synergy of different graphic and plastic sensibilities for students, combining drawing with space and plastic expression.

3. THE IMMERSIVE EXPERIENCE AS A PEDAGOGICAL TOOL

As we explain in Figure 1, the methodology adopted for this project includes several stages.
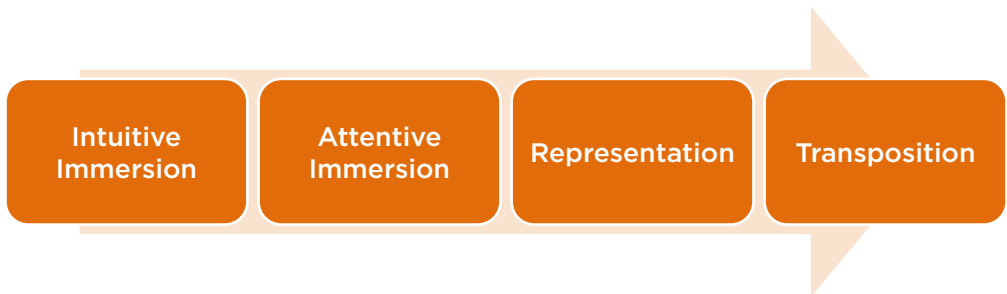
Figure1. Methodology construction. Source: Authors.

3.1 Errance Intuitive

In this first step, we begin by inviting each student to attend and first discover the site (a park, an archaeological site, an urban landscape, etc.), in a collective experience. On field of study, they will gather a variety of data to consolidate their perception and help them to develop their own imaginary world.

3.2 Attentive Immersion

During this phase, each student is called on to take conscience of the time spent on site, to walk, wander, stroll, while activating all their senses and imagination. Indeed, the exercise consists in engaging singular perception, through the senses (sight, hearing, smell, touch...) and the body in movement. As teaching architects, we insist that they pay attention to the rustling of leaves, the chirping of birds, or the ageing of an architectural detail (door, column, window...).

It's about discovering, or rediscovering, a space. The aim of this step is to draw up a comprehensive analysis.

3.3 Representation

This is a graphic and mental reinterpretation of the first two phases. Each student will individually edit and harmonize the various feelings, emotions, actions and reactions. All types of drawings, techniques or tools are authorized: (conventional: sections, plans, axonometry, ...and / or analytical: diagrams, sketches...), plastic compositions (2D / 3D), photos, photomontage, texts... The whole can be presented in the form of a mental map, urban transect or other type of representation.

Vegetation, architecture, history, location, routes, users, details, sequences of light and shadow and the effects of materials and textures, observed and projected bodies, covered and uncovered spaces, continuous and discontinuous boundaries, view and landscape framing and emotions; all material and immaterial factors will be the inspiring elements for this phase.

The architectural and urban design process is a communicative act, of which the use of graphics is one of the privileged tools (Durand, 2003). The interaction between perception and representation is fundamental to this process (Deshey, 2012). That's why we focus on developing this connection between perceived and represented spaces for our students.

Immersion, which begins unconsciously, is triggered by attention, emotion, feeling or an event that arouses interest and creativity. The choice of tools and representation technique can strongly influence this experience.

3.4 Transposition

By taking awareness of all the physical and sensitive parameters of the environment (light, temperature, sound, air...), our architecture students will later learn to consider them into the design process of their architectural and urban space.

The aim of this method is to awaken students' perceptual sensitivity to the components of the architectural and urban experience and to stimulate their creativity in projecting ambiences.

We expect from our future architects a mastery of the material (physical, geometric) and immaterial (effects, etc.) aspects of the spaces they design. The space they conceive will have both geometric and topological properties, thanks to the characteristics of its interfaces (in-between, porosity, etc.) (Ben Ayed &Layeb, 2016). The immersive experience, based on experimentation with sensory effects and the user's sensitive experience, helps to integrate multisensory design, which arouses emotions, stimulates the senses and improves the quality of life of future users. By integrating this pedagogical approach into the teaching of architectural and urban project design, future architects will later be able to design spaces that are more sensitive and better adapted to the well-being of their users.

4. IMPLEMENTATION AND TESTING OF THE METHODOLOGY

We have tested this methodology during three editions of the seminar of representation in 2020, 2022 and 2024.

4.1 Architecture and memory of an archeological site: put on the scene / placed bare

The aim of this experience is to artistically interpret the archaeological site, where it is a question of stagings for as many exposures of the memory of the place: A work of clearing, of revealing and unveiling the layers of the history of Men and Monuments as well as the fantasies which are attached to them.

The discovery of the archeological site will allow the student to situate themselves to better project themselves into the history of the site. He will collect data of various types on site which will have the effect of consolidating his perception of the place in such a way as to deploy his own imagination.

Through a series of drawings of interior or exterior spaces, the student will choose to enhance by means of a different technique (or more), the parts deemed relevant for the staging and/or exposure, sequences of shadows and lights and effects of materials and textures, bodies observed and projected onto the ruins, covered and uncovered spaces, continuous and discontinuous limits, framing of views and landscapes…

4.2 Dialogue between architecture and vegetation: a stroll in a palace and its park

Students were asked to take the time to walk, stroll, stroll while activating all their senses and their imagination using their perception, through their senses, their body and their imagination to discover a palace and its park. Pleasure would govern their work. It is a graphic and mental reinterpretation of the park plan.

The vegetation, the architecture, the history, the location, the leisure facilities, the routes, the users, an ordinary detail in the eyes of people, the name of the place... would be inspiring elements for their work. Students had to take photos, videos, sketches and readings.

As shown in figure 2 the ultimate goal is to enhance the dialogue between vegetation and architecture.

Figure 2. On-site work sessions.
Source: Students' rendering 2022.

Back in the workshop, each team designs a collective board reflecting their mental representation of the park. The team had to edit and harmonize the different fragments developed individually (figure 3). The teammates had to implement a collective composition, made of sections, plans, axonometry, ...and/or analytics: diagrams, photomontage, texts, sketched on site. The whole can be presented in the form of a mental map or other type of map (tourist, artistic...).
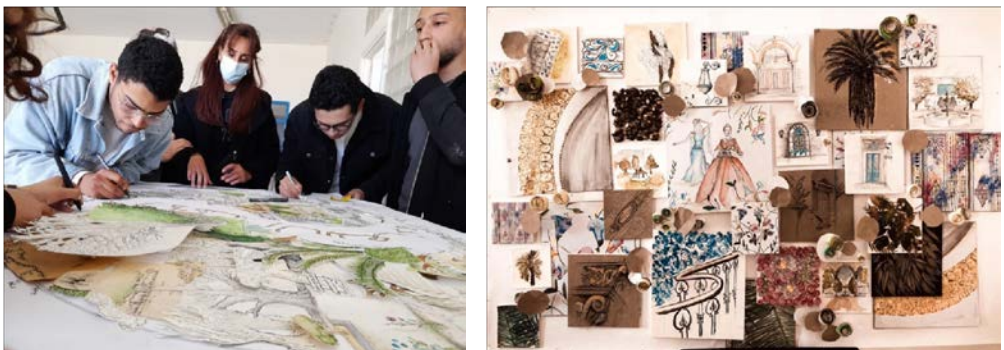
Figure 3. On-site work sessions.
Source: Students' rendering 2022

4.3 Sensory immersion: the transect as a tool for exploring an urban fragment

Through on-site work spread over two days and in pairs, students were asked to explore an urban fragment. They had had to carry out a sensitive study of the place by relying on their five senses, on the stories of users and on the history of the city. Represent this sensory immersion, this collection of user speech and this overall feeling, using a new tool: the urban transect.

One of the tools used to represent the ambience is the transect. The transect is defined by Nicolas Tixier "*as a hybrid device between the technical section and the sensitive route: it is constructed through drawing, photography, measurement, text or video, as much as it is practiced in situ, through perception, speech, ambulation, generally by walking. In fact rehabilitating the atmospheric dimension in urban representations, making it possible to include resident stories in specialized debates between disciplines, the transect becomes a tool for questioning and expressing sensitive space and lived practices*" (Tixier, 2016). This sensory journey is caused, in large part, by spatial configurations (the shape, dimensions and layout of buildings, vegetation, boundaries, proportions between full and empty spaces) and physical environmental factors (light, sound, smell, temperature, wind, etc.). The transect allows these data to be represented on the same medium in addition to the words of the users. Thus, student represented the sequences that most marked them by relying on drawing (geometric, perspective, gestural, linear and/or processed, colored and/or in values, graphic and/or with collage of materials/textures or photos, etc.). The work was carried out on site, and students had to imagine a plastic composition organized around the same plan (Figure 4) and in the same proportions, completing it with elevation views, sections, perspectives, comments, etc.
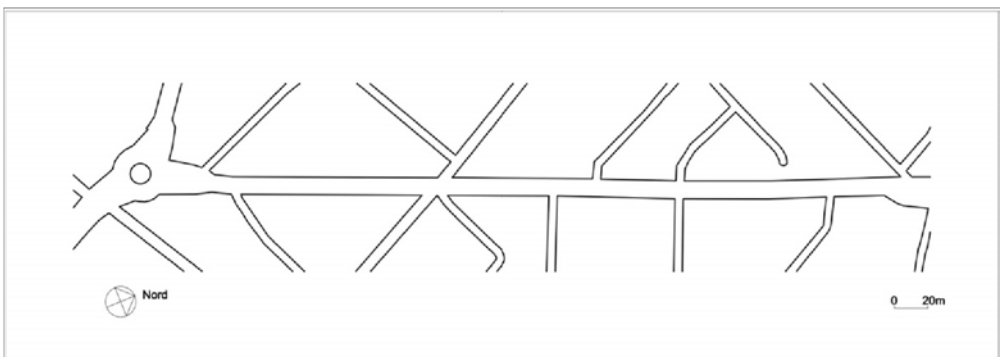
Figure 4 Plan of the urban fragment. Source: Authors.

5. RESULTS

After three different experiences with our methodology, we can affirm that it can applied on various scales (urban space, building and archeological site).

We can also affirm that this approach can help students to collect the sensitive experience of users or can help to recreate living scenes or imagined ones. It's a question of interpreting a local archaeological site, where the staging is as much a question of laying bare the memory of the place: a work of clearing, revealing and unveiling the strata of human history, monuments, experiences and atmospheres, as well as the fantasies associated with them (Figure 5).
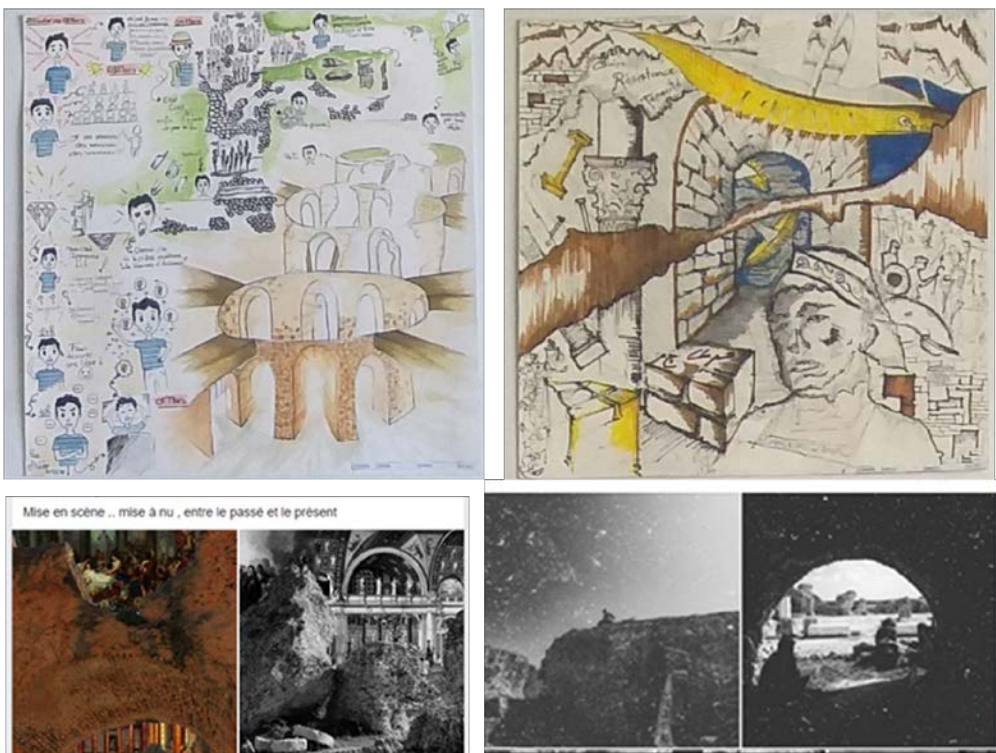
Figure 5. Students rendering with different techniques.
Source: Students' rendering 2020.

Using the transect as a hybrid tool for representation was easy for students to adopt and they found a way to represent different kinds of data in the same drawing (figure 6). Graphics (technique acquired in a plastic arts workshop) can be an interesting tool for representation. All the acquired knowledge from other learning (interdisciplinary) ultimately constitutes a toolbox for our students to operate in their approaches, from on-site observation, immersion, analysis and reading and finally projection/transposition/design.
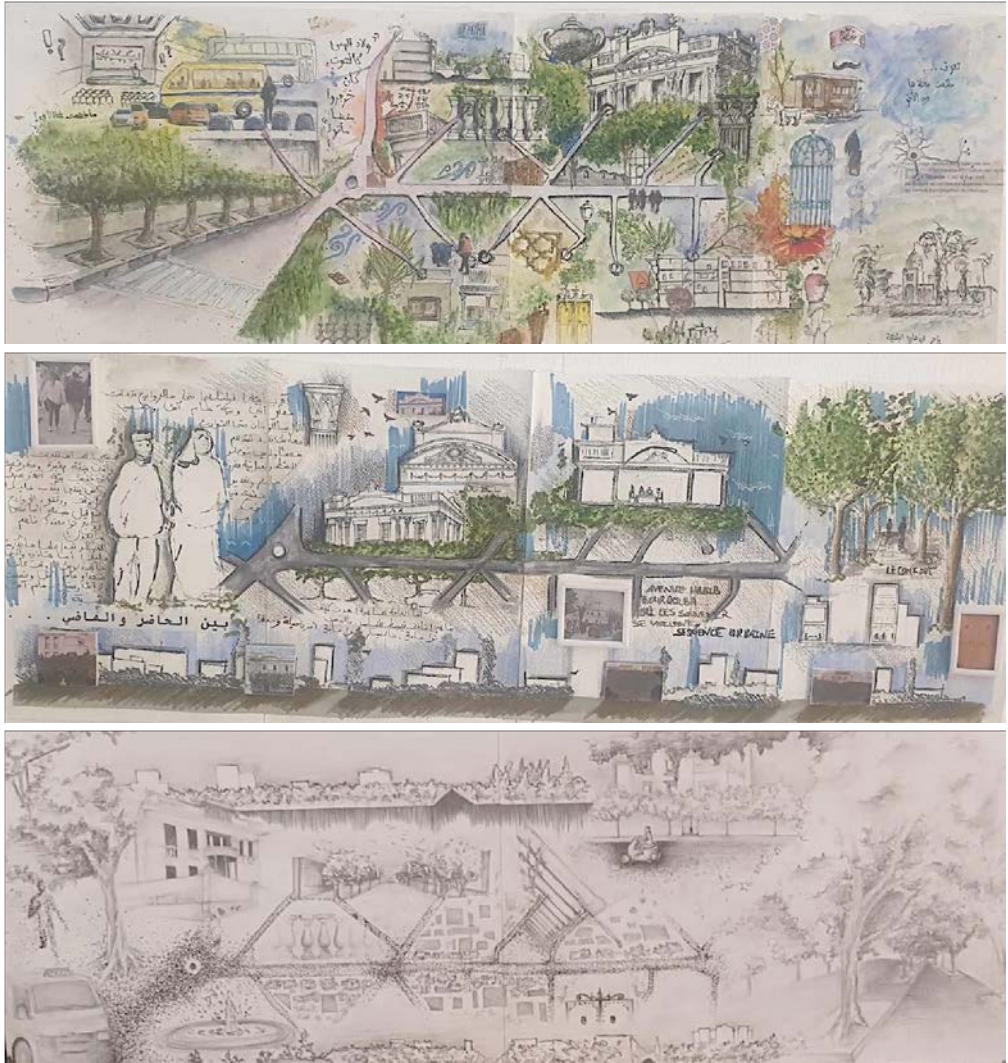
Figure 5. Students rendering transect. Source: Students' rendering 2024.

6. CONCLUSION

Our educational experimentation with first-year architecture students has demonstrated the profound impact of immersive experiences as scientific, educational and creative tool. By engaging students in shared atmospheres through movement, attentive listening and imaginative exploration, we have enabled them to discover new ways of occupying and inhabiting spaces. This methodology, grounded in the appreciation of memory, heritage and sensory perception, has successfully stimulated students' creativity and deepened their understanding of both tangible

and intangible environments. The representation seminar has been a cornerstone of this approach, fostering a collective and convivial learning environment that integrates various workshops on architectural shaping, drawing and plastic expression. Through the stages of intuitive wandering, attentive immersion, graphic representation and transposition, students have honed their perceptual sensitivity and imaginative capabilities. The exercises have emphasized the importance of multisensory design and its role in enhancing the quality of life for future users of architectural spaces.

Our methodology has been effectively tested across different scales and contexts, including urban spaces, buildings and archaeological sites. The use of hybrid tools such the urban transect has proven to be a valuable asset, allowing students to seamlessly integrate various types of data into a cohesive representation. By interpreting local sites and creating detailed, sensory-rich representations, students have learned to appreciate the complex interplay between physical and intangible aspects of spaces.

Overall, this pedagogical approach not only enriches the educational experience of architecture students but also equips them with the skills to design more sensitive, responsive and well-adapted spaces. As future architects, they will be better prepared to create environments that cater to the well-being and sensory experiences of their users, thereby contributing to the development of more livable and emotionally resonant urban and architectural spaces.

7. BIBLIOGRAPHY

BEN AYED Alia et BEL HAJ HAMOUDA Alia, « La « frange épaisse » : un outil opératoire pour l'analyse et la conception. Ambiances », Ambiances, tomorrow, Proceedings of 3rd

International Congress on Ambiances, Volos, 2016, p. 81-86.

Alia BEN AYED et Sana LAYEB, 2016, L'initiation à l'architecture sensible : la place de l'émotion, Colloque international, Les journée internationales de l'initiation pédagogique dans l'enseignement supérieur "JIP'2016", abstract publié en ligne sur http://jip.ieee.tn/resumes-des-articles-acceptes//, pp. 139-147.

Balay, Olivier ; Chelkof, Grégoire ; Delétré, Jean-Jacques ; Liveneau, Philippe ; Remy, Nicolas ; Tixier, Nicolas. 2004. Building atmospheres. Proceedings of the 3th Conference of the European Association for Architectural Education, 27-29 Mai 2004, Athènes. p. 130-137. Cathrine deshay : Proceedings of the 10th World Congress of the International Association for Semiotic Studies (IASS/AIS), Universidade da Coruña (España / Spain), 2012. ISBN: 978-84-9749-522-6

CHELKOFF Grégoire, « Pour une conception modale des ambiances architecturales », Faces, Journal d'architecture, 2010, p. 18-23.

Chelkoff, Grégoire. 2003a. Autour des ambiances : interdisciplinarité et circulation des savoirs. Les cahiers de la recherche architecturale et urbaine. vol. 12, p. 42-43.

Chelkoff, Grégoire. 2004b. Écologie sensible des formes architecturales, recherche et expérimentation. In : Actes des rencontres EURAU'2004 European Research in Architecture and Urbanisme, juin 2004, Marseille. p. 1-9.

DURAND Jean-Pierre. La représentation du projet comme instrument de conception: approche pratique et critique. Éd.de la Colette, Paris,2003 Grégoire Chelkoff, « Expérimenter l'ambiance par l'architecture », Ambiances [En ligne], 4 | 2018, mis en ligne le 05 décembre 2018, consulté le 03 août 2019. URL : *http://journals.openedition.org/ambiances/1558*

Thibaud, Jean-Paul. 2012. Petite archéologie de la notion d'ambiance. Communications. vol. n° 90, p. 155-174.

Nicolas Tixier. « Le transect urbain. Pour une écriture corrélée des ambiances et de l'environnement. ». In: Sabine Barles, Nathalie Blanc. Écologies urbaines. Sur le terrain, Economica-Anthropos ; PIR Ville et Environnement, pp. 130-148, 2016. *https://hal.science/hal-01518091*. Consulté le 05/02/24. ZUMTHOR Peter, Penser l'architecture, Ed Birkhauser, 2008.

Feriel Mesbah [Feriel Mesbah]. (2022). Séminaire de représentation 1ère année architecture, ENAU. [Posting photos]. www.facebook.com. *https://www.facebook.com/groups/259680921137678*

Neila Larbi Zribi [Neila Larbi Zribi]. (2022). Séminaire de représentation 1ère année architecture, ENAU. [Posting photos]. www.facebook.com. *https://www.facebook.com/groups/259680921137678*

ACKNOWLEDGEMENT

L27

"AIR DES CARRIÈRES", A CLIMATIC BENCH TO FIGHT URBAN HEAT ISLAND IN PARIS. STORY OF A SCALE ONE EXPERIMENTAL URBAN FURNITURE.

"AIR DES CARRIÈRES", UM BANCO CLIMÁTICO PARA COMBATER A ILHA DE CALOR URBANA EM PARIS. HISTÓRIA DE UM MÓVEL URBANO EXPERIMENTAL DE ESCALA UM.

Guillaume Duranel
Architecte, Maitres de conférences
Alt, LET-LAVUE, ENSA Normandie
g.duranel@alt-au.com

Frédéric Blaise
Architecte
Alt
f.blaise@alt-au.com

ABSTRACT

"Air des carrières" is a prototype for a public bench that pumps cool air from underground quarries to cool down Paris public space during heat waves. The one-to-one scale prototype was tested during the summer of 2021. After explaining how the bench is able to cool down its surrounding, this paper mainly focuses on how the prototype was implemented and on the technical and political difficulties that occurred. It will show how technical and social data were collected to improve the design. It will conclude on the difficulties that remain to create a permanent version.

KEYWORDS: Prototype, Urban heat island, Public space, Urban furniture

RESUMO

"Air des carrières" é um protótipo de um banco público que bombeia ar frio de pedreiras subterrâneas para arrefecer o espaço público de Paris durante as ondas de calor. A escala um para um foi testada durante o verão de 2021. Depois de explicar como a bancada é capaz de arrefecer a sua envolvente, este artigo centra-se principalmente na forma como o protótipo foi implementado e nas dificuldades técnicas e políticas que ocorreram. Mostrará como os dados técnicos e sociais foram recolhidos para melhorar o design. Concluirá sobre as dificuldades que permanecem para criar uma versão permanente.

PALAVRAS CHAVE: Protótipo, Ilha de calor urbano, Espaço público, Mobiliário urbano

1. INTRODUCTION

"Air des carrières" (quarries's air) is an experimental public bench that aims at cooling down public spaces. The bench pumps cold air located in Paris's underground quarries network to provide free cooling during heat waves. Like many urban areas, Paris is subject to urban heat island that makes the city difficult to live in during the summer. Facing the challenge of global warming, the Paris municipality is looking for options to become more resilient and to improve the comfort of its citizens.

Paris is known for the large network of underground quarries, mostly under the Seine's left bank. Part of those cavities are known today as the catacombs. Over all they form a network of over 200 km of galleries at a depth of around 20 meters. At this depth, air is maintained at around 14°C all year around. A group of architects and designers proposed a design of an experimental bench "Air des carrières" to a project incubator called "FAIRE Paris" in 2018. It enabled them to develop the design of the bench and to test it during the summer of 2021.

After reminding the main features of the bench, this paper will explore how experimenting a one-to-one scale prototype became necessary to verify the hypothesis. It will then describe the prototype technical and social evaluation. Since

this prototype was installed in the public space, this paper also enables to discuss what are the technical and political difficulties to implement this kind of scale one prototype in a public space.

2. HOW "AIR DES CARRIÈRES" WORKS

The bench works by pumping air from underground quarries via an air duct travelling through an existing stone extraction pit[1]. The air flow is controlled by a small VMC like engine located just under the ground surface. The air is then diffused through a marble stone bench that is 3D carved. The cooling effect is designed to occur according to four principles.

Firstly, the air is naturally cold. During the design stage, the conception team collected data concerning the underground air temperature and found that the air remains around 14°C and 17°C during summers. The design team also had to measure air quality such as CO_2 and radon gas levels to ensure it to be safe to diffuse in public space.

Secondly, the air flow is accelerated by the engine to reach a maximum of 500m^3/h, a level considered optimal for comfort.

Thirdly, the underground air has a high hygrometry. Which was thought to improve the cooling effect by creating a humidifier like effect when pumped at the surface. The prototype showed that this aspect proved not to be as effective a thought during the design stage.

Finally, the bench is made of marble stone from the Parisian Basin that has a high thermal effusivity (around 2500 $J.K^{-1}.m^{-2}.s^{-0,5}$). This characteristic makes it naturally fresh to the touch.

All those design principals were proposed by the design team at the beginning of the project. Once "Air des carrières" was selected by the project incubator, the city of Paris gave the design team access to the bureau of quarries investigation[2], the bureau of public space[3] and to Clim espace[4]. Thanks to those contacts, the cooling principals were modeled by an engineering team. Data had to be collected to feed into the model that showed that those principals could create a fresh air bubble of about 1 meter radius around the bench[5]. However, the engineering team pointed

---

1 Over 200 pits connect the underground galleries to the ground level. Those pits where used for extracting stone, for venting and to give access to the quarries.

2 The "Inspection Générale des Carrières" is a municipal bureau created in the XIXth century that ensure the stability of underground quarries.

3 The "direction des espaces public et des mobilités" is a municipal bureau that maintains public spaces in Paris

4 Clim espace was a privately owned company that maintained the urban cooling system.

5 A more detailed explanation of the design process is available in DURANEL G. (2020).

out the many inaccuracies of the model. At that stage many questions remained unanswered:

- Would those four principals really work and provide a sensible cooling effect?
- Would the fresh air resource naturally renew itself since underground air flow is difficult to model?
- Would the fresh air bubble remain around the bench or be quickly dissipated by natural wind?
- Would users feel the temperature difference and would they interact with it by spending enough time sitting to really cool down?
- What technical difficulties are met to enable installing a definitive solution?

3. INSTALLING THE PROTOTYPE, DIFFICULTIES AND LIMITATION OF THE EXPERIMENTATION

In order to install and test the prototype, the design team had to find an implementation site and get a permit from the City Hall. They therefore had to get technical and political approval from the Paris municipality. From 2018 to 2020, the design team worked closely with the bureau of quarries investigation to select the right extraction pit. They also had to work with the bureau of public space in order to obtain the permit to install the temporary bench.

The main difficulties to install the bench was to find the right location that had:

- To be naturally shaded (the design team did not want to implement a shade structure which would cost too much for the prototype),
- To have at least another extraction pits nearby since the quarries investigation bureau needs to be able to access galleries even when the bench is in use,
- To be a place where a bench would make sense for urban uses.

A site in the 13th arrondissement of Paris was selected at the beginning of 2020. The prototype was ready to be installed for the summer of 2020. However, due to the covid pandemic and the municipal elections that were held in March and June of 2020, the project was put on hold.

The project was restarted in 2021 and the prototype was installed from 1st of June to the 30th of September. Since the prototype was temporary, the design team chose not to connect it to the main power line (which would have required further more cost). Instead, they chose to have it run on batteries that could last up to 5 days. During the experimentation the design team had to change batteries once or twice a week.

The prototype also had two temperature sensors, one underground and one at ground level. The goal was to monitor the temperature variation throughout the summer. The bench was also programmed to start automatically when temperature rose over 25°C. The setting of the airflow was also supposed to increase as ground level temperature would rise. However that sensor was located too close to the cool air source which interfered with the sensor. To make up for this flaw, the engine was set by default on medium low power. The design team cloud manually turn up the power during extreme heat period.

One week after the bench was installed, the battery system failed. It took the team one month to find the problem and replace the failing parts. However, during the month of June 2021 when the bench could not work, temperatures were unusually low. The bench was able to work properly with high temperatures from the end of July to the end of September.

Figure 1/Figura 1. Installing and programming of the engine.
Source: Alt 2021

4. EVALUATION OF THE PROTOTYPE DURING ITS USE AND TEACHINGS

During this period, the design and engineering team collected different types of data:

- The temperature of the underground galleries was collected and sent daily,
- The meteorological data was collected from a nearby weather station,
- The power use of the engine was collected and sent daily with enough accuracy to model the airflow hour by hour,
- Temperature at ground level were collected with a thermal camera,
- Sociological observation was realized, to observe how people were interacting with the bench over long periods of time,
- Surveys to users was realized to get their feedbacks on the prototype,
- Workshops were organized with children from the nearby school in order to gather their point of view one this device.

Those evaluations show that the cooling effect works according to the model. For instance, when the outdoor temperature is at 32°C, the temperature of the surface of bench is 10°C cooler. At 1 meter from the bench, the temperature is 5°C lower.

With the temperature of 32°C, when the bench is started, the temperature around the bench drops by 5°C within 15 minutes. It takes 1 hour to reach the maximal difference of 10°C aimed by the system.

Data also shows that the underground air temperature hardly fluctuates during the summer (table 01). After 12 hours of use, the air flowing out of the bench remains at the same temperature. The resource in cold air then seems to renew quickly enough for a permanent bench to be installed.

Overall, the cooling effect that was modeled proved to be working through the prototype.

Température minimale mesurée : 19°C
Température maximale mesurée : 32°C
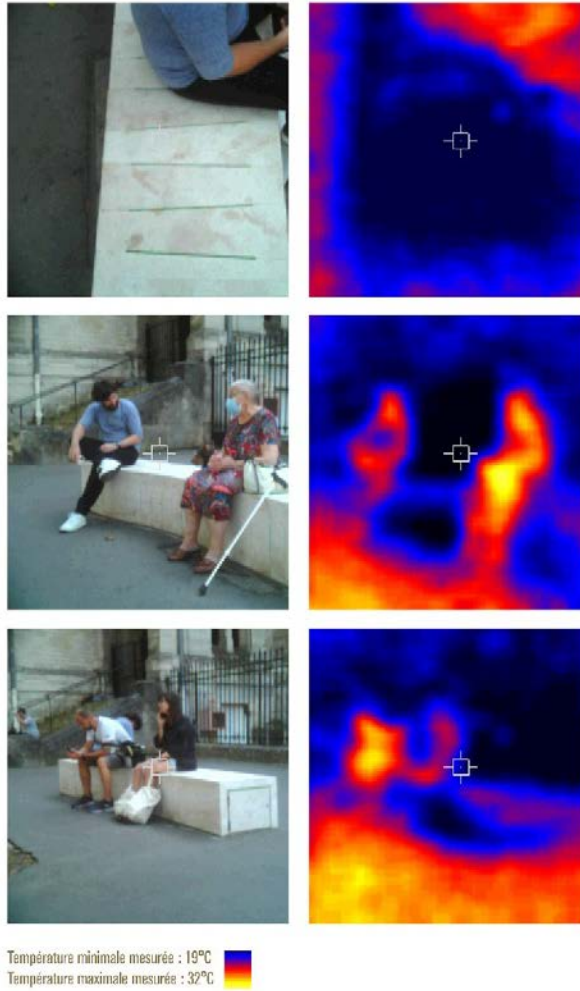
Figure 2/Figura 2. Thermal camera pictures showing the 10°C difference of the bench with its surrounding.
Source: Alt 2021
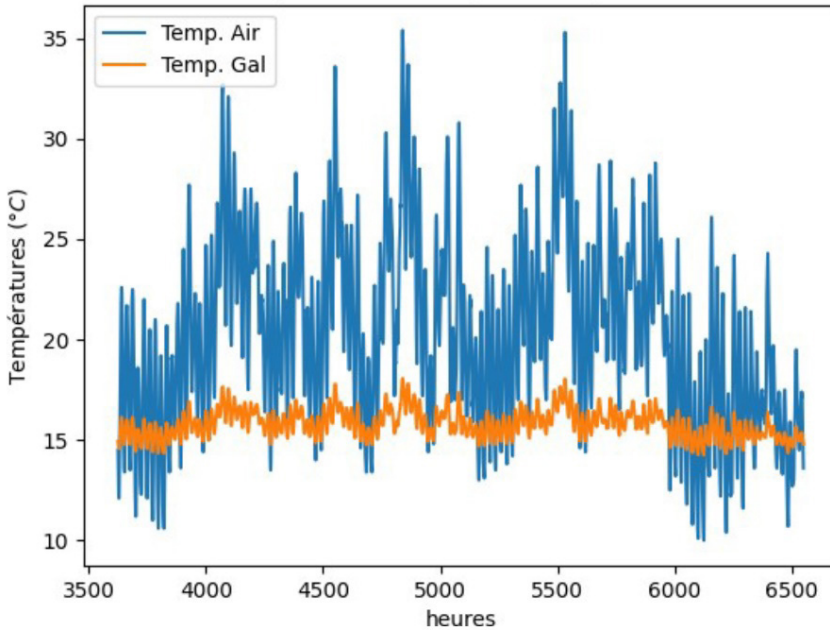
Table 1./tabela 1. Outside temperature (blue) and underground temperature (orange) from Juin to September 2021. Source: Asmod (2022)

5. USER'S FEEDBACKS FROM SURVEYS

The design team also wanted to analyze how users would interact with the bench. They realized a sociological observation of how people would use the bench at certain times of the day and week: at school pick-up time, during the week-end's market, in daytime... A member of the design team would sit at about 15m from the bench for sessions of up to 2 hours to observe who was using the bench, how many people would use it and for how long. It showed that people were using the bench quite frequently, with about 5 to 10 users in an hour and a sitting time ranged from 2 minutes up to 15 minutes. At times, two people not knowing each other would use it at the same time (mainly at school pick up times). They would usually use it while doing other things: smoke a cigarette, wait for their kids to get out of the nearby school, or chitchat with friends met at the market. This intensity of use showed a success since the bench was a little out of the way of the main street flux.

To complete the observation approach, the team surveyed 28 users with a questionary. Designers wanted to understand why people were coming to the bench and if they knew about it before hand. They aimed at collecting people feeling about the bench, if they would feel the cooling effect and which cooling principal was deemed more effective. They also wanted to know if users understood how the bench worked and if more information was needed for them to enjoy it.

The survey showed that a large majority of people knew the project since it was relayed in local media. Some people came from other neighborhood especially to see it. All surveyed users said that the cooling effect was working. Some said that the medium setting of the engine was too strong and to set it at a medium low (around 350m3/h) was more comfortable for long pauses. Concerning the sound of the engine, most users did not hear it. Those who did thought that it was not problematic since the surrounding street is louder. Also hearing the engine gives users the information that the bench is working, and since that sound is related to air flow it event helps feeling cooler. Concerning the overall design of the bench, they found it comfortable. Most users thought that this bench would be more useful if located in a public square or a garden since those are places where people come to seek fresh places. People understood that the bench was using underground air to cool down its surrounding, however, they sometimes would confuse the underground quarries and the sewer system.

Users were also happy to interact with the bench since it made them realize that underground quarries run under the Place Jean d'Arc, a historical feature that is seldom part of the day to day life of Parisians. In this regard, the bench was able to make this otherwise invisible aspect of the Paris underground system a useful resource for citizens.

Some users proposed that instead of an automatic start linked to outdoor temperature, the bench could be activated by people when they sit on it: either with a motion sensor or with a button that they could press.

Figure 3/Figura 3. Picture of a frequent user of the bench
Source: Alt 2021

Figure 4/Figura 4. Picture of an occasional user of the bench
Source: Alt 2021

6. DESIGN IMPROVEMENT AND DIFFICULTIES TO IMPLEMENT A PERMANANT INSTALLATION

Those teachings helped improve the design of the bench with the goal to install a permanent version. The improvement regards three main aspects. Firstly, the location that needs to be carefully selected. In this regard, creating a new pit could be a solution so the location could be more flexible. Secondly, to power the bench, a connection to the main line seems necessary. The design team collected data on the bench electric consumption. It would only need 59kWh per year (half less than an indoor mobile air conditioning unit). Thirdly, interaction with users seems to be a big improvement to bring to the design. An activation mechanism is thought to be the best path forward since it would also be a way to help users become more aware of the stakes in fighting urban heat island.

Today, the bench is dismantled. It could be reinstalled at very low cost provided that the aforementioned improvement would be implemented. The design team has been in contact with technical bureau as well as elected official to try to find a way to install a permanent version. However, that bench would require yearly technical maintenance and that cost was not taken in consideration.

Since 2021, the team has been failing in finding the political support to implement such an amenity. Tow paths forward seem possible. Either the design team is able to integrate the design in a global refurbishment of a public space (which are often ongoing in Paris). Or they could try to build support from a local association that would suggest the design to the Paris participatory budget. We can understand that, even with a prototype that brings a proof of concept, the design team does not have the ability to develop and install a permanent version of the climatic bench. Building political support becomes a necessary action for the project. In conclusion, the fact that the project remains at the prototype stage shows that this kind of innovation in public space need to be technically feasible, meet social needs, get people approval and gather political support.

7. BIBLIOGRAPHY

Agence Parisienne du Climat (2018). L'ilot de chaleur urbain à Paris, un micro climat au cœur de la ville. Paris: Agence Parisienne du Climat.

APUR (2017). Les îlots de chaleur urbain du cœur de l'agglomération parisienne in Cahier#3 : brises thermiques. Paris: APUR.

Berthier S. (2018). Le développement expérimental en situation de projet in Les Cahiers de la recherche architecturale urbaine et paysagère. *https://doi.org/10.4000/craup.294*

Duranel G. Blaise F. (2020). Making the most of Parisian quarries'air in MASSON D. Ambiances, Alloæsthesia: Senses, Inventions, Worlds: Proceedings of the 4th International Congress on Ambiances #2 (pp. 266-271) Réseau International Ambiances.

Hoeppe, P. (1999). The physiological equivalent temperature: a universal index for the biometeorological assessment of the thermal environment in International Journal of Biometeorology 43, 71–75. *https://doi.org/10.1007/s004840050119*.

Matzarakis, A. Mayer H. Iziomon Godwin M. (1999) Applications of a universal thermal index: physiological equivalent temperature in International Journal of Biometeorology 43 76–84 *https://doi.org/10.1007/s004840050119*.

COMPARATIVE ASSESSMENT OF THE PERCEIVED THERMAL COMFORT OF OCCUPANTS IN GLAZED DOUBLE SKIN FAÇADE BUILDINGS

Tosin Omoya
Post-Doctoral researcher
Univ. Bordeaux, CNRS, Bordeaux INP, I2M, UMR 5295, F-33400, Talence, France
Arts et Métiers Institute of Technology, CNRS, Bordeaux INP, Hesam Université, I2M, UMR 5295, F-33400 Talence, France
École Nationale Supérieure d'Architecture et de Paysage de Bordeaux, I2M (UMR 5295), 33405 Talence, France
tosin.omoya@u-bordeaux.fr

Denis Bruneau
Professor
Univ. Bordeaux, CNRS, Bordeaux INP, I2M, UMR 5295, F-33400, Talence, France
Arts et Métiers Institute of Technology, CNRS, Bordeaux INP, Hesam Université, I2M, UMR 5295, F-33400 Talence, France
École Nationale Supérieure d'Architecture et de Paysage de Bordeaux, I2M (UMR 5295), 33405 Talence, France
denis.bruneau.bordeaux.archi.fr

Antoine Dugue
Researcher
National Institute Pour La Transition Energétique Du Bâtiment, (Nobatek/Inef4), 64600 Anglet, France
adugue@nobatek.inef4.com

ABSTRACT

The aim of this paper is to explore a comparative assessment of the thermal perception of occupants in glazed buildings. This is to be able to enumerate empirically the strength and deficiency of these glazed façade as it relates to occupants' perceived comfort. Thus, the case study of two office buildings of which one is enveloped by glazed single skin façade (SSF) and the other by double skin façade (DSF) is being proposed. This paper therefore discusses only the preliminary investigation of the single skin façade (SSF) office building in Bordeaux during the spring season. This was done by collecting the physical thermal measurement of the office space via data logger instruments and the perceptive evaluations via questionnaires. Hence, the factors considered are the environmental thermal parameters, lighting, ventilation and humidity. This preliminary investigation reveals that the subjects feel cooler than the thermal acceptability range when the outdoor air temperature is lower than 14°C. Hence, the level of insulation provided by the SSF building is concluded to be insufficient for the occupant comfort during the cooler period of the spring season. Currently, the operative temperature and the outdoor air temperature are the physical parameters closely link to the subjects' perception and the magnitude of thermal retrofitting required for the glazed buildings.

KEYWORDS: Thermal perception. single skin façade. double skin façade. operative temperature. perceived comfort. adaptive thermal comfort.

1. INTRODUCTION

Climate change and global warming seem to have motivated some design and building innovations and systems to mitigate its effects. These buildings are expected to provide optimum satisfaction and comfort to its occupants. Most design and building project usually commence with the briefs and design process, till the construction and completion stage is reached. Hence, little attention is giving to the occupancy period and post-occupancy evaluation of these buildings. Therefore the chance to maximize the output of all the stages of the building cycle may be undermined. The occupancy period of the building influences the occupant's life-style, behaviors, perception, satisfaction, comfort, productivity, occupancy cost, energy consumption, health and much more. As a result, the thermal comfort evaluation of the occupants is now a fundamental aspect of the building cycle, so that occupant can maximize their building in terms of cost, energy consumption and perceived comfort.

Thermal comfort has been defined by ASHRAE as the condition of the mind that expresses satisfaction with the thermal environment and can be assessed by subjective evaluation (ASHRAE 2017). Hence, to evaluate the satisfaction of occupants a lot of factors are considered; from the objective factors to the subjective, the physical factors to psychological, environmental factors to behavioral and many more. The evaluations of these factors is therefore complex because of the different domains in which they exist, nonetheless these evaluations are necessary to enhance the

effectiveness of the building and to maximize occupant's benefits. It's important to recognize that various building materials and the way in which they are being applied to building construction influences the level of thermal comfort derived from the building. Therefore the thermal satisfaction derived from wooden or masonry building may be different from glazed or the transparent type.

In architecture and building engineering, the glazed designs and façade are usually for large-scale and high-rise buildings, because it is presumed to have numerous advantages than other building materials and styles. This advantage includes its aesthetic façade, transparency, natural lighting, noise reduction, low maintenance, strength, weather resistant, architectural flexibility, energy efficiency, security and many more. Hence, the outcome of these listed advantages should lead to achieve perceived comfort for the occupants. Therefore the evaluation of the occupant's perception within buildings with glazed façade and envelope is crucial and very important for building retrofitting and future designs. Thus, in this research we wish to investigate and evaluate the perceived comfort of occupants in glazed façade buildings by comparing the perceived comfort evaluations in single skin façade (SSF) and double skin façade (DSF) buildings, so as to assess them and optimize their prospects and advantages.

Thermal comfort evaluation

The thermal comfort of occupant is influenced by various factors which can be categorized into environmental factors such as the air temperature, air velocity, radiant temperature and relative humidity; the physiological factors entails the thermoregulatory systems that results into the various heat exchange processes of the body, such as the convective, radiant and evaporative heat loss from the body surface as well as the respiratory heat loss processes (Auliciems & Szokolay 2007; Enescu 2019). Hence, these factors can be categorized as objective factors. The third is the psychological component which has to do with the influence of the human cognition and occupant's memory on their thermal perceptions. These factors include the occupants' experiences, expectations, emotion, attitude and many more (Nikolopoulou & Steemers 2003). This psychological factor also synchronizes with the socio-cultural factors since they are both non-physical and subjective. The socio-cultural factor includes the beliefs, culture, norm, standard of living of the occupants and much more (Knez etal. 2009). Thus, all these factors affect the evaluation of the occupant's perception both quantitatively and qualitatively.

Various types of models have been developed to evaluate the thermal comfort of occupants. These models include the heat balance model which is fundamentally the function of the environmental factors and the physiological processes of the human body; it is dependent on the thermal equilibrium between the body surface and the body core (Gagge & Richard 2011). The fanger's predicted mean vote (PMV) model, new standard effective temperature (SET), and physiological equivalent temperature (PET) are examples of heat balance model and index. However

many field study conducted concluded that heat balance models, especially the Fanger's model (Fanger, 1970) did not take into account the adaptive factors of the occupants (Humphreys etal. 2016). Hence some adaptive models were developed to accommodate these adaptive factors; this includes the expectancy factor (PMVe) model of Fanger and Toftum, the adaptive predicted mean vote (aPMV) model, the ASHRAE adaptive comfort equations and many more. The third type of comfort model is the psychological model which is usually qualitative. This model considers the psychological processes of the human cognition and emotions. It depicts which psychological factors influence another and how they combine to influence the perception of occupants (Lenzholzer & Sjerp 2020). The phy-psy model of lenzholzer and the concept of place, moderator and human response of Knez et al. (2009) are typical examples.

Thus, in our investigations the adaptive comfort model is more relevant since it is a field study of glazed façade building, where occupants are allowed to expresses their adaptive behavior as they perceive the environment. The ASHRAE comfort models and other adaptive models that emphasize the relationship between the outdoor thermal condition and the indoor perception of the occupant are relevant. This is because of there is a large gap between the thermal characteristics of the outdoor environment for each season which eventually affects the building envelope, façade, indoor thermal conditions and consequently the occupant's perception. As a result the adaptive evaluation will generate the magnitude of occupant's perceptions while the psychological or perceptive evaluation will elaborate on the qualities of the adaptive evaluations. Therefore in this study we endeavored to compare the result obtained from our evaluations with the standard requirement in ASHRAE 55, EN 15251 and other related research.

At the moment, we were able to conduct some measurements on one of our case study during the spring season. This case study was conducted in a single glazed façade (SSF) office building in Bordeaux city.

2. CASE STUDY 1 – SINGLE SKIN FAÇADE (SSF)
The first case study was conducted in the spring season in a single skin façade (SSF) office building in Bordeaux city (Figure 1). The study was conducted (from 26/03/2024 to 05/04/2024) in a large work space of about 10m 15m floor area and 3m headroom, filled with lots of work station and staffs working on their computers. In this office space, the walls facing the south, east and west was fully glazed (external walls), while the northward wall was an internal masonry wall which accommodated the doors and the circulation space within the building. The ceiling is made of gypsum board and the floor is covered and insulated with floor carpet throughout the room. The measuring instruments were installed in the office space to collect the microclimate and surface temperature data. PT100 surface temperature sensors were strategically placed on the interior surfaces of the glazed wall, floor,

and ceiling. Surface temperature data was recorded using a GL840 Graphtec device which measures temperature within the ranges of -200°C to 100°C with an accuracy of 30.6°C. Additionally, a nearby meteorology acquisition station (HD32.3TC, Delta Ohm Company) collected air temperature, relative humidity, air velocity, and the black globe temperature (see details in Table 1).

HD32.3TC of DELTA OHM						
Probes	**parameter**	**Dimension**	**Temp. range**	**Resolution**	**Accuracy**	**Temp. drift**
HP3217.2R	Air temperature	150mm long 14mm diameter	-40 to 100°C	0.1°C	1/3DIN	0.003%/°C
HP3217.2R	Relative humidity	150mm long 14mm diameter	0% to 100%	0.1%	± 1.5%.	0.003%/°C
TP3276.2	Globe thermometer	170mm long 50mm diameter	-30 to 120°C	0.1%	1/3DIN	0.003%/°C
AP3203.2	Air Speed	230mm long 8mm diameter	0.02-5m/s /0-80 °C	0.1%	± 0.05%	0.06 %/°C

Table 1: Characteristics of HD32.3TC probes used for the experiments

Afterwards the subjects were required to complete the questionnaire designed to gather data of their Thermal Sensation Vote (TSV) and capture their perception, both for the immediate and generally for the spring season. These questions cover the preferred perception, comfort level, and thermal tolerance and satisfaction of the subjects. The subjects were staffs members with age range of 23 to 53 years old (with over 90% falling between 24-44 years old), representing different nationalities, with about 80% of French origin. In this study, there are 27 males and 10 females; the clothing insulation of the subjects range from 0.7-1.0 clo (Auliciems & Szokolay 2007) and the outdoor air temperatures varied between 5°C and 25°C.
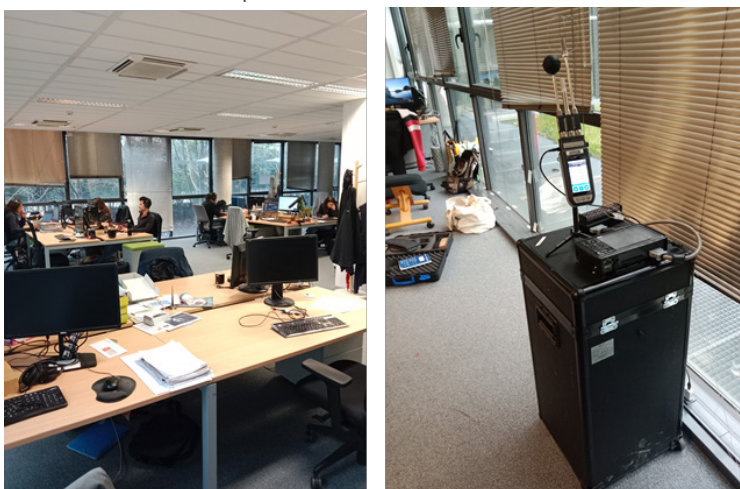
Figure 1: Instrumentation and measurement in a single skin façade (SSF) office building at Bordeaux city

2.1 Analysis
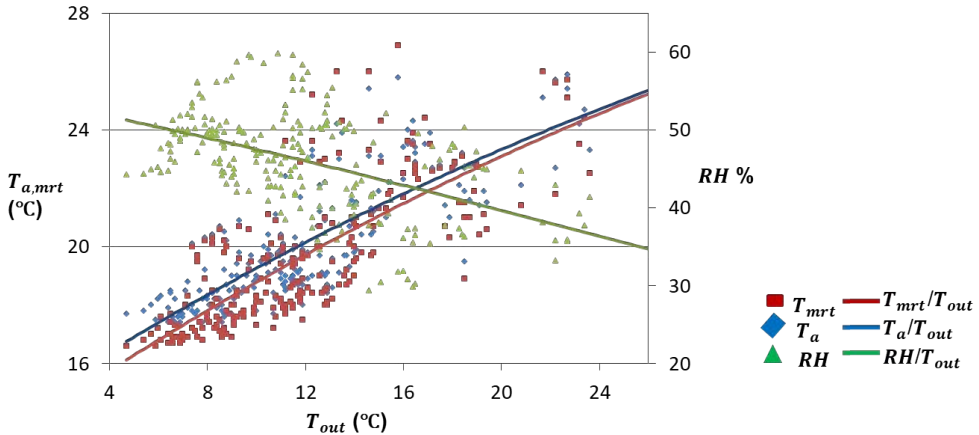
Figure 2: Air temperature , mean radiant temperature and relative humidity RH
of the office space and the outdoor air temperature

Figure 2 above show the behavior of the thermal condition within the office space as it evolve with the outdoor air temperature in the spring season of Bordeaux, this includes the indoor air temperature, mean radiant temperature and relative humidity. The air velocity was negligible or approximately zero throughout the measurement period. In the graph above we can observe that the air temperature and the mean radiant temperature increases as the outdoor temperature increases, however the mean radiant temperature evolve slightly lower than the indoor air temperature. This behavior can relate to the radiant flux emitted by the glazed wall surface due to low outdoor temperatures. Hence the difference between the air temperature and the mean radiant temperature can activate some form of perception by the subjects. The relative humidity shows an inverse relationship with the evolution of the outdoor temperature and indoor temperatures. This could pose a problem for the subjects during the summer period when the temperature is quite high; hence the air may become dry and uncomfortable. Subsequently, we analyzed these physical thermal parameters as it influence the perception of the subjects by comparing the values obtained in the office space to the standard requirements of thermal comfort. This will enable us diagnose the performance of the glazed façade as it relates to the perception of the subjects.

2.2 Adaptive comfort evaluation

The adaptive comfort evaluations and requirement explores the range of thermal condition under which occupants are likely to be comfortable in their buildings. However within such thermal conditions they are expected to adjust themselves consciously by altering their clothing, posture, activity level, ventilation, air movement and local temperature. Thus, the fundamental influence of this adaptive comportment corresponds to the magnitude of outdoor weather condition and the

level of exposure of the occupants to this outdoor condition (Humphreys 2016; Rijal etal. 2017). This exposure can be caused by the design of the building, its orientation to the wind and solar directions, characteristics of building materials, window and door design, heating and cooling systems of the building. Thus the adaptive approach and standards is useful to guide design and energy decisions as well as specifying temperature set points for buildings throughout the year.

According to ASHRAE 55 standard, the relationship between the indoor operative comfort temperature and the outdoor air temperature is given as (ASHRAE 55: 2017):

$$T_{oc} = 0.31 T_{out} + 17.8 \qquad [°C]$$ (1)

Where the adaptive thermal acceptability limit (90%) ranges from + 2.5°C to – 2.2°C of the operative comfort temperature (ASHRAE 55-2013)

Also an experimental study conducted in Bordeaux geographical region obtained a similar result which lies within the acceptability limit of the ASHRAE standard (Omoya, 2023):

$$T_{oc} = 0.36 T_{out} + 15.4 \qquad [°C]$$ (2)

In this study, to evaluate the comfort level of the office space, the values of the operative temperature obtained within the office space during these experiment periods is compared to the results of the equation (1) and (2). The value of the operative temperature is therefore evaluated as the mean of the air temperature and the mean radiant temperature via equation (3) below (ASHRAE 55-2004; Auliciems & Szokolay 2007):

$$T_{op} = \frac{T_a + T_{mrt}}{2} \qquad [°C]$$ (3)
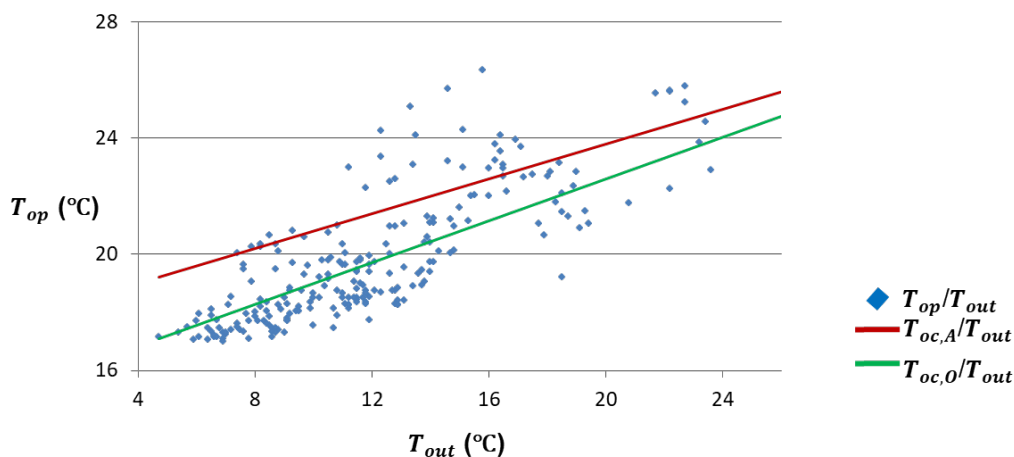
Figure 3: Indoor operative temperature compared with the ASHRAE and Omoya's comfort temperature

Viewing the graph in Figure 3 above, we can agree that the Omoya's comfort regression with the comfort temperature $T_{OC,O}$ represent the lower limit of comfort acceptability while the ASHRAE regression with comfort temperature $T_{OC,A}$ represents the optimum requirement. We can also observe that when the outdoor temperature is lower than 1 the subjects are likely to feel cooler than their comfort requirement. However between 1 and 2 outdoor temperature the subjects are likely to feel comfortable; although at some points within this range, the subjects may sometimes feel slightly warmer than expected. Thus this evaluation is based on the comparison between the indoor operative temperature and the indoor comfort temperature. To further assess this inference, it's imperative to evaluate the actual perception of the subjects so as to investigate if it corresponds to this physical thermal evaluation and to what extent does these physical and perceptive results agree or complement each other. This is because thermal comfort is a complex perception built out of the intersection between objective stimuli with cognitive and emotional processes" (Brager et al. 2003). Hence the characterization of the thermal sensational vote and the perception of the subjects are considered subsequently.

2.3 Perceived Comfort Evaluation
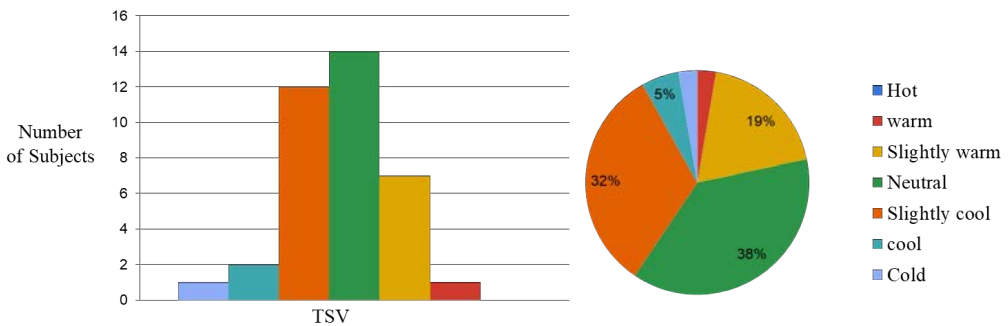
Figure 4: Distribution of the thermal sensation votes of the subjects

Figure 4 above shows the distribution of the thermal sensation of the subjects in the office space. We can observe that about 40% of the subjects feel neutral, the sum of 40% feel cool and slightly cool while about 20% feel warm and slightly warm. Hence, we wish to link this distribution to the deductions gathered from Figure 3. Therefore, the subjects that felt cool and slightly cool (40%) seem to have perceived the indoor thermal conditions at the periods when the outdoor air temperature was less than 1 (see Figure 3). This indicates some level of discomfort to the subjects. Therefore to assess this discomfort, we investigated the tolerance capacity of the subject for each sensational vote collected; by investigating how long they can tolerate the thermal condition of their immediate environment at a single seating. Figure 5 below expresses the outcome of this investigation.
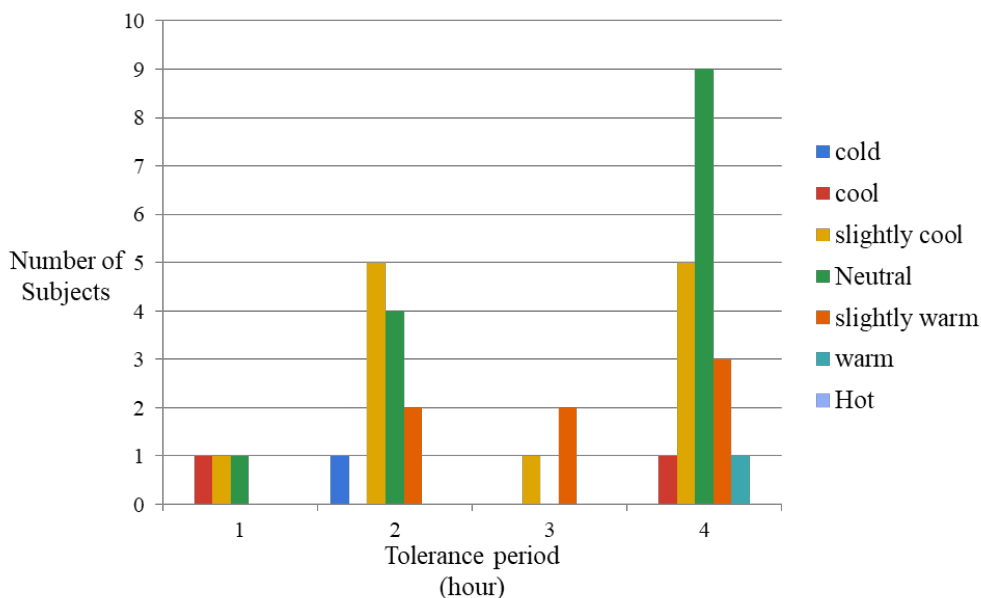
Figure 5: Distribution of the tolerance period for each sensational vote of the subjects

Figure 5 show the period in hours during which the subjects proposes that they can tolerate the uncontrolled thermal conditions in the office space. We considered that the lower tolerance period indicated by the subjects implies a higher level of thermal discomfort. Hence we observed that the cool and slightly cool sensations were predominant in the 1 hour and 2 hours tolerance period. This portrays that the subject's discomfort is mostly linked to the cool and cold sensation than the warm.

Therefore based on the evaluation of the indoor operative temperature and the assessment of the thermal sensational votes of the subjects, we can conclude that the thermal condition in the office space was mostly cooler than the subject's requirements during these experiments. This agrees with the characterized outdoor temperature range that permits adaptive comfort in the office building (Figure 3). Therefore there is need to improve the insulation of the glazed single skin façade (SSF) building in order to generate suitable thermal conditions for subject's optimum perception. Possibly, retrofitting with glazed double skin façade (DSF) may be a suitable solution to this thermal deficiency in the examined office building. According to Volker et al. (2010), DSF buildings offer better thermal comfort in wintertime; this may also be true for the spring season which is milder than the winter.

Subsequently, we investigated other factors that influence the perception of the subjects; this includes the sunray, lighting, air flow (ventilation) and humidity.

Sunray and lighting perception
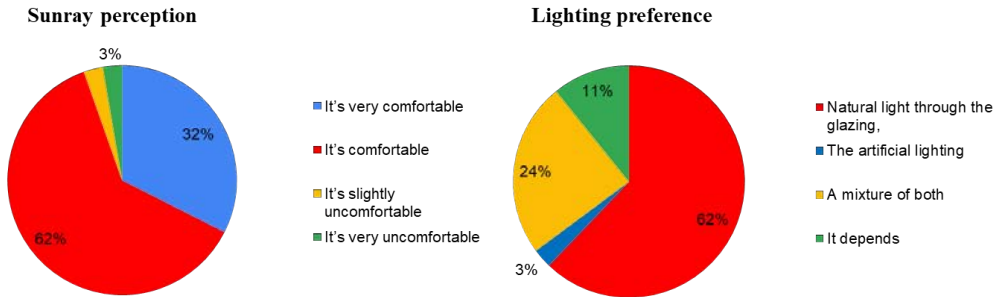
Figure 6: Perception of sunray and preference of lighting by the subjects in SSF office building

Figure 6 above shows the lighting perception and preference of the subjects. It reveals that most of the subjects are comfortable with the sunray (sum of 94%). From the result of the lighting preference, it is obvious that a huge percentage of the subject preferred the natural lighting (62%), including those who chose the mixture of both natural lighting and artificial support (24%). This indicates that natural lighting is an important source of satisfaction for the subjects and must be maintained and ameliorated in all the methods of retrofitting that will be considered for such building.

Airflow and humidity perception
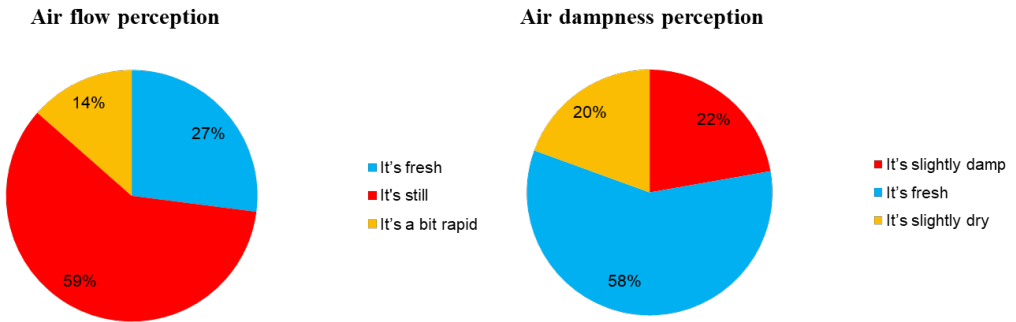
Figure 7: Perception of the air flow and humidity in SSF office building

The air velocity in the office space was typically 0 throughout the study period; hence there was no air movement within the office space. Berglund and Fobelets 1987 concluded that thermal acceptability is unaffected in neutral environments by air speeds of 0.25 m/s or less.

Consequently, about 60% of the subjects perceived the air movement to be still signifying some level of discomfort, while about 30% considered it to be fresh (Figure 7).

Evidently, an increase in air velocity is required especially during evaporative heat exchange when the indoor temperature will be high and sensible heat loss from the body becomes minimal. Furthermore, the relative humidity within the space ranged from 30-60% (Figure 2) and humidity is known to have negligible impact on the thermal sensation of the subjects in moderate environment (EN 15251: 2007). This is evident from the perception of the subject where about 60% perceived the air vapor to be fresh and comfortable. Nonetheless, a slight increase in the air velocity will improve the perception of the subjects that perceived the office space as slightly damp.

3. CONCLUSIONS AND PERSPECTIVE

Based on the survey conducted at the moment, we can observe that the thermal insulation provided by the glazed single skin façade (SSF) is slightly deficient in the spring season especially when the outdoor air temperature is below 1, where the subject feel cool and will not tolerate this thermal condition beyond 2 hours at a seating. This also mean that in the winter or early spring periods, the thermal conditions within the space will likely be uncomfortable except the heating system is switched on and energy consumed. This deficiency may be corrected by using DSF which is suggested to have more insulation capacity because of the double glazed layers and the air cavity within the outer and inner skin layers. Nevertheless, an empirical evaluation and comparative analysis is essential to ascertain the DSF capacity. Moreover, attention must be paid to the air flow and air vapor in glazed façade building, because inadequate air velocity and humidity can initiate significant discomfort especially when the temperature in the space is high. Therefore the DSF systems in buildings should account for these requirements to attain occupant's comfort in each season of the year.

The survey conducted also show us that occupant's prefers natural lighting from the sunray than the artificial light, indicating that retrofitting glazed building with opaque building materials will not be a suitable solution to the perceived comfort and satisfaction of the occupants.

REFERENCES

Al Anzia. A., Al-Dihanib L., Al-Ragama A. (2017). Feasibility and occupants' perception of double skin façade for historical buildings in Kuwait. International Journal of thermal and environmental engineering, 14(1), 71-82. *https://doi.org/10.5383/ijtee.14.01.009*.

ASHRAE, 2004. Thermal environmental conditions for human occupancy, ASHRAE Standard 55. Atlanta, Georgia: American Society of Heating, Refrigerating and Air-Conditioning Engineers.

ASHRAE (2017). Thermal environmental conditions for human occupancy, ASHRAE Standard 55. Atlanta, Georgia: American Society of Heating, Refrigerating and Air-Conditioning Engineers.

Auliciems, A. & Szokolay, S. (2007). Thermal Comfort. 2nd Revised Edition, Brisbane, PLEA: Passive and Low Energy Architecture International in association with Department of Architecture, The University of Queensland.

Berglund L. and Fobelet. A. P. R. (1987). Subjective human response to low-level air currents and asymmetric radiation. Ashrae Transactions, 93, 497-523. *https://api. semanticscholar.org/CorpusID:133023805*

Brager, G. S., & de Dear, R. J. (2003). Historical and cultural influences on comfort expectations. In Cole R. J., &, Lorch, R. (Eds.), Buildings, culture and environment: informing local and global practices (p. 177-201). Oxford, UK: Blackwell Publishing.

Enescu, D. (2019). Models and indicators to assess thermal sensation under steady-state and transient conditions. Energies, 12(5), 841. *https://doi:10.3390/en12050841*

European Committee for Standardization-EN15251 (2007). Indoor environmental input parameters for designs and assessment of energy performance of buildings—Addressing indoor air quality, thermal environment, lighting and acoustics. CEN/TC 156 prEN15251. Bruxelles, Belgique: CEN.

Fanger, P. O. (1970). Thermal comfort analysis and application in environment engineering. Copenhagen, Denmark: Danish Technical Press.

Gagge, A. P., & Richard, R. R. (2011). Mechanisms of heat exchange: biophysics and physiology. In Terjung, R. (Ed.), Comprehensive Physiology. USA: American Physiological Society. *https://doi:10.1002/cphy.cp040104*

Humphreys, M. A., Nicol, F. J., & Roaf, S. (2016). Adaptive thermal comfort: Foundation and analysis. London, UK: Routledge.

Knez, I., Thorsson, S., Eliasson, I., & Lindberg, F. (2009). Psychological mechanisms in outdoor place and weather assessment: towards a conceptual model. International Journal of Biometeorology, 53(1), 101-111. *https://doi.org/10.1007/s00484-008-0194-z*

Lenzholzer Sanda & Sjerp de Vries, (2020). Exploring outdoor thermal perception—a revised model, International Journal of Biometeorology, 64, 293–300. . *https://doi. org/10.1007/s00484-019-01777-z*

Lin Z., Song Y., Chu Y., (2022). Summer performance of a naturally ventilated double-skin facade with adjustable glazed louvers for building energy retrofitting. Energy and Buildings, 267, 112163, *https://doi.org/10.1016/j.enbuild.2022.112163*.

Nikolopoulou, M., & Steemers, K. (2003). Thermal comfort and psychological adaptation as a guide for designing urban spaces. Energy and Buildings, 35, 95-101.

Omoya T, (2023). Thermal comfort in buildings: Evaluation and semi-empirical modeling of occupant adaptation to environmental stimuli. PhD thesis. University of Bordeaux, France.

Rijal, H. B., Humphreys, M. A., & Nicol, J. F. (2017). Towards an adaptive model for thermal comfort in Japanese offices. Building Research & Information, 45(7), 717–729. *https://doi.org/10.1080/09613218.2017.1288450*

Satinoff E., (1996). Behavioral thermoregulation in the cold. In Fregly, M. J., & Blatteis, C. M. (Eds), Handbook of Physiology: a critical, comprehensive presentation of physiological knowledge and concepts (p. 481-505). American Physiological Society, New York, USA: Oxford University Press.

Volker H., Ernesto K., Marlon L., Érika F.T.B. L., (2010). Empirical thermal comfort evaluation of single and double skin façades, Building and Environment, 45(4), 976-982. *https://doi.org/10.1016/j.buildenv.2009.10.006*

L27
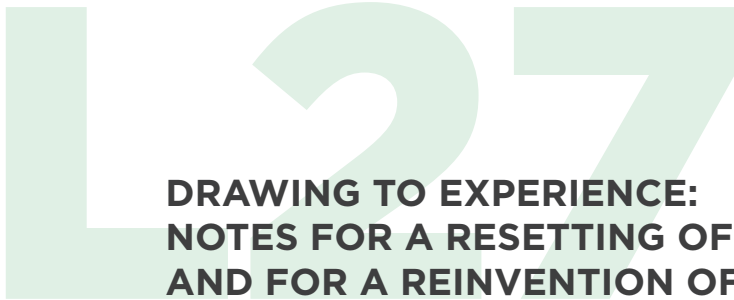
DRAWING TO EXPERIENCE: NOTES FOR A RESETTING OF OBJECTIVES AND FOR A REINVENTION OF THE VOCABULARY AROUND OBSERVATIONAL DRAWING IN THE TEACHING OF ARCHITECTURE AND URBAN DESIGN

DESENHAR PARA EXPERIENCIAR: NOTAS PARA UMA RESSIGNIFICAÇÃO DE OBJETIVOS E PARA UMA REINVENÇÃO DO VOCABULÁRIO EM TORNO DO DESENHO DE OBSERVAÇÃO NO ENSINO DE ARQUITETURA E URBANISMO

Carolina Silva Oukawa
Arquiteta e Urbanista (FAUUSP, 2005). Doutora (FAUUSP, 2019)
Professora Colaboradora do PPGAU/UFPB
carolina.oukawa@academico.ufpb.br

ABSTRACT

The generating hypothesis of this research is that drawing from observation, a common practice in the study of arts, has specificities in the scope of architecture and urbanism. From this perspective, teaching young architects and urban planners to draw from observation has required a series of resignifications and an effort to rebrand. This article records reflections on the course of a drawing course offered to architecture and urban planning students at Universidade Federal da Paraíba (UFPB). There, we sought to radicalize observational design practices, in the sense of transferring the focus from the result to the experience, as stated by Larrosa (2002). Engaged in the review of talk about drawing from observation, the text is developed in episodes that narrate the attempts to reposition what is understood as "error" and "right", placing the experimentation of space and one's own body in the foreground.

KEYWORDS: observation drawing. experience. teaching architecture and urbanism. vocabulary.

RESUMO

A hipótese geradora desta pesquisa é de que desenhar de observação, prática corriqueira no estudo de artes, possui especificidades no âmbito de arquitetura e urbanismo. Sob esse olhar, ensinar jovens arquitetos e urbanistas a desenhar de observação tem demandado uma série de ressignificações e um esforço de renomeação. O presente artigo registra reflexões do transcurso de uma disciplina de desenho ofertada a ingressantes em arquitetura e urbanismo da Universidade Federal da Paraíba (UFPB). Ali, buscou-se radicalizar as práticas de desenho de observação, no sentido de transferir o foco do resultado para a experiência, como posto por Larrosa (2002). Engajado na revisão do falar sobre desenhar de observação, o texto é desenvolvido em episódios que narram as tentativas de reposicionar o que se entende por "erro" e "acerto", colocando a experimentação do espaço e do próprio corpo em primeiro plano.

PALAVRAS-CHAVE: desenho de observação. experiência. ensino de arquitetura e urbanismo. vocabulário.

1. INTRODUÇÃO

O que significa "desenhar bem" em arquitetura e urbanismo? O que ensinar a estudantes de arquitetura e urbanismo sobre desenho? A hipótese geradora desta pesquisa é de que desenhar possui especificidades no âmbito de arquitetura e urbanismo; e de que o ensino de representações arquitetônicas deve se orientar por essas especificidades. Desenhar do lugar de quem projeta carrega, em si, um convite à *invenção,* em direção oposta à ideia de *reproduzir* o existente. A literatura de pedagogia do desenho, no entanto, constitui um compilado de métodos que reafirmam, insistentemente, a noção de "desenhar bem" como "desenhar corretamente". O parâmetro da "semelhança" conduz os esforços de eliminação de "erros", como no clássico *Desenhando com o*

Lado Direito do Cérebro (Edwards, 2021). Assim, ensinar jovens arquitetos e urbanistas a *desenhar de observação*, ponto focal deste artigo, tem demandado uma série de ressignificações e um trabalho de renomeação.

A pesquisa, originalmente, estende-se a uma gama mais ampla de representações, procurando levantar os objetivos de se representar em arquitetura e urbanismo: projetar, analisar, compreender, orientar uma execução, levantar dados, registrar e documentar, entre outros. Desenhar é *meio* e gera um *produto* – o desenho – com características correspondentes às finalidades que motivaram sua feitura. *Desenhar de observação,* prática corriqueira no ensino de artes que resiste como conteúdo obrigatório na formação de arquitetos e urbanistas, é campo fértil para uma problematização do que se espera do desenho como produto, pois parece materializar o que o senso comum entende sobre os objetivos e habilidades necessárias para desenhar. Pensar modos de fazer que indaguem sobre que características *outras* poderiam referenciar o produto da atividade de desenhar de observação em arquitetura e urbanismo, para além ou independentemente da similitude, tem-se mostrado um caminho para formular enunciados e orientar estudantes. O foco na experiência (Larrosa, 2002) tem favorecido o deslocamento de objetivos da atividade de desenhar de observação – do produto (desenho) para a *ação* (desenhar para experienciar); e a reflexão sobre que habilidades de desenho são imprescindíveis para o desenvolvimento de habilidades projetuais e analíticas, num momento em que, no campo da arquitetura e do urbanismo, se fala em "morte do desenho" (Scheer, 2014).

Com o intuito de ampliar a interlocução em torno do tema, as próximas páginas trazem registros de práticas de ensino surgidas desse esforço de radicalizar o entendimento do que pode ser desenhar de observação em arquitetura e urbanismo, quando se parte do objetivo de *experienciar* – tanto arquiteturas como o próprio corpo no espaço. Engajado na revisão do *falar sobre* desenhar de observação, o texto é desenvolvido em *episódios* coletados no transcurso do semestre letivo 2023.2 de Oficina de Desenho I, disciplina de desenho ministrada a ingressantes da Universidade Federal da Paraíba. O primeiro episódio relata um *sintoma*: A tendência a uma *objetificação da arquitetura* e suas consequências para o entendimento de *para quê* desenhar. Em seguida, são apresentados alguns *dispositivos* de ativação da experiência pelo ato de desenhar de observação, contemplando as seguintes frentes: o trabalho de conscientização do gesto, que põe o corpo e o movimento como outras balizas para o ato de desenhar; e o empenho de ultrapassagem do observar para o *imaginar,* habilidade indispensável em trabalhos de arquitetura e urbanismo. Adicionalmente, discute-se a necessária revisão de métricas de avaliação quando o ensino de desenho não mais se pauta pelo produto.

Oficina de Desenho I foi ministrada em dois dias da semana, totalizando noventa horas no semestre. A turma teve quinze estudantes frequentando a disciplina do início ao fim, número que ainda possibilita uma abordagem individualizada. Desenhar de observação, tema dos *episódios* a seguir, correspondeu a *uma parte* do programa da disciplina. Em

paralelo, foram ministrados conteúdos de *perspectiva cônica,* técnica que dá parâmetros para a produção de desenhos *mais controlados.* O esforço geral foi buscar que uma frente de trabalho não contradissesse a outra; pelo contrário: aliar as técnicas aprendidas para potencializar a experiência nos processos de proposição e análise de arquitetura.

2. EPISÓDIOS
2.1. *Sintoma:* sobre um estado de *objetificação* da arquitetura

Segunda aula. Na primeira, havia colocado os objetivos que orientariam as atividades de desenhar de observação: potencializar a experiência de um espaço construído e do próprio corpo no espaço; e preparar o gesto para a produção de *croquis* (desenhos de concepção e verificação realizados no processo projetual). Com isso, o foco desvia-se da finalidade de gerar um desenho "bonito", "bem-acabado" ou "agradável". Em termos práticos, o desafio inicial (que perdura ao longo do semestre em incontáveis e constantes reiterações) é desvincular as expectativas que se tem, ao desenhar, em relação ao resultado do desenho. Os enunciados aproveitam a técnica do "desenho puro de contorno", de Edwards (2021), conhecida popularmente como "desenho cego", que consiste em desenhar correspondendo o movimento da mão ao percurso da visão.

O trabalho de ressignificação das formas de falar sobre desenhar de observação começa por retirar do enunciado a carga negativa ("não olhar para o papel"; "não tirar o lápis da folha"), transferindo o foco para a observação do espaço construído. Procuro expor meus objetivos o mais abertamente possível, conforme recomendação de Rodrigo Lefèvre (1977) para trabalhos em equipe no contexto da formação em arquitetura e urbanismo. Alerto quanto a um inevitável desconforto que pode advir da atividade. O início do semestre é crucial para a construção da confiança da turma, imprescindível para que tenham abertura para o *risco* – aqui aproveitando a ambiguidade entre o significado atribuído por Lúcio Costa (1940), relacionando risco a projeto, e o ato de arriscar-se. Trata-se de um desafio dobrado, pois a disciplina irá quebrar expectativas em relação ao desenho – o que repercute em uma série de outras expectativas em torno de arquitetura e urbanismo.

A aula anterior terminara com uma prática de "desenho cego" no interior da classe, inicialmente apenas pelo gesto da mão empunhando o lápis simulando um desenhar "no ar", até aterrissar no papel. Agora, a proposta era sair para desenhar pelo campus. O edifício mais próximo, a cerca de cinquenta metros, possui uma planta circular e seu térreo forma um *pilotis.* Essa configuração acaba emoldurando um horizonte arredondado que oferece um contraponto interessante à ortogonalidade do interior da sala que já haviam vivenciado. Proponho desenharmos nesse edifício. A caminhada seria breve, mas por alguma razão os estudantes não concluíam o percurso. Levei um tempo para entender o que acontecia: tão logo saíram da sala, haviam parado no caminho e desenhavam o edifício, enfileirados sob a cobertura da

passarela. A cena me pareceu insólita; de onde estavam, quase nem havia ângulo para apreender o edifício como um todo. Mas logo percebi o que parecia ser óbvio para todos: deveriam desenhar *o* edifício, e não *nele.*

É claro que pode haver exercícios de desenho de observação *de* edifícios associados a uma experiência espacial. Aquilo apenas não coadunava com o que havia sido conversado e com o objetivo de *experienciar* um espaço construído. No contexto do ocorrido, pude perceber uma leitura da arquitetura como *objeto*; e como a tendência a uma *objetificação da arquitetura* poderia coincidir com a noção de desenho como produto – em vez do *desenhar como meio de experienciar*. Em termos de vocabulário, é como se, diante de um desenho, a reflexão sobre "*o que* se desenhou" predominasse largamente em relação ao "*para que* se desenhou." Discuto o episódio antes de passarmos a desenhar para experienciar o espaço. Por fim, o contorno curvo do encontro da laje do teto com o céu parece deixá-los mais à vontade para lidar com um resultado menos previsível nos desenhos.

2.2 Dispositivos de conscientização do gesto ao desenhar

Com o semestre em andamento, o trabalho em torno das expectativas quanto ao resultado gráfico dos desenhos de observação persiste. Ainda nas primeiras aulas, compartilho croquis de Vilanova Artigas (Figura 1) para o edifício da FAUUSP na Cidade Universitária (1998), um dos poucos conjuntos de *croquis-de-fato* que se tem publicados (ainda há muita confusão ao se tratar qualquer desenho de arquitetura feito à mão livre como croqui – quando a maioria de desenhos publicados corresponde a *ilustrações*). Apresento os croquis como *desenho que se faz para projetar*, firmando o status de referência de resultado gráfico para os "desenhos cegos". Pela reação de espanto, percebo que se abre um pequeno espaço para um deslocamento de objetivos e expectativas em relação ao desenho e à atividade de desenhar. Em *brechas* como essa, há oportunidades para uma conscientização do gesto, de modo que ele (e não apenas ou prioritariamente o resultado gráfico) possa balizar o ato de desenhar.
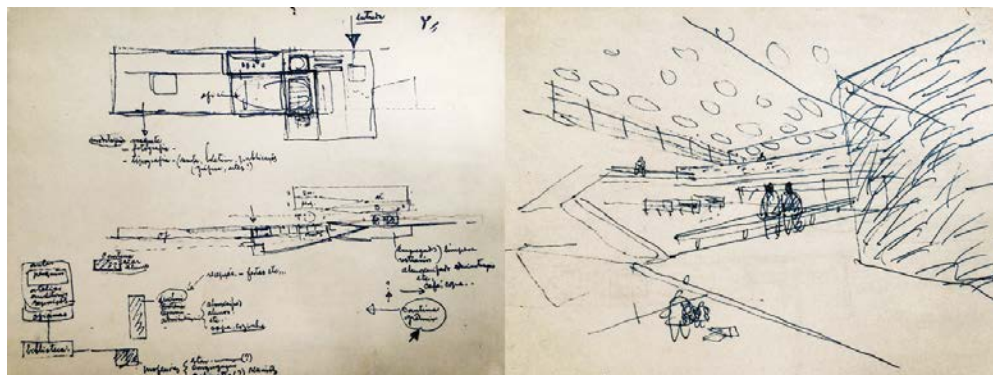
Figura 1. Croquis de Vilanova Artigas, em planta e corte (à esquerda) e em perspectiva (à direita).
Fonte: Artigas (1998).

Em seu curso de desenho para estudantes ingressantes na FAUUSP, Silvio Dworecki (1998) era enfático ao defender a autoconscientização do corpo e, ainda, a ampliação de possibilidades do gesto ao se desenhar. Alegava que, com o aprendizado da escrita, tende-se a um uso muito reduzido das articulações – apenas na ponta dos dedos (e isso quando ainda se escrevia predominantemente em papel). Dworecki insistia em ensinar a desenhar com o corpo todo e propunha exercícios que, aos poucos, expandiam a mão para o para pulso, cotovelo e ombros. O resultado gráfico era consequência das explorações de experimentação e expansão do gesto. Sua proposta costumava causar desconforto e surpresa nos estudantes. Os *dispositivos* a seguir tentam aproximar as potencialidades do "desenho cego" e das atividades desenvolvidas por Dworecki, dando centralidade ao objetivo de promover a experiência do próprio corpo integrado à arquitetura.

2.2.1 Forró: percepção de gestos possíveis

Nos exercícios básicos de "desenho cego", a mão ainda resiste a seguir o olho. Pergunto à turma quem dança forró. No forró, assim como na dança de salão em geral, a dama segue o cavalheiro. Por mais que seguir dispense a preocupação com o planejamento da dança, ser guiada exige habilidades específicas e pode ser desafiador. Uma vez que os estudantes possuem a referência concreta dos croquis de Artigas para o resultado gráfico de seus "desenhos cegos", considero importante que tenham, também, uma referência mais palpável do gesto. Tenho feito isso emprestando a eles o meu próprio gesto de desenhar. Recorrendo ao *forró,* peço licença para empunhar o conjunto mão-e-lápis de cada um e, um por um, conduzo corpos no *forró desenhístico*, pedindo que permitam ser guiados. Não é uma dança literal, pois os estudantes permanecem sentados. Alguns são bastante resistentes; outros se entregam mais facilmente. O desenho resultante é fruto de minha observação ao *dançar,* de modo que os estudantes ficam livres para se concentrar na experiência do próprio gesto, a fim de incorporar novas possibilidades de movimento do corpo ao desenhar. Durante o *forró,* alguns espiam, no papel, o produto da parceria de minha mão com a deles, reforçando a referência gráfica do que pode resultar da atividade.

2.2.2 Desenhar o movimento: corpo em evidência

Dando continuidade às variações do "desenho puro de contorno" de Edwards, exploramos o aspecto lúdico de *desenhar o movimento,* como mais um passo rumo ao mergulho na experiência do gesto e do corpo – do próprio corpo e do corpo do outro. Aproveitando a sequência sugerida no curso introdutório de desenho da FAUUSP (Perrone & Vargas, 2015), os desenhos de observação de pessoas avançam do modo estático para o dinâmico. Em uma das primeiras aulas, a atividade aconteceu tendo os próprios estudantes como modelo, revezando-se em pequenos grupos. A orientação é de que os modelos façam movimentos lentos, porém em velocidade suficiente para tornar inviável concluir um desenho controlado e compreensível. Na etapa final do semestre, a aula contou com uma modelo vivo profissional. O produto dos exercícios atesta que há diferença entre buscar registrar uma sequência de

poses (ainda numa tentativa de controlar o resultado) e uma disposição e entrega para *desenhar-experienciar o movimento* de fato (Figura 2).

Figura 2. Desenho de sucessivas poses e desenho do movimento.
Fonte: Maria Gabriela Ferreira & Beatriz Valoes Leite.

2.2.3 Desenhar em movimento: integrar-se ao espaço

A arquitetura do Espaço Cultural José Lins do Rego, projeto de Sérgio Bernardes (1978-1982), abrigou exercícios de *desenhar em movimento* – no caso, *desenhar caminhando*, numa tentativa de integrar o "desenho cego" e os exercícios gestuais de Dworecki o mais diretamente possível à experienciação de uma arquitetura. O corpo em movimento enquanto se desenha tripudia do desenhista obcecado pelo resultado, favorecendo descobertas de cunho analítico de arquitetura e urbanismo (Oukawa, 2019). Mesmo com o papel preso no suporte da prancheta, a improbabilidade de se produzir uma linha reta enquanto se caminha parece ter liberado os estudantes de uma obrigatoriedade de "acertar". A adição de mais um obstáculo para se obter um resultado controlado parece ter sido determinante no ganho de confiança dos estudantes nas possibilidades de desapego do resultado gráfico como objetivo da ação de desenhar de observação.

2.3 Desenhar de observação como dispositivo para desenhar de imaginação

O componente da imaginação é imprescindível e deveria orientar, invariavelmente, o ensino de representações arquitetônicas, por firmar uma aproximação concreta com a atividade projetual, na respiração que alterna proposição e análise. As práticas relatadas a seguir buscam promover e evidenciar uma passagem da observação para a imaginação de arquiteturas ainda inexistentes. Aqui, uma maquete de papel muito simples desafia a desenhar de observação *encarnando*, quase literalmente, a pequenina representação de ser humano que passeia pelo modelo. Como sugerido por Paulo Mendes de Rocha (2007), é pedido que os estudantes posicionem os olhos na altura correspondente à dos olhos da representação de escala humana. Proponho que desenhem de observação a partir daí (Figura 3). A depender da proposta geradora do modelo de papel (a partir de dobras ou de cortes), criam-

se situações inacessíveis pelo olhar, o que convoca o desenhista-projetista, a partir dessa máxima tentativa de aproximação de uma realidade inexistente, a *desenhar para imaginar* o que não está visível. Há, ainda, a possibilidade de desenhar para avançar a imaginação do que está literalmente expresso naquela sumária maquete de estudo.

Figura 3. À esquerda, modelo gerado a partir de alguns cortes na folha.
À direita, estudantes desenham de observação para experienciar as maquetes de papel.
Fonte: Beatriz Valoes Leite e autora.

Esse desenho ainda não é propositivo ou *técnico,* no sentido do croqui em planta e corte, como abordado na disciplina subsequente; mas tem o potencial de promover a experiência de um lugar ainda em feitura (como se pode supor que tenha sido, para Vilanova Artigas, desenhar o croqui apresentado na Figura 1). *O objetivo central da atividade é o de que a experiência – aqui, de uma arquitetura ainda em processo – possa ocupar alguma centralidade na atividade projetual futura.* Um vocabulário analítico, formulado a partir de uma intenção de *sensibilização* para aspectos da arquitetura e do urbanismo, apoia os exercícios, permitindo que os estudantes pensem e *falem sobre* os projetos em andamento conforme o experimentam e transformam. São usados termos e expressões como *luz e sombra, peso e leveza,* além das *atmosferas* de Peter Zumthor (2006). Como nos *dispositivos* relatados anteriormente, o "desenho cego" novamente é um recurso explorado, principalmente nas rodadas iniciais de observação-imaginação a partir do modelo.

A turma atual mostrou-se resistente à atividade (em comparação a outras para as quais eu já havia lecionado), de modo que os exercícios de desenho de imaginação acabaram ocupando um número reduzido de três aulas, apenas. Além do desconforto físico de se posicionar na altura do usuário do projeto, lidar com a incógnita de desenhar para imaginar o *não visível* pareceu multiplicar o incômodo do "desenho cego". Diante das queixas, optei por recompor a grade com atividades de maior aceitação dos estudantes, a fim de manter o ambiente de trabalho prazeroso, não sem apontar a relevância dos objetivos da proposta.

3. CENTRALIDADE DA EXPERIÊNCIA NO ENSINO DE DESENHO DE OBSERVAÇÃO E REFORMULAÇÃO DE MÉTRICAS AVALIATIVAS

Coloco a avaliação em discussão por perceber que algumas práticas de ensino do desenho tendem a ser mantidas por uma preocupação (legítima) de garantir a solidez de parâmetros avaliativos. Quando se trafega pelas noções de "certo" e "errado", a similaridade entre desenho e "realidade" dá parâmetros consistentes nesse sentido. Atribuir centralidade à experiência nos objetivos do ensino de desenho para arquitetos e urbanistas tem, de fato, requerido reformulações nas métricas de avaliação. Mover o foco do resultado para a experiência exige que se avalie *processo*, ou seja: uma pré-disposição para lidar com a *imprevisibilidade*, já que os resultados admitidos passam a ser múltiplos.

O reposicionamento de objetivos convoca a uma revisão de conteúdos e habilidades a serem consideradas quando se ensina arquitetos e urbanistas a desenhar de observação. Um ponto a ser amadurecido em futuras pesquisas, determinante para a formulação de enunciados e parâmetros avaliativos, é a conscientização do aspecto *técnico* implicado no tipo de prática proposto. Assim como tem sido possível tratar de *técnica de croquis* na disciplina de desenho subsequente, o percurso recente em Oficina de Desenho I evidenciou que desenhar de observação para experienciar possui um arcabouço próprio de *técnicas*, como atestam os relatos de *dispositivos* acima. Fatores relacionados ao gesto e ao desenvolvimento de habilidades de experienciar podem ser mais nitidamente curricularizados, de modo que avaliar signifique, sobretudo, *orientar* os estudantes.

Estabelecer relacionamentos (hooks, 2017) torna-se prioritário para o ambiente pedagógico. O desconforto dos estudantes, que perpassa os episódios aqui trazidos, não está associado somente a uma divergência de expectativas em relação a desenhar e "saber desenhar", mas a uma preocupação (também legítima) com o impacto do resultado de seus desenhos na avaliação. O deslocamento dos objetivos de desenhar de observação reposiciona o "erro", mas os estudantes ainda estão condicionados a querer "acertar", paralisados tanto pelo "medo de errar" como pela preocupação em "desenhar perfeito" – expressões comumente trazidas às aulas. Diante disso, construir um ambiente de confiança tem-se mostrado fundamental. A contínua reformulação e ressignificação de conceitos e objetivos que atravessam a disciplina, somada à sua deliberada comunicação, é um dos pilares para que essa confiança aconteça.

Em termos quantitativos e numéricos, foi acordado que o valor da nota corresponderia à porcentagem da frequência. Isso fez sentido diante do critério de que todos os exercícios propostos ocuparam, exclusivamente, o horário das aulas, tendo acontecido, portanto, sob minha orientação direta. Ademais, dentro dos objetivos de desenhar para experienciar, *estar presente* é pré-requisito. Assumir a correspondência de valores de nota e frequência desvinculou a avaliação de uma habitual "caça aos

erros", na qual o estudante "perde pontos" de acordo com resultados (não) atingidos nos desenhos. Por essa ótica, a título de ilustração, a estudante que desenhou a sequência de poses no exercício com modelo vivo possivelmente receberia "menos pontos" do que a que expressamente *desenhou o movimento.* O que se teria ganho com essa "precisão"? Uma avaliação processual considera que, para cada estudante, houve um acréscimo de habilidade de desenho e de reflexão; e que o trabalho de ambas contribuiu para que esse acréscimo alcançasse a turma como um todo, dado que foi justamente a diferença entre os desenhos que suscitou o debate, em aula, sobre as nuances e potencialidades de se *desenhar o movimento.*

Por fim, o instrumento de avaliação instituído na atual edição da disciplina foi o *relato*, consolidando a *experiência* como orientadora metodológica de um ensino de desenho de observação para futuros arquitetos e urbanistas. Os estudantes foram estimulados a expressar e a justificar o desconforto que sentiam, ao mesmo tempo em que falavam dos meios e técnicas de desenho apreendidas e das descobertas obtidas por meio dos exercícios. A construção do relato, escrito e ilustrado, ocupou as três últimas aulas do semestre e foi uma oportunidade de dar voz à experiência, num processo de elaboração e de diálogo que culminou na organização do que foi experienciado ao desenhar.

4. CONSIDERAÇÕES FINAIS

O que contei nos episódios é, em parte, fruto de minha reflexão a partir da atmosfera das aulas (se os estudantes estavam mais ou menos tensos ou descontraídos) e dos resultados obtidos (se o desenho ainda expressa preocupações alheias aos objetivos dos enunciados); e, também, do que os estudantes sistematicamente relataram. Ensinar a desenhar de observação passou a ser também ensinar a *falar sobre desenhar,* considerando também as questões de entorno, como o estado de ânimo de cada um ao desempenhar as atividades. Os *dispositivos* apresentados são tanto instrumentos de um esforço de radicalização e indícios do que pode vir a ser mais deliberadamente explorado como prática pedagógica de desenho de observação em arquitetura e urbanismo.

Um caminho para essa exploração pode ser dado por uma suspeita que começa a ser formulada como hipótese nesse momento de reflexão sobre o percurso de Oficina de Desenho I, que aponta que *a priorização da experiência frente ao resultado gráfico dos desenhos de observação pode requerer técnicas específicas.* A partir daí, a investigação pode indicar possibilidades de encaminhamento para questões que persistem: Que habilidades de desenho precisam ser, de fato, desenvolvidas? Que outras técnicas e práticas já consolidadas no ensino de desenho de observação podem ser apropriadas nesse processo? Como lidar com (ou mitigar) o persistente desconforto resultante da quebra de expectativas em relação ao desenho? O que pode ser tido como "certo" e "errado", caso se deseje pensar assim? – Ou, ainda: o que precisa ser avaliado?

A prática de desenhar de observação conduzida pela experiência coloca não somente o espaço, mas também quem desenha, como objeto da observação, a começar pelo próprio gesto de desenhar. No processo pedagógico, o modo como falamos de desenho e da ação de desenhar influi nas dinâmicas e nos resultados. A depender de como falamos, o exercício de experimentação do espaço e do próprio corpo pode assumir o primeiro plano, agregando sentido e significado ao ensino de desenho de observação na formação em arquitetura e urbanismo. Em Oficina de Desenho I, o trabalho implicado nas estratégias de desnaturalização da atividade de desenhar obteve algum sucesso por intermédio da própria experiência dos estudantes, ao desenharem de observação, a cada aula, indicando que uma autoconscientização frente ao ato de desenhar e seus possíveis objetivos abre espaço para uma discussão que pode produzir contribuições para o campo teórico do desenho de observação e para o ensino desse tipo de desenho.

5. BIBLIOGRAFIA

Artigas, J. B. V. (1998). Caderno dos riscos originais: Projeto do edifício da FAUUSP na Cidade Universitária. FAUUSP.

Costa, L. (1940). O ensino do desenho: Programa para a reformulação do ensino de desenho no curso secundário, por solicitação do ministro Capanema. Lucio Costa 1940. Recuperado de *http://portal.iphan.gov.br/uploads/publicacao/O_Ensino_do_Desenho.pdf*. Acesso em 17 jun 2024.

Dworecki, S. (1998). Em busca do traço perdido. Scipione & Edusp.

Edwards, B. (2021). Desenhando com o lado direito do cérebro: Um curso para estimular a criatividade e a confiança artística. nVersos.

hooks, bell. (2017). Ensinando a transgredir: a educação como prática da liberdade. WMF Martins Fontes.

Larrosa, J. (2002). Notas sobre a experiência e o saber de experiência. Revista Brasileira De Educação, (19), 20–28. *https://doi.org/10.1590/S1413-24782002000100003*

_____ (2003). O Ensaio e a Escrita Acadêmica. Educação & Realidade, 28(2). Recuperado de *https://seer.ufrgs.br/index.php/educacaoerealidade/article/view/25643*. Acesso em 20 jun. 2024.

Lefevre, R. B. (2019). Notas de um estudo sobre objetivos do ensino de arquitetura e meios para atingi-los em trabalhos de projeto. Em Khoury A.P. (Ed.), Arquitetura Moderna Brasileira: Uma Crise em Desenvolvimento. Textos de Rodrigo Lefèvre (1963-1981) (pp. 87-139). Edusp.

Rocha, P. M. (2007). Maquetes de Papel. Cosac Naify.

Oukawa, C. S. (2019). Potentialities of drawing from observation in architectural analysis based on an analysis of the Copan building. Estoa. Journal of the Faculty of Architecture and Urbanism, 8(15), 57–63. *https://doi.org/10.18537/est.v008.n015.a05*

Perrone, R.C. & Vargas, E. C. (Eds.). (2015). Fundamentos de projeto: arquitetura e urbanismo. Edusp.

Zumthor, P. (2006). Atmosferas. Gustavo Gili.

ESPAÇO CULTURAL JOSÉ LINS DO REGO: ARCHITECTURAL ANALYSIS AS WRITING EXPERIENCE

ESPAÇO CULTURAL JOSÉ LINS DO REGO: ANÁLISE ARQUITETÔNICA COMO ESCRITA DA EXPERIÊNCIA

Carolina Silva Oukawa
Arquiteta e Urbanista (FAUUSP, 2005). Doutora (FAUUSP, 2019)
Professora Colaboradora do PPGAU/UFPB
carolina.oukawa@academico.ufpb.br

Camila B. Andrade
Arquiteta e Urbanista (UFPB, 2023)
Mestranda do PPGAU/UFPB
cbandradez@gmail.com

Ellen Castro
Graduanda em Arquitetura e Urbanismo
Universidade Federal da Paraíba (UFPB)
ellensousabc@gmail.com

ABSTRACT

Architectural analysis is an incipient practice compared to musical analysis, a consolidated discipline in the study of music (Oukawa, 2019). This article brings together notes from two ongoing research studies, at the Master's (Postgraduate) and Scientific Initiation (Undergraduate) levels, which seek to verify the hypothesis that the non-literal transposition of musical analysis techniques and procedures can support the systematization of actions for an analysis of architecture and urbanism. Through two simultaneous study paths of the same work – Espaço Cultural José Lins do Rego, designed by Sérgio Bernardes for the city of João Pessoa, in Paraíba –, the potential of writing is investigated, using fiction (Saer, 2022) and the form of the essay, to constitute and organize an experience of built space (Larrosa, 2002 and 2003), following the example of Malaco's formulations on Casario de Atenas (2015) and the Attempt at Exhausting a Place in Paris (Perec, 2016).

KEYWORDS: experience. architectural analysis. essay. fiction. Espaço Cultural José Lins do Rego.

RESUMO

A análise arquitetônica é uma prática incipiente se comparada à análise musical, disciplina consolidada no estudo de música (Oukawa, 2019). O presente artigo reúne anotações de duas pesquisas em andamento, nos níveis de Mestrado (Pós-Graduação) e Iniciação Científica (Graduação), que buscam verificar a hipótese de que a transposição não literal de técnicas e procedimentos da análise musical pode subsidiar a sistematização de ações para uma análise de arquitetura e urbanismo. Por meio de dois percursos simultâneos de estudo de uma mesma obra – O Espaço Cultural José Lins do Rego, projetado por Sérgio Bernardes para a cidade de João Pessoa, na Paraíba –, investiga-se o potencial da escrita, valendo-se da ficção (Saer, 2022) e da forma do ensaio, para constituir e organizar uma experiência do espaço construído (Larrosa, 2002 e 2003), a exemplo das formulações de Malaco sobre o Casario de Atenas (2015) e do esgotamento de um lugar parisiense (Perec, 2016).

PALAVRAS-CHAVE: experiência. análise arquitetônica. ensaio. ficção. Espaço Cultural José Lins do Rego.

1. INTRODUÇÃO

O presente artigo reúne anotações de dois percursos simultâneos de estudo de uma mesma obra – O Espaço Cultural José Lins do Rego, projetado por Sérgio Bernardes para a cidade de João Pessoa, na Paraíba. Na interseção de duas pesquisas em andamento, de Mestrado (Pós-Graduação) e Iniciação Científica (Graduação), busca-se verificar a hipótese de que a sistematização de ações para uma análise de arquitetura e urbanismo pode se beneficiar da transposição não literal de técnicas e procedimentos da análise musical, disciplina consolidada no estudo de música (Oukawa, 2019). A análise musical acontece por sucessivas rodadas de aproximação

de uma obra, guiadas por um vocabulário de *parâmetros* musicais, como: harmonia, contraponto, dinâmica, entre outros. A escrita é instrumento de registro e sedimentação do que é vivenciado, num caminho gradual da descrição à formulação de sínteses, sendo o produto da análise um texto ilustrado. Em arquitetura, o corpo de vocabulário é indefinido e, pelo encontrado até o momento, um tanto mais vasto, tornando-se necessário *ensaiá-lo* – coadunando a ideia de *ensaio* colocada por Larrosa (2003) – de acordo com as particularidades de cada objeto estudado.

As rodadas de análise arquitetônica podem acontecer por experiência direta e indireta: na presença da obra e/ou exclusivamente por meio de representações. As representações portam-se como bases para se (re)constituir ou complementar uma experiência, assim como um músico acessa o conteúdo de uma peça musical ao ler a partitura, podendo expandir a compreensão do que vivencia pela escuta ou ao executar uma obra. No caso da arquitetura, tem-se a predominância de representações gráficas – daí, possivelmente, o uso corrente da expressão "análise gráfica", como em Berredo e Lassance (2011), para designar uma análise arquitetônica. Em que medida o contato com essas representações pode (re)constituir a *experiência* (Larrosa, 2002) de uma arquitetura é um de nossos interesses de pesquisa. Recuperando uma fala de Adriana Moreira (2013) para a análise musical, é importante marcar que a sistematização analítica não deve suplantar a experiência e uma atitude artística. Ela diz:

> (...) venho percebendo que nem todos os trabalhos estabelecem uma integração das técnicas de análise musical com uma experiência musical suficientemente sedimentada ou musicalmente atenta do analista. Será isso fruto de um recuo do artista frente ao técnico-cientista? Seria uma publicação científica um processo criativo? Seria uma publicação científica um fazer artístico? É possível que exista um diálogo entre o artista e o técnico-cientista, em que prevaleça o primeiro? (...)

E conclui: "Uma análise musical precisa ser criativa e consequente musicalmente. Precisa ser fruto da curiosidade que germina da percepção humana do músico bem informado. *Uma análise musical precisa ser musical*" (grifo nosso).

É nesse sentido que se tem procurado explorar a escrita como representação de arquitetura, tanto no âmbito de uma análise mais aproximada do que é feito em música – como a que vem sendo desenvolvida na Iniciação Científica; como em percursos mais experimentais, que procuram ampliar o uso da escrita como instrumento (re)constituidor de experiências – caso da pesquisa de Mestrado, que tem explorado a *ficção* (Saer, 2022) para experienciar o que não é alcançável pela experiência direta (por exemplo: na análise de um projeto/obra distante; ou não construído; ou que já tenha deixado de existir; ou mesmo na imaginação de outros cenários possíveis de existência). Como exemplos de referência de escritas (re)constituidoras de experiências, recorremos às formulações de Jonas Malaco sobre o Casario de Atenas (2015) e às *Tentativas esgotamento de um lugar parisiense* de Georges Perec (2016).

A pesquisa de Iniciação Científica constatou a evidente apropriação da arquitetura do Espaço Cultural José Lins do Rego pelos usuários, assumindo a *experiência direta* como condição para o exercício pretendido. O vocabulário trazido nas *Atmosferas*, de Zumthor (2006), foi identificado como propício para nomear aspectos da arquitetura nessa modalidade de análise, e tem sido utilizado como guia para as rodadas de aproximação, podendo ainda, daí, derivar a proposição de novos vocábulos que também orientem a análise pela experiência direta. Em paralelo, na pesquisa de Mestrado, a *ficcionalização* tem sido usada como instrumento para indagar sobre as alterações sofridas pelo edifício ao longo de quatro décadas de uso, integrando à análise a imaginação de possíveis realidades do projeto original e da obra construída no instante de sua inauguração. A seção 2 do artigo estrutura-se como um ensaio de orquestração dessas duas vozes, num exercício de (re)constituição multidimensional e temporal da experiência da arquitetura do Espaço Cultural José Lins do Rego. Por fim, na seção 3, é apresentada uma reflexão sobre o processo de feitura do texto, como sistematização das principais descobertas colhidas no trajeto.

2. ENSAIO

_O Espaço Cultural sempre foi fechado, *muito bem fechado.*
_Com os portões?
_Com os portões.
(...)

_Quando eu era criança, ainda não havia os portões. De uma rua a outra, atravessávamos o Espaço Cultural. Nem portões nem boxes de lojas: a cobertura metálica como que se incorporava ao tecido urbano, de modo que transitar pelo edifício era como um passeio pela cidade.

A tensão entre o interior e o exterior. Há um impasse de quando se está dentro ou fora. O Espaço Cultural já acontece quando ainda não estamos nele, dentro. Ou: o dentro começa fora, com o avanço da coberta até quase sobre o passeio. Aprendi com as crianças o ímpeto de ignorar as baias que fracionam a largura da entrada em prol das catracas que vez ou outra se usam. O portão, marcador de fronteira, quase sempre está aberto em horário de gente acordada. Quando é assim, o que faz o dentro é a coberta. A grande praça coberta, onde bicicletas e patinetes anunciam que é domingo (ou férias), tensiona o que entendemos por espaço interno ou externo. Mas agora estou *bem dentro,* posto que não apenas coberta, mas cercada de algumas paredes.

Se os boxes das lojas não existissem, como um dia não existiram (e como um dia, talvez, não mais existam), que panorâmica eu estaria vendo agora? Uma linha linear e residencial? – ou, quiçá, *o bosque*?... A mera presença de uma barreira física parece ter o poder de instigar uma curiosidade sobre o outro lado. O Espaço Cultural integra-se ao entorno permitindo sensações sobre estar dentro ou estar fora, supostamente

em razão das aberturas e transparências existentes. *Lembro que, quando é noite, as luzes acesas escapam para a rua em muitas brechas*. A tensão reside, sim, nesse embrechamento. Não seria tanta se a panorâmica fosse dada sem interferência de matéria. A própria cobertura, por ser tão grande, se faz da interação entre dois materiais, um metálico e outro translúcido, os quais se alternam regularmente para que a luz atravesse; ao mesmo tempo, essa casca se suspende numa malha treliçada aparente, a qual possibilita diferentes impressões de contato com o exterior, à medida em que a iluminação natural se movimenta ao longo da vastidão construtiva para criar uma consciência do dia.

De certo modo, a tensão é desfrutada pela percepção de dois macro cenários do Espaço Cultural — o exterior, espaço que margeia as fachadas e revela os impactos da edificação diretamente ao entorno; e o meio interno, onde se adentra a realidade dessa arquitetura, na qual vejo paredes se encontrando, misturadas a curiosos integrantes, *aquáticos ou terrestres*, que às vezes exprimem funcionalidade somente por trás de sua volumetria. Em virtude de uma delimitação estabelecida, ambas as esferas evidenciam uma relação de propriedade com determinados indivíduos, a sensação de pertencimento ou de segurança; digo isso principalmente em razão dos portões, com hora e dias para fechar e abrir. Essa circunstância atinge diretamente a *permeabilidade*, um termo tão constante na análise de um edifício, a ponto de nos gerar a intenção de atravessar elementos opacos através da imaginação.

Tal interesse é aguçado pela permeabilidade, por sua capacidade de transmitir diversos cenários — fictícios, quando existe um elemento de obstrução que alimenta ideias, ou reais, que mostram fielmente o que acontece em outro ponto de vista. Integrada aos variados percursos admitidos, essa propriedade da arquitetura se manifesta pela consonância entre materiais de divisão, portanto percebo que pode se bifurcar em duas vertentes: a visual — o indivíduo tem contato meramente indireto com o outro lado, seja por uma abertura integral, com anteparos transparentes, ou por elementos vazados, que se caracterizam pela impossibilidade de travessia física, a qual se resume ao olhar; e a tátil, que alcança uma conexão dinâmica e física entre ambientes a partir da imposição de esquadrias ou de jogos entre paredes. Uma possível descoberta que, pela experiência, pode ter se revelado: a comunicação interno-externo na edificação acontece além das intenções originais de projeto, seja por alturas não opressivas (como em peitoris de estatura para sentar e libertos de esquadrias) ou por tramas mais abertas nos elementos de demarcação, capazes de convidar o indivíduo a atravessar por ali. Os integrantes do Espaço Cultural, independente da cronologia ou da composição, têm o poder de constituir essa relação com o *corpo.*

O corpo da arquitetura. A cobertura metálica, que delicadamente alcança o chão através de pilares-galhos, não seria muito mais digna de ser considerada *corpo* do que os boxes das lojas? Me pego gastando tempo e energia com eles, caixas soltas dispostas nas laterais da edificação — é possível passar por trás, pois criou-se um

corredor residual entre as lojas e a trama metálica com vista para a calçada. Alguém coloca potes com comida para os gatos que circulam pelo espaço cultural. Seria algum preconceito meu, pelo fato de os módulos de lojas terem sido colocados apenas mais recentemente, enquanto os elementos estruturais estão ali notadamente desde o início?

Uma característica ainda dos boxes, mas que se repete diversificadamente em outros elementos constituidores do Espaço Cultural, é o fato de sua altura não alcançar a superfície inferior dos mezaninos, oferecendo a quem caminha pela Praça do Povo — num nível mais elevado em relação às laterais onde os boxes se acomodam — a visão de duas paisagens distintas e paralelas, que não são vistas por completo, mas sua ideia se constrói pela intuição onde os olhos não alcançam. A primeira, sul, mescla a proximidade dos edifícios do entorno com um distante cenário panorâmico (de certa forma até pacato) da cidade. A última, norte, é a fachada principal do Espaço Cultural, que abriga os vendedores ambulantes e seus carrinhos de comida desde cedo da manhã até o fim do dia; volta-se para quadras com edifícios residenciais e pequenos comércios, inclusive uma padaria, um salão de cabelos, uma mercearia, uma clínica, um edifício de uso misto com galeria no nível da calçada. Decido ir ali.

Estou na calçada agora, do outro lado da rua. Ganhando certa distância da edificação, a permeabilidade se esvai. Parece tudo matéria. Uma espécie de quadra edificada. Não é verticalizada, mas não a percebo "baixa"; é quase feita de um enorme pé-direito, se tomarmos como referência a Praça do Povo (e sem contar a parte enterrada, do subsolo). "[...] [O Espaço Cultural] *não é visto de nenhum ponto da cidade, apesar da imponência de sua construção*" (Ramos, 2008, grifo nosso). De fato, de certa forma ele parece estar escondido por entre as tantas casinhas de Tambauzinho. Enorme e escondido. De fora vemos essa contenção controversa: está contido por algo menor que ele.

Retorno ao interior. Agora chove. Quando caminhava até o edifício, eram só alguns pingos esparsos. Não sei se lá fora a chuva engrossou, mas aqui dentro, sim. Chove muito e chove forte. O som das águas que caem das canaletas e encontram os espelhos d'água constitui o som ambiente. *Festa das Águas,* batizaram.[1] Um evento natural, mediado pelo construído. Sair de casa com a intenção de ouvir a chuva em um edifício é uma outra experiência, pouco comum. Ele não nega o exterior; nesse sentido, potencializa-o. Além dos pilares-galhos, a cobertura também tem dutos que formam agrupamentos de ruidosas cachoeiras. Duas canaletas cheias d'água e de peixes, uma em cada lado do vazio da praça coberta (há de se cuidar para não cair ali), recebem a água toda.

---

1 "Na entrada da praça há pequenas pontes sobre um canal de águas límpidas, que será alimentado pelas chuvas através de tubos que descem do teto, constituindo o espetáculo conhecido como "Festa das Águas", segundo definição do arquiteto Sérgio Bernardes, autor do projeto." Jornal A União, 13/05/1982.

No banco vizinho, um homem com um saxofone incrementa a paisagem sonora. Entram também gargalhadas e gritinhos: um possível pai brinca com sua possível filha, que alcança uns cinco anos de idade e tem uma bicicleta, embora agora eles estejam brincando de pega-pega. Ele, com suas pernas enormes, facilmente consegue escapar dela, de pernas tão pequenas. Por um tempo, essa disparidade não causa uma diminuição na diversão dos dois; até que ela renuncia à brincadeira e senta no banco. Sem ter de quem correr, ele a acompanha, e agora se compromete com a limpeza dos pequenos pés da menina, retirando o pó deles com as próprias mãos. Ela estava correndo descalça. Eles, agora, estão apenas sentados, olhando o "nada". Mas muita coisa acontece no nada. Eu, sentada, escrevo.

Escrevo como quem queria estar no bosque. Ainda chove forte. O bosque, com três quadras de profundidade ao longo de toda a extensão do Espaço Cultural, indo até a Epitácio Pessoa. Ouço o som dos motores atravessando a copa das árvores até aqui; a essa hora, ressoam as buzinas dos motoristas que querem seguir em frente, mas são bloqueados por aqueles que avançam a faixa livre, furando fila para acessar a Ruy Carneiro. Desse lado, então, o bosque. Na face oposta, a Sul, até a Beira Rio, o amplo estacionamento de quatro mil vagas. Sorrio, pensando em que imaginação de cidade teria colocado esses dois elementos em um mesmo projeto, contando com cerca de noventa desapropriações. O estacionamento é um tanto maior que o bosque, quase um terço. Viro-me de costas para visualizar o mar de carros. Agora, que já não há tantos (os da tarde começaram a sair e os da noite ainda não chegaram), a paisagem é quase de um campo, de vegetação rasteira que cresce entre o piso intertravado.

O som do deslizar de skates interrompe meu devaneio. Acompanho os ruídos curiosamente. Existem espaços com alturas e angulações que conduzem escalas com efeitos diferentes, logo avisto uma bola a boiar na água, e então, as rampas. Sim, elas poderiam consistir em um componente banal de vínculo vertical; no entanto, sua presença e esbeltez instigam o olhar e induzem os passos tanto de quem frequenta diariamente quanto dos visitantes excepcionais a transformar aquela continuidade livre — a Praça do Povo — em uma dança de espaços. As rampas 1 e 2 — são quatro no total, espelhadas originalmente — não acabam em uma só direção, se adentram nas laterais e no meio principal simultaneamente — sua projeção seria em "U", mas que solta a ligação, o que promove o acesso do mezanino ao nível térreo e ao subsolo. Por outro lado, essa configuração atinge a descida suave da Praça do Povo até os espelhos d'água e cria anteparos que sustentam placas de certa contradição: "proibido andar de skate, de patins, de patinete..." todos em ícones, numa altura perfeita para serem lidas por usuários "crescidos". Então parte uma sensação de vazio nesse campo inclinado, vira não mais que uma passagem, não há permanência a não ser em suas margens onde os bancos foram posicionados. Seria uma advertência de cuidado para evitar topar com os peixes ou um suposto elemento de segregação?

O pai e a menina parecem ter ido embora, não os vejo mais. Mas é possível que ainda estejam explorando outro espaço. Duas mulheres, jovens, talvez da minha idade, são

quem chega agora. Elas e mais duas crianças, de patinete e bicicleta, apesar da placa de proibido. A proibição de bicicletas, patinetes e afins avançou por décadas. A placa continua fixada. Os bancos e árvores originalmente implantados haviam sido retirados em prol de liberar o vão da Praça. Houve represália... O Espaço Cultural é frequentado por vários grupos sociais, há disputas... As crianças venceram (ou talvez a decisão tenha decorrido de algum problema técnico de manutenção dos canteiros). Fato é que, um dia, os bancos não amanheceram por aqui. Me pergunto que outros elementos poderiam ser (ou já foram) removidos.

Tento imaginar o Espaço Cultural sem o palco e me parece que, mesmo em sua ausência, outras paredes, provavelmente do teatro e da área técnica, impediriam a visão do outro lado. Mas me disseram que a sensação, sem o palco, era de abertura; de continuidade e amplidão, com as rampas espelhadas — e que não são mais, justamente porque foram alteradas para caber o palco. *Escrevo para eliminar paredes*, mas dessa vez a escrita conflita com pensamentos demais: Quando e quem decidiu fechar o Espaço Cultural? A partir de quê? Algum fato extremamente violento motivou ou foi hiperbolizado e propagandeado como justificativa para a implantação dos portões? Houve quem dissesse, muito incisivamente, que o Espaço Cultural sempre foi fechado. E este foi alguém que relatou ter morado ali perto a vida toda, acompanhado mesmo a obra. A minha pergunta, no entanto, quanto aos portões, recebeu dessa pessoa uma resposta tão incisiva, que me levou a pensar nas repercussões ideológicas que carregam processos como esses, de reformas ou alterações de edifícios.

Sempre foi fechado, muito bem fechado. A arquitetura de um edifício, sua manutenção ou o seu desmonte, como ações políticas, atendendo a interesses que se alteram de gestão em gestão. Em contrapartida, e com bastantes mais relatos, há aqueles que contam memórias dos tempos em que ainda não havia portões e era possível "atravessar" o edifício de uma rua a outra. *Eu cheguei em 1990 e já era fechado.* Quais e quantos discursos fomentando o medo ou a necessidade de segurança foram necessários para que restasse como única opção o fechamento por portões? Como reagiu a população? O que achou da mudança? Intervenções como essa pretendem tornar o edifício mais controlado, dando as costas ao exterior e quase obrigando-o a voltar-se para dentro.

Mas essa intenção não pôde ser consumada plenamente. O som escapa aos portões. A chuva segue presente; é inegável. O edifício toca o seu som. Minha cabeça começa a doer, e quase quero culpar o homem que toca a mesma música, incansável. O horário do jantar se aproxima, a minha dor pode ser fome. Tinha que ir à biblioteca ver se encontro algo. Talvez testemunhos dessa época. O portão se abriu para o caminhão de transporte, que estava estacionado dentro, poder passar, e só então pude ver um pedacinho livre da rua lá fora. Por isso o nome — Praça do Povo. Devia parecer uma praça. Já não parece tanto. O homem do saxofone levantou, e ainda toca. Está em pé. Será que ele se imagina diante de uma plateia? É isso o que o vazio

faz: se dá a ser preenchido pela imaginação. Saio depois do suposto pai e da suposta filha, mas antes do homem que toca. Na mesma música, ele fica.

3. PROCESSO

A construção do ensaio que apresentamos foi iniciada com um levantamento do material produzido em cada pesquisa em andamento (Iniciação Científica e Mestrado), ou seja, das vozes que comporiam o texto, chamadas "descritivo-analítica" e "ficcional", respectivamente. Foram pinçados trechos que se aproximariam do *tom* que cada uma delas poderia assumir, o que direcionou a produção de novos ensaios. Essa etapa foi marcada por visitas ao Espaço Cultural, na qual acabaram ocorrendo conversas imprevistas e consulta a material gráfico e textual, como desenhos do projeto e notícias de jornais e revistas.

As explorações de escrita ficcional, nessa fase, aconteceram em imersões de observação do cotidiano do Espaço Cultural, partindo principalmente da descrição de cenas (como a do pai brincando com a filha) e avançando (pouco, ainda) para a especulação de possíveis desdobramentos (... *Parecem ter ido embora... Mas é possível que ainda estejam explorando outro espaço*). No percurso da escrita descritivo-analítica, algumas das atmosferas de Zumthor destacaram-se como guia das rodadas de análise: *A tensão entre o interior e o exterior*; *O corpo da arquitetura* e *O som do espaço*. Na elaboração de descrições a partir de tais princípios, houve intensa discussão sobre que *imagens* criar a partir da seleção do vocabulário usado nas descrições. A construção e o teor atribuído a essas imagens vincula-se diretamente à elaboração da própria análise pretendida, nos desdobramentos da descrição.

À medida que a descrição evoluiu desse modo, evidenciaram-se possibilidades de trabalho com a ficção que não estavam sendo exploradas ou que ainda eram confundidas com um esforço documental frente aos dados encontrados. Esse momento coincidiu com o aparecimento de registros de elementos do projeto que não chegaram a ser concretizados. Ficou nítido, então, que a multitemporalidade pretendida com o exercício do ensaio ficcional no processo de análise da arquitetura do Espaço Cultural poderia envolver não apenas os tempos já ocorridos. Mais do que passado, presente e futuro, abria-se uma dimensão que tensionava diretamente a realidade posta, com *o que poderia ter sido*. Essa constatação foi inescapável quando nos deparamos com o excerto a seguir:

Sérgio Bernardes, todavia, arquitetara idéias ainda mais mirabolantes para o projeto que lhe foi confiado. Lembra Osvaldo que uma das suas exigências, preocupado com a excelência da obra, era que o terreno onde foi edificado, no antigo campo do Botafogo, em Tambauzinho, fosse tornado de utilidade pública até a Avenida Epitácio Pessoa. Para isso, seria necessária a desapropriação, ao longo do tempo, de várias casas das vizinhanças, em número de quase noventa. Aquela área seria coberta por um bosque, por dentro do qual se teria acesso ao colossal monumento, a partir

de Epitácio. No lado oposto, que dá para a Avenida Beira Rio, o arquiteto projetou um estacionamento-garagem com capacidade para aproximadamente quatro mil automóveis. Assim, toda a área a ser ocupada pelo Espaço Cultural abrangeria desde a Epitácio até a Beira Rio. A leste ficaria um bosque; a oeste, um estacionamento gigantesco. No lado norte, onde existe uma capela e uma escola ocupando vasta área, ficariam os restaurantes e casas de lanche (Ramos, 2008).[2]

Percebemos, assim, que seria possível e desejável procurar incluir as possibilidades do que *seria* (e, eventualmente, *será*) a arquitetura do Espaço Cultural — e, também, da cidade transformada por ele. Um dos recursos narrativos pensados foi deixar a fronteira entre os tempos mais fluida (ou pelo menos não tão marcada), incluindo a consideração de um hoje que não se fez. A partir do momento em que escrevemos para experienciar algo não dado, oferecemos a oportunidade para que outros (os leitores) experienciem aquilo que, em algum nível (o da representação pela escrita), passa a existir.

Na prática, no entanto, e com a aproximação do prazo de conclusão do artigo, a montagem ou a pretendida orquestração das vozes do ensaio estava truncada. O foco no texto como produto estava impedindo uma escrita experiencial, como num processo de projeto em que se tem demasiado cuidado com o resultado gráfico das representações num momento em que elas ainda devem servir prioritariamente ao fluxo do raciocínio projetual. Foi preciso um grande esforço de conscientização no sentido de recuperar os propósitos originais do artigo, de escrever para experienciar, para que a escrita pudesse fluir. O trecho que traz para o ensaio o bosque e o estacionamento fez parte desse movimento e ilustra a tentativa de uso da escrita para experienciar algo não concretizado. Em termos de linguagem, buscamos constituir frases que, sutilmente, admitissem-no como existente (ou pelo menos, que em nenhum ponto se atestasse sua inexistência). No parágrafo seguinte, diante da sugestão de imaginar o grande vão não mais interrompido pelo palco, a intenção da escrita é momentaneamente revelada (*escrevo para eliminar paredes*).

A essa altura, o texto expressa uma tensão crescente, motivada por uma questão central identificada no processo: a dos fechamentos da arquitetura do Espaço Cultural, entre outras imposições aleatórias, como a proibição a patinetes e bicicletas no vão livre da Praça do Povo e os boxes de loja, insistentemente presentes no início do ensaio (por mais que não quiséssemos falar dos boxes, eles se mantiveram e seguiram reaparecendo quanto mais a escrita avançava). Percebemos que, na intersecção das vozes, a descrição lastreou a escrita ficcional. E a ficção, por sua vez, deu visibilidade a aspectos até então coadjuvantes, diante da magnitude da arquitetura estudada, num processo de validação da experiência — tornou-se impossível calar a experiência de elementos "menos nobres"; ou de uma arquitetura "menor"; ou até inicialmente lidos como "não arquitetônicos" do Espaço Cultural José Lins do Rego.

---

2 O autor recupera a fala de Osvaldo Trigueiro, secretário administrativo nomeado para supervisionar a parte operacional de edificação da obra. A última parte apresenta algumas inversões na orientação do edifício: O bosque ficaria ao norte; o estacionamento previsto, ao sul; a capela e a escola existentes encontram-se a oeste.

4. CONSIDERAÇÕES FINAIS

Esta foi uma de nossas primeiras experiências de exploração da ficção em percursos de análise arquitetônica. Há algum tempo, temos utilizado o ensaio como meio de transbordar as informações coletadas nas rodadas de aproximação de uma obra pelo esgotamento da descrição, como proposto na análise musical. O ensaio convoca a subjetividade do analista a expressar-se (em vez de tender a um ocultamento pretensamente objetivo ou científico). Assim, já estava colocada uma postura de questionamento em relação ao que pode (ou até deve) ser posicionado como elemento de *rigor* em estudos analíticos de arquitetura e urbanismo.

Os recentes exercícios de ficcionalização a partir de elementos que podem ser dito *mais objetivos,* como os contidos na escrita descritiva, têm trazido a percepção de que a escrita ficcional pode ser um recurso para, apoiando-se na descrição, atingir questões mais sutis ou tidas como secundárias do projeto analisado, como o controle do acesso ao Espaço Cultural, no presente ensaio. Ao potencial da escrita ensaística, de constituição de um fio narrativo que organiza os aspectos estruturantes de uma obra, a ficção acrescenta uma abertura ainda maior, que pode trazer para o centro da análise aspectos impensáveis por outro caminho. Esse recurso não substitui uma análise mais sistemática, no sentido de um esgotamento, como orientado pela metodologia analítica de música; mas pode constituir um instrumento de complementação, uma vez que dá voz à experiência de uma obra, ao considerar aspectos "menos atraentes" e possivelmente ausentes de roteiros de análise.

Adotar esse recurso de escrita e de pensamento requer do analista um desprendimento e um treino ainda mais intenso para abandonar uma atitude controladora no processo de análise — o que é potente, em termos de rigor metodológico, por marcar uma pré-disposição para acolher aspectos que possam advir da obra analisada, sem forjar ou apressar conclusões. O produto da análise é deliberadamente uma expressão da subjetividade de quem analisa e, uma vez posto, pode ser acessado por outras subjetividades, numa construção coletiva do que se pode conhecer de uma obra e da própria arquitetura. Assim, ao recuperar a universalidade na interação de sujeitos, a análise de arquitetura pode constituir-se como um fazer artístico (ou, pelo menos, criativo), como sugerido por Moreira (2013) para a análise musical.

5. BIBLIOGRAFIA

Berredo, H. & Lassance, G. (2011). Análise gráfica, uma questão de síntese. A hermenêutica no ateliê de projeto. Arquitextos 133(01). *https://vitruvius.com.br/revistas/read/arquitextos/12.133/3921*.

Jornal A União (1982, 13 de maio). O encontro das artes numa obra gigantesca. 90(81).

Malaco, J. (2015). Da forma urbana: o casario de Atenas. FAUUSP.

Moreira, A. L. C. (2013). Processos interpretativos criativos e perceptivos em análise musical. Anais do III Encontro Internacional de Teoria e Análise musical. *https://etam.eca.usp.br/iiiencontro/files/lect_Moreira.pdf*.

Larrosa, J. (2002). Notas sobre a experiência e o saber de experiência. Revista Brasileira De Educação, (19), 20–28. *https://doi.org/10.1590/S1413-24782002000100003*

_____. (2003). O Ensaio e a Escrita Acadêmica. Educação & Realidade, 28(2). *https://seer.ufrgs.br/index.php/educacaoerealidade/article/view/25643*.

Oukawa, C. S. (2019). Análise arquitetônica e o fio do sentido: apontamentos para uma prática pedagógica (Tese de Doutorado). Universidade de São Paulo, São Paulo.

Perec, G. (2016). Tentativa de esgotamento de um lugar parisiense. Gustavo Gili.

Ramos, B. (2008). Burity: Esplendor & Tragédia. Santa Marta.

Saer, J. J. (2022). O conceito de ficção; tradução de Lucas Lazzaretti. 7Letras.

Zumthor, P. (2006). Atmosferas. Gustavo Gili.
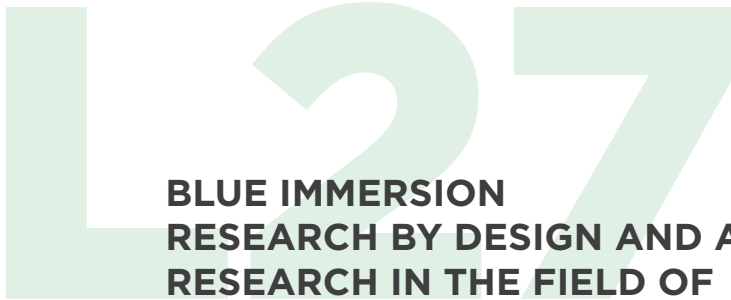
BLUE IMMERSION
RESEARCH BY DESIGN AND APPLIED
RESEARCH IN THE FIELD OF
ATMOSPHERES

IMERSÃO AZUL
INVESTIGAÇÃO PELA CONCEÇÃO E
INVESTIGAÇÃO APLICADA NO DOMÍNIO
DAS ATMOSFERAS

Philippe Liveneau
Professor
ENSAG, UGA, AAU-CRESSON
DIGITAL RDL, partnership chair, French Ministry of Culture
liveneau.p@grenoble.archi.fr

Amal Abu Daya
Senior lecturer
ENSAG, UGA, AAU-CRESSON
DIGITAL RDL, partnership chair, French Ministry of Culture
abudaya.a@grenoble.archi.fr

ABSTRACT

The paper presents our design-research approach, centered on the notion of ambience, in order to develop a "practice of ambiences", which we define as an "inclusive strategy of sensory design in the field of architecture". Our experiential approach to architecture is based on a practice of situated experimentation that takes shape, following an iterative and recursive design process, through the production of models, prototypes, micro-architectures and pavilions.

Our methodology of action research through experimentation on the scale of the body in motion brings to the fields of ambience an interdisciplinary and multi-sectoral framework within which architecture is elaborated by self-correlation of the dimensions of form, in a logic of ecosystemic convergence made possible by the incorporation and embodiment of the arguments and horizons of ambience by each of the actors involved. Over the years, our approach has evolved into applied research in the field of ambience.

KEYWORDS: Architecture. Ambience. Sensory design. Experimentation. Action research. Applied research.

RESUMO

Este artigo apresenta a nossa abordagem de investigação em design, centrada na noção de ambiente, com o objetivo de desenvolver uma "prática de ambientes", que definimos como uma "estratégia inclusiva de design sensorial no domínio da arquitetura". A nossa abordagem experimental à arquitetura baseia-se numa prática de experimentação situada que se concretiza, seguindo um processo de conceção iterativo e recursivo, através da produção de modelos, protótipos, micro-arquitecturas e pavilhões.

A nossa metodologia de investigação-ação através da experimentação à escala do corpo em movimento fornece um enquadramento interdisciplinar e multissectorial para os campos da ambiência, no âmbito do qual a arquitetura se desenvolve através da auto-correlação das dimensões da forma, numa lógica de convergência ecossistémica possibilitada pela incorporação e corporização dos argumentos e horizontes da ambiência por cada um dos intervenientes.

Ao longo dos anos, a nossa abordagem evoluiu para a investigação aplicada no domínio da ambiência.

PALAVRAS-CHAVE: Arquitetura. Ambiente. Design senoriel. Experimentação. Investigação-ação. Investigação aplicada.

1. FRAMING THE CONSTRUCTION OF APPLIED RESEARCH IN THE FIELD OF AMBIENCES

Over the last 20 years we have been developing a research approach through design based on our doctoral thesis (2005), the aim of which was to articulate the design and perception of ambiences around the notion of architectural gesture, centered on architects. We have thus created the concept of "*the scale of the body in motion*" as a measurement standard and design horizon for the architectural discipline. The projects presented in this article illustrate, to some extent, the results of this line of work.

Indeed, our paper is structured in three parts. First, we present our applied research methodology. Secondly, we present the project for a bench built between 2016 and 17 through the story of the optimisations made, over the course of several projects, of a generic strato-fabrication principle, while identifying the ambient potential that it allows. We present the sensory design arguments that emerge in the course of the design process, then finalise the presentation of this urban furniture according to the four polarities of composition, perception, manufacture and technical instrumentation. In the third and final part we present, in the same way as before, a pavilion project produced for the French Canoe Kayak Federation as part of the France Club for the Paris 2024 Olympic Games. Through the story of the envelope designs produced over nearly 15 years, (a research topic developed in part thanks to the theoretical contributions and doctoral research of Amal Abu Daya), we show how, step by step, we specified and integrated all the dimensions, arguments and values of the visual, luminous, aerolic, thermal and chromatic ambiences, as well as the issues of inclusivity in terms of social interactions and differentiated appropriations of the pavilion façade. Beyond the *"partes extra partes"* description, the aim is to propose a blue immersion that makes sense for the canoe kayak federation.

2. RESEARCH BY DESIGN – METHODOLOGY AND ÉPISTÉMOLOGY
2.1 Inclusive process and multi-sector ecosystem - Programming, designing, building, perception, evaluation.

The uniqueness of our approach is to develop research through design centered on the morphogenesis of ambient environments that are programmed, designed, produced, perceived and then evaluated and reconfigured. This environmental design approach goes beyond classic 'living lab' practice in that it is more extensive (from conception to use) and is based on the reconfiguration of research objects into 'real' situations that have a direct impact on civil society. More fundamentally, we apply our approach systematically to each project, at each of its phases, but also over time and from a macroscopic viewpoint, considering several projects for

the same morphogenesis typology. These 'micro' and 'macro' iterations, on the same type of ambient object (for example, the strato-fabrications, the bench, or the perforated envelopes, the pavilion), allow a sedimentation of experiences, knowledge capitalisation, thus building a shared and transmissible lived expertise. Specifically, over the course of our projects, we have developed a strategy of gradually involving our partners and, more generally, all the actors involved, whether they be teachers, industrial partners, students or members of civil society, in the entire process. Our approach thus encourages a multi-sectoral approach to architectural design, which is both necessary and required by the convergence of integrated research practices around the design-creation of artefacts and fabricated architectures.
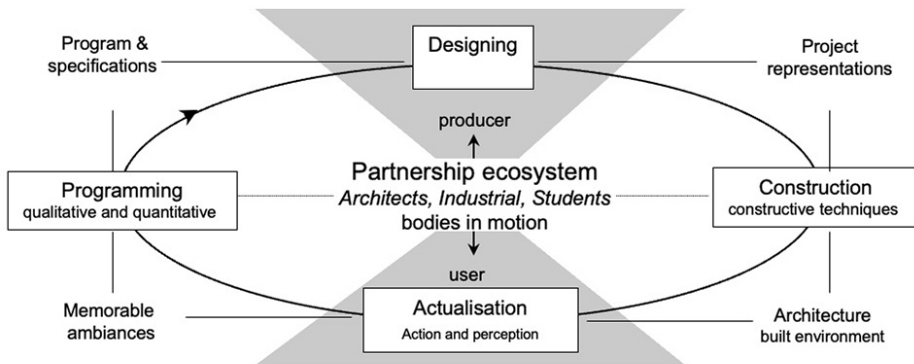
Figure 1/ Methodological process of research through design, stakeholder involvement
Source: Diagram of the 4 processes P. Liveneau. 2005, Doctoral thesis - Amended 2024

2.2 Disciplinary intelligibility. Intentionality and process engineering. Autocorrelation of the dimensions of form

From an epistemological point of view, our research by design approach is based on a model of disciplinary intelligibility on which we base our architectural research, represented by a disciplinary diagram, 'Regimes of intentionality and genius of processes', which we presented at the 'Ambiances Demain' conference in Volos in our article "Digital RDL - Research by design laboratory. Perception of non-standard forms" (in volume 1, page 190). Our aim is to ensure that the development of knowledge and understanding takes place at the interface between the regimes of intentionality (design and perception) and process engineering (materiality and technicality). This interdependence of the polarities in architectural research that are usually dissociated by discipline (Design Sciences, TPCAU/ Human and Social Sciences, SHS/ Sciences and Techniques, OMI & CIMA) forms the background or framework of an emerging digital ecology and enables us to construct a practice of ambiences that is fundamentally interdisciplinary. For the two projects we are presenting, the bench and the pavilion, we are systematically linking technical and material issues, compositional principles and perceptual horizons.

3. THE BENCH. GENEALOGY OF A STRATO-FABRICATION, SENSORY DESIGN AND SOCIAL INTERACTIONS. AUTOCORRELATION OF THE DIMENSIONS OF THE FORM.

This experimental street furniture project was commissioned by Transdev, a transport operator and partner of the chair. It was part of the "lemon project" and the "chrono en marche" initiative involving the *syndicat mixte des transports en commun (smtc)* and *semitag*. The consultation process, which also involved the city of Grenoble and the METRO (Grenoble alpes métropole), lasted for a year, allowing during this time the layout of the bench to be modified. Intervening in the programming of the 'bench equipment', we proposed a principle of morphogenesis and physical construction of the artefact, in line with the genealogy of lamellar structures that we have been producing for several years.

3.1 Background. Strato-fabrication or lamellar structures.

Figure 2/ Illustration of strato-fabrication since 2009. Top line: photo 1: topography, lounge area, student center, crous de grenoble, under the direction of P. Liveneau. Photo 2: "La caverne", sound week, ensag, under the direction of P. Liveneau. Photo 3 and 4: "le passage", grenoble campus, 50 years of the university estate, under the direction of P. Liveneau. Bottom line: photos 1, 2 and 3, "Affordance haptique", the platform, "architecture à l'èrenumérique" exhibition, under the direction of P. Liveneau. Two images on the right, "la caverne", bivouac bastille project under the direction of P. Liveneau. Source: Digital RDL - direction of P. Liveneau. Credits © P.Liveneau

From left to right, "*Topographie*" (2009) is a 21-square-metre surface made of triple-fluted cardboard that allows users to change their altimetric position (i.e. their body's position in space). This architectural installation, created as part of an exhibition, is open to a number of different modes of bodily appropriation (lying down, sitting up, standing up). *"La Caverne"* (2011) is a microarchitecture, a small sculptural space

whose morphogenesis and digital production are concerned with the perception of depth. *"Le passage"* (2012), installed on the Grenoble campus, borrows the curvilinear lines of Calder's sculpture, in front of which it is placed as a way of integrating formally the site. The continuous transformation of the form offers a modulation of light, an optical structure that is both smooth and striated, which disappears when the viewer is positioned perpendicular to the object.

Finally, the *"affordance haptique"* below (2014), created as part of an exhibition on 'Architecture in the Digital Age, Ambiances Demain', was designed using interactions profiles (between a body in motion and the artefact), adjusted to the optimised dimensions of the parts to be produced, based on the dual dimensional constraints of the standard plates of medium on the market (the material used) and the cutting table of the CNC used. The way the plates are fixed with threaded rods also defines the positioning of the fixed points around which the profiles can develop. Finally, the two images on the right (top and bottom) show the spatial scale of a micro architecture for a bivouac in 2022. All of these dimensions of composition, perception and use, and technical instrumentation and production are assimilated in the design of the "Cétoi-cémoi bench".

3.2 The Cétoi Cémoi bench - body ergonomics and functional prototype

The design of the bench is based on the definition of ergonomic seating profiles. Chronophotographs were used to characterise body configurations and select seven remarkable postures. The research also took into account the possibility of different situations of co-presence (being alone, accompanied, together for discussion or co-habiting). The design of this first version of the project is accompanied by the creation of a functional prototype, a support for experimentation and experience.
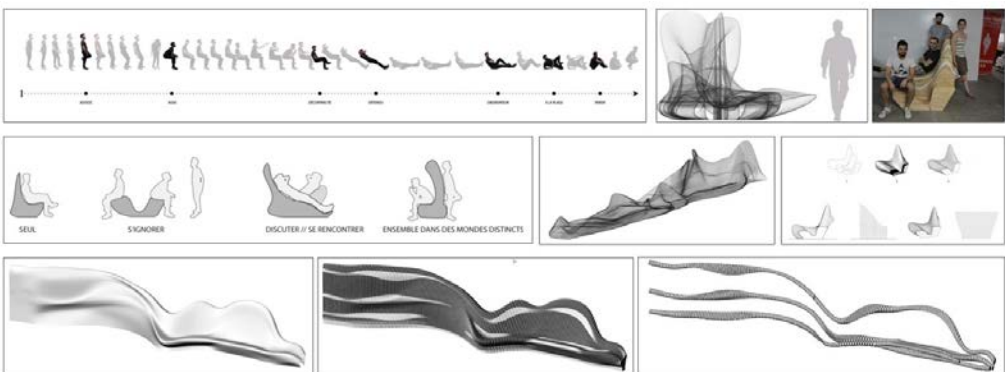
Figure 3/ This third figure shows the design methodology we have developed to adjust and size the shape of the artefact to the ergonomics of its use by a moving body. On the first two lines : research into postural ergonomics, selection of several 'ways of sitting' and research into modes of social interaction. Parametric design, wireframe representation. Production of a prototype. On the third line, from left to right, three-dimensional view of the general morphology of the left side of the bench, representation of the morphology based on these successive profiles and the outcrops of the struts. Extraction of the connecting struts from the body profiles. The three 'tubes' are flush with and adjust to the contour geometry of the profiles to provide surface body contact surfaces for the hands, head and feet.
Source: Digital RDL - direction of P. Liveneau. - Credits © P.Liveneau

The question of the connecting elements between the profiles (spacers) was raised, as it was not possible to draw a straight line across the entire length of the bench (haptic affordance 2014): the convolutions of its morphology required a 'step-by-step' connection. In addition, the weft pitch, thickness of the planks and void, in this case in a ratio of 2cm full to 4cm empty, causes discomfort in use. Several tests were carried out, and the ratio of 1.5 cm board thickness to 3 cm void offered real comfort. This prototype also reveals an unthought-of aspect of the design process. The omnipresence of the hand touching, leaning on, brushing against, just as much as the position of the buttocks, the fact of leaning one's head on the backrest or wanting to put one's foot on the front or back, requires us to think of the body's involvement in terms of contact surface. It's not a question of thinking in terms of the body profile but of the carnal body, on the scale of the skin that touches, of the surfaces of bodily adequacy. Finally, due to a lack of materials, the company responsible for producing the prototype produced 2 'white' profiles. This material distinction is progressively revealed in the form of a chromatic doubt as well as a question about the materiality of the profiles that might be in keeping with the lamellar constitution of this non-standard morphology.

3.3 Autocorrelation of the dimensions of the non-standard shape.

The final version of the bench incorporates each of the above-mentioned achievements and all the chromatic and tactile observations made thanks to the prototype. This substrate defines the assimilated design framework, or the condition of possibility for optimised updating of the lamellar structures that we have been producing for several years.

3.3.1 Composition

The formal design of the bench is based on the modelling of a morphology generated by body interaction profiles (standing, sitting, lying down). It divides the bench into different situations of co-presence (secluded, withdrawn, exposed). The skyline of the bench (the high horizontal generating line of the overall morphology) structures a relationship of masking the context (left), revealing a point of view (center) and inviting people to enter the district (right).

3.3.2 Perception

The obliquity of the side view (when walking along the bench on the pavement that runs parallel to it) reveals the users who occupy it, while masking the car park on the opposite side. When viewed from the front, the lamellar striation provides a porous view and a degree of transparency that encourages people to enter the neighbourhood (the project owner's initial wish). The position of the bench on a platform provides a view of the potential for occupying the form (the bench is fixed to a deck 30 centimeters above the pavement). Finally, the chromatic contrast and location of the spacer elements (the three extracted tubes in the drawings below, the light spots in the photos) are both a way of locating the zones to be occupied

and a way of qualifying the 'areas' of body contact. The spacers are flush with the surface they are aligned with, defining tactile surfaces. They constitute affordances for use, opportunities for action or physical interaction (body/material) and sensory interaction (skin/smooth surface) that are varied and specified for the feet, hands, buttocks and head.

3.3.3 Material
The choice was made to use film-coated plywood (usually used for formwork for walls made of reinforced concrete). This material is a multi-ply plywood panel with crossed and glued plies. It is coated with a dark brown printed film and impregnated with hot-pressed polymerised resins. The material composition of this material, as well as the way in which it is used, responds to a number of challenges. The film-coated side surfaces, in addition to their resistance to abrasion and the elements (which can be cleaned with a Karcher), contrast with the clear core, which is made up of 9 layers for the chosen thickness of 15 millimetres (ergonomics). The 15 millimetre thickness is therefore made up of 11 sheets, 2 on the sides and 9 for the core, i.e. 11 sheets of 1.36 millimetres. From a chromatic and optical point of view, the lamellar material composition is in line with the formal principle of concretising the shape by 300 successive profiles and linking them by two thicknesses of spacers (the tubes). From an optical and metric point of view, this bench is made up of 9900 striations of 1.36 millimetres (13.50 metres in 2 parts). Precisely, the optical quality of this shape in transformation lies in its embodiment by the fineness of the striation of the body profiles, which contrasts with the smooth surfaces of carnal contact (light spots).

3.3.4 Instrumentation
The 3,000 unique parts (300 profiles, 2,100 spacers and 600 risers) are produced by digital milling. Nesting, i.e. optimising the distribution of the parts to be cut on the 94 sheets of film-coated plywood, means that the standard panels (2500x1250 mm) can be used to maximum effect. Each part has a number to enable it to be identified and located. The parts nomenclature system made it possible to assemble the bench with a new group of Master 1 students in September 2017. Machining is carried out by a local company, Stand Pub. The students had the opportunity to produce the machining files and pilot a 3-axis CNC.

4. BLUE IMMERSION. IMMERSIVE EXPERIENCE OF WHITE WATER AND DESIGN OF MULTI-SENSORY INTERACTIONS OF A NON-STANDARD ARCHITECTURAL ENVELOPE.
As part of the Cultural Olympiads and in particular the Archi-Folies project, run by the French Ministry of Culture in partnership with the CNOSF (French National Olympic Sports Committee) in the context of the 2024 Olympic Games, we designed the pavilion for the French Canoe Kayak and Paddle Sports Federation for Club France

in the Parc de la Villette in Paris. The pavilion was designed as part of the master's programme entitled 'Architecture, Ambiance and Digital Culture' at ENSAG. It involved the master 1 cours in 2023 (exploration of the subject, the site, the themes, spatial composition, under the supervision of P. Liveneau and A. Abudaya), then as research trainees in the Digital RDL chair/University research unit AAU, in June and July 2023, under the supervision of P. Liveneau, and finally the 2023/2024 Master 1 class, under the supervision of P. Liveneau, with a teaching team (P.Liveneau, A. Abudaya, T Marchal, S. Yaklef, J. Alexandre, C. Bonicco, A. Berg) and numerous partners (the French School of Concrete and Vicat, the European Coil Coating Association – ECCA : Arcelor Mittal, Arconic, Miralu and Machot bois).

4.1 Background. Non-standard ornamentation, parametric design, sensory ergonomics.

The illustrations above show the evolution of our design of filtering façade since 2010.
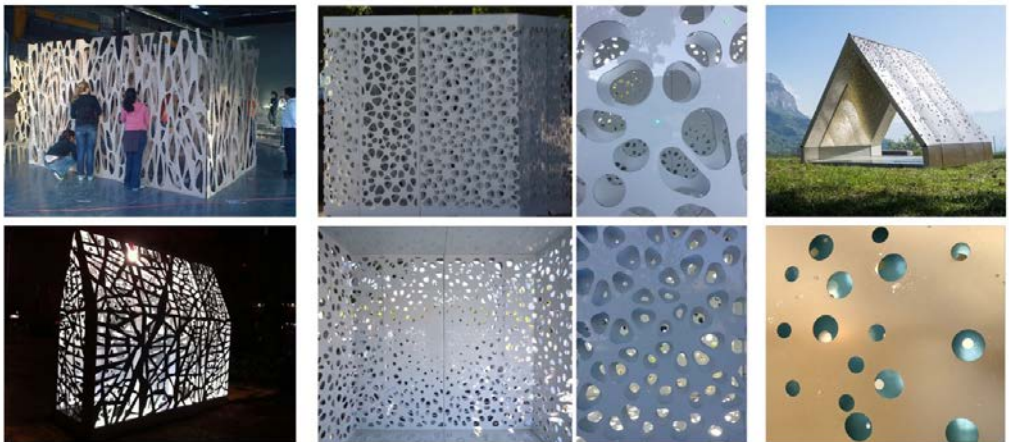
Figure 4/ illustration of ambient envelope projects since 2009. Column 1: Pavilion at Place Bellecour in Lyon - 10 years of the Grands Ateliers event, (dir. P. Liveneau)./ Iconic chapel, Place Sathonay, Lyon Festival of Light (dir. P. Liveneau). Columns 2 and 3: Student Life Pavilion, Grenoble Campus - UGA, (dir. A. Abudaya and P. Liveneau. Column 4: Bivouac Bastille project, Bastille site, (dir. P. Liveneau).
Source: Digital RDL - direction of P. Liveneau. Credit © P.Liveneau

The left-hand column shows an initial project in which the patterns were drawn and cut out by hand (jigsaw) to create a double plywood envelope. Although this 'façade' filters the light well, the reason for the design at the time was essentially an aesthetic appreciation of the finished object. The iconic chapel created for Lyon's "Fête des Lumières" (2012) is based on a reproduction of a microscopic view of cellulose fibers. The analogical design in its composition has no horizon other than the resulting luminous effect.

The four images in the center are part of the student life pavilion project carried out on the Grenoble campus in 2017. This project has enabled progress to be made on several points. Firstly, on the cardinal lateralization and therefore location of the project, which stems from the orientation of the main winds from the north, which had to be regulated in relation to a base (reduction and elimination of perforations) while preserving the passage of air for summer ventilation of the space. The design work of superimposing the two layers makes it possible to synchronise the perforations in order to encourage both light and reciprocal visibility between inside and outside. The homothetic reduction in the number of holes from one side to the other creates an effect of depth and a sense of interiority.

Finally, as part of the 'Bivouac Bastille' project, part of the Grenoble European Green Capital year in 2022, we are being confronted for the first time with the chromatic value of the reverse side of the sheet metal we are using. As part of this project, which involves recreating the feeling of a starlit sky by perforating the sloping roof slopes of this refuge, the bluish reverse side, although unimagined and the result of industrial production methods for the material, is in keeping with the celestial horizon of this architecture during the day. All these design stages made it possible to build pluralized expertise on the design of an ornamental envelope attached in terms of design to the multisensory ergonomics of its use and experience.

4.2 The pavilion of the French Canoe Kayak Federation in the Parc de la Villette in Paris

4.2.1 Architectural intention

The architectural intention can be expressed in terms of the pavilion's dual role in the landscape and the quality of the spatial experience offered to visitors. Composed on a square base, this pavilion is a spatial enclosure between a ground plane and a roof plane that sets out a prospect and a minimalist relationship with the wider landscape. Within the pavilion, you can wander freely, as if you were canoeing on water. The 121 square meters floor space is organised into three main areas around a central core: a museum area, a competition area and an environmental area. The depth of the façade invites visitors to explore the pavilion. The interior space offers visitors a multi-sensory experience, combining sight, touch, light and sound to create an immersive understanding of the liquid world of paddle sports. The aim of this pavilion is to show that the construction of meaning in architecture takes place through the facts perceived and experienced by the public.

Figure 5/ The FFCK pavilion for "Club France" at the 2024 Olympic Games in Paris. Top line: perspective view from the outside, from the footbridge and the promenade. Bottom line: view of the interior space and the façade: superimposition or alignment of openings.
Source: © Philippe Liveneau

4.2.2 Constructive methods: method of construction, special devices during design and construction...

The project is built around a frame structure in planed laminated spruce wood made up of 16x8 cm section beams and 14x14 cm posts. The facades are made up of a complex of 4 layers of pre-painted aluminum sheets 1.5 mm thick, white (Ral 9020), ultra matt (coefficient 3) with a bluish tint on the reverse. These sheets are oriented two by two to contain the bluish chromatic values in the luminous thickness of the facade. Finally, the exterior peripheral path as well as the central core are made using ultra-high performance white fiber-reinforced concrete used for these aesthetic qualities, but also for its weight which allows the ballast of the pavilion.

4.2.3 design a parametric envelope dedicated to ambiances

In terms of landscape aesthetics, from a distance, the pavilion asserts an immaculate whiteness which contrasts with the greenery punctuated with the red of the follies of Parc de la Villette. When you approach, the reflection of the light reflected by backlighting the backs of the bluish metal sheets diffuses an aquatic halo which puts the visitor in the atmosphere of paddle sports.

Figure 6/ Research by design, the steps – methodology digital rdl ©P.Liveneau & A.Abudaya . Previous model and physical prototype (June and July 2023), immersive prototype in "LEICA" at digital RDL space (under the supervision of A. Abudaya). Parametric design of facades. Integration of the path of the sun, first year master course 2024.
Visual porthole, bluish halo, Framing.
Source: Digital RDL - direction of P. Liveneau. Credit © master AACN & P.Liveneau

The design of the envelope is precisely based on an inclusive sensory ergonomic design that invites visitors to enter the interior of the pavilion. Arranged within the evolving pattern, the facade includes a series of portholes which provide visual commands, from the outside towards the interior, but also, reciprocally, from the interior towards the park: large openings are aligned on the four facades, at eye level for children, adults and people with reduced mobility. While inviting the visitor to look at the space, these "windows" are also ways of generating social interactions, of looking at others or, from a playful perspective, looking at each other as a family on either side of the facade. When you enter the interior of the pavilion, the weakening of the light intensity generated by the superposition of the layers provides visual comfort and rest for the eyes which then allows for stimulation of the other senses. The reliefs of the posts or concrete elements, which visually recall the undulation of the waves, invite the hand to touch. The curves and salient points of the shapes have been adjusted to the swinging hand of the wandering body.

The superposition of the perforated layers of facades makes it possible to combine the sensation of an enclosed space, differentiated from the exterior, while preserving good ventilation and thermal comfort. Acoustically, the openings as well as the concrete walls in relief make it possible to limit the reverberation effect that can appear in a parallelepiped spatial configuration with smooth materials. Finally, the design of the openings of the east, south and west facades integrates the angles and directions of the solar rays for the months of June, July and August. By a principle

of homothety of the openings centered on the angle of incidence of the solar rays, it is then possible to reproduce the projection of a caustic phenomenon by allowing certain rays to penetrate directly on the floor of the pavilion.
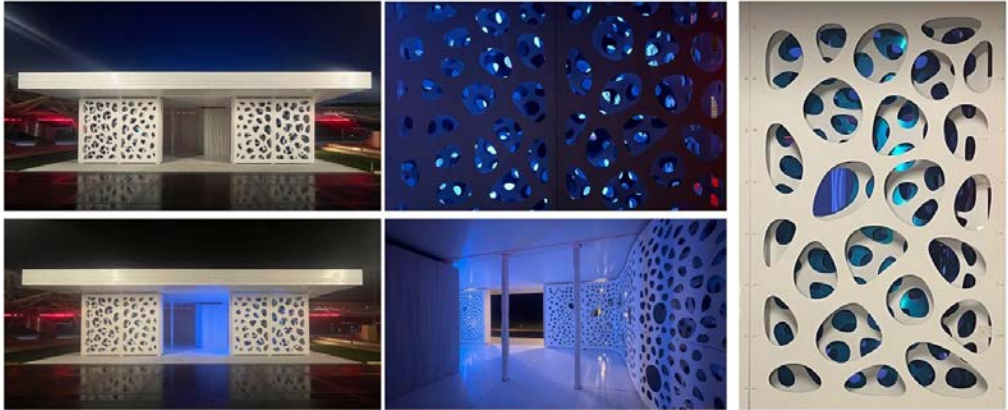
Figure 7/ the nocturnal experience of the pavilion... a bluish immersion by artificial light, another subject...
Source: Digital RDL - P. Liveneau. Credit © P.Liveneau.

To conclude about this project, the facade of this pavilion allows to experience a unique non-standard architectural envelope made up of 6000 openings which organize framed views, bluish backlighting phenomena, caustic-shaped projections on the floor.

Figure 8/ The pavilion in use. Visit from Nicolas Gestin, gold medallist at the 2024 Olympic Games in the canoe-kayak slalom.
Source: WhatsApp group for the installation and management of the pavilion. Credit - WhatsApp group @FFCK & P. Liveneau

4. CONCLUSION

In conclusion, this article has shown how our design research approach to strato-fabrication and ornamentation, through *experimentation* on the scale of the body in movement, thanks to accumulated *experience,* has gradually built up an *expertise* in applied architectural research in the field of atmosphere.

THINKING AMBIANCES THROUGH EXPERIMENTAL, EXPERIMENTATONS AND EXPERIENCE IN EXISTNG SITUATONS

Gregoire Chelkoff
École nationale supérieure d'architecture de Grenoble (France)
chelkoff.g@grenoble.archi.fr

ABSTRACT

The notion of "experimentation" has spread to many Felds of research since its advent in the modern sciences. It has found a new resonance for the disciplines of architecture and art which, through their practice of materiality and making, lend themselves to the setting up of situations and protocols of evaluation and critique according to a complex work process. However, often limited in architecture to materials and their implementation, to technical devices and constructive processes leading to prototypes, what can we experiment with the atmosphere? Experiencing on ambiance with architecture questions both the research methods on ambiances and the role of architecture in their advent. Is it efficient? How can we put to the test the non-material or non-tangible components that atmospheres and ambiences cover, the sensitive and bodily experiences, the luminous, sound and climatic phenomena, the pressures and flows, the movements and vibrations? Can we isolate these elements from their context of emergence?

Since the 2000s we have conducted several experiments in the framework of research and pedagogy involving experience and use at the scale of the moving body in situations and according to specific societal and environmental issues. Some of these experimental practices allowed us to test working hypotheses and to evaluate through particular devices according to specific problems. We thus question how the question of ambiences allows us to conceive particular forms of experimentation and what they can bring on several aspects and implications. Many other practices have been developed and it is necessary to question now their epistemological, creative, societal or technical issues.

In this perspective, we propose to situate the various practices claiming to be based on experience by questioning the values and processes of ambience that they are said to explore. By identifying three filiations that underlie these types of practice, our intention is to attempt to clarify the different processes and issues that are put in place. We will conclude with a discussion of the limits and difficulties, as well as the openings that they might project in the current context.

KEYWORDS: Architecture, Experiments, Experience, Experimental, Ambiances, ExistIng sites

1. INTRODUCTION

The works in which we are interested have in common the fact of having developed within their research methodology an experimental approach based on the design and manufacture of a material device intended for use. Testng and evaluatng the environmental potental that it is likely to cause or accompany on a body scale calls for diferent approaches, some of which will be presented here. In this context, the atmosphere is a vector of thought, design and acton based on the artculatons between physical and sensitve forms, uses and living. We will frst recall some

elements explaining what we can call the experimental turn taken by the research on atmospheres in which we partcipated, then we will look at the queston of these actons located more partcularly in existng occupied contexts and will briefy present three dimensions which seem operatonal to us to describe these approaches: that relatng to experimental approaches, that resultng from experimentaton of a scientfc nature and that of lived experience, which allow us to analyze and conceptualize these types of actons.

2. AN EXPERIMENTAL TURNING POINT IN RESEARCH, A BRIEF REMINDER

While investgaton collects informaton in a given situaton, the principle of experimentaton is to modify or create a partcular situaton to study it. Following multple empirical research carried out in situatons essentially based on recepton or experience surveys, an experimental turn relatng to the dimensions of atmospheres began to take of at the beginning of the 2000s, partcularly in the context of the school of architecture of Grenoble of which we were part. This turning point follows in the wake of a trend which had taken place especially in the feld of constructon and its educaton (Chelkof, 2018). Practces clearly claiming experimentaton as a research engine were then theorized in architecture to develop critcal productons. The Brazilian architect-researcherteacher Sergio Ferro (Ferro, 2005) promoted and theorized this mode of research in the 1980s as a suitable means to reconnect with a material approach based on constructon. This perspectve then posed against the idea of a spatal formalism then dominant, also aims to revalorize knowhow (against their alteraton due in partcular to the division of work and the site into simple tasks without much qualifcaton). This thought opposing "drawing" to "constructon site" infuenced the development of experimental practces involving politcal and social dimensions. The Grand Ateliers platorm near Lyon will be delivered in 2001, it is intended to forge these practces as well as a pedagogy involving acton more directly. However, they are essentially focused on building on "scale one" and favor the constructve (Snyers, 2008) and design aspects, centered on the implementaton of techniques and materials. It must be said that an experimental traditon already exists in architecture if we think of A. Aalto who built his "experimental house" in 1952 in Muuratsalo in Finland as a constructve laboratory testng diferent questons (support of the structure , solar heatng, arrangement of bricks). The partcular implementaton of assemblies of diferent constructon materials, in this case bricks, and their behavior over tme, is explored from an aesthetc perspectve (texture, light, color). Experimental architecture is thought of in oppositon to an architecture whose language would be determined and which would call for an expected recepton from a spectator public. It opens up new possibilites and without a doubt with it atmospheres or at least processes of ambiancizaton.

2.1 The queston of ambiances in architectural and urban experimentaton and research

2.1.1 Genesis

In this renewal involving the revaluaton of "doing" and building, the dimension of the atmospheres to which we are tackling fnds litle place although we partcipate in the frst refectons on possible perspectves (in 1995 and 1997 autumn days were organized in Grenoble to prefgure "educatonal experimental modules" in which we are partcipatng with O. Balaÿ). The idea is then that such experimental practces involve the manufacturing of devices on the scale of the moving body and uses. The queston of ambiance as a "design issue" is then for us strongly linked to inhabitants' uses and infuence over their own ambiances as a determining issue . This idea largely infuenced by our frst investgatons into sound, artfcial light and movement and by the works of our colleagues in the human sciences at CRESSON (J.F. Augoyard, J.P. Thibaud in partcular) and other researchers that we have met (I. Joseph, P Sansot) or read (Gofman, De Certeau, etc.). The desire to conduct "tests" through a material device was born at this tme to endorse this multdisciplinary approach based on atenton to individual as well as social uses and infuence on the body. Although fragmentary, these experimental devices would thus make it possible to approach certain physical behaviors (sound, light, climate), to verify modes of apprehension and sensitve efects felt, and to queston certain simple modalites of acton and use partcipatng producton and adaptaton of atmospheres. It was in the 2000s that we carried out a frst research experiment funded by the Ministry of Equipment on a multmodal shelter around moving sound (Chelkof, 2003, 2005) by hybridizing the experimental aspects of design and manufacturing to a scientfc approach of evaluaton by surveys which would later be called "experimentaton reactvated by use". It will be carried out in the workshops of Isle d'Abeau, in an "existng laboratory", between in situ and in vitro (in *si-tro*, will say P. Amphoux emphasizing this ambivalence during a seminar where we exhibited this research). Among the infuences, we also note our meetng and our exchanges with Alain Berthoz, which will notably support the taking into account of movement in the approach to the atmospheres that we needed to explore.

2.1.2 Emerging points

A frst interestng aspect of the experiment carried out according to an ambient hypothesis is that the bringing into play of distnct layers of knowledge (physical conditons, sensitve situated perceptons and individual and social uses) which are deeply entangled must fnd a practcal ground for artculaton with diferent moments of the experiments or simultaneously (design, metrology, survey). A delicate multdisciplinary exercise through thus takes place (Chelkof, 2003 b) in the entre process ranging from design to evaluaton via material producton combining diferent human and technical disciplines. The second point is that the questons addressed then cover specifc areas among which are primary: an investgaton of the sensitvites experienced and the approach to sensitvites considered secondary or tenuous such as sound, micro variatons, etc., the ofers of uses to the scale of the body linked to

sensitve situatons, the spatal devices with regard to living practces and formatve phenomena, the materialites implemented and their impacts, the temporalites of experience at stake. These questons require exploraton outside the frameworks usual aspects of architectural practce to consttute a research framework questoning the conditons of producton, evaluaton and analysis material things". Experimentaton would then make it possible to hybridize research and project through renewable protocols, and to escape certain academic limits as well as those of professional practce by being located upstream of these felds of practce.

3. THE USE OF EXPERIMENTS AND THE EXPERIMENTATION OF USES ON EXISTING SITES

Experimentaton with an architectural or material artfact always takes place in a specifc work context which interacts with the material and investgaton system. Some experiments took place, as we have seen, in a limited physical setng close to a "laboratory" (i.e. in conditons of partal reproducton or partally controlled conditons) although not totally isolated. Considering these operatons in an existng context, in situ, whether public or in a building, presents more difcultes but is also a source of wealth in terms of research. The inserton into the built space, the possible resonance with current uses and the regulatons to be respected in a context of public atendance, raise interestng interactons. This framework of experience is fruitul because it immerses users and actors in an ordinary situaton which, partally transformed over tme, becomes an object of study and also acts more widely. We will take some recent examples that we know closely (thesis and aither works in cresson) to illustrate this point which indicate interestng avenues with regard to the installaton of modest-sized fragments in existng environments. In these examples we will highlight three aspects which underlie these types of operaton and allow us to discuss them. Thus we distnguish their *experimental* dimension which concerns rather a creatve and technical level, their *experimentaton* dimension which concerns scientfc analysis and fnally their power generator of individual and social lived *experience*.

3.1 Experimental, experimentaton and experience: three interrelated modes

These three aspects are underlying to varying degrees in the operatons twhich we can quickly summarize below.

3.1.1 Experimental practces

The experimental dimension characterizing an art of research and testng was frst partcularly invoked in post-war plastc practces. If it is not a queston of "making a masterpiece" from the outset but of "seeing what it gives" (Souriau Etenne, 1990). This part of the essay as a material producton procedure perpetuates the exploratory nature specifc to creaton by emphasizing the appropriaton of techniques, implementatons and also modes of handing over works (installaton or performance

practces combining diferent techniques or media, use of digital tools today, etc.). Experimental practces ofen have the functon of surprising and astonishing. Aiming at an experience that can be "overwhelming" or destabilizing, by promotng the reconsideraton of prejudices or working hypotheses to the test of diferent confrontatons, the experimental dimension would contribute to reconfguring our way of representng ourselves, knowing or practcing something, which remains to be verifed. Intensifying perceptual awareness makes it possible to extract creatve potental but also to go beyond accepted data and ideas or queston actual or presumed "natural" situatons. Research or renewal of sensitve qualites, innovaton but also reference to an experience sometmes called "phenomenological", whether or not they are linked to social practces and uses of space, are signifcant in this practce claiming innovaton. The experimental essay can nevertheless also resonate with conditons specifc to the framework in which the producton takes place (site, social issues, history, etc.) while reconfguring it according to a renewed narratve.

3.1.2 Scientfc experimentaton

On a completely diferent level, the second level refers to experimentaton in the sense in which the modern scientfc method has defned it, partcularly within the natural sciences, notably from Newton onwards (Lecourt, 1999). Experience, a fairly general noton which previously fueled the sciences and referred to an empiricism, becomes constructed and systematc (Bachelard, 1989), ordered from a theory which makes it exist. In principle, the intentonal scientfc experiment defned by this protocol makes it possible to collect empirical data on a feld of study and to confront the theoretcal model with the "facts" through the creaton of a partcular situaton for analysis and analysis. evaluaton of hypotheses. The control of the situaton allowing the variables to be controlled and the model to be simplifed, is suitable for a scientfc framework carried out in the laboratory, which is not the case for work on situated environments, unless it is reduced to physical dimensions. If this scientfc method works for a certain number of disciplines (including experimental psychology of percepton or building physics), we can queston the relevance of this type of experimentaton with regard to the atmospheres which precisely artculate the contexts and variables which characterize the situatons experienced and which cannot be easily reduced or simplifed while separatng subject and object. There is therefore a difculty in following this model in terms of atmosphere, without reducing them to experiments of a technical nature which test the performance of partcular or innovatve devices or materials by limitng themselves to the study of physical dimensions. The queston however concerns the difcult correlatons between physical and sensitve phenomena requiring diferent and adapted methodologies. On the other hand, certain biases of this idealized laboratory science have been widely critcized (Latour,1989). These critques underline the interest in studying science in acton, research as it is carried out through procedures, routnes and modalites. This calls for renewing the place of experimentaton by considering technical designs and science not as a theoretcal corpus with a pure and autonomous practce in relaton to the rest of the social game. It is an efectve and collectve practce, a perspectve which emerges with the

conceptons of a science which would be in the process of being developed, even co-produced and more collaboratve and also capable of inventng sensitve and social physical evaluaton procedures adapted to situatons and problems.

3.1.3 Living experience

The third aspect that seems to emerge refers to the dimension of experience as a lived process consttutng knowledge and actons, an idea that pragmatst thought has put forward. The course of the experience then also serves as a source of this consttuton. Denying truths or concepts given a priori, pragmatst thought returned the center of interest to the domain of experience as the primordial consttutve moment in which hypotheses are instruments for acton. While in its less scientfc and more conventonal aspect experience designates what is imposed on us according to the contngencies of existence, in the pragmatsm of John Dewey experience also ceases to be empirical and precisely "becomes experimental". (Dewey, 2005). The artfact produced is the source of an evaluaton-experience which involves an experimental public and an investgaton protocol which are part of the process (Neilsen, 2018). These conceptons partcularly highlight both the accomplished event and the process, while moving towards an aesthetc which would not detach itself from life and would on the contrary be intertwined with it (Shusterman, 2019). This is of partcular interest to the architecture experienced from a more phenomenal angle ftng into everyday life. In fact, the experience of everyday life, and therefore through uses, returns to the center of an aesthetc which would no longer be solely formalist. In the unfolding of practces that we can observe, the idea of a process of experience becomes a driving element to color an atmosphere which is based on a situaton in acton, not only a refexive distancing through the judgment of an object. Ideas of passive contemplaton or recepton, or even "consumpton," of objects and things are called into queston when we consider the ambiance. This promotes the idea of architecture as a sensitve common and even more specifcally, as a dynamic form of atmosphere, may be open to critcal and prospectve experience. What then characterizes in our opinion an experiment thought in terms of atmosphere is based on the way in which it puts us into acton, in other words how it takes place and involves the uses or questons the links between use and atmosphere. The course of actons leads to unforeseen events and brings out other hypotheses, which is also the richness of this research process not reduced to research-development or research-acton.

4. THREE EXAMPLES OF EXPERIMENTS IN EXISTING CONTEXTS

4.1 A long modulated bench

The installaton of a bench (enttled "cétoi cémoi") in an urban public space in an educatonal setng (Liveneau, 2019) benefted from the collaboraton of the authorites in charge of the order and the ephemeral but fairly durable locaton of this street furniture (installed for one year). This bench is experimental in more than one way,

thwartng with its appearance the usual representatons of this type of urban furniture. By its dimensions, measuring almost 15 meters, it forms a long line made up of 3000 pieces of wood separated by voids of the same thickness and leans against a void, forming a limit punctuated by contnuous undulatons. Secondly, it is designed according to a so-called non-standard morphology that is not very common in the everyday world and as such is completely in line with the experimental modes of morphologies linked to the digital tools which have enabled this implementaton. In fact, these modulatons according to diferent curvatures reconfgure the local space while ofering, according to the author, looking and listening postures which seem diferentated. The hypothesis tested is that these modulatons afect what we would call a "postural atmosphere". In fact this design hypothesis is not verifed and is essentially based on the eye. From the point of view of experience, it is the uses of seats, certainly taking advantage of various microspatal situatons over tme, which contribute to requalifying the environment (very litle at the origin it must be said) and toning it. Because by being part of the duraton, the installaton consttutes an anchor point in the place and promotes the vocal and visual presence (the bench is located near a bus stop) which extends the experience beyond the period of experimental observaton. However, if they took place, the investgaton and observaton were not made public, the evaluatve plan of the experiment was separated (subcontracted to a third party) and does not include a metrological component. Like any experiment of this type, the bench was dismantled and no trace remains except perhaps in local memories. The installaton duraton also revealed an aging process (the wood material having been subjected to climatc hazards over a year). Less than the postural and haptc "afordances" of the bench which were the generator of its design according to the author and which were the subject of occulometric captures, its atmosphere-forming character lies above all in the capacity to sediment the public into a a place that has become endearing or emotonal in additon to the "curious" or unusual aspect that it presents.

4.2 Urban carpet

The installaton of an urban foor made of burnt wood enttled "urban carpet" was implemented as part of a doctoral thesis (Chebotareva, 2019). It is an experimental device in more than one way: by its rather specifc materiality on the one hand (referring to an ancestral Japanese technique) and by the idea of making an urban "carpet". This carpet is located in a locaton considered strategic since it is crossed and very frequented by pedestrians who have to cross roadways that are as busy as they are noisy, polluted and violent due to the diference in speed. The technique of creatng this carpet is based on an assembly of small pieces of wood forming a new surface that is visual, tactle, sound and odorous. In terms of experience, the device had the hypothesis that it is possible to reveal in a bodily and sensitve way the road and polluted character of an intersecton crossed by a crowd of pedestrians, and to convey the nonsense of developments typically "all-road" resultng from the planning thinking of the Anthropocene era. According to this hypothesis put forward by the author, the ground, unexpected by its appearance (blackened and made up

of strips of wood), by its smell of burnt wood and consequently the sound of the footsteps that it modifes, is supposed to awaken a awareness of pedestrians about this priority given to the automobile. Training their critcal outlook on the pollutng and uncomfortable situaton that results would be a functon of the burnt carpet. At the experimental level, the investgaton to verify the hypothesis unfortunately could not be carried out due to the obligaton to dismantle the installaton quickly afer two days (yet so patently and laboriously implemented). place) following the refusal to leave it in a public place by the authorites. The later present the pretext of endangering pedestrians due to excessively uneven ground. The installaton in public space reveals the resistance of urban space managers with regard to the departure from standards which could make them responsible for an accident (pretext or reality). Beyond the immediate efects on the public who cross the intersecton daily and who fnd themselves confronted with this unusual and temporary device, the relevance could not be fully demonstrated even if some clues could be observed during the too short tme of installaton by the author herself. Incidentally, it was unexpectedly noted that the sound impact of footsteps on this partcular ground was more emergent than the inital hypothesis based on the smell of burnt wood supposed to awaken the consciousness of passers-by.

4.3 An haptc wall at home

In a context of social housing built in the 1930s in Grenoble, the experiment carried out strongly links the queston of materiality to ambient phenomena. The aim of this research operaton is to show and explore the potental for bodily presence beyond the purely technical aspects of constructon and material by working on a "haptc wall" made of raw earth brick (Alvarez N. and Miranda M 2020, both then doctoral students and addressing the earth material in built interiors) set up in a living room. It is a queston of studying the modalites of feeling involved such as the tactle impact, but also of sound, even climatc, of the material and of putng this materiality in tension with those currently implemented. The acton takes place by involving residents and other users of the premises (Nuria Alvarez 2024) in carrying out the transformaton. The experimental dimension lies in the use of a material completely foreign to the context of these buildings from the 1930s and at the same tme found at its feet: the earth which is extracted, its shaping on site into raw earth bricks that can be handled and their mountng on the entre wall of an interior living room. The working hypothesis is that the local resource and its "raw" nature could bring back both an awareness of materials used industrially and at the same tme bring the user to feel the ambient efects of the material. In terms of experimentaton, a user survey in the form of a questonnaire was conducted and the movements were flmed (possibly to show the atractveness of the land surface of the premises alone) once the producton was completed. Acoustc and humidity measurements were also carried out, although this did not demonstrate a measurable impact in the physical world, probably due to a lack of fnesse in the measurement tools or the tenuous nature of the efects. In terms of experience, this research shows that the involvement of resident partcipants in the process of constructng the wall from local soil opens up sensitvity to the

ambient characteristcs provided by the material used compared to those who have not. not partcipated in its assembly. Involvement drives feelings in one directon and operates on the transformaton of perceptons. Thus, the idea of an acton based on experimental exploraton and/or on an experimental approach of an autonomous scientfc nature and characterizing a certain determinism is superimposed here by an approach rooted in situatons and contexts of acton. The specifc dimensions of the experience enter into a consttutve process which can involve a set of actors, or even create a partcipatory experimentalism. It is then no longer a queston of strictly conforming to the methods of a modern science, carried out essentially in the laboratory and making the separaton between subject and object a fundamental criterion which raises strong questons for a phenomenological and situated approach to the atmosphere. It is rather a mater of taking into account the principle of creatng conditons of observaton, doing and apprehension capable of grasping and provoking phenomena. In the overall process, if the results are to be considered, it is also the framework of experience, the whole process itself in that it involves the actor, the actors, who act on a feld and the modifes, refectng a more or less signifcant infuence on their own atmospheres.

5. PROVISIONAL CONCLUSION AND OPENINGS

These few examples illustrate existng ways of working among others and reveal their limits as well as the interestng issues that they allow us to explore.

As we have tried to show, the three aspects (experimental, experimentaton, experience) briefy summarized and schematzed in our proposal are in principle co-present in the processes that we have reported, they are not sufcient in themselves but complement each other. to structure and lead actons. They serve as a guide for us to specify the diferent aspects which, in our opinion, must be contained in this type of research based on an in situ experimental setup. Diferent questons stll appear to conclude. Size

Experiments with specially constructed material devices occur on a relatvely small scale, as we have said they are fragmentary and claim to be as such, of modest dimensions they act locally at the level of the moving body. On the other hand, they allow us to work at a level of detail directly relevant to the fairly precise defniton. If these experiments are quite small in scale, they are nevertheless already quite heavy and complex actons to carry out and assume (we are thinking in partcular of the thesis work which carried them out and which we have pushed). However, it seems to us that small elements can carry and initate an ambient dynamic which could be extended to larger principles, conceptually and materially. This perspectve can therefore ofer sources of teaching having an impact on the search for orientatons for a publishing producton more in accordance with the infuence on atmospheres and their real and imaginary appropriaton through use and life. Materiality

On the other hand, it must be emphasized that the material and dimensional dimensions of a physical nature are taken into account for the creaton of ambient conditons: physical propertes of materials on several aspects - light, sound, climatc - and dimensions of the consttuent elements can be brought into play. Thus it is necessary to take into account that some of the propertes are not identcal to the real constructon conditons, due to the experimental dimension which is not the reproducton of a reality. The 1-scale "model" dimension also has these limits to the extent that the scale of size is certainly respected, but not necessarily the assemblies, weights and natures of the materials used, which leads to problems with the physical behavior of the elements produced. The simulacrum is far from reproducing real conditons, but it can be improved and leads to other solutons or avenues.

Temporal scale

By defniton, experimentaton has something ephemeral, limited in duraton, it ends up disappearing, leaving only a memory trace of which we must be able to sediment in order to keep elements of it. The duraton of registraton in a "real-world" setng may also vary and limit the impact or shape the expected results. The reproducibility of the experiment is also limited since the conditons external to the experiment can change (be it the climate, practces, schedules, etc.), which further reveals the power of variatons and their role in the approach to atmospheres.

The unexpected of atmospheres

In certain cases, a situaton of destabilizaton or modifcaton of usual perceptons is produced or analyzed such that it requires actors to adapt to the situaton. The "artfcial" modifcaton of the normal course of things specifc to the experimentable also makes it possible to reformulate certain expectatons or to verify and discuss inital hypotheses; it can reveal the unexpected in that it involves the idea of testng and variatons. This implies work mobility due to the necessary adaptatons and discoveries while maintaining the objectves which are the safeguards of the experience.

Finally, a challenge of experimentaton would be to reestablish a less abstract and distant contact with mater and artfacts with a view to constructng a less geometric and represented approach to space and restoring to phenomena their "formatve" power. This path could face a trend towards the disembodiment of objects and the distance from their manufacture, partcularly with industrializaton and standardizaton, accompanied by a distance from material sources through image and communicaton. It is also about making possible the incorporaton of more fuid values of informal energy felds, more immaterial or at least not directly tangible, which the noton of ambiance and its difuse appearance carries.

6. BIBLIOGRAPHY

Alvarez Coll, N. (2020). Raw Materials and Emphasis on Tactle Perceptons to Create

Atmospheres. A Tactle Experiment to Explore Bodily Sensatons. Proceedings of the 4th

Internatonal Congress on Ambiances, e-conference, France. pp. 272-277

Alvarez Coll, N. (2024). Concevoir à l'état brut, Thèse sous la direcon de G. Chelkof, M.P. Lassus,

M. Achienza, Université Grenoble Alpes

Berger R. (1970). Notes sur l'art expérimental, *Vie des arts*, (59), 12–17.

Chebotareva Polina (2019). Architectural Aesthetcs as a Catalyst of Agency, Thèse sous la dir. de C.-P. Pedersen, Aarhus school of Architecture, https://aarch.dk/en/architectural-aesthetcs-as-acatalyst-of-social-change/

Chelkof, G. (2022). Percepton et expérience critque: explorer l'architecture comme ambiance.

Cahiers thématques, Théorie critque et pensée critque au prisme de l'architecture, 21, pp.149161. (halshs-03838687*)*

Chelkof, G. (2018). Expérimenter l'ambiance par l'architecture , *Ambiances* [En ligne], 4 Chelkof,G. et al.(2003) Prototypes sonores architecturaux- Catalogue raisonné et expérimentatons constructves, Rapport de recherche PUCA, Cresson, ENSAG

Chelkof, G. (2003 b) Autour des ambiances : interdisciplinarité et circulaton des savoirs. *Les Cahiers de la recherche architecturale / Les Cahiers de la recherche architecturale et urbaine* Chelkof G. (2005) Approche écologique de kinesthèses sonores: expérimentaton d'un prototype d'abri public et ergonomie acoustque , *Acoustque et Techniques*, p.24-32,

Dewey J., "« La réalité comme expérience »", *Tracés. Revue de Sciences humaines* [Online], 9 | 2005, URL: htp://journals.openediton.org/traces/204; DOI: https://doi.org/10.4000/traces.204

Ferro S. (2005). Dessin chanter, Eyrolles, Paris

Latour, Bruno. 1989. La Science en acton. La Découverte, Paris

Lecourt D. (1999) Dictonnaire d'histoire et de philosophie des sciences, PUF, Paris

Liveneau, P. (2019). Banc cétoi- cémoi, https://digitalrdl.hypotheses.org/tag/mis-en-avant

Mazauric Louise, Demers Claude MH et Potvin André (2018). Climate Form Finding for Architectural Inhabitability », *Ambiances* [En ligne], 4

Nielsen Stne Louring, Carsten Friberg et Ellen Kathrine Hansen (2018). The Ambience Potental of Coloured Illuminatons in Architecture, *Ambiances* [En ligne], 4

Snyers *A. (2008) Les grands ateliers – Enseigner, expérimenter, construire, JM Place, Paris* Shusterman, R. (2016, trad. Laure Borndonaba) Danto et l'esthétque pragmatque, Cahiers philosophiques n°144, (27-37) Réseau Canopé Editons, Souriau E. (1990). Vocabulaire d'esthétque, PUF, Paris

L28

WHEN CARE BECOMES AMBIENT

CHAIRS Laure Brayer
Théa Manola

For several years now, theoretical approaches on care have allowed this concept to become more complex (Tronto, 2009; Paperman, 2015; Hirata, 2021), including issues of inequality in social relationships. While these works do not include in their development issues relating to spatial and territorial inequalities, other works are beginning to shed light on the relationships between care and space and/or territories. Michel Lussault (in Beau, Larrère, 2018) draws on the ethics of care by proposing the notion of spatial care, in order to think the vulnerability of contemporary habitats as a constructive force. By extending Joan Tronto's definition, Lussault defines spatial care as "a generic activity that includes everything we do to maintain, perpetuate and repair our habitat and the principles of our cohabitation, so that we can live as well as possible in our ecumene" (Lussault, 2018: 207).

This approach to inhabited spaces and their contemporary issues makes the metamorphoses at work as much an object of attention as a projectual aim.

Beyond the spatial and material transformations considered within spatial care, this session proposes to walk alongside the ethics of care by focusing on practices that raise a particular concern for sensitive and ambient qualities, which, to borrow an expression from Jean-Paul Thibaud (2015: 21), question less the "what of the surrounding world than the how of being-in- the-world".

The spatial care invites us to consider the inventive practices of non-institutional stakeholders, who are still too often unrecognized, and thus to rethink the frameworks for action on the ground.

Spatial care calls us to pay attention to both sometimes fragile collectives (more or less informal groups trying to invent new ways of living), and to solutions locally constructed in the light of specific spatio-temporal situations. It also encourages us to look at the transformations of inhabited spaces beyond the completion of development projects: what are the practices of caring for spaces on a daily basis?

The focus on ambiance in this frame of thoughts invites us to question the practices, stories and gestures of attention and care towards ambiances, whether they are undergone, desired, designed, experienced and shaped on a daily basis. And, beyond gestures, we can also look at the ways in which this ambient and sensitive preoccupation translates into reinvented spatial configurations and material arrangements.

Faced with the need to rethink the role of ambiances and the sensitive approaches in times of Anthropocene, and considering contemporary socio-ecological crises, this session aims to propose a reflection on ambiantal care within the Ambiances 2024 Congress. To this end, a non- exhaustive set of questions is raised:

How should we approach the intersections between care and ambiances? What are the attentional modalities and situated practices that need to be developed to care for fragile atmospheres, local weather conditions in crisis, and unstable or changing environments? How can we take responsibility, at our own level, in the context of socio-ecological crisis? How caring is translated in material work? What kind of contact with the objects of care does this imply? How can we ensure that the reception of care is recognized and, in this way, judge its appropriateness? Does caring for ambiances contribute to the raising of new kinds of public to consider in the frame of spatial transformation?

These questions can be addressed from both theoretical and empirical/operational perspective.

Proposals may come from researchers working on these issues, or from professionals with a reflective view of their own practices.

LIVES IN CARE: ARE AFFECTIVE CARTOGRAPHIES CAPABLE OF SUPPORTING EXISTENCES ON THE LIMITS?

VIDAS EM CUIDADO: CARTOGRAFIAS AFETIVAS SÃO CAPAZES DE SUPORTAR EXISTÊNCIAS EM LMITE?

Maria Rosália Guerra
Doutoranda em Sociologia
Centro de Investigação para a Valorização de Recursos Endógenos,
Instituto Politécnico de Portalegre, Portalegre, Portugal
rosalia.guerra@gmail.com

José Maria Carvalho
Doutorado em Sociologia
Centro de Investigação Interdisciplinar de Ciências Sociais,
Pólo de Évora, Évora, Portugal
carvalhoze10@hotmail.com

José Manuel Resende
Doutorado em Sociologia
Centro de Investigação Interdisciplinar de Ciências Sociais,
Pólo de Évora, Évora, Portugal
josemenator@gmail.com

ABSTRACT

Based on the accompaniment of a person undergoing a prolonged process of dementia and dependent on others, we propose to reflect on the experiences and affective tones evoked in a caregiving environment. This case is part of an ongoing doctoral research in Sociology, which follows an ethnographic approach grounded in the contributions of pragmatic and phenomenological sociology. In the face of situations of existential exhaustion, in the most cognitive sense of the term, we are invited to turn our attention to modes of action forged by the necessities of care. The unpredictability brought by the illness opens the door to new environments, composed of a delicacy of gestures that serve as true anchors for existences on the edge. Through a detailed analysis of the spaces-times-objects of care, we can understand the notion of ambiance and how it evokes perceptual phenomena that relate subjects, the sensitive space, and its meaning.

KEYWORDS: Ambiances, Care, Objects, Corporalities, Affectivities

RESUMO

Partindo do acompanhamento feito a uma pessoa em processo de demência continuado e dependente de terceiros, propomo-nos pensar as vivências e tonalidades afetivas convocadas num ambiente de cuidados. Este caso integra-se numa investigação de doutoramento em Sociologia, ainda em curso e que seguiu uma abordagem etnográfica, ancorada nos contributos da sociologia pragmática e fenomenológica. Perante situações de esgotamento existencial, no sentido mais cognitivo do termo, somos convidados a voltar a atenção para modalidades de ação desenrascados à força das necessidades de cuidados. A imprevisibilidade trazida pela doença, abre as portas a novos ambientes, compostos por uma finura de gestos que se compõem como verdadeiras âncoras de existências em limite. A partir de uma análise detalhada sobre os espaços-tempos-objetos dos cuidados, podemos compreender a noção de ambiência e a forma como esta convoca fenómenos percetivos que põem em relação, os sujeitos, o espaço sensível e a sua significação.

PALAVRAS-CHAVE: Ambiências, Cuidados, Objetos, Corporalidades: Afetividades

1. INTRODUÇÃO

Tão controversos e ambíguos quanto potencialmente poderosos, os eventos relacionados à saúde dos seres humanos, têm a virtude de fazer pensar, de forma cada vez mais audaz a problemática dos ambientes de vida humana. O desafio propõe abordagens que esbatam as próprias margens e limites das diferentes ciências, no sentido de as fazer dialogar em torno de conceitos complexos, ziguezagueantes, porosos, como o de ambiente de cuidados. Pôr em diálogo várias gramáticas científicas permite tratar o ser humano a partir da sua dimensão complexa, e respeitar a sua própria natureza vivente, um ser vivo entre outros seres vivos, dependente do seu ambiente para, com este, co-existir.

O trabalho etnográfico que nos aproximou dos quotidianos de pessoas que vivem em processo de demência continuado, permitiu-nos adentrar nos territórios de cuidados de pessoas, cujas vidas fortemente vulnerabilizadas pela doença, careciam de cuidados de terceiros.

Adotamos o conceito de ambiência que, no quadro de reflexão aqui proposto, convida-nos a acompanhar as vivências diárias de quem cuida e de quem é cuidado. Expomos, a partir deste texto, algumas especificidades que compõem ambiências incertas, criativas, reinventadas, à força da necessidade de manter a vida.

2. NOTAS SOBRE OS ALICERCES TEÓRICOS

Do acompanhamento feito a pessoas em processo de demência fomos soltando um conjunto de linhas reflexivas que perscrutam a complexidade de que são feitos os ambientes de cuidados, no caso que aqui apresentamos, aqueles que desfilam em ambientes familiares. A demência é uma condição especialmente boa para pensar as questões do ambiente, antes demais pela sensação de que, em linguagem coloquial, parece retirar, para aqueles que a vivenciam, o chão debaixo dos pés. Desde logo, a alusão à espacialidade eclode na vida de muitos que sentem o seu espaço como inseguro, incerto, irreconhecível, estranho, pouco familiar, experienciando um abalo na sua segurança ontológica (Giddens, 2001; 2002).

Quando o chão parece não mais ser a garantia da firmeza dos passos, o ser humano exibe uma luta pela sobrevivência, exteriorizada em táticas de resistência (Breviglieri, 2016) que são formas de garantir uma segurança vital mínima (Breviglieri, 2012). Para o autor, "quando a vida perde fôlego ou vacila, é, de certo modo, para viver que o corpo afetado, esgotado, arruinado se volta" (Breviglieri, 2006, p. 4). A demência disponibiliza uma mostra de como o corpo e toda a existência, se liga a um mundo com o qual o ser humano partilha a própria humanidade. Ainda segundo Breviglieri (2008), estas situações de limite ajudam a compreender melhor como se funda e o que exige a humanidade do homem, porque não basta viver para ser humano. Por outro lado, convidam a um abaixamento da própria noção de capacidade (Breviglieri, 2008), de forma a tornar possível compreender as ações e as vivências que desfilam noutras grelhas de atuação, aquém da inteligibilidade mútua (Bidet, Boutet & Chave, 2009).

O interesse pelo estudo dos ambientes de cuidados convida-nos a considerar as vivências experienciadas nos lugares "dentro de portas", onde os cuidados, protagonizados por um familiar, ocupam ainda uma certa invisibilidade no quadro das práticas cuidativas (Paperman, 2014).

Quando nos referimos a populações em demência, o desafio de apoiar densifica-se, em situações em que a doença pode gerar níveis de dependência graves e comportamentos de difícil gestão. Não ter mais soluções de apoio para uma pessoa cujo comportamento é muito instável ou cuja dependência é muito grave, é inaceitável e acontece (Piveteau, 2014), fazendo recair, na maioria das vezes, exclusivamente sobre os familiares, a responsabilidade de cuidar dos seus, muitas vezes em ambientes de profundo cansaço e de uma proximidade vivida, por vezes, como excessiva e insuportável (Breviglieri, 2009).

Falar do cuidar convida-nos a entender os atores em *situação*, com a abertura suficiente para abraçar múltiplas corporalidades, temporalidades, espacialidades e sensorialidades. O desafio permite construir narrativas de grande pertinência no quadro dos atuais problemas que afligem a humanidade. Desde logo, convida a rasgar com racionalismos estreitos (Paperman, 2014) que insistem em separar corpo, mente, emoções, sentidos e sentimentos.

Quando associamos o cuidado ao ambiente, dispomo-nos, igualmente, a seguir o pensamento de autores que têm contribuído para uma revisão dos conceitos de espaço, território e precisamente de ambientes, para além das suas dimensões físicas estruturais, geográficas, abrindo os conceitos a questões que têm vindo a ser associadas a atmosferas sensíveis, onde a cadência dos passos, o tom da voz, o lugar dos silêncios, importam (Thibaud, 2012, 2017; Augoyard, 2004; Böhme, 1993, 2016). Por outro lado, esta atenção aos cuidados ambientais, desloca a nossa atenção para modalidades de envolvimento com o espaço que se compõem nos microterritórios do eu (Goffman, 1971), habitados e investidos por uma pessoa em situação de grande vulnerabilidade e seus cuidadores.

Pensar os ambientes de cuidados, no quadro das sociedades modernas é um convite a seguir vidas humanas que, atravessadas pela quebra dos princípios de auto-controlo, domínio de si, individualismo, autonomia, responsabilidade, coabitam, ainda que com dificuldade, num território comum com os que mantêm passos apressados em corpos que "ainda aguentam". permitir-nos acompanhar e compreender "as formas sensíveis da vida social", usando uma expressão de Pierre Sansot (Pollien, 2007) a partir de uma visão ecológica do mundo, onde co-habitam todos os seres vivos. Procuraremos partilhar uma série de micro-expressões acionais que foram possíveis observar nos ambientes de cuidados. Tratam-se de micro-acomodações que os atores, em cena, mostram nas múltiplas transações que compõem o dia a dia de cuidados.

Laugier (2020) aclara esta urgência de pensar o cuidar, num mundo constantemente visitado pela vulnerabilidade. O cuidado é, segundo a autora, talvez a condição de um olhar verdadeiramente humano, finito e marcado por uma incerteza essencial sobre o humano e sobre o real, na medida em que esse real é vulnerável e frágil.

Para acompanhar o quotidiano dos cuidados, foi preciso aligeirar o ritmo dos passos, para compreender a tonalidade rítmica das suas vidas, marcadas por alterações cognitivas, corporais e comportamentais arremessadas pela doença, que decretavam uma lentificação dos pensamentos, um atenuar das pressas da vida. No interior das "casas dos cuidados" podemos captar ambiências que, diferenciadas das gramáticas institucionais, marcam ritmos e compõem estéticas únicas, na medida em que se assumem como profundamente existenciais (Leroi-Gouhran, 1983; Bidet, 2007).

Este artigo, partilha, um olhar sociológico atento a essas experiências, a vivência de cuidados familiares protagonizados entre marido e mulher, que, no interior de um espaço habitado (Breviglieri, 2012), se envolvem numa luta pela garantia da vida, no plano da sobrevivência (Breviglieri, 2012).

Em lados inseparáveis que misturam corpos de quem cuida e de quem é cuidado, vimos a face de quem se presta a apoiar o outro para que viva e a face de quem se entrega no colo dos cuidados para sobreviver. A face, o passo a passo, o som, o olhar, são componentes do corpo, para as quais dedicamos a nossa atenção, permitindo que, fosse pela atenção à corporalidade que compreendêssemos uma série de vivências que se mostram na primeira pessoa.

Adentrar nos territórios de cuidados dispõe-nos a compreender a forma como, estes atores, se inserem na incerteza e tentam dominar o imprevisível, nos emaranhados que se constroem por entre os dias, os espaços e os tempos dos cuidados. possibilidades de tornar os cuidados mais possíveis.

2.1 Do lado de dentro da porta... no interior do ambiente de cuidados

Um passo para dentro dos ambientes de cuidados é uma porta aberta para pensar a noção de ambiências, na medida em que estas convocam fenómenos percetivos que põem em relação, sob uma forma mais complexa do que uma simples soma, os sujeitos, o espaço sensível e a significação. Constituem-se como unidades sensoriais compósitas onde é possível captar não apenas o espaço físico em si, mas o espaço apreendido pelo sujeito, através do seu corpo e das suas possibilidades afetivas e sensoriais. É ainda através destas, que é possível captar a substância do que não se vê, do não dito, a natureza do pano de fundo vivido.

Desde logo, em territórios onde a possibilidade de comunicar entre os atores que experienciam os cuidados, está fortemente marcada pelos danos provocados pela doença, é relevante pôr o ouvido à escuta de outras sonoridades que compõem

novas linguagens, a linguagem da carne (Brennant, 2004). Esta, que impregna os espaços de uma afetividade que afeta, que envolve, que molda, que compõe, que edifica espaços que se fazem e se alicerçam em arquiteturas sensíveis. A voz que expele o gemido, os sons que provêm do interior do corpo, os movimentos e gestos, os olhares, os toques, o passo a passo, são manifestações que auxiliam na construção da ambiência cuidativa.

2.2 Ética(s) de cuidados

Na medida em que se dirige ao lado vulnerável da vida humana, o cuidado tem uma ética, não apenas numa dimensão filosófica mas também antropológica, sociológica, médica e orgânica, o que implica ver o ser humano como um todo, na sua condição de vivo entre outros vivos, integrante e dependente de um ambiente com o qual partilha a mesma natureza (Breviglieri & Thévenot, 2023). Por isso, falar de cuidados implica, precisamente, sensibilidade e afetos, deixar-se afetar pelo que está a acontecer ao outro frágil, tão frágil como qualquer outro ser vivente. Esta perspetiva convida a abrir o pensamento para um diálogo com a dimensão ecológica do mundo e, por isso, com uma responsabilidade de cuidar do outro: pessoa, ser vivo, ambiente.A subjetividade atuante de cuidadores e pessoas cuidadas constrói uma ética compósita, que abraça corporalidades, sensorialidades, ambientes e materialidades que competem para a criação de uma atmosfera vital. Podemos dizer que é uma ética que se desdobra em múltiplas, tantas quantas as experiências de cuidados que exigem ponderações, composições e arranjos adaptáveis a cada situação.

Estamos perante uma ética vivificante, que pulsa no "entre corpos" e no "entre espaços" de cuidados, compreendendo que o ritmo e a estética podem constituir-se como possibilidades para manter os lados mais difíceis, insuportáveis e insustentáveis da vida em doença, e dos ambientes de cuidados, onde se experienciam proximidades, por vezes, insuportáveis (Breviglieri, 2009).

3. APONTAMENTOS METODOLÓGICOS: DO CASO DE ESTUDO AOS MODOS DE ENTRAR NA "CASA DOS CUIDADOS"

Do ponto de vista metodológico, decidimos acompanhar casos de pessoas que vivem em processo de demência continuado. A partir de uma investigação baseada numa abordagem pragmática e fenomenológica, suportada numa perspetiva *emic* (Rosa & Orey, 2012), que tenta observar os fenómenos pelos olhos das pessoas afetadas, socorremo-nos de registos de diário de campo, fotográficos e da gravação sonora, para acompanhar, o mais de perto possível, as vivências de cuidados. A investigação privilegiou um tipo de abordagem emocional, considerada fundamental para adentrar nos sensíveis territórios do eu. Atentos que fomos aos modos de "entrar na casa", como lugar de cuidados, aceitámos deixarmo-nos afetar (Favret Saada, 2005). A partir de uma dimensão microética construída na relação de investigação,

foi possível, desafiar os limites da própria ética da pesquisa que não se reduzindo a um simples procedimento rotineiro de leitura e recolha de dados, permitiu um envolvimento no "coração das práticas

A compreensão da demência, a partir de quem a vive tem sido um trabalho pouco atendido nas agendas das ciências sociais pela dificuldade de comunicar com pessoas cujas capacidades, ao nível da linguagem verbal, podem estar comprometidas e, para quem manter a co-presença também pode ser penoso. Para tal, é preciso integrar uma forma de abordagem que se enquadre numa perspetiva sensível mesmo que tal exija pôr em marcha novas formas de comunicação que suportem necessidades de se fazer compreender, que se socorrem de materialidades e corporalidades, para se expressar.

Elegemos um caso. Luísa tem 75 anos. Vive com demência há aproximadamente dez anos. As marcas decalcadas pela doença comprometeram a capacidade de se expressar, fazendo uso das palavras. O seu corpo encurvado faz notar a debilidade física e a posição de recolhimento a que a demência vai entregando o ser humano. Os seus passos não percorrem um caminho programado, são deambulantes. Não toma decisões sobre os seus cuidados, mas manifesta, corporalmente, reações para as quais deslocamos a nossa atenção e que compõem as próximas reflexões deste texto.

4. PARA LÁ DA PORTA – A CASA COMO ARQUÉTIPO DO CUIDADO

A casa de Luísa tinha uma atmosfera singular, feita de uma tonalidade e temperatura únicas. O tom de luz era baixo, o ar era quente, os cómodos denotavam ter sido aconchegados por uma mão humana sensível à situação da doença. Ainda assim, nem sempre esta acomodação era sentida como suficientemente familiar ou atenuante dos diferentes desassossegos e cansaços que assolavam a vida destes viventes.

Luísa andava sempre atrás do marido, numa proximidade que fazia misturar as sombras dos seus corpos. Imitava os gestos do marido, no passo, nos movimentos dos braços, no riso...como se de um efeito espelho se tratasse. Esta proximidade era sentida, em alguns momentos, como excessiva pelo seu marido, "parece uma lapa, para onde eu vou, ela vai também". Esta excessiva proximidade povoava de cansaço o ambiente de vida. A necessidade de cuidados permanentes dava pouco espaço ao cuidador para se ausentar, o que motivava a inventar táticas que permitissem pequenos momentos de alívio fora do ambiente de cuidados.

4.1 A grade e a boneca – parceiros de cuidados

No quarto, local onde o marido de Luísa tratava dos cuidados mais íntimos, a cama de casal tinha sido substituída, recentemente, por duas camas individuais. A convivência com a urina que Luísa não continha, e os movimentos de agitação psicomotora que a invadiam vários momentos a meio da noite, impulsionaram o seu cuidador a decidir abandonar a cama comum.

A estética do quarto de casal alterara-se. Uma das camas novas destoava das habituais camas que compõem os mobiliários familiares, era articulada que, como o próprio nome indica, permitia dispor e ajustar o corpo às várias necessidades individuais ou do parceiro de cuidados. Podemos ver o corpo a ser elevado e abaixado como um outro objeto, comandado por um dispositivo, manuseado em função das necessidades dos cuidados.

Dispunha também de grades, mecanismo que permitia garantir que o corpo ficava em maior segurança, mas não necessariamente em maior bem-estar. Até à separação Luísa dormia sempre de mão dada com o marido.

> O marido de Luísa contou-nos que a grade era algo que a esposa não aceitara bem, tentava sair por cima desta ou por entre os espaços minúsculos que havia entre cada barra ou um outro espaço maior na zona do final da cama (Diário de Campo, 10/05/2023).

A contenção não era experienciada como favorável para Luísa, com quem travava combates corpo-a-corpo, forçando uma saída. Os objetos de cuidados participavam da composição de uma ambiência ambígua, por um lado protetora, por outro lado opressora. Assumiam poder sobre o corpo, na intenção de um poder de amparar, mas que se impunha à liberdade individual. O cuidado visa o bem-estar, embora, em nome de uma segurança vital, por vezes torne necessário medidas que podem comprometê-lo.

O marido de Luísa, sentindo a irritabilidade que a contenção provocava, desdobrou-se em outras táticas que pudessem minorar o mal-estar. A boneca de uma neta, passa a ser coadjuvante nos cuidados. Luísa passa longos períodos do dia com a boneca ao colo. Afaga-lhe os cabelos, embala-a e com esta comunica com vocábulos maternais e trauteares de melodias de embalo.

A boneca substituía também o cuidador em pequenos momentos em que este tinha que sair para ir tratar de assuntos que não podia deixar de resolver.

> Deixando-lhe a boneca entre mãos, dizia para esta, *vá, olha pela nossa Luísinha, que eu não me demoro*. Dava-lhe meio calmante, dizendo-nos que era a hora de controlar o corpo, evitando as deambulações confusas, próprias dos momentos de entardecer. Fechava as janelas e qualquer outra entrada de luz, como a que vinha do postigo da porta e acendia uma luz artificial ao lado do sofá onde a mulher se sentava. Dizia que o escurecer do dia era um momento difícil para a sua esposa. Não sabendo exatamente o tempo que podia demorar em tarefas, cujo agendamento não dependia de si, marcadas para momentos que se podiam estender até ao entardecer do dia, evitava que a luz natural a pudesse perturbar como já tinha acontecido (Diário de Campo, 10/05/2023).

Saíamos ao mesmo tempo do cuidador. A co-presença tornava-se impossibilitada em momentos de *sundown*. Só em momentos em que o cuidador permanecia, pudemos ver como o corpo se retirava com o "pôr do sol". Luísa dava sinais corporais de confusão e irritabilidade, que eram apaziguados pela ação do comprimido e pelo contacto entre peles, possibilitado pela proximidade com a sua boneca. Podemos ver que, à medida que Luísa embalava a boneca, num movimento de vai e vem, parecia embalar-se a si mesma. O ambiente era favorável ao descanso, ao recolhimento no "colo dos cuidados".

A luz participava do ambiente de recolhimento, arranjado, sensivelmente, pela mão do cuidador. Vetar as entradas de luz, permitia que o ambiente do interior da casa assumisse uma tonalidade de embalo, propício ao repouso, ao amolecimento do corpo. Luísa, cujo corpo já tinha uma postura recolhida, ainda se encolhia mais sobre si mesma, assumindo uma posição aparentada com a fetal. De repente, a luz não era apenas uma possibilidade de iluminar espaços e objetos, mas um convite à retirada, como um voltar ao útero materno

A luz artificial, aproximada dos seres, dispõe-se a mostrar, mais claramente, as bordas e limites do humano e dos demais seres viventes, compreendendo o fim da excecionalidade humana, na medida em que os objetos ascendem em importância, extrapolando a sua função meramente não humana, competem com os humanos, no apoio à manutenção da vida.

Essas experiências de fronteira, vivida por seres, que vivem em situações-limite manifestam a atmosfera sensorial, na qual estamos imersos na vida de todos os dias, intensificando-a. Elas revelam que o espaço ambiente não pode de forma alguma ser reduzido a um espaço objetivo, geométrico e divisível. Pelo contrário, a ambiência é dinâmica, forma-se e dissolve-se e volta a formar-se, envolve-se na *situação* (Thibaud, 2016).

4.2 Deambulações vitais

O ritmo corporal de Luísa era também denunciador de uma necessidade de deambulação quase constante. "Fora das grades", e nos momentos em que o marido se esforçava por se afastar para um território só seu, Luísa vagueava. Movimentos circundantes em torno de si própria compunham um ritmo único que envolvia o seu corpo todo, mas também o ambiente, que parecia circular em simultâneo. Era uma travessia de busca de uma segurança mínima que lhe era devolvida pela ressonância do calcar dos pés no chão.

Os ambientes de cuidados têm também este lado indispensável, o do caminho. Aquele que permite que o corpo ressoe com o seu entorno. Nesta deambulação frequente, Luísa quebrava, pontualmente os movimentos circulatórios para tocar em objetos, maçanetas de porta que abria para espreitar outras existências, móveis onde suportava o corpo em momentos de cansaço ou a sua imagem refletida no espelho que afagava com a sua mão. As materialidades comparticipavam as suas buscas, pelo sentido de si e pelo afeto, nos momentos em que não podia recuperá-los na proximidade com o cuidador, nas ausências do marido. Eu própria era envolvida

neste toque. Como se de uma outra materialidade se tratasse, participava do suporte ao seu caminho, quando Luísa me estendia a mão para partilharmos a caminhada.

São ambientes que nos informam de novas estéticas da vida que exigem cultivar um "desfocalizamento" do olhar, para mostrar como deambulações e modos de passar mobilizam e configuram um ambiente construído com base em arranjos temporários que se ajustem a cada momento às necessidades dos seres vivos.

4.3 A sonoridade dos cuidados: entre vozes silenciadas e os diminutivos do cuidar

A ambiência da casa era também marcada por uma atmosfera parca em palavras. A expressão corporal, a troca de risos, os gemidos do ser, os suspiros de cansaço, o som do corpo a embater nos objetos e dos fluídos e excreções corporais, estes sim quebravam os "sons do silêncio" que inundavam os espaços do mundo interior da casa. A sonoridade era ambígua. Por um lado, parecia apaziguante e convidativa ao sossego, à desaceleração, por outro lado, era perturbante, no sentido que afetava, exigindo que todos adotassem um novo estilo comunicacional, menos verbal e mais gestual e afetivo.

A paisagem sonora (Thibaud, 2016) que se ouvia no ambiente dos cuidados, deixava transparecer um processo de silenciamento de vozes. Luísa não proferia palavras, a sua forma de comunicação era feita por lamúrios, gemidos e por risinhos. O seu marido mimetizava a sua forma de comunicar, devolvendo em lamúrios, respostas que compunham uma dialética que não constava em qualquer dicionário, construída numa inteligibilidade que só uma aproximação afetiva, fazia ser possível. Distante de qualquer racionalidade, no sentido estrito do termo, esta forma de comunicação tinha duas componentes: por um lado era vital, permitia comunicar o ser in sito, por outro lado era distribuída, estendendo-se pelos objetos, ou mais ainda, aproximando-se do som dos objetos.

Os estalidos do corpo de Luísa, eram semelhantes aos que provinham dos móveis nos quais ela mesma se suportava. O corpo dos seres, humanos e não humanos, eram mostras de uma atmosfera sonora desgastada pelo tempo, pelo uso e pelas vicissitudes da vida.

Havia uma palavra que também aparceira pelo meio destas vozes silenciadas. "Luisinha". Era uma palavra que quebrava o desprendimento que se havia feito das outras palavras. Mais uma meia dúzia de outras, contribuíam para a excecionalidade do seu uso: "vá, vamos, come, anda, mexe-te, força..." compunham a semântica do cuidar e, por sua vez, competiam para a construção daquela ambiência sonora que soltava linguagens forjadas na fragilidade e na necessidade de manter os corpos vivos.

O cuidador tratava a sua mulher por Luisinha. Estes "diminutivos do cuidar", têm um significado expressivo dentro das "paredes que acolhem os cuidados familiares". Soam a afetividade, mas também a infantilidade e a um poder sobre o outro. Podemos designa-los como "os diminutivos do cuidar" que carregam um poder distinto daquele

que se tece nas gramáticas públicas, pelo facto de ser um poder solícito, que demostra interesse, atenção, assistência, cuidado e de responsabilidade pelo outro.

5. CONCLUSÃO

Os objetos: a cama individual, a grade, a boneca, os móveis, participam deste mundo de cuidados, cheios de arranjos temporários e circunstanciais, que permitem responder à fragilidade.

Estes ambientes informam-nos da necessidade de captar o que compõe o ritmo do lugar, em cada circunstância, relacionando-o a momentos concretos e singulares. Pensar os ambientes de cuidados permite-nos dirigir a atenção para uma "casa comum" na qual habitam todos os seres vivos e na qual se mostram as diferentes forças por manter a vida no limiar da sobrevivência.

Os ambientes de cuidados são uma das mais excecionais possibilidades de pensar a vida na sua composição subjetiva, nos seus múltiplos arranjos e ajustes com vista a uma confortabilidade que torne as agruras da vida em atmosferas suportáveis e possibilitantes. Os ajustes na luminosidade, o acerto dos passos, a colocação da voz, a adaptação da gramática comunicacional, a aproximação dos corpos, o movimento da mão, são disposições corporais e ambientais que se associam na composição de um mundo que se entrega aos cuidados.

O cuidado não se esgota num cuidado com o espaço, na sua dimensão física, mas remete-nos a um cuidado com a vida, na sua dimensão ética, na garantia de uma dignidade que seja possível a todos os seres viventes. As práticas de cuidados, atentas às necessidades que decorrem da dimensão frágil da vida, são construtoras de ambiências sensíveis, reinventadas, criativamente, para poder segurar uma humanidade escorregadia.

6. BIBLIOGRAFIA

Bidet, A. (2007). Le corps, le rythme et l'esthétique sociale chez André Leroi-Gourhan. *Techniques & Culture*, 15-38. *https://doi.org/10.4000/tc.2132*

Bidet, A., Boutet, M., & Chave, F. (2019). Beyond mutual intelligibility: Collective activity as a transaction. A contribution of pragmatism illustrated by three cases. *Trabalho & Educação*, 28(3), 13-34. *https://doi.org/10.17648/2238-037X-trabedu-v28n3-15797*

Böhme, G. (1993). Atmosphere as the fundamental concept of a new aesthetics. *Thesis Eleven,* 36 (1), 113-126. *https://doi.org/10.1177/072551369303600107*

Böhme, G. (2016). *The Aesthetics of Atmospheres* (J.-P. Thibaud, Ed.) (1st ed.). Routledge. *https://doi.org/10.4324/9781315538181*

Brennan, T. (2004). *The Transmission of Affect*. Cornell University Press.

Breviglieri, M. (2006). Penser l'habiter, estimer l'habitabilité. *Tracés. Bulletin Technique de la Suisse Romande*, 23, 9-14. hal-01578031v2

Breviglieri, M. (2008). Penser la dignité sans parler le langage de la capacité à agir. In J.-P. Payet & A. Battegay (Eds.). *La reconnaissance à l'épreuve. Explorations socio-anthropologiques* (pp. 83-92). Presses Universitaires du Septentrion.

Breviglieri, M. (2009). L'insupportable. L'excès de proximité, l'atteinte à l'autonomie et le sentiment de violation du privé. In M. Breviglieri, C. Lafaye, & D. Trom (Eds.), *Compétences critiques et sens de la justice*. Economica. *https://hal.archives-ouvertes.fr/hal-01533280v2*

Breviglieri, M. (2012). L'espace habité que réclame l'assurance intime de pouvoir : un essai d'approfondissement sociologique de l'anthropologie capacitaire de Paul Ricoeur. Études *Ricoeuriennes,* 3(1), 34-52.

Breviglieri, M. (2016). Pensar a dignidade sem falar a linguagem da capacidade de agir: uma discussão crítica sobre o pragmatismo sociológico e a teoria do reconhecimento de Axel Honneth. *Terceiro Milénio: Revista Crítica de Sociologia e Política*, 6 (1), 11-34.

Breviglieri, M., & Thévenot, L. (2023). Le vivant en forme humaine et ses débordements. *SociologieS*. *https://doi.org/10.4000/sociologies.22031*

Favret-Saada, J. (2005). Ser afetado. In P. Siqueira (Trad.), *Cadernos De Campo (São Paulo - 1991)*, 13, 155-161. *https://doi.org/10.11606/issn.2316-9133.v13i13p155-161*

Giddens, A. (2001). *As consequências da modernidade* (R. Fiker, Trad.). Unesp.

Giddens, A. (2002). *Modernidade e identidade* (P. Dentzien, Trad.). Jorge Zahar.

Goffman, E. (1971). *The Presentation of Self in Everyday Life.* Pelican Books.

Laugier, S. (2020). *Politics of the Ordinary: Care, Ethics, and Forms of Life,* 11. Peeters Publishers. *https://doi.org/10.2307/j.ctv1q26kzr*

Leroi-Gourhan, A. (1983). *O gesto e a palavra. Memória e ritmos* (E. Godinho, Trad., Vol. 2). Edições 70.

Paperman, P. (2019). *Cuidado y sentimientos* (1a ed.). Fundación Medifé Edita.

Piveteau, D. (2014). *Zéro sans solution: Le devoir collectif de permettre un parcours de vie sans rupture, pour les personnes en situation de handicap et pour leurs proches.* Paris: Ministère des Affaires sociales et de la Santé.
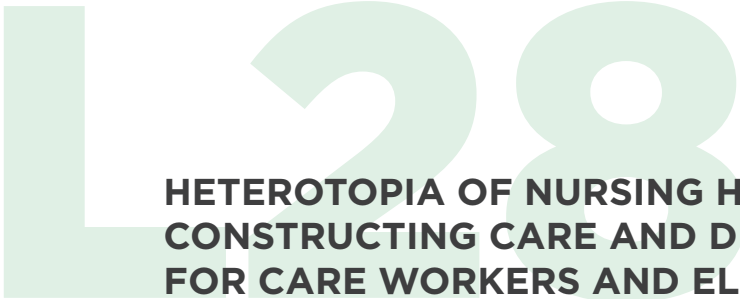
Pollien, A. (2007). Pierre Sansot: *Sociologie itinérante d'un être sensible. A contrario*, 5, 105-117. *https://www.cairn-int.info/journal--2007-1-page-105.htm*.

Rosa, M., & Orey, D. C. (2012). O campo de pesquisa em etnomodelagem: as abordagens êmica, ética e dialética. *Educação e Pesquisa, 38*(4), 865-879. *https://doi.org/10.1590/S1517-97022012000400006*

Thibaud, J.-P. (2016). Le sonore dans tous ses états : trente-cinq ans de pistes de recherche au CRESSON. In A. Aterianus-Owanga & J. P. Santiago (éds.), *Aux sons des mémoires* (1). Presses universitaires de Lyon. *https://doi.org/10.4000/books.pul.27148*

Thibaud, J.-P. (2017). Installer une Atmosphère. *Phantasia*, 5, 127-135. 10.25518/0774-7136.789

Thibaud, J.-P., & Siret, D. (Eds.). (2012). *Ambiances en acte(s)/Ambiances in action.* International Ambiances Network.

L28

HETEROTOPIA OF NURSING HOME: CONSTRUCTING CARE AND DISCIPLINE FOR CARE WORKERS AND ELDERLY CARE RECEIVERS IN THE CONTEXT OF HONG KONG

HETEROTOPIA OF NURSING HOME: CONSTRUCTING CARE AND DISCIPLINE FOR CARE WORKERS AND ELDERLY CARE RECEIVERS IN THE CONTEXT OF HONG KONG

Yunhe Du
PhD Candidate
School of Design, The Hong Kong Polytechnic University
caroline.du@connect.polyu.hk

Yu Hin Brian Lee
Associate Professor
School of Design, The Hong Kong Polytechnic University
brian.yh.lee@polyu.edu.hk

ABSTRACT

Nursing homes exist to respond to the demands of individuals who require assistance with Activities of Daily Living (ADL) and need to be cared for collectively within an institutional setting. While Foucault's discussion conceptualizes spaces of" otherness" that unveil the shadows of everyday life in institutions, he depicts the nursing home as a place that exists on the border between being a Heterotopia of Crisis, and a Heterotopia of Deviation.

Based on the observation with care workers, this paper describes how this kind of Heterotopia is constructed within the nursing homes in ageing Hong Kong, and what conflicts arise among care workers and care providers regarding discipline and daily care routines under the local social context. The paper then explores insights for design researchers to perceive the environment, products, and services of nursing homes by constructing an understanding of the discipline and care paradigms from the perspective of the Heterotopia.

KEYWORDS: nursing home as a Heterotopia. care and discipline. design research. Heterotopia. Hong Kong. ethics of care. care work.

RESUMO

Casas de repouso existem para responder às demandas de indivíduos que necessitam de assistência com Atividades da Vida Diária (AVDs) e precisam ser cuidados coletivamente em um ambiente institucional. Enquanto a discussão de Foucault conceitualiza espaços de "alteridade" que desvendam as sombras da vida cotidiana em instituições, ele retrata a casa de repouso como um lugar que existe na fronteira entre ser uma Heterotopia de Crise e uma Heterotopia de Desvio.

Com base na observação com cuidadores, este trabalho descreve como esse tipo de Heterotopia é construída dentro das casas de repouso no envelhecido Hong Kong, e quais conflitos surgem entre cuidadores e provedores de cuidados quanto à disciplina e rotinas diárias de cuidados no contexto social local. O trabalho então explora insights para pesquisadores de design perceberem o ambiente, produtos e serviços de casas de repouso construindo uma compreensão dos paradigmas de disciplina e cuidado da perspectiva da Heterotopia.

PALAVRAS-CHAVE: casa de repouso como uma Heterotopia. cuidado e disciplina. pesquisa de design. Heterotopia. Hong Kong. ética do cuidado. trabalho de cuidado.

1. INTRODUCTION

The global population is experiencing a significant increase in its ageing demographic. In 2020, 9% of the world's population was aged 65 and above, and it is projected to reach 16% by 2050 (Jarzebski et al., 2021). This demographic shift is driven by extended lifespans, decreased fertility rates, and advanced healthcare technology (Bowling, 2005; Fernández-Ballesteros et al., 2021). These forecasted trends are predicted to drive up the demand for long-term care services (Hussein & Manthorpe, 2005). Concurrently, the long-term care workforce is also facing shortages across countries, especially in the developed regions (Aronson & Neysmith, 1997). Meanwhile, the incessant news or reports about carelessness and elder abuse within nursing homes deepen the negative impressions of nursing homes for the public, with complex factors influencing the care service provided for the elderly in nursing homes (Cheng & Chan, 2003; Kaur, 2014; Yan et al., 2022; Yau et al., 2022).

In the context of Hong Kong, a prosperous high-density region with well-equipped healthcare services (Comondore et al., 2009; Kane, 2001), it consistently ranks among the top in terms of life expectancy worldwide (Census Statistics Department, 2020), and as a result, there is a high demand of the nursing homes (Chan et al., 2023). Although the government has implemented a series of measures to supervise the quality of care service provided in residential care centres (Social Welfare Department, 2021), public views remain concerned toward care quality (Cheng & Chan, 2003). For example, one abuse scandal in which residents were stripped naked by the care workers at the open-air podium before showering at a nursing home in Hong Kong in 2015, had been widely discussed by the local people for years (Ngo & Lai, 2015; Yau et al., 2022).

Now there are a number of design practices and design research for nursing homes which explore how to provide a better living for elderly residents from the design of environment (Fleming & Purandare, 2010), products (Aride & Couto, 2022; Yang et al., 2016) and services (Lin et al., 2011; Yang et al., 2016), it is also challenging for design researchers or practitioners to fully understand the complexity of nursing homes in different societies (Bentz, 2020). These complexities of care service are related to a series of local social welfare policies, regulations of the labour market, societal change, and cultural factors among care receivers and providers (Bookman & Kimbrel, 2011; Cassidy-Eagle, 2020).

Therefore, to uncover and perceive these intricate conflicts of care service in various societies, and to be questioned *what constructs the care in nursing homes with disciplined routines,* this study explores providing an epistemological perspective for designers to understand the nursing home from a more holistic view in the context of Hong Kong, by introducing the concept of *heterotopia* from Foucault and findings from the field study with local care workers (1977; 1986). More specifically, this paper describes how the *Heterotopia of Crisis* and *Heterotopia of Deviation* are constructed within the nursing home setting and what conflicts arise among care workers and care

providers regarding discipline and daily care routines under the social context, which encompasses dimensions of immigrant labour, gender dynamics, moral boundaries (Tronto, 1993).

2. NURSING HOME AS A HETEROTOPIA

The notion of *heterotopia*, as outlined by the philosopher Michel Foucault, refers to spaces that are "other spaces" - places that are fundamentally different from the surrounding environment and everyday spaces. Foucault described *heterotopias* as counter-sites that represent, contest, and invert the real spaces we inhabit (1986). At the first principle, he pointed out that retirement homes with unordered rest are the "borderline" between the *Crisis Heterotopias* and *Heterotopias of Deviation*:

> *Cases of this are rest homes and psychiatric hospitals, and of course prisons, and one should perhaps add retirement homes that are, as it were, on the borderline between the heterotopia of crisis and the heterotopia of deviation since, after all, old age is a crisis, but is also a deviation since in our society where leisure is the rule, idleness is a sort of deviation. (Foucault & Miskowiec, 1986, p. 5)*

Nursing homes exist to respond to the demands of individuals who require assistance with Activities of Daily Living (ADLs) and need to be cared for collectively within an institutional setting (Sanford et al., 2015). While according to Foucault's discussion conceptualizes spaces of "otherness" that unveil the shadows of everyday life in institutions (1986), he depicts the nursing home as a place that exists on the border between being a *Heterotopia of Crisis* - forbidden places reserved for individuals undergoing a state of crisis relative to the societal norm or life cycle, such as pregnant women or the elderly and a *Heterotopia of Deviation* - for individuals whose behaviours deviate from established norms (Donoghue, 2016; Foucault & Miskowiec, 1986).

2.1 Heterotopia of deviation from normative eldercare

In the densely populated and fast-paced environment of Hong Kong, the traditional family-based model of eldercare is often disrupted by factors such as changing family structures, economic pressures, and urban development (Yau et al., 2022). In response, a range of formal elderly care service types, like residential care homes, daycare centres, or elderly community centres, aim to provide a comprehensive continuum of care and support for the city's ageing population.

Nursing homes in Hong Kong represent a deviation from this normative eldercare approach, as they emerge as institutional spaces to manage situations that deviate from societal norms for the ageing population who are not suitable for living at home or in communities. According to the policies regulated by the Social Welfare Department in Hong Kong, nursing homes provide residential care for those "*who suffer from poor health or physical or mental disabilities with deficiency in ADLs*

but are mentally suitable for communal living and are assessed and recommended for Nursing Home under the Standardised Care Need Assessment Mechanism for Elderly Services" (2021). Therefore, these spaces are set apart from the typical living environments of the elderly, designed to manage and contain bodies and behaviours that deviate from societal norms (Donoghue, 2016).

2.2 Heterotopia of crisis with compensation and juxtaposition

Nursing homes as spaces of crisis with compensation: They emerge as a response to the *crisis* of ageing, disability, and the inability to independently maintain one's own living situation. They aim to "compensate" for these disruptions to the normative life course (Donoghue, 2016).

Nursing homes as spaces of crisis with spatial constraints and juxtaposition. Hong Kong's dense urban landscape poses unique spatial challenges for the design of nursing homes, often resulting in limited square footage and the need to maximize utilization. Within these constrained environments, nursing homes in Hong Kong must juxtapose various functions and realities, from the medical to the domestic, the public to the private (Lee, 2020). Within their walls, nursing homes bring together disparate elements, such as the medical and the domestic, the public and the private, the autonomous and the dependent. This creates a unique, heterogeneous environment (Donoghue, 2016).

3. CARE AND DISIPLINE IN THE HETEROTOPIA
3.1 Docile bodies of care receivers and care providers
3.1.1 Distribution of spaces in the nursing home

Nursing home, by its nature, incorporates several characteristics of *enclosure* to ensure the safety, security, and well-being of its residents. Like the description of the art of distribution: "Discipline sometimes requires *enclosure*, the specification of a place heterogeneous to all others and closed in upon itself. It is the protected place of disciplinary monotony" (Foucault, 1977, p. 141). The enclosure aspect manifests through controlled access measures, which serve the purposes of *preventing unauthorized entry* and ensuring that residents do not inadvertently wander off the premises without proper supervision, thereby facilitating the smooth execution of daily service routines. Nowadays many nursing home facilities implement robust security systems, including closed-circuit television cameras and alarmed doors to further enhance safety and monitor movements (Bekker et al., 2010).

The *enclosure* extends beyond the physical separation of the internal and external environments. Nursing homes often employ specialized units to segregate various resident populations based on their respective levels of ADLs and the variety of care needs. These units include dementia care units (see *Figure 1*), which are meticulously

designed to be secure and prevent residents with cognitive impairments from wandering unsupervised. This segregation enables the provision of tailored care and ensures the safety of residents with diverse functional abilities, ranging from those requiring high-level care to those capable of self-care.

Figure 1. The examples of the partition of the function zone in two nursing homes in Hong Kong.
Source: Author (2024).

3.1.2 Control of activities: care receivers and care providers with the docile bodies

As a *Heterotopia of Crisis*, nursing homes serve as reserved spaces for the care receivers who experiencing a significant life transition or crisis relative to societal norms, specifically the elderly who are at the final stage of the life cycle. This transition involves a shift from managing their ADLs autonomously or with family support to adhering to structured schedules and guidelines monitored by the nursing home (Beerens et al., 2014). As *Figure 2* shows, the residents' ADLs are governed by the institution's routine with a 24-hour schedule. Elderly residents follow a timetable of waking up at 7 am, having breakfast together at 8 am in the dining area, and taking turns to bathe around 9 am. Within the nursing home, the corresponding activities are announced via alarms and music to remind both residents and care workers to follow the scheduled activities.

> *"There is the modality: it implies an uninterrupted, constant coercion, supervising the processes of the activity rather than its result and it is exercised according to a codification that partitions as closely as possible time, space, and movement. These methods, which made possible the meticulous control of the operations of the body, which assured the constant subjection of its forces and imposed upon them a relation of docility-utility, might be called 'disciplines' ." (Foucault, 1977, p. 137)*

每 日 活 動 程 序	
時間	內容
上午 7:00	起床, 梳洗
8:00	早餐
9:00	沐浴, 早操
10:30	護理, 復康, 社交活動
12:00	午餐
下午 1:00	午睡
	護理, 復康活動
3:00	下午茶
	小組活動
5:30	晚餐
6:30	梳洗
8:00	安睡

Daily Activity Routine

TIME	CONTENTS
7:00 AM	Grooming
8:00	Breakfast
9:00	Bathing, exercise
10:30	Rehibition activities
12:00	Lunch
1:00 PM	Nap time
	Nursing, Rehabilitation Activities
3:00	Afternoon tea
	Group activities
5:30	Dinner
6:30	Grooming
8:00	Sleeping

Figure 2. The daily routine of activities of a nursing home in Hong Kong.
Source: Author (2023)

Accordingly, the transformed role of care providers from home to institution also subjects the nursing staff, especially the personal care workers responsible for ADL services, to disciplined individuals whose work routines are almost entirely encompassed by the residents' ADLs in the *timetable* (Dramé et al., 2012; Palese et al., 2016). For instance, ay shift care workers must arrive before 7 am to assist residents with grooming, serve breakfast, and help those requiring bathing (Rogers et al., 1999). Night shift staff are tasked with ward rounds, record-keeping, and responding to residents' calls, often conflicting with their own personal needs like sleep. All the activities of both care receivers (elderly residents) and care providers (care workers) are scheduled, or "disciplined," to align with the nursing home's *timetable*, a manifestation of the "control of activities" within this heterotopian space.

3.2 Hierarchical surveillance under the discipline in the nursing home

3.2.1 The labour division of the care-related staff

Care workers as the subject of surveillance by senior care staff: As *Table 1* below indicates, PCWs have the largest numbers among all the nursing staff, and they are also responsible for the most frequent interactions with elderly residents' ADLs compared to other roles such as Health Care Workers (HCWs), Enrolled Nurses (ENs) and Registered Nurses (RNs) who are more focused on medical-related care activities. It is notable that although ENs or RNs may not directly participate in hands-on care work, they are in charge of the overall operation of care work and are often referred to as the "supervisors" of the PCWs. In this case, these professional care staff are regarded at the management level, as responsible for supervising and monitoring the care service, while PCWs are seen as the direct care providers for residents' ADLs under the surveillance of the ENs or RNs.

Occupation	Main Duties	Eligibility	Roles
Enrolled Nurse (EN) / Registered Nurse (RN)	Medication management Disease management Infection control Nutrition suggestions Health assessment Home modification advice Nursing report	Fully trained nurses with a two/three-year Diploma of Nursing. Completion of a 5-year bachelor's nursing programme provided by the local tertiary education institution.	Nurses especially RNs are always in charge of PCWs and HCWs with supervision to ensure the operation runs smoothly.
Health Care Worker (HCW)	Tube-feeding Condition monitoring Emergency support Medication management	Completion of at least 300 hours of "health worker certificate" course	HCWs are with more comprehensive physical assistance than PCWs, who can handle certain medically related tasks.
Personal Care Worker (PCW)	Personal care Companionship Assistance with daily activities Medical escort service	Completion of at least 30 hours of "care worker certificate" course provided	An essential role in assisting with residents' ADLs with the highest frequency.

Table 1. Duties and hierarchical roles among Personal Care Workers, Health Care Workers, Enrolled Nurses, and Registered Nurses of residential care homes in Hong Kong. (Note: Titles and divisions of labour among nursing home staff may vary slightly in different contexts. Since the discussions are under the field study conducted in Hong Kong, all contents follow the titles developed by the Hong Kong Social Welfare Department.
Source: Adapted from Evercare (Evercare, 2022) and Hong Kong Physiotherapy Association (2022).

According to the field study with the care workers, they are even given detailed instructions on how to provide personal care for the residents during the training and service assessment stages. *Table 2* excerpts from the assessment sheet demonstrate the level of instructional detail during the training of care work.

Step 1	*Place your hands under the resident's knees;*
Step 2	*Hold tightly with both hands and keep both palms on the resident's shoulder area to stabilize the patient's body;*
Step 3	*Give the command "1, 2, 3", lift together (verbal explanation);*
Step 4	*Give the command "1, 2, 3" to pull the patient, lift them, and apply downward pressure with your knees to stabilize and transfer the resident into the wheelchair;*
Step 5	*Adjust resident's body position for comfort and safety (verbal explanation);*
Step 6	*Place the resident's feet on the wheelchair footrests to ensure legs are properly positioned; Push the wheelchair to the designated position (verbal explanation: Now we will move...).* *Note: When moving forward, remind the resident to keep feet inside the wheelchair and on the footrests.*

Table 2. Instructional steps of the assessment sheet for the care worker training.
Source: Author (2023). Note: The contents are excerpted from the field study with care workers conducted by the author.

3.2.2 The hierarchical surveillance for care service in the nursing home

In the heterotopic context of Hong Kong's nursing homes, a hierarchical system of surveillance and discipline is often constructed to maintain order and ensure the provision of care. At the top of this hierarchy are the management-level care staff, such as the superintendent, RNs and other professional healthcare personnel, who oversee the overall operations and healthcare within the institution. These trained personnel are responsible for monitoring the activities of the personal care workers, who form the frontline caregiving staff. The PCWs, in turn, are tasked with closely observing the elderly residents and ensuring their daily needs are met, from personal hygiene ADLs to medication management.

This multi-layered surveillance system serves to reinforce the power dynamics and disciplinary mechanisms inherent within the nursing home setting, where elderly residents are subjected to the constant scrutiny and control of professional caregivers. The nursing home, as a heterotopia space, becomes a site where the care receivers are disciplined and their autonomy is often compromised, leading to a complex interplay of power relations between the various stakeholders – the managers, professional healthcare providers like RNs or ENs, the PCWs, and the elderly residents themselves.
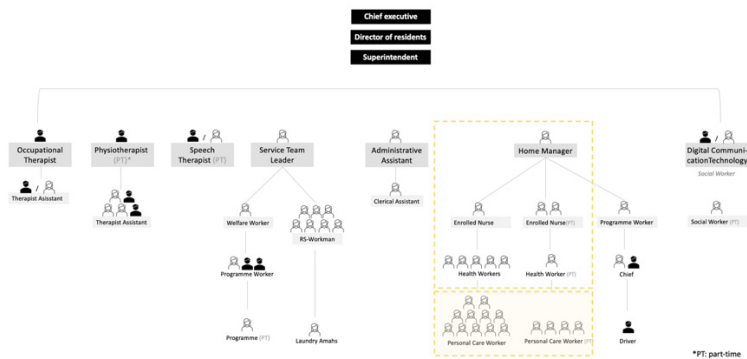
Figure 3. Line and staff organisation of a nursing home in Hong Kong.
Source: Author (2023)
Note: The author illustrated it based on the information provided by a collaborated nursing home.

Figure 3 illustrates the line and staff organization of a typical nursing home in Hong Kong, with the management-level staff overseeing the operational and clinical aspects, and the frontline PCWs providing direct care to the residents.

Family members of the elderly residents, while not directly involved in this hierarchical surveillance system, often serve as indirect and external observers, keeping a watchful eye on the care being provided to their loved ones. Their presence and involvement, though not part of the formal institutional structure, can add an additional layer of oversight and accountability within the nursing home environment.

4. AN EPISTEMOLOGICAL PERSPECTIVE FOR DESIGNERS: CONSTRUCTING DISCIPLINE AND CARE IN THE HETEROTOPIA

The notion of *heterotopia,* as outlined by the philosopher Michel Foucault, refers to spaces that are "other spaces" - places that are fundamentally different from the surrounding environment and everyday spaces. Foucault described *heterotopias* as counter-sites that represent, contest, and invert the real spaces we inhabit. In the context of nursing homes in Hong Kong, the concept of *heterotopia* can provide a valuable lens for designers to explore the complex, multifaceted nature of these institutions.

Through this lens, designers can not only see the nursing home as the *Heterotopia of Deviation* and *Heterotopia of* Crisis but also perceive the care services as operating under a hierarchy of discipline and control. This hierarchical surveillance system, which involves registered nurses, professional healthcare staff, personal care workers, and the elderly residents themselves, serves to reinforce the power dynamics and disciplinary mechanisms inherent within the nursing home setting. Family members of the elderly residents can serve as indirect and external observers, adding a layer of oversight and accountability within the nursing home environment.

By drawing on the concept of *heterotopia,* designers might be inspired to explore more critical design research or projects to respond to intricated problems of care services from the epistemological perspective. Through this, designers can also challenge the normative conceptualization of nursing homes and imagine alternative design explorations that account for the social, cultural, and political dimensions of elder care through the construction of discipline and care.

This approach can lead to more responsive, resident-centred, and socially integrated design solutions for nursing home environments in Hong Kong. Ultimately, a heterotopian perspective encourages designers to see nursing homes not merely as spaces of care, but as sites where broader societal attitudes, values, and power structures manifest and are contested. Future research might explore a more holistic, contextually grounded, and in-depth design framework with a series of guidelines and implications in terms of how to construct the care and discipline in the nursing home as a *Heterotopia.*

5. BIBLIOGRAPHY

Aride, A., & Couto, R. (2022). Products and Strategies for Dementia Rehabilitation and Prevention in Nursing Homes. In *Design for People Living with Dementia* (pp. 201-212). Routledge.

Aronson, J., & Neysmith, S. M. (1997). The retreat of the state and long-term care provision: Implications for frail elderly people, unpaid family carers and paid home care workers. *Studies in Political Economy, 53*(1), 37-66.

Beerens, H. C., Sutcliffe, C., Renom-Guiteras, A., Soto, M. E., Suhonen, R., Zabalegui, A., Bökberg, C., Saks, K., Hamers, J. P., & Consortium, R. (2014). Quality of life and quality of care for people with dementia receiving long term institutional care or professional home care: the European RightTimePlaceCare study. *Journal of the American Medical Directors Association, 15*(1), 54-61.

Bekker, M. M., Sturm, J., & Barakova, E. I. (2010). Design for social interaction through physical play in diverse contexts of use. *Pers Ubiquit Comput, 14*(5), 381-383. *https:// doi.org/10.1007/s00779-009-0269-9*

Bentz, P. (2020). *Complexity in Nursing Homes* Philosophisch-Theologische Hochschule Vallendar].

Bookman, A., & Kimbrel, D. (2011). Families and elder care in the twenty-first century. *The Future of Children*, 117-140.

Bowling, A. (2005). *Ageing well: Quality of life in old age*. McGraw-hill education (UK).

Cassidy-Eagle, E. (2020). Community and home care for mentally ill older adults. In *Handbook of Mental Health and Aging* (pp. 417-421). Elsevier.

Census Statistics Department. (2020). *Hong Kong Statistics. https://doi.org/https:// www.censtatd.gov.hk/hkstat/index.jsp*.

Chan, C. W., Chen, Y.-f., & Chan, H. Y. (2023). Advance Care Planning in Hong Kong. *Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen, 180*, 90-93.

Cheng, S. T., & Chan, A. C. (2003). Regulating Quality of Care in Nursing Homes in Hong Kong: A Social-Ecological Investigation. *Law & Policy, 25*(4), 403-423.

Comondore, V. R., Devereaux, P. J., Zhou, Q., Stone, S. B., Busse, J. W., Ravindran, N. C., Burns, K. E., Haines, T., Stringer, B., & Cook, D. J. (2009). Quality of care in for-profit and not-for-profit nursing homes: systematic review and meta-analysis. *Bmj, 339*.

Donoghue, G. (2016). Aged care as heterotopia? Australian Sociology Association TASA 2016 Conference 'Cities and Successful Societies',

Dramé, M., Lang, P.-O., Jolly, D., Narbey, D., Mahmoudi, R., Lanièce, I., Somme, D., Gauvain, J.-B., Heitz, D., & Voisin, T. (2012). Nursing home admission in elderly subjects with dementia: predictive factors and future challenges. *Journal of the American Medical Directors Association, 13*(1), 83. e17-83. e20.

Evercare. (2022). *Duties and hierarchical roles among Personal Care Worker, Health Care Worker, Enrolled Nurse, Registered Nurse of the residential care homes in Hong Kong. https://www.yourevercare.com/*

Fernández-Ballesteros, R., Sánchez-Izquierdo, M., & Santacreu, M. (2021). Active Aging and Quality of Life. In *Handbook of Active Ageing and Quality of Life* (pp. 15-42). Springer.

Fleming, R., & Purandare, N. (2010). Long-term care for people with dementia: environmental design guidelines. *International Psychogeriatrics, 22*(7), 1084-1096. *https://doi.org/10.1017/S1041610210000438*

Foucault, M. (1977). Discipline and Punishthe :Birth of the Prison. New York :Pantheon Books, .

Foucault, M., & Miskowiec, J. (1986). Of other spaces. *diacritics, 16*(1), 22-27.

Hong Kong Physiotherapy Association, H. (2022).

Hussein, S., & Manthorpe, J. (2005). An international review of the long-term care workforce: policies and shortages. *Journal of aging & social policy, 17*(4), 75-94.

Jarzebski, M. P., Elmqvist, T., Gasparatos, A., Fukushi, K., Eckersten, S., Haase, D., Goodness, J., Khoshkar, S., Saito, O., & Takeuchi, K. (2021). Ageing and population shrinking: Implications for sustainability in the urban century. *Npj Urban Sustainability, 1*(1), 17.

Kane, R. A. (2001). Long-term care and a good quality of life: Bringing them closer together. *The gerontologist, 41*(3), 293-304.

Lee, C. (2020). The Interior is The Exterior; The Exterior is the Interior: The Complex Fold between the" Public" and the" Private".

Lin, M. C., Hughes, B. L., Katica, M. K., Dining-Zuber, C., & Plsek, P. E. (2011). Service design and change of systems: Human-centered approaches to implementing and spreading service design. *International Journal of Design, 5*(2).

Ngo, J., ., & Lai, Y. K. (2015). Hong Kong elderly home faces loss of licence after nakedabuse scandal. . *South China Morning Post.* https://www.scmp.com/news/hong-kong/educationcommunity/article/1812045/hong-kong-nursing-home-regrets-leaving-elderly

Palese, A., Menegazzi, G., Tullio, A., Fuso, M. Z., Hayter, M., & Watson, R. (2016). Functional decline in residents living in nursing homes: a systematic review of the literature. *Journal of the American Medical Directors Association, 17*(8), 694-705.

Rogers, J. C., Holm, M. B., Burgio, L. D., Granieri, E., Hsu, C., Hardin, M., & McDowell, B. J. (1999). Improving morning care routines of nursing home residents with dementia. *Journal of the American Geriatrics Society, 47*(9), 1049-1057.

Sanford et al. (2015). An international definition for "nursing home". *Journal of the American Medical Directors Association, 16*(3), 181-184.

Tronto, J. C. (1993). Moral Boundaries: A Political Argument for an Ethic of Care.

Yang, M., Huang, H., Yuan, H., & Sun, Q. (2016). Interaction design of products for the elderly in smart home under the mode of medical care and pension. Human Aspects of IT for the Aged Population. Healthy and Active Aging: Second International Conference, ITAP 2016, Held as Part of HCI International 2016 Toronto, ON, Canada, July 17–22, 2016, Proceedings, Part II 2,

Yau, S. Y., Lee, Y. K., Li, S. Y., Lai, S. K., Law, S. P., & Huang, S. (2022). The Social Construction of "Dirty Work" for Working in Residential Care Homes for the Elderly. In *Ageing with Dignity in Hong Kong and Asia: Holistic and Humanistic Care* (pp. 53-64). Springer.

CAPTURING AND REEACTIVATING AMBIENCE AS A KEY ISSUE IN SENSIBLE URBAN PLANNING

A CAPTAÇÃO E REACTIVAÇÃO DO AMBIENTE COMO QUESTÃO FUNDAMENTAL DE UM PLANEAMENTO URBANO SENSATO

Imen Landoulsi
Architect, PhD,
University of Catrthage, ENAU, LR21ES20, LaRPA, ERA, Tunis
imen.landoulsi.20@gmail.com

Alia Ben Ayed
Architect, HDR,
University of Catrthage, ENAU, LR21ES20, LaRPA, ERA, Tunis
aliabenayed@yahoo.fr

ABSTRACT

As part of the 4th year of project teaching at the Ecole Nationale d'Architecture et d'Urbanisme in Tunis, our team strives to make students aware of the importance of sensitive, environment-oriented design. Our approach consists of adopting an analysis/project attitude based on field experiments. However, this project-oriented attitude - conscious and aiming to be useful - is somewhat contradictory to the very nature of the atmosphere - pure, a-conscious, sensitive vibration - that we are trying to capture. In addition, the reporting phase of the experiment represents a second challenge. How do you reproduce a feeling that is fleeting, labile and elusive? How do we capture this moment of resonance in concert with the atmosphere? A third challenge is that of the project phase, which aims to reactivate atmospheres that are still present on the ground but have faded over time. In this paper, we wish to report on this ten-year experience, while highlighting the heuristic significance of the limits encountered.

KEYWORDS: Sensible Urban Design. Sensory Design. Ambience Capture. Ambience Reactivation. Ambience Representation

RESUMO

No âmbito do 4º ano de ensino de projeto na Escola Nacional de Arquitetura e Urbanismo de Tunes, a nossa equipa esforça-se por sensibilizar os alunos para a importância de uma conceção sensível e orientada para o ambiente. A nossa abordagem consiste em adotar uma atitude de análise/projeto baseada em experiências no terreno. No entanto, esta atitude projectual - consciente e com o objetivo de ser útil - é um pouco contraditória com a própria natureza da atmosfera - vibração pura, consciente e sensível - que estamos a tentar captar. Para além disso, a fase de relato da experiência representa um segundo desafio. Como reproduzir um sentimento que é fugaz, lábil e esquivo? Como é que captamos este momento de ressonância em consonância com a atmosfera? Um terceiro desafio é o da fase de projeto, que visa reativar atmosferas que ainda estão presentes no terreno mas que se desvaneceram com o tempo. Neste artigo, pretendemos dar conta desta experiência de dez anos, sublinhando o significado heurístico dos limites encontrados.

PALAVRAS-CHAVE: Conceção urbana sensata. Conceção sensorial. Captação de ambientes. Reativação da ambiência. Representação do ambiente

1. TEACHING AMBIENT DESIGN

The teaching of 'ambiancie' or ambient design is faced with a major challenge, linked to the very nature of ambience, which is vibratory, labile and elusive, and whose encounter can be missed all the more because we are trying to make it happen. If the atmosphere is there at first sight, it can happen, depending on our state of mind, that we miss the moment of vibrating in tune with it, that we feel excluded, out of place. This is all the more true when we approach it with the intention of capturing it,

at the risk of annihilating the spontaneity of the situation. If the encounter does take place, how do you capture it without reifying it at the risk of dissolving it? How do we capture it? In addition, what tools should be used as part of an urban redevelopment project to preserve opportunities for vibratory encounters? This is the challenge we face as teachers of a project workshop that we hope will be sensitive. The use of art is one of the ways in which we can meet this challenge. Our aim in this paper is to give an account of this ten-year experience, while highlighting the heuristic significance of the limits encountered.

1.1 The context of Tunisian towns

The second semester of 4th year project teaching at the Ecole Nationale d'Architecture et d'Urbanisme (ENAU) in Tunis (equivalent to a Master's 2) focuses on urban design in the context of Tunisian cities. These towns, particularly coastal ones, underwent major changes from the end of the 19th century in response to the logic of colonization. They extended beyond the ramparts of the old medinas, around the area of the new port and station, essential facilities for transporting goods to the metropolis. These cities adopted a rational grid layout, largely inspired by Western models, and built public buildings symbolizing the new power (the consul's residence, the cathedral, the theatre) along tree-lined avenues or facing squares or other forms of public space.

Today, because of the demographic dynamic, these towns are facing accelerated urbanization. As a result, agricultural land is being consumed (urban sprawl), and uncontrolled illegal peri-urban housing is springing up, with deficiencies in terms of infrastructure and sanitation. This phenomenon is accompanied by social insecurity (often leading to delinquency). In addition, the artificialisation and sealing of land increases the vulnerability of these cities to surface water flooding. The situation is made all the more critical by the fact that climate change is increasing the occurrence of one-off events of excessive rainfall. What's more, in the embryonic colonial towns that have now become the hypercentres of metropolises, the road and sewerage network no longer meets needs. In the context of the global economy, port facilities have become obsolete.

It is in this context that the objectives of the 'Study Tour' module undertaken in 4th year are defined. The aim is to identify a city and help students understand how it has developed, so that they can make a reasoned diagnosis of its current situation with a view to proposing solutions to the issues raised. Our project teaching aims to achieve the following objectives:

- Introduction to methods for reading and analysing urban systems,
- Integration of the various investigation and analysis data into the urban project methodology,
- Mastery of the design process in the context of the complexity of an urban context and issue,
- Coherence and legibility of the elements defining the project.

Our teaching team strives to introduce students to a sensitive, ambience-oriented project approach. Our approach consists of adopting an analysis/project attitude (analysis with a view to the project) based on field experiments. In other words, we invite students to question the potential and limitations of the situation in question, with the aim of coming up with project ideas that are relevant to the specific features of the existing situation. The exercise is carried out in three stages: in vivo, in situ and then in vivo again.

1.2 The search for documentary sources

The approach requires multidisciplinary thinking at different scales, from the metropolis to the neighbourhood. Preliminary work, carried out in workshops, aims to draw up a comparative map of the city's development, which consists of superimposing maps from different significant periods on the scale of the metropolis, analysing them and understanding the logic of the city's development over time. The analysis breaks down into the following 4 themes:

- Road network and infrastructure
- Division of plots
- Building layout on the plot
- Singular elements and public space

The work involves bibliographical research into historical sources, the collection of graphic documents, photos, old postcards, eyewitness accounts, travellers' accounts, etc. and the collection of census data. The work is carried out in teams of 6 to 7 students.

1.3 Immersion in the field and ambience capture

The second stage is a sensitive immersion in the field, with the aim of taking the measure of its ambient tones so that they can be taken into account in the project phase. Given the short time available (3 days) for the experiment, a crossing representative of the city's ambient variations was identified to serve as the site.

We are well aware that this project-oriented attitude - conscious and aimed at utility - is somewhat contradictory to the very nature of the atmosphere - pure a-conscious sensitive vibration - that we are trying to capture. According to the philosopher Bruce Bégout:

'Any attempt to capture ambiences, to accumulate them as facts, to manipulate them as data, very often produces the opposite effect. This desire to control simply reifies ambience. What it captures is not the ambience itself, but a projection that misses its mersif and enveloping character. An atmosphere cannot be directly objectified and manipulated... '. (Bégout Bruce, 2020)

In addition Hartmut Rosa points out that:

> '[…] there is no method or seven-step or nine-step manual to help us resonate with people or things. Even if we try to control all the subjective, social, spatial, temporal and atmospheric conditions, to arrange and orient them in such a way as to make an experience of resonance possible, it may be that the meeting by candlelight, the mountain at dawn, the music heard from the most expensive seat in the best concert hall still leave us (or for that very reason) 'completely cold', untouched and unable to establish a relationship.' (Rosa, Hartmut, 2020)

1.4 Restitution

In addition, the analysis reporting phase, in other words the graphic or other form of feedback from the experiment, is in itself a second challenge. How do you capture a feeling that is fleeting, labile and elusive? What do we capture, and in what way, inevitably truncated, inevitably frozen? What is an atmospheric snapshot? To what extent does it reflect this moment of resonance in concert with the ambience (if the magic worked and this moment of vibration took place)? Added to this is the difficulty of finding a type of representation and putting it to the test to help with the project, while at the same time highlighting ambient references or feeding into the construction of new ambient references? How can we reactivate atmospheres that are still present on the site but have faded over time? How can we encourage the revelation of atmospheres (landscapes, for example) that are potentially present on the site, and make the references to these atmospheres operational?

Faced with these difficulties, and despite the short time available for this exercise, we invite the students in the first phase to abandon themselves to the atmosphere, to allow themselves to be impregnated without trying to grasp it, in order to encourage the emergence of resonance. The « parcours commenté en aveugle » (Thibauld, 2022) is a powerful tool that is often used, and which has the advantage of suspending the visual modality in order to focus on the many sound, tactile, aeraulic or climatic phenomena that colour urban situations. It is all the more effective when used in the old centres of medinas, or in working-class neighbourhoods, where urban planning is hidden from view and configured less to respond to the logic of staging than to ensure a certain porosity to sound or air circulation. Or cette configuration est liée à un mode de vie qui concorde avec une certaine conception intégrative d'être au monde proposée par le soufisme bien ancré dans la pensée populaire, explicitée par la philosophie islamique (Ben Ayed, 2021). Happily, the students concerned come from all regions of Tunisia - insofar as ENAU is the only public school of architecture - represent all social categories, and share this conception where the world and the subject are not two separate entities. As a result, vibrational contact occurs quite naturally, the links not being severed by an exclusive attitude in which the intellect takes over from an ever-vibrant sensitivity. We don't necessarily need to resort to special practices such as geobiology, for example, which is used as part of the Sensibilia project (Revoll, Thollière, De Pertat, Labussière, Damian, 2023). Open

interviews with residents and observation of behaviour and usage are also used to try and get a sense of this ordinary yet powerful daily experience.

On returning from the field, at the end of the first day, a debriefing session is organised, a kind of interactive workshop where participants exchange their experiences. These exchanges can take the form of oral, drawn, photographed or filmed reports. The student groups then intuitively suggest 'artistic' forms of feedback, which can take the form of humorous or romantic anecdotes, photo collages or atmospheric sketches. The other two days in the field are reserved for documentation and analysis proper. They also end with feedback workshops in the evening, which provide a stimulating forum for discussion.

At the end of the three days in the field, a feedback workshop is organised in the form of an intensive three-day workshop. In order to stimulate the students' imagination and allow for the emergence of an original report, no particular instructions in terms of format or technique are given. The presentations take the form of slide shows, accompanied by videos or sound recordings. Given the skills in digital and/or manual graphic tools of 4th year students, who are fairly well equipped at ENAU, the harvest is most of the time fruitful and the renderings sufficiently sensitive to reproduce the variations in ambient tones. A jury is organised to view all the slideshows. On one occasion, a group asked the members of the jury to close their eyes to listen to an ambient sound reconstruction.

Once the diagnosis and ambient feedback have been completed, the second phase of design on the scale of the urban project is less straightforward, insofar as this is the first time in their course that ENAU students are confronted with this scale of project. The workshops are an opportunity to encourage them to use their analysis schemes, which combine the architectural and sensory dimensions (including the postures and words of users), as design tools. This return to sensibility facilitates the emergence of solutions that are relevant from the point of view of inhabitant appropriation. Once again, the use of sensitive representations is encouraged to promote this emergence.

Sometimes, however, despite a 'successful' phase of analysis and rendering of the ambience, the transition to the project is not made in the sense of taking account of what already exists and proposing an invisible but nonetheless sensitive micro-urbanism. This phenomenon is undoubtedly due to the trend towards the ostentatious, the flashy and the visible. To win over the jury, and given the difficulty of representing the intangible, the fleeting and the invisible, some results are disappointing from the point of view of atmosphere. These 'failures' bring us face to face with our own limitations as teachers, but they are also a reflection of the whole course at ENAU, which gives too much importance to formatting and emphasises a production where the aesthetics of the object take precedence, not allowing the prerequisites of a sensitive project to develop over the years. In other circumstances, for example during summer courses held on school premises, things work out differently. When

we feel, after a sensitive analysis phase, that the transition to the project is not conclusive in terms of atmosphere, we can encourage the students to return to the site to reconnect. The immediate result of this is an increase in the ambient dimension of the project. Designing on the ground means that we can keep in touch and take account of what already exists (take care of it).

2. ILLUSTRATED CRITICAL FEEDBACK ON EXAMPLES OF AMBIENCE RENDERING AND THEIR TOOLS TICAL FEEDBACK THROUGH EXAMPLES OF STUDENT WORK

2.1 Memory of place and place of memory

By analysing the interviews and old photographs, it is possible to characterize past atmospheres and highlight the shared ambiences that inhabit the collective memory. In depicting these environments, the student uses mixed techniques, collaging fragments of photographs and snippets of interviews in an attempt to capture a collective memory as effectively as possible.

Figure 1 and Figure 2: Representations in collage form of ambiances from collective memory of La Goulette
Source: students work 2020-2021

The characterization of these remarkable environments, which are therefore considered to be part of our heritage (Landoulsi, 2016), (Belakehal, 2012) for their value in terms of use, memory and so on, offering students a potential for referencing, nourished by the atmosphere, the memory of the place and the imagination it generates (figure 1, 2).

2.2 Place mind mapping versus place ambiantal mapping

After introducing the notion of mind mapping in addition to the the built map or administrative map (Lynch, 1960), we encourage the students to question the toponymy of the places. In fact, it often reveals the mental map of users, creating new quarters and districts that reshape the purely administrative division, as well as new affective or usage landmarks. (figure 3). The student is then invited to superimpose on this cartography the representation resulting from the analysis of the modes of appropriation - observed or recounted - of these places. For this goal the students are invited to understand the main profiles of users. (figure 4)

Figure 3: Mind mapping of Bizerte based on toponymy
Source: students work 2017-2018

Figure 4: Representation of user profiles
Source: students work Bizerte 2017-2018

After that are defined the main pathes, identifying poles of attraction and repulsion, describing their tipology, avoiding, nostalgic, spontaneous. (Augoyard, 1979). On a minor scale the cartography can relate even the intensity and typology of contact, gestures and this relation between the form and the utilization (Breviglieri, Landoulsi, 2016) (Figure 5)

Figure 5: Cartography of gestures and utilization
Source: Breviglieri, Landoulsi 2016

2.3 The perceptual analysis, from the pittoresc approach to the ambiental approach

We have referred to the pittoresc approach (Cullen, 1971) to represent perceptions integrating in the same time the notion of effects (visual, luminous, sound) developped in the CRESSON (Augoyard, 1987), (Follut,2002), (Chelkoff,Thibaud, 1992) etc. The students have found in the work on the photographic material a way to transmit the user's perceptions. (figure 6,7), they represent in the same time the typomorphological aspects using on the one hand classical representations, maps, fronts and sections and on another hand transects with collages to integrate user perception and practice. In fact, otherwise they seem to lose the relation between the real physical configuration and the ambiental one and thus they lose their capacity to project.

3. NATURAL SENSITIVITY VERSUS ACADEMIC FORMATTING

At the end of this teaching experiment, we can see that despite the natural propensity of the Tunisian student population to be sensitive to environments, and despite a generally conclusive feedback analysis phase, the transition to a sensitive project remains problematic in the 4th year. In comparison, another experience in the introductory workshop in 1st year (Ben Ayed, Bel Haj Hamouda, 2016) made it much easier to move from analysis to sensible design. No doubt the freshness and spontaneity of the 1st year students, who had no great architectural culture in the academic sense of the term, made this easier. On the other hand, the academic curriculum at ENAU, which favours and promotes productions with a strong plastic and formal content, and the unlimited access to digital platforms that showcase this type of production, contribute greatly to the difficulties in making the transition to a sensitive project. This leads us to think that the sensitive dimension of vernacular architecture, or that of today's working-class neighbourhoods without architects, comes from the fact that this vibratile link is never completely severed when they are built. Didn't the architect Jacques Marmey set up on the building site to create the Lycée de Carthage, his emblematic work with a strong ambient resonance (Ben Ayed, 2014), reproducing the age-old gestures of the maaclem with whom he worked in Morocco and from whom he learned to adapt his architecture to the site?

In the legitimate concern, no doubt, to conform to international standards, isn't the academic course at ENAU missing the mark in the end, by training excellent shapers who have forgotten along the way their natural tendency to play to the atmosphere?

BIBLIOGRAPHY

Augoyard, Jean-François. (1979). Pas à pas, essai sur le cheminement quotidien en milieu urbain, Editions du seuil.

Augoyard, Jean-François. (1987). Répertoire des effets sonores, cinq échantillons. [éd.] Rapport de recherche.

Bégout, Bruce. (2020). Le concept d'ambiance, Editions du Seuil, 378 p.

Belakehal, Azeddine, (2012). Ambiances patrimoniales, problèmes et méthodes. Ambiances en acte (s). International Congress on Ambiances, Montreal, Canada. pp. 505-510

Ben Ayed, Alia et Bel Haj Hamouda, Alia. (2016). La "frange épaisse" : un outil opératoire pour l'analyse. Proceedings of 3rd International Congress on Ambiances. Volos, pp. 81 - 86.

Ben Ayed, Alia. (2021). La porosité au fondement de l'ambiance oasienne. In [Direction] Marc Breviglieri, Noha Gamal Saïd et David Goeury. Résonances oasiennes - Approches sensibles de l'urbain au Sahara. Italie : MetisPresses.

Ben Ayed, Alia. (2014). Le régime ambiantal dans l'architecture moderniste de Jacques Marmey- Cas du Lycée de Carthage. Tunis : Thèse en architecture, ENAU.

Breviglieri Marc, Landoulsi Imen. (2016). Gestes publics d'appropriation et phénoménalisation progressive d'une ambiance autour d'une source sacrée intégrée à la réhabilitation d'une medina (Tiznit, Maroc) in N. Rémy et N. Tixier (dir.), Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances, Volos, International Network Ambiances; University of Thessaly, vol. 1 (pp.105-110)

Chelkoff Grégoire, Thibaud Jean-Paul. 1992. Mise en vue de l'espace public.

Cullen Gordon, (1961). The Concise Townscape. Editons Routledge

Follut Dominique. (2002). L'ambianscope : propositions méthodologiques d'analyse des ambiances appliquées à l'ensoleillement urbain, Ecole Nationale Supérieure d'Architecture Nantes, Thèse en Sciences de l'Ingénieur, spécialité Architecture.

Landoulsi Imen. (2016). De la patrimonialisation à la référenciation ambiantale, Nefta et le Dar Hi. Landoulsi. Ambiances, tomorrow. Proceedings of 3rd International Congress on Ambiances. Volos, Greece, pp. 921 - 926.

Le Corre, Yanick. (2006). "Le pattern ambiant, une entité opératoire de caractérisation des ambiances urbaines", thèse de doctorat

Lynch, Kevin. (1960). The image of the city. [éd.] MIT Press.

Revol, Claire, et al. 2023. Un contact vibratoire avec les éléments Les cosmologies entre ciel et terre des pratiques de géobiologie. Socio-anthropologie, pp.177-189.

Rosa, Hartmut. (2020). Rendre le monde indisponible,La Découverte, pp.48.

Thibaud, Jean-Paul. (2022). Parcours commentés. Psychologie de l'environnement : 130 notions clés.

Tixier Nicolas. (2016). Le transect urbain, pour une écriture corrélée des ambiances et de l'environnement. [auteurs du livre] Barles et Blanc. Ecologies urbaines. Sur le terrain, Economica-Anthropos; PIR Ville et environnement, pp. 130-148.

L28

GEOBIOLOGY AS CARE FOR ENERGETIC QUALITIES OF LIVING ENVIRONMENTS AND PLACES

A GEOBIOLOGIA COMO CUIDADO COM AS QUALIDADES ENERGÉTICAS DOS AMBIENTES E LUGARES DE VIDA

Revol Claire
Associate Professor
Univ. Grenoble Alpes, CNRS, Sciences Po Grenoble*, Pacte,
38000 Grenoble, France
* School of Political Studies Univ. Grenoble Alpes
claire.revol@univ-grenoble-alpes.fr

Thiollière Pascaline
Post-doc researcher
Univ. Grenoble Alpes; CNRS, AAU Cresson
pascaline.thiolliere@gmail.com

ABSTRACT

Geobiology is linked to the culture of caring for the Earth and our living environments. More broadly, geobiology considers the earth as an arc between its daily practice (inhabiting) and its inclusion in the cosmos. It is defined as a healing practice in that it opens the way to understanding and nurturing the invisible energetic links between beings, places and elements. By giving shape and rhythm to the unsuspected interplay of forces that structure the world, geobiology enables us to reconsider our daily cohabitation with the elements, to change our habits, to improve our habitats by modifying, reactivating and repairing them if necessary. We will draw on the results of empirical work in which co-practice or initiation sessions were carried out with practitioners, to show how the art of geobiological care is taking place.

KEYWORDS: Geobiology. Relational Territory. Infrasensibilities. Cosmologies. Eco-habitat.

RESUMO

A geobiologia está ligada à cultura de cuidar da Terra e dos nossos ambientes de vida. De uma forma mais ampla, a geobiologia considera a Terra como um arco entre a sua prática quotidiana (habitar) e a sua inclusão no cosmos. É definida como uma prática de cura, na medida em que abre o caminho para a compreensão e o cultivo das ligações energéticas invisíveis entre seres, lugares e elementos. Ao dar forma e ritmo ao jogo insuspeito de forças que estruturam o mundo, a geobiologia permite-nos reconsiderar a nossa coabitação quotidiana com os elementos, mudar os nossos hábitos, melhorar os nossos habitats modificando-os, reactivando-os e reparando-os, se necessário. Basear-nos-emos nos resultados de um trabalho empírico em que foram realizadas sessões de co-prática ou de iniciação com praticantes, para mostrar como se realiza a arte dos cuidados geobiológicos.

PALAVRAS-CHAVE: Geobiologia. Território relacional. Infrasensibilidades. Cosmologias. Eco-habitat.

1. INTRODUCTION

In recent years, the development of alternative medicine has led to the emergence of practices aimed promoting the health of homes and living environments, including geobiology, which has its origins in magnetism. Long practiced in informal settings, as folk medicine, these practices have developed with the growth of the eco-housing (Fries, 2017) and the wellness market, most often in the form of interventions to individual dwellings, building plots or farms. Our research project, carried out as part of the ANR Sensibilia research programme, brought us to meet regularly with a dozen practitioners in Grenoble and the surrounding mountains.

Geobiology is a healing activity in the sense that it is a therapeutic response to harmful phenomena felt by suffering beings (animals, humans), who are unable to explain the origin of their physical and psychological ailments on a scientific basis and who therefore turn to invisible phenomena; geobiology can also be used as a preventive measure to promote a healthy living environment, for example by identifying qualities of a piece of land to guide the construction of buildings (searching for water, identifying favourable locations, etc.). Our contribution aims to go beyond an interpretation that would make the development of these practices the result of a retreat from science and rationality in contemporary society, or a simple appropriation of esoteric practices by late capitalism, driven by the wellness and personal development market and the individualism of the consumer society.

Our aim is to explore the potential for attention and care, as well as the ethical dimension of the relationship to living beings, places and environments, that these practices activate. In doing so, we place ourselves within the Environmental Humanities approach to rethink these practices in the context of contemporary ecological concerns. In this way, we explore these practices as a *caring for place*, showing how we can move from therapeutic practice - the care exercised by a healer - to the dimension of care in the relationships to places and *milieux* that these practices embody.

2. HEALING PLACES: THE GEOBIOLOGIST AS "PLACE THERAPIST"

In another article (Revol et al., 2023), we showed how geobiology proceeds through a singular form of exercising our capacities to sense and feel the world that we qualify as *energetic* that allow its practitioners to come into contact with vibratory phenomena. We follow how Bastien, a geobiologist in the Trièves region of France, went about detecting these phenomena manifest on a building site of a client - Nicolas - plotting them on a map and then interpreting them in response to a request to guide the orientation of the buildings to be constructed. While forms of detection and mapping seem to be common to all the practitioners we met, there is diversity of forms of interpretation, the breadth of which we have only been able to fathom without studying them systematically. Nevertheless, interpretation is at the heart of the healing relationship established between the geobiologist and the person or persons concerned. In this article, we take up some elements of Bastien's survey of Nicolas's land, which we cross-reference with other elements of our exploratory study, in order to show how the geobiologist is, in Bastien's words, a "therapist of place".

Some phenomena are closely linked to the environment and the elements, and therefore to the influence of landscapes on human settlements, through the quality of rocks, their faultlines, the presence of underground water and its flow, the atmosphere and sunlight, the presence of metals in the earth's mantle. Other

phenomena are linked to pollution of human origin: electrical, electromagnetic and chemical pollution. Still other phenomena may seem closer to the realm of fantasy, even if they are considered to be vibratory phenomena linked to nature: cosmo-telluric 'chimneys' that form breathing points between heaven and earth, vortices associated with sacred high places, elementals or nature spirits... There are also a number of phenomena associated with the human occupation of places and their memories, such as the imprinting of certain tensions or emotional charges, the creation of thresholds and energy bubbles associated with the occupation of places by living beings, the presence of entities or energetic remnants of deceased people (ghosts), objects charged with noxious energy...

The way in which the phenomena in question is approached varies from practitioner to practitioner: some, for example, exclude the detection of electromagnetic pollution, which requires specific equipment and technical training. Protocols and their formalisation also vary. 21st century geobiology considers it necessary to reorganise the habitat to avoid harmful phenomena, rather than intervening to transform them; some geobiologists debate the ethics of systematic cleaning or relocation of certain troublesome phenomena, preferring to maintain a form of humility towards what goes beyond the human. A wide variety of corrective actions are practiced, on a physical level (sorting and removing objects), but also through energetic re-harmonisation, each person developing his or her own methods, by placing stones and various object or through sound (drum, Tibetan bowl). Some also set up rituals to treat the problem, involving the patient or client in their own space. Many leave their clients completely free to decide on the corrective action and involve the recipient in the treatment process.

If the geobiologist is a therapist of place, then caring for place means identifying what is at play in the relationship between a place and its inhabitants. It is this relationship that needs to be questioned in order to adapt an intervention to what is meaningful for the person. In the case of Bastien's diagnosis, Nicolas explains:

> "What really touched me about Bastien's work was that I felt it was really addressed to me (...) [In the construction project], the approach to this plot of land is the practical one of the architect, of a bricklayer. But it's never about what's most important, what makes the inside vibrate. (...) It's the least concrete approach in terms of construction... but the most in tune with feelings, deep analysis, you know... and also to look at this place that speaks to me so much, I have an enormous attraction to this place (...) on the side of the spirit, the spiritual " (Nicolas, 04/07/2022).

In the next section, we'll look at how care works through contact with the intimate, inner relationship a person has with the place where they live.

3. GEOBIOLOGY AS THE CARE OF A "RELATIONAL TERRITORY"

For Bastien, the purpose of therapeutic activity is to "bring the place and those that live there, the habitat and the inhabitant, back into harmony" (Bastien, 01/07/2024). In our research, the intimate, inner, psychic and spiritual dimensions of the relationship with place gradually emerged as the core of these care practices. Bringing people into harmony means working on the inner bonds they have with the place where they live and on the affective dimensions of their relationships with other beings. Diagnostic work is designed to enable people to get in touch with these dimensions and to begin work on inner healing. The psycho-affective and psycho-corporeal dimensions are essential, and the paradigms used are close to the depth psychology of C.G. Jung, since the aim is to consider the psyche in its relationship with the soul, whose healing takes place on a spiritual level. In addition, various spiritual paths are sometimes mobilised (Christianity, Buddhism, various wisdom paths).

We find it useful to situate geobiology within a group of practices that derive from thinking around ecological healing that seeks to reconnect people to themselves, to others and to the earth through their inner selves, even if not all practitioners in our inquiry refer to these streams of thought. In ecological thinking, these theories are part of developments in inner ecology, eco-spirituality and eco-psychology, and their aim is to create caring relationships between humans and living beings, including through restorative practices: "eco-spirituality is rooted first and foremost in a first-person ecology directed towards the direct and irreducible exploration of lived experience. And this explicit practice of conscious activity generates new ways of paying attention to corporeality, elementary material networks and the interdependent links that make up a living being" (Barniaudy and Delorme, 2022). Thus, far from addressing the private individual, separated from the social and living collective, care passes through the self to transform human relations with their environment.

In *Ecopsychology: Restoring the Earth, Healing the Mind* (Roszak, Gomes, Kanner, 20-23 [1995]), Theodor Roszak outlines the ambitions of a psychology that no longer limits itself to the private life of the ego but takes into account all the connections between the personal and the planetary, seeing psychic, physical and ecological health as inseparable. The psyche to be cared for extends to the surface of the earth and to relationships with living beings. Roszak traces the links between this ecopsychology and ancestral healing practices:

> "The world's oldest healers, those whom our society called 'sorcerers', knew no other way to heal than to interact with the environment, to weave relationships of mutual reciprocity (…) human beings must live in balanced, respectful exchange with the flora and fauna, rivers and hills, sky and earth, on which we depend for our physical sustenance and practical education" (Roszak, 2023, 26).

Roszak emphasizes the importance of the environment for physical and mental health, from Hippocratic medicine to contemporary approaches to health in relation to the environment.

In practice, contact with the inner dimension is achieved by listening to the person being cared for in a full, multidimensional sense. Bastien takes into account the circumstances of the call for intervention, the way in which it is formulated, the exchanges that precede the visit to the field and the reactions of the people what he detects when he gets there: "Sometimes I have the impression that three quarters of the information is already there, it's already given. Information can be given as well on how I should approach the field". (Bastien, explanatory interview after diagnosis). These are the elements that allow us to interpret the phenomena listed and mapped by the energetic diagnosis and to give them meaning in relation to the person's problems. This delicate task, the dimensions of which we have only just glimpsed, requires the practitioner not to go for hasty interpretation and to be wary of its hunches: for Bastien, he must remain as close as possible to listening to the person in order to make the diagnosis meaningful.

It's a matter of helping a reconsideration – on the part of the client - of the diverse collectives and environments with which they are in contact, reconfiguring the relationships they have with something greater than themselves from the perspective of their own home, which is often the space in which the geobiologist is called upon for treatment. Geobiology enables us to explore what Bastien calls a person's "relational territories": "I'm called out to houses two-thirds of the time, and the territory is restricted to the notion of a small space of one's own, but in fact, it's just a matter of changing and seeing further afield, how the human being reconciles with a wider territory" (Bastien, 01/07/2024). This relational territory takes in a whole ecology of relationships, of relations to other living beings, to the elements, but also to the human beings with whom we cohabit. Through the home, this territory inscribes the individual in a collective, which also includes ancestors and descendants (transgenerational care). *Where do we choose to set relational boundaries? This notion of relational territory, it can be applied to... a tree, a bird, a butterfly, the rock, finally, mineral life, plant life, animal life, human life"* (Bastien, 01/07/2024). The aim of geobiological care is to re-establish communication, to re-establish links between occluded or neglected relational spaces, or to re-establish exchanges where modern society operates more on relations of extraction and power:

> "(...) Geobiology shows me this. I see people through how they choose the limits of this relational territory. In other traditions and peoples, the limit of the territory is simply the limit of our thoughts. And I like this vision. How does the limit of my consciousness limit my idea of territory? It's a really beautiful question. (...) That's what it shows me. I find it quite fascinating. And in any case, the geobio expertise allows me, through the initial cartography, to question this notion of relational territory" (Bastien, 01/07/2024).

Bastien sees his care work as a way of reconnecting with the different levels of a person's relational territory, leading to changes in their daily life. These changes are not always immediate: he insists on the time and repetition necessary to foster transformations. It therefore seems that the geobiologist, as a healer, does not have the power to transform in an immediate and definitive way: it is the involvement of the person in a work of repetition and duration. Do these ways of involving people in healing foster other relationships with the environment?

Figure 1. Bastien diagnoses Nicolas' building site. Source photo from the authors. June 2022

4. CULTIVATING AN ABILITY TO CARE FOR THE EARTH AND ITS ENVIRONMENT

As we can see, Bastien does not see himself as the bearer of a healing power, but rather as an advocate, a facilitator for reconnecting people with the different levels of their relational territories. This involves getting people to examine their own feelings about their environment. As a dancer and teacher of contact improvisation dance, he guides people to sharpen their perception of their surroundings. This transmission through the body is not limited to therapeutic practice. Bastien also seeks to develop cultural activities to promote environmental awareness for groups of all ages. For example, in June 2024, he led the "Dance with the glaciers" workshop as part of the Ranc'Arts events at the Parc Naturel Régional des Bauges. He combines his expertise as a geologist, which he practiced at the Office National des Forêts, with

his experience as a dance contact improvisation teacher. He proposes an exploration of the glacial landscape of the Combe de Savoie and seeks to develop a sensitive understanding of the place.

The development of this type of activity, aimed at a broad public at moderate prices, is a feature of many of the people we met during our research. In other articles, we show how Laetitia Vivot organises mountain excursions aimed at developing awareness of the mineral, plant and animal kingdoms (Revol and al., 2023), in a practice supported by a collective of therapists practicing a wide range of alternative medicines, *Terre d'étoile*. Led by the magnetizer Joel Bécot, this place is located in a working-class district of Grenoble that is the recipient of public policies aimed at alleviating poverty named "Politique de la Ville". Many initiatives are aimed at people on low incomes: low-cost advice during the Covid crisis, discovery workshops at neighbourhood festivals. Patrice Floury, a geobiologist and trainer with the Gaia association in Romans (France, 26), regularly organises free visits to sacred places. Katarina Dugast, storyteller, Qi Gong teacher and geobiologist, organises visits to vibratory sites around the city of Grenoble, combining storytelling, energetic practices and embodied exploration. Peggy Mouthon, architect and geobiologist, took part in the Sillon Biennial of Contemporary Art in Drôme with workshops on the landscape of the Saou forest. The aim of all these initiatives is to sensitise a wider public to the environment and to discover contact with the inner self through the body.

For Bastien, this reconnection with one's own capacities for sensing and feeling is essential to the development of self-care: "When you get in touch with your body, you do a lot of work to allow yourself to take care of yourself; it's already about listening to your body and not relying on an external diagnosis, it's up to you to tell yourself what you feel" (Bastien, 01/07/2024). It's easy to see why these suggestions are aimed at cultivating capacities for energetic sensitivity: by developing attention to one's own sensitivities, individuals can develop care for the different layers of their relational territories and environments.

5. CONCLUSION

In this way, Bastien, like other geobiologists, seeks to draw attention to the energetic fabric of places. We have already shown how this reading of the subtle landscape leads people to appropriate the energetic qualities of a place according to their own logic of use (Revol et al, 2023). This involves developing a sensitive relationality with the living environment at different levels of the territory. We have also shown that they reinscribe sensitive experience in an "earth/sky" polarity that carries cosmologies (Revol et al, 2023). This approach is the bearer of other relations with nature and the living, marked by other ontologies (Escobar, 2018). In her recent work, in particular *Réveiller les esprits de la Terre* (2021a) and a survey of geobiological practices in the Creuse region of France (2021b), Barbara Glowczewski points to links between the development of these spiritualities and gestures of care for the earth that we have been too accustomed to attribute either to distant populations and their exotic customs.

It thus becomes the site of a re-actualisation - as much in the mode of survival as of *reclaim* - of past and vanished minority forms of our own culture that predate the hegemony of a naturalistic ontology (Descola, 2005), and allows us to re-imagine ways of inhabiting and appropriating landscapes that gave full expression to these perceptions that fell beneath what is usually sensed and felt. This implementation of actions, rituals and gestures constitutes the reinvention of ritual care that connects humans to their environment. Here, the attempt to make these sensibilities shared by wider collectives shows us that care is not just the object of the therapist's practice: it is a broader disposition towards the environment that these practices cultivate. As such, these energetic practices of caring for places can find themselves as 'allies' in the defence and promotion of certain ecologies and can thus be considered as practices of ambient care.

6. BIBLIOGRAPHY

Barniaudy, C. & Delorme, D. (2022) L'Écospiritualité, opium du peuple ou révolution intérieure pour une transition écologique ? La Pensée écologique, 8(1). p. 31-44.

Descola, P. (2005) Par-delà nature et culture. Paris. Gallimard.

Fries, C. (2017) Géobiologie, fengshui et démarche environnementale dans l'habitat : pratiques professionnelles et représentations (Doctoral dissertation). Université de Lorraine.

Glowczewski, B. (2021a), Réveiller les esprits de la Terre, Bellevaux, Éditions Dehors, 285 p.

Glowczewski, B., Pruvost G. (2021b), Des énergies qui soignent en montagne limousine, Limoges, Maiade.

Escobar, A. (2018) Sentir-penser avec la Terre. Une écologie au-delà de l'Occident. Paris : Le Seuil.

Revol, C. ; Damian, J. ; Labussière, O. ; de Pertat, S. ; Thiollière, P. (2022) Géobio : rapport d'enquête exploratoire sur les savoirs et les pratiques de la géobiologie dans l'espace alpin. Labex ITTEM ; ANR Sensibilia.

Revol, C. ; Thiollière, P. ; de Pertat, S. ; Labussiere, O. ; Damian, J. (2023) Un contact vibratoire avec les éléments. Les cosmologies entre ciel et terre des pratiques de géobiologie. Socio-anthropologie, 48, pp.177-189 (halshs-04369965) 2019, 165-166).

Roszak, T.; Kanner, A.; Gomes, M. (1995) Ecopsychology: Restoring the Earth, Healing the Mind. Counterpoint LLC.

L28

SPATIAL AND TERRITORIAL INEQUALITIES IN FLORIANÓPOLIS/BRAZIL AND THE HOMELESS POPULATION

DESIGUALDADES ESPACIAIS E TERRITORIAIS EM FLORIANÓPOLIS/ BRASIL E A POPULAÇÃO EM SITUAÇÃO DE RUA

Elson Manoel Pereira
Doutor, Professor Titular
Centre de Recherche sur l'Espace Sonore
et l'environnement urbain (CRESSON)
Universidade Federal de Santa Catarina -UFSC
Pesquisador CNPq
Prof.elson.pereira@gmail.com

ABSTRACT

The text addresses the presence of the homeless population in Brazil and its relationship with the neoliberal city. The article explores how urban policies have shifted from the fordist city to the neoliberal city, influencing the perception of the homeless population. Since the 1980s, municipal governments have adapted neoliberal thinking, managing the city as a company. This has brought "hostile architecture" and other forms of repression to urban spaces, culminating in adverse legislation. In Florianópolis, public authorities, along with private capital, act to construct the neoliberal city, marginalizing differences and excluding this population from urban spaces. The article questions the absence of an inclusive and hospitable city in the actions of public authorities, which follow a hegemonic vision of urban development that restricts the use of public spaces.

KEYWORDS: Urban ambiances. territorial inequality. right to the city. homeless population. Florianópolis

RESUMO

O texto aborda a presença da população em situação de rua no Brasil e sua relação com a cidade neoliberal. O artigo explora como as políticas urbanas mudaram da cidade fordista para a cidade neoliberal, influenciando a percepção sobre a população em situação de rua. Desde os anos 1980, governos municipais adaptaram o pensamento neoliberal, gerindo a cidade como uma empresa. Isso trouxe para o espaço urbano a chamada "arquitetura hostil" e outras formas de repressão, culminando em legislações adversas. Em Florianópolis, o poder público, junto com o capital privado, atua para construir a cidade neoliberal, marginalizando as diferenças e excluindo essa população do espaço urbano. O artigo questiona a ausência de uma cidade inclusiva e hospitaleira nas ações do poder público, que seguem uma visão hegemônica de desenvolvimento urbano que restringe o uso do espaço público.

PALAVRAS-CHAVE: ambiências urbanas. desigualdade territorial. direito à cidade. população em situação de rua. Florianópolis

1. INTRODUÇÃO

Nos últimos anos, temos nos defrontado com um debate importante no Brasil sobre a população em situação de rua. Os números são alarmantes, em 11 anos cresceram mais de 16 vezes na cidade de São Paulo. Estima-se que a população em situação de rua no Brasil seja de 221 mil pessoas presentes em grandes e médias cidades, espalhadas por 2.354 municípios (O Globo, 2023). Apesar de termos algumas informações do ponto de vista quantitativo, o perfil dessa população ainda é pouco conhecido.

Mesmo que o pensamento neoliberal tenho sido conduzido majoritariamente na escala nacional, rapidamente os governos municipais buscaram, já nos anos 1980, adaptar o pensamento neoliberal à cidade, que deveria ser gerida como uma

empresa. Claramente vemos aqui, nas palavras de que Lefebvre (1986), a ordem distante se impondo sobre a ordem próxima. A própria arquitetura da cidade, vista a partir do mobiliário urbano, passou mesmo a definir formas de objetos contra as pessoas em situação de rua através de uma arquitetura dita hostil. Essa arquitetura hostil foi acompanhada por outras formas de repressão, objetivas ou simbólicas, que culminam hoje na elaboração de leis notadamente contra essas pessoas. Haveria o espaço urbano no neoliberalismo abolido em definitivo o valor de uso? Estabeleceu-se o reino do valor de troca? O espaço público existe apenas em função do espaço privado e de sua valorização? Quem pode usar o espaço público?

Florianópolis, Brasil, apresenta-se como um exemplo onde o poder público, ao lado do capital privado, atua como um agente central na preparação do território para a construção da cidade neoliberal, a partir de ações que reafirmam um pensamento hegemônico do capital, em detrimento da alteridade. Este artigo propõe uma reflexão sobre as ações do poder público na cidade de Florianópolis em relação a população em situação de rua, tanto em questões formais, simbólicas, como legais. Qual a relação dessas ações com o chamado pensamento hegemônico de desenvolvimento urbano? Como a visão hegemônica de espaço urbano restringe seu uso a uma parcela da sociedade e sequer reconhece a possibilidade de uma coabitação? Como se legitimam certas ações contra a população em situação de rua?

2. A CIDADE NEOLIBERAL FRENTE À POPULAÇÃO EM SITUAÇÃO DE RUA

Assume-se que neoliberalismo surge com Milton Friedman, professor da Escola de Chicago. Seu advento foi seguido de desdobramentos importantes com uma política financeirista que tem uma forte crítica ao keynesianismo e à ação do Estado na Economia. O Estado de bem-estar social foi o alvo principal das críticas neoliberais. As políticas urbanas mudaram, da cidade organizada segundo o modelo fordista de produção para a cidade neoliberal, onde as ações de bem-estar social foram, de maneira crescente, apontadas como um problema para a economia. Essas mudanças foram sentidas no espaço em termos de forma e vida urbanas. Mesmo que o pensamento neoliberal tenho sido conduzido majoritariamente na escala nacional, rapidamente os governos municipais buscaram, já nos anos 1980, adaptar o pensamento neoliberal à cidade, que deveria ser gerida como uma empresa. A postura do poder público em relação à população em situação de rua, evidentemente, também mudou, porque o espaço e o urbanismo (e suas obras) não são neutros: "a questão de que tipo de cidade queremos não pode ser divorciada do tipo de laços sociais, relação com a natureza, estilos de vida, tecnologias e valores estéticos que desejamos" (Harvey, 2012, 74).

A partir dos anos 1990, dois fenômenos, manifestamente interligados, podem ser observados: primeiro, ao mesmo tempo em que as políticas anti-keneysianistas são postas em prática, o número de pessoas em situação de rua aumenta nos países

centrais do capitalismo, e segundo, a ação do Estado muda de conteúdo. É o caso de Nova Iorque, cidade chave para se entender as políticas neoliberais e que reúne em seu centro cada vez mais desempregados e pobres, em sua maioria pertencentes a minorias étnicas, ao mesmo tempo que a classe média vai morar nos bairros periféricos. Esse fenômeno coincide com a diminuição das subvenções sociais do governo federal que as considera como uma das causas da crise financeira (Recoquillon, 2014). Para David Harvey isso seria o centro do pensamento neoliberal: "se houver um conflito entre o bem-estar das instituições financeiras e o bem-estar da população, o governo escolherá o bem-estar das instituições financeiras" (Harvey, 2007, p.8).

Desde os anos 1980, as cidades "tornaram-se cada vez mais centrais na reprodução, mutação e contínua reconstituição do neoliberalismo" (Brenner, Theodore, 2002, apud Recoquillon, 2014, p.2). A neoliberalização das cidades, através de medidas de abertura, desregulação e competição de mercados, alterou significativamente, não apenas os espaços urbanos, mas também o processo de sua produção.

Assim, após a recessão dos anos 1980, os centros das grandes cidades do centro do capitalismo estavam tomados por uma população empobrecida, que era mal vista pela classe média (branca) que demandava políticas públicas contra essa situação. O espaço público que se tornou perigoso, segunda a classe média, precisava ser reconquistado.

Assim, a gentrificação, constatada como um fenômeno urbano nos anos 1960 em Londres, duas décadas depois, é transformada em estratégia de classe visando principalmente a expulsão de pobres de certas áreas da cidade. A percepção, por parte das populações mais pobres dessa estratégia levou inclusive ao aparecimento de lutas sociais contra as intervenções estatais em certas áreas urbanas como em Montreal (quartier du Pointe Saint-Charles) ou Recife (cais Estelita).

Nessa estratégia, os mecanismos de intervenção estatal são diversos. Um dos elementos mais perversos consiste na criação de um mobiliário urbano visando impedir certos hábitos da população em situação de rua (deitar em bancos ou se abrigar sob marquises). A esse conjunto de elementos deu-se o nome de "arquitetura hostil".

No Brasil, o debate sobre a população em situação de rua tomou uma certa centralidade na imprensa e no debate público quando o padre Lacellotti, em São Paulo, destruiu elementos arquitetônicos que impediam a população em situação de rua de dormir debaixo de viadutos. Em dezembro de 2022, como reação a esse tipo de arquitetura, foi promulgada a Lei nº 14.489 de 2022 (Lei Padre Júlio Lancellotti) que alterou o Estatuto das Cidades, criado em 2001. A Lei Padre Júlio Lancellotti regulamenta a proibição de Arquitetura Hostil no Brasil.

No entanto, leis no sentido inverso têm sido propostas no Brasil, como é o caso da lei aprovada em Florianópolis, em 2024, que autoriza a retirada coercitiva de pessoas em situação de rua de áreas públicas. Assim, a oferta de casas de acolhimentos e albergues

faz parte de uma estratégia de retirada das pessoas da rua, justificada pelo incômodo às demais pessoas da cidade formal, fomentando e legitimando ações higienistas.

Assim, segundo Pierre Auriel (2021, sp), para impedir a população em situação de rua de permanecer nos espaços públicos, duas grandes estratégias são empregadas:

- Criar estruturas de alojamento e acompanhamento cujo objetivo inclui lidar com as causas dos comportamentos problemáticos: precariedade social, falta de emprego, situação administrativa irregular, dependências, transtornos mentais, etc.

- Restringir os direitos e liberdades dos sem-teto para impedi-los de perturbar a ordem nos espaços públicos. Nesse caso, não se trata mais de agir sobre as causas dos distúrbios, mas de excluir diretamente as presenças ou comportamentos problemáticos.

3. A CIDADE COMO ESPAÇO DE USO: CUIDADO AMBIENTAL

Qual alternativa à cidade do neoliberalismo? Em 1968, Henri Lefebvre publica o livro o Direito à Cidade trazendo uma reflexão sobre a forma de habitar o espaço urbano. Para ele, "o urbano e o cotidiano estão indissoluvelmente ligados e entram na reprodução das relações de produção, na reprodução das relações sociais." (Le Brun, 2024, p.2). O espaço concebido pelo estado neoliberal (por seus intelectuais orgânicos do urbanismo) reflete seu pensamento sobre a (não) utilização dos recursos para as necessidades sociais e a construção de espaços que excluem os considerados indesejáveis.

Lefebvre afirma que a cidade capitalista empurra para os espaços periféricos todos aqueles que não participam dos privilégios políticos. O objetivo da cidade neoliberal seria o de minimizar ou até mesmo eliminar dos espaços públicos das cidades todos aqueles que incomodam, principalmente aqueles que dormem em bancos, armam uma barraca para dormir ou simplesmente perambulam por esses espaços (Le Brun, 2024).

No entanto, um outro tipo de espaço emerge das contradições próprias do capitalismo: "a ideia de um espaço social elaborado, complexo e bem-sucedido, o das práticas sociais, em uma palavra: um espaço apropriado e não apenas dominado pela técnica e pelo poder político." (Lefebvre, apud Le brun, 2024, p.9).

O Direito à cidade seria o direito à vida urbana, que diz respeito à apropriação, conceito chave de Lefebvre. Pela sua etimologia, a palavra "apropriação" expressa muito bem essa dimensão humana buscada por Henri Lefebvre. O verbo latino "appropriare", derivado de "ad proprius", transmite a ideia de tornar algo próprio.

Propondo um direito à apropriação, Henri Lefebvre deseja contrabalançar os excessos da cidade liberal. Ele espera que novamente a cidade possa refletir os residentes, que possa ser um suporte para a expressão habitante, mesmo daqueles em situação de rua.

Contemporaneamente, no livro "Aménager sans exclure, faire la ville incluante", Mathieu Berger fala dos conceitos de cidade inclusiva, cidade hospitaleira, Cidade 'Friendly'. O autor afirma que "inúmeras de falhas de coesão social estão relacionadas ao espaço que compartilhamos (ou não compartilhamos)" (Berger, 2018, p. 30), corroborando a tese de que os espaços produzidos pela sociedade a afetam dialeticamente, aproximando os conceitos de justiça social e justiça espacial e chamando à responsabilidade os urbanistas e os responsáveis pelas políticas públicas relacionadas ao espaço urbano. Mesmo que não conceba uma determinação espacial, o autor "admite que as qualidades sociais dos ambientes urbanos representam uma condição de base, uma condição necessária (logo fundamental) de toda ação ou política pública que vise melhorar de maneira significativa as condições de vida social nas cidades"(Berger, 2018, p. 30). O autor questiona, de maneira política, se não seria possível, dentro da cidade liberal (aqui uma diferença central em relação a Lefebvre que sustenta a necessidade de superação da cidade liberal), ir além da limitação da exclusão e tentar de maneira afirmativa e proativa a inclusão espacial.

Ora, vimos que a cidade liberal criou mecanismos de exclusão e até uma arquitetura hostil contra certa parte da população. Para Berger (2018), um design inclusivo seria possível, mas com repertórios normativos potencialmente concorrentes: inclusividade, hospitalidade e de caráter friendly. Sem entrar em profundidade na reflexão do autor, parece-nos importante resgatar que, para ele, a cidade inclusiva "implica uma forma de ação e, de outra parte, visa mudar um estado de coisa", enquanto a hospitalidade "pode ser ao mesmo tempo um estado de espírito, um humor, uma tonalidade uma atmosfera que podem ser percebidas por aquele que chega" (Berger, 2018, p. 32). Desta forma, "a vocação de uma cidade inclusiva é de agir sobre seus espaços, seus territórios e suas populações a fim de reduzir as desigualdades. O Desafio para uma cidade hospitaleira seria o de se mostrar apta e disposta a receber aquele que é novo, exterior ou estrangeiro" (Berger, 2018, p. 33). A abordagem friendly do ponto de vista da necessidade de ação, estaria entre a hospitalidade e a inclusão. Do ponto de vista do reconhecimento das desigualdades, estaria mais próxima da cidade inclusiva, embora diferente pois, a abordagem friendly pressupõe o conhecimento prévio daquele ou daquela que será acolhida: "os projetos friendly, iniciativas, politicas, etc, devem identificar seus amigos: mulheres, homossexuais, idosos, pessoas com mobilidade reduzida, turistas, crianças, cachorros, etc. Eles [os projetos] se referem a problemas de uso ou acesso já conhecidos e para públicos já identificados como tais" (Berger, 2018, p. 33).

Assim, a cidade hospitaleira acolhe, sem transformar. A cidade friendly se prepara para públicos escolhidos (seus amigos). "A cidade inclusiva, ao contrário, visa a inclusão geral e universal"(Berger, 2018, p. 34).

O Direito à Cidade preconizado por Lefebvre (1968) seria não apenas ter direitos (mesmo que fundamentais) na cidade, mas também (e conjuntamente) habitar uma outra forma de cidade. Ocupar o espaço a partir de seu uso e não de seu valor. Nele, o habitante em situação de rua poderia coabitar com a população residente. Mas, para isso, a cidade teria que reconhecê-los como legítimos habitantes, ou melhor, cidadãos. O que Berger (2018) propõe com a construção da cidade inclusiva, se aproximaria daquilo que Lefebvre chama de heterotopia: a construção de espaços numa lógica diferente da lógica neoliberal.

4. A ILHA DA MAGIA

Florianópolis, capital do estado de Santa Catarina, apresenta o quarto maior valor do metro quadrado construído entre as 27 capitais brasileiras. O município situa-se predominantemente na ilha de Santa Catarina, lugar de grande apelo turístico e de crescente imigração interna no Brasil, um território em disputa pelo capital. Desde os anos 1980, o turismo, a construção civil e mais recentemente a indústria ligada à tecnologia têm alinhado seus interesses no sentido de atrair investimentos, buscando o crescimento do município, de forma pretensamente sustentável. Há também uma clara aproximação entre os interesses desses capitais e os governantes municipais que se sucederam ao longo das últimas décadas, que buscam, por seu lado, preparar o território para acolher esses investimentos, seja na forma de melhoria da infraestrutura, adequação das leis, filtros contra certos usos e ocupações não desejadas pelo capital ou mesmo do marketing urbano que reforça os atributos naturais e enaltece de forma seletiva certos índices de qualidade de vida. Nas últimas décadas, o capital privado tem se organizado de forma institucional de modo a buscar a hegemonia na forma de conduzir os destinos da cidade. Como estratégia, seus dirigentes, alinhando capital privado e poder público, têm cunhado alguns termos como "Ilha da magia", "Capital da qualidade de vida" e "Silicon island", que "são algumas das narrativas criadas para promover a cidade ao longo das últimas décadas, no intuito de atrair turistas, novos moradores ou investimentos econômicos" (Lenzi et al., 2023, p. 3). Evidentemente, esses termos dizem respeito apenas a algumas partes da cidade e parte da população, numa espécie de metonimização do discurso sobre a cidade, onde a parte toma o lugar do todo. Segundo Lenzi (2021, p. 45):

> O city marketing de Florianópolis evoca um estilo de vida e formas próprias de viver nessa cidade, passando a mensagem de que, em Florianópolis, se vive melhor do que em outros lugares. Com base em uma leitura parcial da cidade, reinventam seus conteúdos e divulgam um cenário sedutor.

Este discurso faz parte da tentativa da elite local de exercer sua hegemonia através de um conjunto estruturado de pensamento político, econômico e cultural, que privilegia certos usos do espaço urbano e recrimina outros. Segundo Andrade e Pereira (2021, p. 18),

A partir de 2008, ano em que foi publicada a agenda de desenvolvimento Floripa 2030, o documento tem funcionado como "pensamento estruturado" subjacente às estratégias e ações dos integrantes públicos e privados da máquina de crescimento em Florianópolis, ajudando a orientar e coordenar suas ações. A partir da análise da agenda Floripa 2030, mas não somente deste documento, é possível considerar que a ONG FloripAmanhã e os últimos governos de Florianópolis têm atuado como uma máquina de crescimento, utilizando em boa medida as estratégias delineadas na agenda de desenvolvimento Floripa 2030.

Esta visão de cidade que privilegia uma parte da população e exclui outra, é antiga, embora sua organização orgânica seja recente. A elite econômica e política de Florianópolis já atuava nessa direção em séculos passados na capital catarinense.

No final do século XIX, Florianópolis não era uma cidade rica, mas um comércio ligado ao porto começava a criar uma elite econômica. A escravidão foi proibida no Brasil a partir de 1888 e os senhores não tinham mais a obrigação de cuidar de seus escravizados. Do ponto de vista arquitetônico, alguns sobrados passaram a substituir as casinhas de origem colonial na área próxima ao Mercado Público e Alfândega. Do ponto de vista territorial, começava uma certa separação social, pois, na impossibilidade de coabitar com seus antigos senhores, os pretos libertos procuravam outros lugares para morar. Assim surge, atrás da catedral da antiga Desterro, um cortiço chamado Cidade Nova. Era uma área considerada "fora da cidade" e com pouco valor econômico. Ali os pobres passaram a viver após a abolição da escravidão. No entanto, uma nova dinâmica urbana, na primeira década do século XX, levou a alguns moradores ricos a ocupar com chácaras áreas ao norte do centro tradicional. Esta expansão vai encontrar "em seu caminho" o cortiço Cidade Nova. Por pressão da elite econômica, vai ocorrer então, a demolição do cortiço pelo poder público, que construiu no local alguns elementos símbolos da república nascente, como a Assembleia Legislativa e a praça do Congresso (hoje praça Pereira Oliveira). A população pobre será então "expulsa" e passa a habitar a parte leste do rio da Fonte Grande (depois rio da Bulha), em novos cortiços. Em um terceiro ato, nos anos 1920, uma nova intervenção higienista, agora impetrada pelo então Governador Hercílio Luz, através da construção de uma avenida, vai expulsar novamente a população pobre e preta do espaço urbano de Florianópolis, que vai passar a ocupar os morros do entorno da parte central da capital catarinense. A tese de Santos (2009), relata com precisão e detalhes esses movimentos da população empobrecida em Florianópolis. Sobre esses casos específicos, o autor relata: "Como havia ocorrido no início do século XX com a demolição do antigo [cortiço] Cidade Nova para construção de prédios republicanos e da Praça do Congresso, o mesmo ocorreu ao longo da Avenida do Saneamento" (p. 489).

Em outra tese de doutorado, Vaz (2016) descreve um caso mais recente de uma ação pública que procurou excluir parte da população do pleno direito à cidade, a partir da reforma da Praça Celso Ramos, localizada numa área urbana valorizada

de Florianópolis. Falando da Praça antes da reforma, Cunha (2002, apud Vaz 2016, p.298) afirma que

> no decorrer de sua trajetória, até o final da década de 1990, a praça era apropriada por diferentes grupos de usuários. No final da manhã, mães e pais do entorno próximo com suas crianças e, no cair da tarde, mães e crianças dos morros do entorno. No final do dia, a praça também era usada como campo de futebol, mesmo que não houvesse um espaço para essa prática em seu desenho original.

No final do século XX, no entanto, o entorno da praça Celso Ramos sofrera uma valorização imobiliária expressiva e a população agora ali residente, não desejava mais compartilhá-la com os meninos pobres que a utilizavam como um pequeno campo de futebol e demandaram então à prefeitura, uma reforma daquele espaço, o que foi realizado:

> Além de um projeto cujos traços estejam afins às linguagens paisagísticas contemporâneas, a possibilidade de apropriação advém não apenas das linhas projetais, as quais, muitas vezes, podem coibir diversos usos, como no primeiro momento da praça, quando se formava um campo de futebol a partir do uso da área vazia, e, no segundo momento, com a locação de canteiros, coibindo a prática dos jogos com bola. A despeito do desenho original, no qual havia a possibilidade de apropriações que ultrapassassem as previstas, as duas reformas seguintes coibiram determinadas práticas e usos (Vaz, 2016, p.298).

Desta forma, como afirma Abib (2014), as intervenções estatais se diferenciam entre as que proporcionam inclusão e as que geram exclusão, mas ambas se constituem como estratégias biopolíticas de controle social.

Em 2022, o jornal UOL, numa reportagem sobre Padre Júlio Lancellotti, aponta Florianópolis com uma cidade que desenvolve a arquitetura anti pobres. Em um perfil numa rede social, o referido padre mostra um " banco de um ponto de ônibus em Florianópolis feito com ferros em forma de cilindro e espaçado. A estrutura também impede que alguém se deite. Nessa mesma foto, aparece um morador de rua dormindo no chão, em cima de um papelão" (UOL, 2022).

Se a reforma da praça Celso Ramos constitui uma medida localizada de exclusão do espaço público, a colocação de bancos em abrigos de ônibus na década de 1990 foi um exemplo claro de arquitetura hostil que se reproduziu por todo o território do município. Ambas denotam ações alinhadas com o pensamento neoliberal.

Portanto, a história de Florianópolis mostra ações e mesmo políticas que vão na direção da exclusão de certos grupos sociais, numa clara visão de um higienismo social próprio dos séculos XIX e XX e que continua com grande perversidade no século XXI. Seria a antítese da cidade que cuida.

5. A FORMA CONTEMPORÂNEA DE FLORIANÓPOLIS HIGIENIZAR O ESPAÇO URBANO

A sociedade brasileira criou uma sólida legislação para proteger a população em situação de rua, com destaque para a Lei 14.821 que institui a Política Nacional de Trabalho Digno e Cidadania para População em Situação de Rua (PNTC PopRua).

Não obstante, a elite local de Florianópolis parece permanecer com a mesma visão do início do século passado, embora agora justificada por princípios neoliberais. Em 14 de fevereiro de 2024, a Câmara de Vereadores de Florianópolis aprovou um projeto de lei que prevê a internação compulsória de pessoas em situação de rua que tenham transtornos mentais ou dependência química.

Tal lei, aprovada por ampla maioria dos vereadores, é contrária ao entendimento do Supremo Tribunal Federal, que, em 2023, proibiu estados e municípios de removerem e transportarem compulsoriamente pessoas em situação de rua. A Câmara de Vereadores igualmente ignorou pareceres da Defensoria Pública da União, da Defensoria Pública de Santa Catarina e do Ministério da Saúde que indicaram direção diferente na abordagem da população em situação de rua em Florianópolis.

As defensorias públicas da União (DPU) e a de Santa Catarina (DPSC), em um documento de 16 páginas elaborado conjuntamente, com base na reforma psiquiátrica existente desde 2001 no Brasil, a qual adota a internação involuntária como medida excepcional, recomendaram a suspensão do projeto de lei. Segundo as defensorias, as medidas propostas pela Prefeitura de Florianópolis violam a legislação federal por instituir internações sem esgotar os recursos extra hospitalares e sem oferecer tratamento integral ambulatorial em meio aberto. No documento, os órgãos pediram que fosse priorizado o "tratamento ambulatorial às pessoas em situação de rua em sofrimento mental ou abuso de substâncias entorpecentes" (DPU, DPSC, 2024, p.13).

O Ministério da Saúde, por sua vez, reafirma a questão da excepcionalidade do internamento e destaca que "o internamento não deve ser concebido como mais uma forma de discriminação de grupos vulneráveis" (Ministério da Saúde, 2024, p. 7).

Portanto, longe de buscar transformar a cidade num espaço inclusivo, o poder público de Florianópolis exclui parte da população do convívio urbano. É preciso lembrar que, como afirma Gomes (2006), pensar pessoas em situação de rua é necessariamente pensar a cidade e o habitar as ruas. Segundo o autor, é possível compreender o habitar as ruas de duas formas: a rua como espaço de interação, encontro e alternativa de vida para algumas pessoas; ou a rua como espaço de abrigo e refúgio, como uma casa. O espaço da cidade configura-se como local de sobrevivência e vivência cotidiana para essas pessoas. No lugar de retirar as pessoas dos espaços públicos, uma cidade inclusiva deveria pensar a estrutura urbana e constatar como ela é insuficiente para a compreensão dos modos de viver das pessoas em situação de rua. O planejamento urbano precisa considerar a existência

das pessoas que vivem nas ruas, na busca do pleno direito à cidade, valorizando o valor de uso do espaço urbano.

A aprovação da referida lei em Florianópolis, sem considerar os aspectos relacionados ao seu não alinhamento com leis federais, denota a visão hegemônica neoliberal das elites políticas e econômicas locais.

6. CONSIDERAÇÕES FINAIS

Lefebvre (1986) alerta-nos que o espaço não determina as relações sociais, mas, por outro lado, não é um simples suporte ou palco dessas relações. A sociedade constrói seus espaços que falam muito dela, de sua constituição e por outro lado esses espaços condicionam a própria sociedade. As administrações locais, alinhadas com o neoliberalismo, têm buscado preparar suas cidades para receberem o capital excedente por meio de projetos e ações que constroem espaços para o capital privado e sua rentabilidade, evitando todo uso não desejável. Se isso não é exclusivo da atual fase (neoliberal) do capitalismo, as ações sobre o espaço público atual têm se revestido de certa perversidade contra a população em situação de rua.

Florianópolis desenvolveu, através de sua elite econômica e política, ações e mesmo políticas que visaram a um certo tipo de higienismo social no final do século XIX e início do século XX, numa espécie de haussmanianismo tropical, com menos recursos financeiros que o original de Paris. Foi o caso da destruição do cortiço Cidade Nova ou dos cortiços atingidos pela construção da avenida do Saneamento nos anos de 1920. Destruição/construção que levou os pobres da cidade a seguirem uma espécie de êxodo urbano, na procura de espaços (ainda) não requisitados pelo capital.

O período hegemônico do neoliberalismo apontou para Florianópolis suas flechas globais. Também na capital de Santa Catarina projetos e ações do poder público foram idealizados em favor do capital privado e ações de marketing urbano que procuram vender a imagem de uma parcela do território com alta qualidade de vida como sendo um território diferenciado em sua totalidade. Ao mesmo tempo, a cidade convive com uma população empobrecida que não é alvo da mesma atenção do poder público em termos de políticas sociais, e é cada vez mais escorraçada dos espaços formais da cidade, corroborando a afirmação de David Harvey: "vivemos num mundo onde os direitos de propriedade privada e a taxa de lucro se sobrepõem a todas as outras noções de direito" (Harvey, 2012, p.73).

A lei de internação involuntária, proposta pelo executivo municipal e aprovada pela Câmara Municipal de Florianópolis, aponta para uma visão de cidade excludente, que não reconhece qualquer possibilidade de uso do espaço público pela população em situação de rua. Florianópolis parece estar longe de construção de políticas de inclusão com a disponibilização de equipamentos e serviços destinados a essa população, como banheiros públicos ou um mobiliário urbano que não lhe seja hostil.

A cidade neoliberal não reconhece a alteridade e não tem a intenção de desenvolver nenhuma política de inclusão para aqueles que sofrem de maneira insofismável as consequências da política econômica atual.

7. BIBLIOGRAFIA

1. Abib, L T (2014). Crônicas urbanas: Consultório na rua, população em situação de rua, clínica menor e outras histórias (dissertação de mestrado). Universidade Federal do Rio Grande, RS, Brasil.

2. Andrade Neto, G e Pereira, EM (2021). Capital e crescimento urbano em Florianópolis: atores e conteúdo de um pensamento estruturado. Anais da ANPEGE.

3. Auriel, P (2021). L'état, les sans-abris et l'espace public. 10 novembre. *https://dieses.fr/letat-les-sans-abris-et-lespace-public*.

4. Berger, M (2018). Ville Inclusive, ville hospitalière, ville Friendly: quelques dinstintions. En: Badaroux, J et al. Aménager sans exclure, faire la ville incluante. Le Moniteur.

5. Brasil. Lei nº 14.489 de 2022.

6. DPU, DPSC (2024). Recomendação Conjunta n. 01/DRDH-SC/DPU – NUCIDH/DPE-SC.

7. Gomes, RCM (2006). Gente-caracol: A cidade contemporânea e o habitar as ruas (dissertação de mestrado). Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brasil.

8. Harvey, D (2007). Neoliberalism and the City. Studies in Social Justice, Vol. 1, n° 1, pp. 2-13.

9. _____ (2012). O Direito à Cidade. Lutas Sociais, São Paulo, n.29, p.73-89, jul./dez.

10. Le Brun, P (2024). La production de l'espace.

11. Lefebvre, H (1968). Le Droit à la ville, Paris : Anthropos.

12._____ (1986). La production de l'espace. Paris: Anthropos.

13. Lenzi, MH (2021). Das imagens, a ausência: projeções do tempo e fragmentos do espaço nas imagens de Florianópolis do início do século XXI. Curitiba: Editora Appris.

14. Lenzi, MH et al. (2023). De "sol e mar" a "ilha do silício": narrativas midiáticas na promoção de Florianópolis (1975-2020). Revista brasileira de estudos urbanos e regionais, v. 25.

15. Ministério da Saúde (2024). Parecer técnico Nº 3/2024-CGDDH/DESMAD/SAES/MS.

16. O Globo (2023). Ministério apresenta plano para população em situação de rua; veja pontos. *https://g1.globo.com/politica/noticia/2023/12/11/ministerio-apresenta-plano-para-populacao-em-situacao-de-rua-veja-pontos.ghtml*.

17. Recoquillon, C (2014). Néolibéralisation et (in)justice spatiale : Le cas de la gentrification de Harlem. Justice spatiale, Spatial justice, n.6, junho.

18. Santos, AL (2009). Do Mar ao Morro: a geografia histórica da pobreza urbana em Florianópolis. Tese de doutorado em Geografia apresentada ao programa de pós-graduação em Geografia do Departamento de Geociências da Universidade Federal de Santa Catarina.

19. Vaz, MJM (2016). A produção do espaço público em Florianópolis: As praças e a vida urbana. Tese de doutorado em Geografia apresentada ao programa de pós-graduação em Geografia do Departamento de Geociências da Universidade Federal de Santa Catarina.

20. UOL (2022). Padre Júlio Lancellotti: o que é a arquitetura 'antipobres' denunciada por religioso em São Paulo. *https: noticias/bbc/2022/01/06/padre-julio-lancellotti-o-que-e-a-arquitetura-antipobres-denunciada-por-religioso-em-sao-paulo.htm?*

L28

FACING THE COVID-19 CRISIS: SPATIAL CARE IN HOSPITABLE CITIES

ENFRENTANDO A CRISE DA COVID-19: CUIDADOS ESPACIAIS EM CIDADES HOSPITALARES

Emmanuelle Cheyns
Researcher
CIRAD, UMR MoISA, Univ Montpellier, CIHEAM-IAMM, INRAE, Institut Agro, IRD, Montpellier, France
emmanuelle.cheyns@cirad.fr

ABSTRACT

The Covid-19 health crisis was unique in that we were all vulnerable. We could transmit the virus, be carriers of it. Our relationships were affected, particularly those that took place in public spaces. Taking care of others also meant avoiding even approaching them. On the other hand, the health crisis was also a period marked by inventiveness in finding new uses of public space. The question of hospitality, which involves welcoming people and preparing the environment to suit everyone, suddenly became urgent. In this article, I discuss the results of a study conducted in two city neighborhoods that are emblematic of the way in which uses and ambiances contribute to hospitality and care. These results contribute to thinking about the positive relationship between care and space in terms of variations in the qualities of ambiance in public spaces and in familiarizing the inhabitants with gestures and uses. They also invite us to place the ambient conditions of rest in the city at the heart of care.

KEYWORDS: Care. City. Hospitality. Ambiance. Public space. Crisis. Covid-19

RESUMO

A crise sanitária da Covid-19 foi única porque éramos todos vulneráveis. Poderíamos transmitir o vírus, ser portadores dele. Nossos relacionamentos foram afetados, principalmente aqueles que aconteciam em espaços públicos. Cuidar dos outros também significava evitá-los. No entanto, a crise sanitária foi também um momento de grande inventividade para novos usos do espaço público. A questão da hospitalidade, que é receber bem e preparar o ambiente para agradar a todos, foi levantada com urgência. Neste artigo desenvolvo os resultados de dois bairros e praças emblemáticos da forma como os usos e ambientes contribuíram para a hospitalidade e o cuidado. Abordo também as práticas de atenção e cuidado com os ambientes, vivenciadas e moldadas cotidianamente pelos habitantes. Esses resultados contribuem para pensar a relação positiva entre cuidado e espaço em termos de variação na qualidade das ambientações em espaços públicos e familiarização de gestos e usos.

PALAVRAS CHAVE: Cuidado. Cidade. Hospitalidade. Ambientes. Espaço público. Crise. COVID-19

1. INTRODUCTION

Spring 2021, Montpellier (France). It's lockdown. In a neighbourhood called '*Méditerranée*' nestled behind the train station, along the route she takes on her daily walk, Annick stops at the "chat corner". Here, on the street corner, her neighbors have opened the windows that give onto their balconies so they can chat to each other. Chat leads to conversations with people passing through the neighborhood, each one stopping for a few moments along their authorized daily kilometer. Thresholds and doors open onto public spaces in a context where everything else invites residents to keep their distance from other people.

"Around here, everyone who wanted to, went out onto their little balcony with a cup of coffee or tea. As this is a street corner, several balconies are in sight of one another. When it all started, there were only two or three of us… We did know each other, but not all that well. Then we decided to 'meet' at 11 o'clock each morning. And because I live a bit further away, I walked here from my place bringing my authorization with me and just sat here with my coffee. We covered the four corners. And how we talked! We talked about everything…" (Commented-walk with a resident, 2021).

Figure 1. One of the facades of the 'chat corner'.
Source: E. Cheyns/L. Metreau, 2021.

From a scientific perspective, the Covid health crisis offered an unprecedented opportunity to identify the situated practices and environments that lead to greater resilience. In cities of flows that value mobility, inhabitants not only experienced deceleration of their rhythms, but also discovered the nooks and crannies of their city, a quieter sound ambiance (conversely to overpowering "saturated" sound ambiance, Antonioli et al., 2020), experienced gestures of appropriation and care towards their neighborhood. The unprecedented urban ambiance and the change in the rhythms of our mobility opened our senses to new sensory experiences of the city. How did this new ambiance contribute to the city's hospitality and care during the pandemic?

What material arrangements and uses of public space made it possible to take care of the city and enabled these uses to find their place in the city?

These were the questions we wanted to answer in the UrbaSens research project implemented in 2021 in Montpellier[1], a city located on the Mediterranean coast in the South of France. The method we chose was based on photographs and sound recordings made in urban situations that recount the materiality, the different kinds of ambiance and uses (Chelkoff, 2001) in five city squares, during and after lockdown. We also undertook commented walks (Thibaud, 2001) with inhabitants within the authorized radius of 1 km from their home (limited authorization given during the first lockdown), in order to recapture the experiences (ambiances, gestures, uses) of successive lockdowns.

This article presents the results concerning two out of the five neighborhoods and squares that are emblematic of the way in which uses and ambiances have contributed to hospitality and care[2]. I also address the practices of attention and care towards ambiances during this period, as experienced and shaped on a daily basis by the inhabitants.

2. MEDITERRANEAN NEIGHBORHOOD: NEW CENTRALITIES
2.1 Opening the thresholds

In the neighborhood called *Méditerranée*, the porosity and expansion of thresholds (windows, a garage or store threshold, among others), as well as the extension of home life into public space (including through the revegetation of sidewalks), in gestures of care, helped provide emotional comfort. The neighborhood square, which is usually occupied by terrace cafés, opened up to new centralities and gestures of care toward others and Nature. Benches (re)emerged as places to exchange greetings, to sit down and rest and take care of vulnerable people, in a square whose inhabitants multiplied familiar gestures signaling appropriation of a public space.

In this neighborhood, the people we met suffered little from the lockdown. For them, the meetings and the solidarity between neighbors, as well as new soundscapes and decelerated rhythms, were a remarkable experience.

On *Place François Jaumes* (the main square in this neighborhood), the closure of the three terrace cafés due to the health crisis restrictions, gave way to the sounds of village life. The passage of the street cleaning vehicles, the postman, delivery pushcarts, the singing of the birds punctuated and ritualized the occupation of the

---

1 The project was funded by MSH-SUD (See more details: *https://www.mshsud.org/projets/urbasens/*).

2 Data collection was done between February and July 2021 by Emmanuelle Cheyns and Lucas Metreau (Master in urban design).

square. Yves, the owner of a café called *La Planche à pain* (Breadboard), decided to stay open, to keep in touch with his regular customers by selling takeaway coffee and snacks. The six public benches were there for residents who came to take a break, drink a takeaway coffee, meet others or simply relax. During the first lockdown, even retired residents who were born in the neighborhood but had never met before, now met each other there for the first time. The "bookshelf"[3] and the planters placed at the foot of the acacia trees, maintained by the inhabitants themselves, became a meeting point and the scene of intrigues between the inhabitants.

In this neighborhood, lockdown was characterized by an extension of home life into public space, the exteriorization of family life into the square, into the streets, which creates bonds and reassures. Some residents came down into the square bringing their cups of coffee with them from home, sometimes in slippers. The street became an extension of the children's playroom. One resident put up a wooden sign saying 'Warning! Children at play!' at the entrance to the street to warn the occasional vehicle owner to drive carefully (Figure 2). During the first lockdown, a garage threshold was used to set up a table on the sidewalk to bring neighbors together for an aperitif every evening. A piano was set up in the street for a neighborhood concert. A family put their camping table up on the sidewalk for lunch. Annick put her coffee pot out on her window sill to serve her friends.

Figure 2. A wooden road sign built by local residents warning that children are playing in the street. Source: E. Cheyns/L. Metreau, 2021

The climbing plants growing along sidewalks and on the facades of the houses planted by the inhabitants flourished to the point of concealing a street lamp and a stop sign (Figure 3). Building doors were left open. The sounds of life in the apartments and in the street intermingled.

3 Shelves containing books put there by inhabitants for anyone to read and exchange. In French: Arbre à livres.

Figure 3. Revegetation by local inhabitants.
Source: E. Cheyns/L. Metreau, avril 2021.

On the street named *Méditerranée* some "essential businesses" that remained open put a chair on the sidewalk in front of their doorstep so their clients could be seated while waiting.

The opening and personalization of thresholds enabled the extension of "home space" into public space, which made people feel safe thanks to the presence of others (Breveglieri, 2018; Gamal Said, 2020). The care given to Nature and to others struck the inhabitants in particular. The greening of streets and sidewalks gained momentum during successive lockdowns with concern growing for both fauna and flora.

> *"The first lockdown, you couldn't hear anything, nothing at all.*
> *You don't want noise, and when there's no noise, you want a little noise, but not too much. We really discovered the birds in our neighborhood, which we hadn't heard before. Thanks to the flowering, biodiversity has taken root in all the plants. There were families of birds there that we hadn't heard before. But as we could only hear them, it became a real topic of conversation, and a subject for walks too, because we went to see where there were birds.*
> *To discover the birds, we had to get out a bit early in the morning. We had time, that's all we had to do. Now we've identified places where we're very careful. We're careful. We say to ourselves: "Oh yes, there are birds there. I'm not cutting too much because they've settled in. And we're careful when we prune". We were the ones who created this vegetation. We hadn't understood everything. We hadn't understood that there were living creatures in the vegetation. Magnificent!"* (Commented-walk with a resident, 2021).

Public benches in the square recovered their central role as a place where we get news about regulars who happen to be absent, but also keep ourselves informed about vulnerable people, for whom taking a break on these benches became a ritual. The fact people were opening thresholds led residents to check on those who had not opened their shutters. Likewise, food solidarity became anchored in thresholds. Neighbors treated each other to meals during the lockdown, which was often an excuse to exchange some meals through the windows and get news of and care for others. The "chat corner", which began on a couple of balconies on a street corner, was also the starting point of a food supply initiative to help students.

2.2 Making public benches visible

I was particularly interested in the benches on *Place François Jaumes*. During the lockdown, the benches in this square were occupied starting in the early morning; they became the focal point of the square. The benches were used for reading, sunbathing, working, making a phone call, resting, and meeting others: a place for local residents to get together in the morning for a coffee break, with a cup of coffee brought from home, and at midday for lunch. A place to exchange greetings, to get news about people who aren't there. A place where vulnerable people can be cared for, and where older people can sit down and take part in public life.

Figure 4. Public benches Place François Jaumes during the lockdown.
Source: E. Cheyns/L. Metreau, 2021.

The benches let you choose between sun and shade, one bench allows you to catch the first rays of spring sunshine, another to sit under the filtered shade of an acacia tree, yet another is close to a wall that is still cool at midday when the sun is getting stronger. The benches also face one another, but are sufficiently far apart that you have to raise your voice a little, speak just loudly enough so that even casual passers-by feel free to join the conversation, which is obviously not intimate.

Benches are also places where you can hear sounds you weren't aware of before the lockdown. The chirping of birds perched on the branches of the acacia trees, the sound of the postman closing a door, the sound of a regular customer entering the *Planche à pain* to pick up a coffee, of a delivery cart being pushed by hand to a business in *Méditerranée* street, the sounds of ephemeral conversations of passers-by crossing the square and of those gathered in front of the "bookshelf", the sound of a child's scooter.

After May 19, when the terraces on the square opened again, these same benches would be deserted in the lunch hour, because the terrace cafés attract a considerable number of new passing clientele, they occupy the physical and sound space, and

overlook the benches. Nevertheless, the experience of lockdown left its mark. A year later, local residents were still coming there, early or later in the day, bringing small folding camping chairs to form a square with two facing benches to sit and have a coffee or an aperitif with friends and neighbors. Similarly, the residents are still trying to keep the bookshelf and communal planters on the square alive; they have negotiated to keep a space free in front of the bookshelf, a space not to be encroached upon by tables belonging to the terrace cafés, to enable continued free use of the square. What counts is the variety of uses of the public square, the free occupation of the space, and taking care of vulnerable people.

3. PLACES THAT BRING PEOPLE TOGETHER

The third lockdown was also characterized by reoccupation of places whose hospitable atmosphere invites people to get together, to 'vibrate together'. St Roch square and the steps of church are shaped like an amphitheater and provided a unique place for people to meet and rest. Its uniqueness is due to the profound modification of the former uses and ambiances and thanks to design of the physical environment that is both enveloping and resonant.

The steps of the Saint Roch church are emblematic of the period when groups of people formed and reformed, when public spaces were freely appropriated, where the shapes and atmospheres of the place become hospitable. In April-May 2021, beginning at noon, the church steps were occupied by people who gathered to have lunch, read, get some fresh air, nap, listen to music, people watch, play chess, rest, meet.

Figure 5. Lunch and rest time during lockdown on the steps of Saint Roch church
Source: E. Cheyns, 2021.

As the steps form an amphitheater, they allow a reciprocal gaze between the "spectators" on the steps and "passers-by" in the forecourt, between those who stop and rest and those who keep moving. The usual hubbub that reigned in the terrace cafés on the forecourt and in the streets nearby, had given way to the sounds of a lived-in place: the sound of someone playing a piano in an apartment, postmen making their deliveries, a building door quietly closing, conversations on the steps, the sound of construction work underway in an apartment on *rue des Sœurs Noires,* the cooing of pigeons, the passing of a bicycle, church bells. The sound effect of resonance (Augoyard & Torgue, 2006) of the many conversations on the steps amplifies the vibratory atmosphere. More than public intimacy, the place responds to a fundamental need for public encounter, to "vibrate together", in this time of "social distancing".

Initially arranged in groups dispersed across several levels of the steps, which function as stands, the groups merge as the steps fill up, favoring chance encounters. The place is emblematic of a sense of shared community: *"We don't really know who's in the group with whom, but we are all looking in the same direction"*. For some, the steps help get through the stressful situation caused by lockdown and provide a *"dose of normality"*. For others, it is a demonstration of micro-resistance to body guidance. Face masks remain in people's bags, people feel free to sit on non-normative public seating. All around the streets are quiet, all the café-restaurants are closed. As time passes, bodies relax back, supported by their forearms, feet are bare, some people simply lie down on a step for a nap. The sound ambiance starts to fade at 3 o'clock, crescendos again at 5 and continues until curfew, aperitif time. This is when the sun's rays on the steps shift and the users of the square follow its movement to profit from the last rays of the day.

The users of the square feel safe enough to lie down and take a nap on one of the lowest steps near the forecourt (Figure 6). Bringing along a pet bird, a home-brewed mug of coffee, slipping off one's shoes, relaxing, extending the lunch break (have a siesta, play games, watch passers-by aimlessly crossing the square), are signs of ease and of feeling comfortable plus the sense of security users felt there during the lockdowns.

Figure 6. Ease during rest time, on the steps of Saint Roch church during lockdown.
Source: E. Cheyns/L. Metreau, 2021.

Before and after the lockdowns, the center of energy was focused on the forecourt and the nearby streets with their many terrace cafés, with another type of occupation. Following the lockdown, a few passers-by still dropped by in their lunch break to pick up a takeaway meal, but they moved more quickly, and were fewer in number. The artisans' vans stayed parked at the foot of the steps for several hours, while delivery men on bicycles or scooters waited for orders.

4. CONCLUSION

The two neighborhoods recount the effects of sound de-saturation and the slowing down of mobility, as well as the wide variety of uses: the effect is to open up the space to encounters and care.

These observations contribute to thinking about the positive relationship between care and space in terms of variation in the quality of ambiances in public spaces and familiarization with gestures and uses. They also invite us to place the ambient conditions of rest in the city at the heart of care.

5. REFERENCES

Antonioli, M., Drevon, G., Gwiazdzinski, L., Kaufmann, V., & Pattaroni, L. (2020). L'épreuve des saturations. In Saturations. Individus, collectifs, organisations et territoires à l'épreuve (pp. 19-22). Elya éditions.

Augoyard, J. F. & Torgue, H. (Eds.). (2006). *Sonic experience: a guide to everyday sounds.* McGill-Queen's Press-MQUP.

Breviglieri, M. (2018). L'affadissement des villes méditerranéennes et la désacralisation de la figure de l'hôte. SociologieS, *http://journals.openedition.org/sociologies/6821*.

Chelkoff, G. (2001). Formes, formants, formalités : catégories d'analyse de l'environnement urbain. In M. Grosjean & J-P. Thibaud (dir.), L'espace urbain en méthodes (pp. 101-124). Éditions Parenthèses, Marseille.

Gamal Said, N. (2020). Sonic Affordances of a Sacred Spring. The Urban Courtyard as a Figure of Rehabilitation of the Medina. Journal of Sonic Studies. (hal-02998784) Stavo-Debauge, J., Felder, M. & Pattaroni, L. (2022). L'hospitalité urbaine au risque de la contagion. *EspacesTemps. net.*

Thibaud, J-P. (2001). La méthode des parcours commentés. In M. Grosjean & J-P. Thibaud (dir.), L'espace urbain en méthodes (pp. 63-78). Éditions Parenthèses, Marseille.

L28

MICRO-SPACES OF CARE AND (DIS)COMFORT

MICROESPAÇOS DE CUIDADO E (DES)CONFORTO

Carolina Vasilikou
Manchester School of Architecture, Manchester Metropolitan University
C.Vasilikou@mmu.ac.uk

ABSTRACT

This paper investigates the methodologies used for understanding the systems of care and (dis)comfort in the micro-scale of the street environment. Using the lenses of the multi-senso-reality of walking, we develop a set of lens for a narrative of capturing perceptual responses through mapping, scoring and notation. Exchanges between ethnographic research and participatory practices seem to. create a hybrid process of experimentation that allows new understanding of the spectrum of care and (dis)comfort and a continuum of interchange in the multi-sensory experience.

The study presented here is focusing on the understanding of different typologies of urban investigations in experiencing urban space, creating a narrative of sensing with the intention of providing meaning through a conscious, meditative experiential process that allows the embodied knowledge of the comfort spectrum to interact with the place in a systemic way.

KEYWORDS: inclusive. micro-spaces. urban investigations. Care. (dis) comfort. sensory walks. participatory processes.

RESUMO

Este artigo investiga as metodologias utilizadas para a compreensão dos sistemas de cuidado e (des)conforto na microescala do ambiente de rua. Utilizando as lentes da realidade multissensorial da caminhada, desenvolvemos um conjunto de lentes para uma narrativa de captura de respostas perceptivas através de mapeamento, pontuação e notação. As trocas entre a pesquisa etnográfica e as práticas participativas parecem sim. criar um processo híbrido de experimentação que permita uma nova compreensão do espectro de cuidado e (des)conforto e um continuum de intercâmbio na experiência multissensorial.
O estudo aqui apresentado centra-se na compreensão de diferentes tipologias de investigações urbanas na vivência do espaço urbano, criando uma narrativa de sensação com a intenção de fornecer significado através de um processo experiencial consciente e meditativo que permite ao conhecimento incorporado do espectro de conforto interagir com o local de forma sistêmica.

PALAVRAS CHAVE: inclusivo. microespaços. investigações urbanas. Cuidado. (desconforto. passeios sensoriais. processos participativos.

1. INTRODUCTION

We can identify several key points that contribute to a new understanding of the spectrum of care and discomfort in the multi-sensorial experience for pedestrians. The urban street environment engages multiple senses simultaneously, creating a complex and dynamic sensory landscape. This includes visual, auditory, olfactory, tactile, and kinesthetic experiences. Sensory experiences in urban streets are not static but vary across time and space. Different sections of a street or different times of day can produce distinct sensory atmospheres. There is a constant interplay between different sensory inputs in the urban environment. For example, visual perceptions might be influenced by sounds or smells, creating a holistic sensory experience. However, The sensorial interchange is not just about objective stimuli but also involves subjective interpretation and emotional responses. Individual perceptions and memories play a crucial role in how people experience the urban environment.

The sensory experience in urban streets is composed of various atmospheric components, including physical-material characteristics, people's activities, sounds, smells, weather, and microclimate. As people move through urban spaces, they experience gradual transitions in sensory stimuli. For instance, moving from a busy main street to a quieter side street can create a noticeable shift in the sensory atmosphere. The continuum of sensorial interchange can influence people's behavior, comfort levels, and overall experience of urban spaces. Understanding this sensorial continuum has implications for urban design, suggesting the need for spaces that cater to diverse sensory experiences and preferences.

This continuum of sensorial interchange highlights the dynamic and interconnected nature of sensory experiences in urban street environments. It emphasizes the importance of considering multiple senses and their interactions when studying or designing urban spaces, moving beyond purely visual approaches to encompass the full range of sensory experiences that shape our perception and use of city streets. The paper takes the form of lists of lenses to engage with the question on the new understanding of the spectrum of care and discomfort in the multi-sensorial experience for pedestrians.

2. THE QUESTION OF NARRATIVES

Narratives of sensing through walking involve meaningful meditative cognitive processes that engage the walker in a multifaceted experience of the environment. This approach combines physical movement, sensory perception, and introspective reflection to create a rich, embodied understanding of place. We have selected some key lens to develop an understanding of different narratives:

Embodied experience: walking allows for an embodied engagement with the environment, where the body becomes a tool for sensing and understanding space. This physical interaction creates a direct, visceral connection to the surroundings.

Sensorial awareness: as walkers move through space, they become attuned to various sensory inputs - visual, auditory, olfactory, and tactile. This heightened sensorial awareness forms a crucial part of the narrative experience.

Cognitive mapping:the act of walking facilitates cognitive mapping, where individuals mentally construct and reconstruct their understanding of the environment. This process integrates sensory information with existing knowledge and memories.

Narrative construction: through walking, individuals craft narratives that interweave personal memories, observations, and reflections. These narratives are not just biographical but "autotopographical," extending beyond physical and psychical perceptions of place.

Meditative state: the rhythmic nature of walking can induce a meditative state, allowing for deeper introspection and a more nuanced perception of the environment. This state enhances the walker's ability to process and interpret sensory information.

Temporal and spatial exploration: walking narratives unfold across time and space, allowing for an exploration of how places change and how perceptions shift during the journey. This temporal aspect adds depth to the sensory experience.

Dialogic and collaborative practice: when walking with others, the experience becomes a dialogic and collaborative practice. Shared observations and conversations contribute to a collective narrative of sensing and understanding place.

Affective mapping: the walking experience involves affective mapping, where emotional responses to the environment are integrated into the narrative. This includes feelings of comfort, discomfort, belonging, or alienation.

Somatic awareness: walkers develop a heightened somatic awareness, attuning to their body's responses to the environment. This bodily consciousness becomes an integral part of the sensing narrative.

The process of walking and narrating seems to be transformative, allowing individuals to step away from conventional ways of thinking and perceiving. It opens up new configurations of understanding place and self. Artists and researchers use walking as a methodology to creatively interpret and represent urban spaces. This approach goes beyond mere documentation, becoming a form of active engagement with place. Walking narratives often incorporate historical and cultural elements, allowing walkers to sense and interpret layers of meaning embedded in the landscape.

This approach to sensing through walking emphasizes the interconnectedness of body, mind, and environment. It recognizes walking not just as a physical act, but as a complex cognitive and sensory process that generates rich, multifaceted narratives

of place and experience. These narratives offer unique insights into how individuals perceive, interact with, and make meaning of their surroundings, providing valuable perspectives for urban studies, environmental psychology, and artistic practices.

3. WALKING AS A TOOL FOR EMOTIONAL AND SENSORY EXPLORATION

There are key methods emerging for the investigation of emotional and sensory exploration.

Sensory walks:
These structured walks encourage participants to focus on different sensory aspects of the environment. They can be designed to engage multiple senses - visual, auditory, tactile, olfactory, etc. This allows for a rich, multi-sensory exploration of the surroundings.

Texture walks:
Specifically designed to develop tactile discrimination, texture walks involve exploring different surfaces and materials with hands or feet. This can broaden concepts like soft/hard and rough/smooth, providing a tactile sensory experience.

Mindful walking: by incorporating mindfulness techniques, walkers can become more attuned to their sensory experiences and emotional responses to the environment. This can include focusing on breath, bodily sensations, and immediate surroundings. Nature walks: walking in natural environments can stimulate multiple senses and evoke emotional responses. Activities like listening to bird songs, feeling different textures of leaves or bark, and observing colors and patterns in nature can enhance sensory awareness.

Urban exploration: walking through urban environments can provide a diverse range of sensory stimuli, from the sounds of city life to the textures of different building materials. This can elicit various emotional responses and perceptions.

Sensory scavenger hunts: creating a list of sensory elements to find during a walk (e.g., specific sounds, textures, or smells) can encourage active engagement with the environment and heighten sensory awareness.

Emotional mapping: walkers can document their emotional responses to different areas or elements encountered during their walk, creating a personalized emotional map of their journey.

Barefoot walks: walking barefoot, especially on varied surfaces, can provide intense tactile feedback and promote a stronger connection with the environment.

Guided sensory activities: incorporating specific sensory activities during walks, such as bark rubbings, creating nature mandalas, or using found objects to make "paintbrushes," can enhance sensory engagement.

Reflective practices: combining walking with reflective practices like journaling or group discussions can help process and articulate the sensory and emotional experiences encountered during the walk.

These approaches leverage walking as a means to actively engage with the environment, promoting heightened sensory awareness and emotional exploration. They can be adapted for various age groups and abilities, making them versatile tools for personal growth, education, and therapeutic purposes.

4. USING THE LENS OF CARE AND (DIS)COMFORT

Research on micro-environments of care and discomfort emphasizes the importance of considering multiple sensory aspects when designing urban spaces. This includes not just visual elements, but also auditory, tactile, and olfactory experiences that contribute to comfort or discomfort. Studies are focusing on creating "micro-environments" that allow for personalized climate control in urban settings. This includes the ability to adjust temperature, air flow, and even lighting at a localized level. Studies highlight the importance of flexible and customizable urban spaces that can adapt to individual needs. This includes adjustable furniture and environments that can be tailored to different preferences. Recent studies are exploring how urban design can accommodate neurodiversity. This involves creating spaces that can be comfortable for individuals with various sensory processing needs.

Looking at innovative wayfinding methods that go beyond traditional visual cues, incorporating tactile and auditory elements seems to become an important methodological tool to assist navigation for diverse users. Studies are examining how to balance stimulation in urban environments, recognizing that different individuals may require varying levels of sensory input. The benefits of creating multiple access points between indoor and outdoor spaces in urban environments are encouraging movement and providing diverse sensory experiences, including new methodologies are being developed to monitor and assess microenvironmental conditions within urban spaces, including factors like micro-humidity and temperature close to the body.

There's a growing focus on universal experiential design in urban spaces, aiming to create environments that are comfortable and accessible for all individuals, regardless of neurological differences. Research continues to explore how the micro-environment of urban spaces affects physical and mental health, as well as productivity in work environments. These research trends indicate a shift towards more nuanced, personalized, and inclusive approaches to urban design, with a focus on creating micro-environments that can cater to diverse needs and preferences.

The current theoretical approach to care and architecture includes a shift towards care-based design. There's a growing focus on incorporating the concept of "care" into architectural and urban design practices. This approach places the fragility of environments, individuals, and their relationships at the forefront of the design process. Current theoretical approaches emphasize understanding urban spaces as complex, evolving systems of holistic understanding. This includes considering the networked and topological qualities of urban environments, moving beyond traditional Euclidean or Cartesian conceptions of space.

There seems to be an increased emphasis on considering multiple sensory aspects when designing spaces, not just visual elements. This includes auditory, tactile, and olfactory experiences that contribute to how people perceive and interact with urban spaces (multisensory and experiential focus). Current approaches prioritize involving diverse stakeholders in the design process, recognizing the importance of local knowledge and experiences in shaping urban spaces (participatory and inclusive design). Theoretical approaches now emphasize the need for flexible and adaptable spaces that can respond to changing needs and uses over time. The importance of "transition spaces" is more frequently highlighted - areas that don't fit neatly into traditional urban/rural or public/private dichotomies. These spaces are seen as opportunities for innovative design approaches, in empowering local communities and support social resilience.

Care-based approaches in architecture also extend to environmental concerns, emphasizing sustainable design practices and care for the natural environment. These theoretical approaches reflect a shift towards more holistic, inclusive, and care-oriented practices in architecture and urban design, moving beyond purely aesthetic or functional considerations to address broader social, environmental, and experiential factors.

5 CONCLUSIONS : WHAT IS THE NEW UNDERSTANDING OF THE SPECTRUM OF CARE AND DISCOMFORT IN THE MULTI-SENSORIAL EXPERIENCE FOR PEDESTRIANS?

We can identify several key points that contribute to a new understanding of the spectrum of care and discomfort in the multi-sensorial experience for pedestrians:

Sensory processing and environmental impact: sensory processing difficulties are welldocumented in individuals with autism spectrum disorder (ASD) and other developmental disabilities. This heightened sensitivity can lead to disproportionate behavioral responses to stimuli that may not bother typically developing individuals. For pedestrians with sensory sensitivities, urban environments can be particularly challenging.

Multi-sensory environments (MSEs) as a tool: research has shown preliminary support for using MSEs in clinical settings to reduce anxiety and challenging behaviors in patients with intellectual and developmental disabilities (IDD). This concept could potentially be applied to urban design to create more comfortable pedestrian experiences.

Comprehensive sensory assessment: studies are now focusing on a range of sensory experiences beyond just visual aspects, including sound, olfactory experience, and haptic perception. This multi-sensorial approach provides a more holistic understanding of pedestrian comfort and discomfort.

Sensory walks and mental mapping: researchers are using innovative methods like sensory walks and mental mapping exercises to capture pedestrians' multi-sensory experiences. These techniques allow for a more nuanced understanding of how people perceive and navigate urban spaces.

Integration of sensory information: individual capacity to receive and integrate multi-sensory information varies. This understanding highlights the need for urban designs that accommodate a wide spectrum of sensory sensitivities.

Restorative effects of multi-sensory perception: research has shown that multi-sensory experiences in urban green spaces can have restorative effects on physical and mental wellbeing. This suggests that carefully designed multi-sensorial environments can contribute to pedestrian comfort and care.

Emotional responses to sensory experiences: studies are now considering emotional responses such as comfort, pleasant feelings, sense of belonging, and attraction as important factors in assessing pedestrian experiences.

Behavioral activities influenced by sensory design: the design of urban spaces can influence various behavioral activities, from relaxation and social interaction to fitness and literary pursuits. This understanding can inform urban planning to create spaces that cater to diverse pedestrian needs.

Importance of tactile perception: research is now considering tactile aspects of the pedestrian experience, such as the comfort of road materials, hydrophilic properties of surfaces, and the quality of seating areas.

Auditory considerations: the acoustic environment, including natural sounds, background music, and the absence of traffic noise, is recognized as a crucial factor in pedestrian comfort.

This new understanding emphasizes the need for a more nuanced, multi-sensorial approach to urban design that considers the diverse needs and sensitivities of

pedestrians. It suggests that creating comfortable and caring urban environments requires attention to visual, auditory, tactile, and emotional aspects of the pedestrian experience, as well as consideration for individuals with varying sensory processing abilities.

6. BIBLIOGRAPHY

Pittaluga, P. (2020. Pioneering urban practices in transition spaces. City Territ Archit 7, 18. *https://doi.org/10.1186/s40410-020-00127-6*

Carmona, M. (2013). The Place-shaping Continuum: A Theory of Urban Design Process. Journal of Urban Design, 19(1), 2–36. *https://doi.org/10.1080/13574809.2013.854695*

Lund, K. (2012). Landscapes and Narratives: Compositions and the Walking Body. Landscape Research, 37(2), 225-237. *https://doi.org/10.1080/01426397.2011.651111*

Costa, S., & Coles, R. (2019). The self-narrated walk. A user-led method to research people's experiences in urban landscapes. Landscape Research, 44(5), 526–540. *https://doi.org/10.1080/01426397.2018.1467004*

Misharina, A., Betts, E. (2023). The Embodied City: A Method for Multisensory Mapping. In: Landeschi, G.,

Betts, E. (eds) Capturing the Senses. Quantitative Methods in the Humanities and Social Sciences. Springer, Cham. *https://doi.org/10.1007/978-3-031-23133-9_11*

Zhang T, Liu J, Li H. (2019). Restorative Effects of Multi-Sensory Perception in Urban Green Space: A Case Study of Urban Park in Guangzhou, China. Int J Environ Res Public Health 6;16(24):4943. doi: 10.3390/ijerph16244943

BUILDING AN INFRASTRUCTURE OF CARE. THE ROLE OF DESIGN IN RETHINKING COMMUNITY PRACTICES AND COLLECTIVE SPACES.

CONSTRUIR UMA INFRAESTRUTURA DE CUIDADOS. O PAPEL DO DESIGN NO REPENSAR DAS PRÁTICAS COMUNITÁRIAS E DOS ESPAÇOS COLETIVOS.

Silvia Lanteri
post-doc fellow
Politecnico di Torino / DAD - Department of Architecture and Design
silvia.lanteri@polito.it

Giulia Montanaro
phd candidate
Politecnico di Torino / DAD - Department of Architecture and Design
giulia.montanaro@polito.it

Martina Spinelli
phd candidate
Politecnico di Torino / DAD - Department of Architecture and Design
martina.spinelli@polito.it

Ianira Vassallo
research
Politecnico di Torino / DIST - Interuniversity Department of Regional
and Urban Studies and Planning
ianira.vassallo@polito.it

ABSTRACT

This contribution is part of a broader debate on the role of urban and architectural design within the growing attention to processes of spatial regeneration, not only in urban contexts, focusing on practices of care and redefinition of space as an element of collective action outside neoliberal dictates.

From the empirical observation of some ongoing processes, it is possible to deduce more general elements of reflection regarding the role of the designer and of space within commoning processes.

How does the practice of design redefine itself in the context of actions that place at their centre a different doing from the productivist model within which the urban project has been placed in recent decades? What is the role of space as a medium of negotiation within a collective process that evolves with slow and uncertain times and modalities? These are some of the questions that drive our open reflection.

KEYWORDS: Third Places; practice of commoning; Collectif Etc; marginal areas; care.

RESUMO

Esta contribuição insere-se num debate mais amplo sobre o papel do desenho urbano e arquitectónico no âmbito da crescente atenção aos processos de regeneração espacial, não apenas em contextos urbanos, centrando-se em práticas de cuidado e redefinição do espaço como elemento de acção colectiva fora dos ditames neoliberais.

Da observação empírica de alguns processos em curso é possível deduzir elementos mais gerais de reflexão sobre o papel do designer e do espaço nos processos de commoning.

Como se redefine a prática do design no contexto de ações que colocam no seu centro um fazer diferente do modelo produtivista em que o projeto urbano se tem inserido nas últimas décadas? Qual o papel do espaço como meio de negociação dentro de um processo coletivo que evolui em tempos e modalidades lentos e incertos? Estas são algumas das questões que norteiam a nossa reflexão aberta.

PALAVRAS-CHAVE: Third Places; prática da comunhão; Collectif Etc; áreas marginais; cuidado.

1. INTRODUCTION

The contribution explores the role of architectural and urban planning projects and their respective skills within commoning processes, especially when initiated in marginal areas. It draws on the ongoing empirical experience of the Erasmus+ project ASOC - An(Architecture) School Of Commons[1]. This European project, spanning three years, involves alternative architectural pedagogies sharing experiences with rural communities and architecture collectives across Europe. Its aim is to immerse students from three architecture faculties in ongoing commoning processes through experimental and multidisciplinary teaching activities. This serves partly to test the role of architectural projects in creating common goods and partly to help students understand the potential of their skills in strengthening and promoting forms of active citizenship (Arena, 2006). Another goal of ASOC is to foster close collaboration among architecture universities, architectural collectives and local associations. Each entity involved brings its empirical and theoretical experience to the debate, aiming to build a shared pedagogical model. They contribute specific experiences and skills in collaborative care practices, exploring bottom-up design forms and horizontal governance of space. Recognizing the material and immaterial value of certain abandoned and/or underutilized spaces and buildings, caring for them as a collective act, and federating communities through open construction sites and convivial moments are some of the activities promoted by this international network of practices. The main objective is "learning by doing" (John Dewey, 1938), creating a condition of osmosis and mutual learning among the involved partners and between local and temporary communities formed during these moments. The project stems from the desire of the participating architectural collectives to affirm and certify their design approach as an alternative mode (Catalanotti, 2020) to mainstream models and systems (Shneider Till, 2008). Their alliance with architecture faculties on one side and local associations on the other represents a way to highlight the importance of design skills within commoning processes, as well as to assert their presence as forerunners of a model and holders of abilities and knowledge useful in codifying this contribution

Within this experience, the article aims to propose a reflection on commoning processes and the construction of care infrastructures in marginal contexts. These processes provide an opportunity to reconsider the role of architectural and urban planning in defining a different narrative of contemporary territorial dynamics affecting these areas. The intertwining of care and commons offers a perspective that transcends the concept of personal assistance to embrace a broader and deeper vision of "care,"

---

1 ASOC is the acronym for *(Architecture) School of commons*. Alternative architectural pedagogies sharing experiences with rural communities and architecture collectifs across Europe. The project was selected in the 'Erasmus Plus Cooperative Partnership' call and has a three-year duration (2021-2024). It is a work that intertwines international teaching experiences with experiments in multi-actor alliances to define innovative design practices. For this reason it is defined through an extended partnership between the University of Architecture (Politecnico di Torino, ENSA Grenoble, NTUA Athens), collectives of architects (Collectif Etc, Zuloark, Orizzontale) and local organizations (La Rivoluzione delle Seppie, TiriLab), in between France, Italy and Greece. The objective is to explore the collaboration between these different subjects to rethink pedagogical models and project themes and methods that take into account the main ecological and social challenges underway. For further information, please refer to the project platform: *https://asoc.eu.com/*

understood as a form of resistance and assertion by local communities. Through neofeminist literature, we can highlight this dimension, showing that care is not simply an individual, familial, or exclusively female practice (Federici, 2007). Instead, it needs to be reclaimed as a collective action, as a constant, daily, and permanent process of maintaining the territory and its environmental characteristics, going beyond the mere extractivist logic of land for productive purposes. The contamination between feminist literature on care and the debate concerning commoning processes allows us to highlight at least three fundamental aspects for rethinking marginal territories: first, the central role of reproductive approaches (characterized by care actions, daily maintenance, domestic actions inherent in local traditions and non-remunerative) as collective practices (and not individual, confined to intimate and private space); secondly, the role of these actions as opportunities to assert a different value of the territory compared to the productive logics typical of the neoliberal system; finally, the principle of cooperation and mutual responsibility in action, not as a grouping of people united by exclusive interests, but as an opportunity to define collective self-governance processes. Based on the rich body of knowledge and reflections developed through the ASOC project, this contribution focuses on the critical re-reading of an empirical case, the 'failed' project of La Place des Possibles in Saint-Laurent-en-Royans, France.

2. CARE AND COMMONS IN MARGINAL CONTEXTS

For some time, rural areas have been subjected to ideologies that continuously redefine their forms and meanings, influenced by policies that often promote a vision antithetical to that of the city, thus shaping the sense of both rural and urban life. These narratives tend to alternately exalt or demonize one of the two realities, creating complex dynamics of interaction and contrast (Koolhaas, 2021). As early as 1970, in the now renowned book "The Urban Revolution", Lefebvre urged attention to the "blind field" (Lefebvre, 1973: 41) where the traits of a new way of inhabiting time and space were emerging, not reducible to those dichotomous oppositions city/countryside, center/periphery with which we have been accustomed to universally order the world.

By using these interpretive lenses, it is possible to observe in rural contexts, often associated with conditions of marginality and fragility, the presence of creative and generative forces capable of filling in innovative ways the empty and silent spaces that characterize such territories (Carrosio, 2019; Tantillo, 2023), defined by a rich history and great environmental and landscape value. To address the economic problems and social changes that influence them, new ecosystems are recently being developed in an attempt to preserve local specificities and find innovative forms of rebirth. In this context, hybrid, shared spaces, laboratories of experimentation, and places where inhabitants come together to co-shape services in a creative way while taking care of abandoned spaces emerge. The concept of urban commons thus assumes a new relevance even in marginal contexts of this type, marking an

interesting shift in perspective from its traditional centrality in heavily urbanized environments. This phenomenon highlights a significant transformation in terms of the skills involved and the fundamental values that emerge, such as inclusivity, mutualism, and care. Thus, marginality begins to present itself not as a place of deprivation but, on the contrary, as a place where radical possibilities and spaces of resistance can be shaped. Bell Hooks defines this marginality as "spatially strategic for the production of counter-hegemonic discourse [...] a place capable of offering us the possibility of a radical perspective from which to look, create, imagine new alternative worlds" (Hooks, 2020, p. 128).

3. COLLECTIF ETC AND THE PROJECT FOR LA PLACE DES POSSIBLES

In 1989, Ray Oldenburg, in the book "The Great Good Place", coined the term "third places," referring to spaces distinct from home (first places) and work (second places), intending to emphasize rather those other spaces where people love to meet informally. Oldenburg refers to bars, restaurants, cinemas, commercial places, libraries, religious centers, sports centers, parks: collective spaces fundamental to the democratic development of society. In France, the concept of "tiers-lieux" (third places) has evolved into a national policy that emphasizes the relational role of space rather than its physical dimensions. These spaces—'proximity factories'—are open, community-centered engines of socio-economic development and local regeneration. They include coworking spaces, fablabs, circular economy areas, new manufacturing centers, and places for social inclusion, cultural production, and promotion. While initially concentrated in large cities, they are increasingly found in industrial, rural, and mountain areas, sparking local change. These initiatives are driven by local communities to address specific challenges, involving diverse relational, economic, and political models. Each project is unique, reflecting local identities and opportunities, and focuses on new forms of work, social inclusion, and cultural dynamism. Examples include the works of YesWeCamp, which promotes the creative reuse of abandoned spaces, and Villages Vivants, which revitalizes depopulated rural villages with social enterprises. Other notable examples include Le Chalutier, which engages in participatory processes to repurpose abandoned buildings in rural Drôme.

In this context, the present contribution identifies the experience of Collectif Etc[2] as particularly significant. As one of the most well-known French architects' collectives, operating for about fifteen years in various territories. Initially based in Marseille with numerous projects located in major French cities, recently they have been moving to increasingly remote contexts from the major metropolises with the aim of reactivating "third spaces" through incremental and participatory processes. In this regard, the project for La Place des Possibles in Saint-Laurent-en-Royans stands out as a turning

---

2 *http://www.collectifetc.com*

point between the previous and subsequent phases, with part of the group moving from the city to a rural context, challenging themselves not only as architects but also in their deeper life choices. Until that moment, their projects focused on "contested" urban areas – for example, the mobile democratic parliament PaPoMo (proposed multiple times since 2008), or the construction of spaces for socialization and play like Fraternité Belle de Mai (2018) and Parc de la Carraire (2017) – where the occupation of space was seen as a catalyst to question ongoing transformation processes, aiming to bring out social and ecological issues by involving citizens in political decisions and the subsequent management of reclaimed spaces.

Fig 1. La Place des Possibles, Saint-Laurent-en-Royans, France. From abandonment to reconversion, through a design experience and redefinition of an identity. Photo: *http://www.collectifetc.com/realisation/la-place-des-possibles/*

With the project for La Place des Possibles, the collective decided to move to the small village of 1,300 inhabitants, Saint-Laurent-en-Royans, at the foot of the Vercors, in the Drôme. They co-designed with the local community new forms of habitability in contexts different from the previous ones. This project particularly focuses on 2500 square meters of a disused textile factory dating back to the early twentieth century. It was initiated in 2016 by several associations active in the area, including Les Tracols, the owner of the property. These organizations, with different backgrounds and skills, organized themselves collectively and collaboratively, seeking to identify and address the needs and aspirations of the context by organizing meetings with the local community. Through this process of involvement, listening, and valuing local resources, the new role of these spaces took shape.

From 2019, the collective of architects was involved to assist the network of associations not only in the physical design of space recovery but also in developing a medium to long-term gradual reactivation strategy, attributing social and cultural value to the space. This phase was crucial for discussing and exchanging ideas about the future of the project: through participatory methodologies, it was possible to outline a global medium to long-term strategy, mainly focusing on the architectural transformation of the space. After a year of working on this strategy, the

implementation phase began with the first construction workshop. On this occasion, it was decided to involve a wider audience, including not only the local actors already part of the process but also the local population, other active associations in the area, former employees of the textile factory, and young people seeking employment and training opportunities. Additionally, various cultural events were organized, such as concerts, debates, and film screenings, to further engage the local community and introduce them to the new opportunities offered by the transforming space. A large "container" is being co-designed not only in terms of the physical space but also in terms of content, uses, and the entities that will gradually be involved. La Place des Possibles is thus established not as a tool for political negotiation in areas where the use value of land is high, but rather as an opportunity to systematize a range of existing know-how and initiatives, producing necessary services for the community from the ground up and creating a space for mutual and shared exchange.

Similar to previous cases, social, economic, and cultural innovation is at the heart of the process, and this is achieved by developing a reactivation project that does not consist of creating a final image – a completely and clearly defined recovery – but through a project capable of changing direction, bending, and growing progressively along with the various co-construction steps depending on the opportunities that arise. Workshops are organized to work on large silkscreens to be used as interior furnishings indicating various spaces; on the reuse of materials from the plants to transform them into furniture and signage; on the reconstruction of the linear space of offices and training workshops located at the main entrance. It is, therefore, a collaborative learning process in which 'learning by doing' is central.

Fig 2. La Place des Possibles, Saint-Laurent-en-Royans, France. A moment of the participatory construction workshop organized for the redefinition of the spaces of the "Place des Possibles". Photo: *http://www.collectifetc.com/realisation/la-place-des-possibles/*

However, the project faced a crisis when the balances created over the years began to falter, revealing the limitations of such operations in the medium to long term. Despite four years of intense efforts towards improvement, the project ultimately

failed due to the inability to establish horizontal governance among the different project partners. The lack of collaboration and divergent interests among the involved parties led to the project's closure and dissolution. The association Les Tracols – which had purchased the space six years earlier to carry out its work and catalyze other forms of associationism and services – is closely tied to social assistance, a sector that receives substantial public funding in France. In contrast, cultural and artistic projects struggle to obtain public funding, creating a disparity in opportunities and resources among the entities involved in the process, contributing to the failure of the project with its partial closure starting in 2023.

Nonetheless, failure becomes an integral part of the process to be observed – an opportunity for reflection for both those who were part of it and those initiating similar projects – highlighting the strong specificity characterizing these initiatives, with no possibility of replicability or standardization of practices. Even in the project's failure, it emerges that each participant is integral to its success, with specific skills and knowledge that need to be valued. This awareness leads to greater maturity in conceiving and implementing future projects, where the sharing of values and collaboration becomes fundamental for the success and sustainability of community initiatives.

Fig 3. La Place des Possibles, Saint-Laurent-en-Royans, France. The ASOC project is interested in creating connections between three schools of architecture, with local community projects in marginal areas and a generation of architect-activists organized in collectives from France, Italy and Greece. Photo: Silvia Lanteri, 2022

As Delfini and Snoriguzzi write (2019), these experiences aim to highlight a condition of osmosis between the local community and the project. The focal point is no longer the realization of a spatial design or economic profit but rather the continuous experimentation in shaping the process, a complex entity in constant adjustment, which tries to constitute itself as a form of resistance in opposition to the metropolitan condition.

If, in putting 'margins at the center,' it is necessary to give space to the forms of creative innovation that can germinate there (Carrosio, 2019), the projects presented in this article – and the experience of La Place des Possibles in particular, if read in its final disintegrative phase – show the profound value of the dimensions of collective learning and social cohesion, conditions that are as fundamental as they are fragile if not treated with the right care. It is important to emphasize the complementary role played by the different associations already active in the space, which have contributed by inviting their networks of contacts and strengthening ties with the local community. While Collectif Etc focused mainly on the architectural transformation of the space, other associations worked to maintain and strengthen the ties with the local community, thus creating an integrated and synergistic approach to their involvement. The participating individuals are not only users of resources, but their social practices related to the commons are also shaped by the community's identity dynamics. In this context, the community takes on a central role in various sharing processes, contributing to the socialization of rural space and the "production of locality" (Appadurai, 1996). The case study analysis thus highlights how the processes in question embody the concept of "care" not limited to the individual construction of personal services but embracing the idea of creating a broader infrastructure. The commoners claim the idea of the common good while retaining their singularities by joining a community. This culture suggests a common existence, "an open network of singularities that connect with each other based on the common they share and the common they produce" (Hardt and Negri, 2004, 129). Following the project's failure, Collectif Etc acts as a support network for other realities, not only in relation to associations but also with the aim of acting in a broader social context. This has materialized in the creation of the French association Superville, which brings together collectives of architects and landscape designers eager to promote social and ecological change. This network has further expanded through the organization of events in Nantes that have allowed other local collectives to present their work, resonating with local institutions and communities.

4. ASOC AS AN OPPORTUNITY TO EXPLORE AN ARCHITECTURE OF CARE

Promoting mobilization and organization from the local to the international level is fundamental in these cases. The collective's commitment in creating networks and collaborations tells of an action that is not isolated, but rather one that aims to share resources, knowledge, and mutual support to broaden its territorial impact and create positive change in society. As already mentioned, this contribution arises from the opportunity of encounter and contamination proposed by the ASOC project, which has allowed close observation of such projects – specifically La Place des Possibles – in different territories straddling Italy, Greece, and France. In this Erasmus+ project, the concepts of care, commons, project, and community have been placed at the center of both theoretical and practical reflection. Questions were asked about what it means to build an "infrastructure of care" (Care Collectif, 2021), seeking to propose

an alternative to project forms and methods that fall within established extractive practices, placing the recovery of abandoned spaces in a dimension of care for and by the local community, through the activation of those "voids" (Tantillo, 2023) produced by contemporary socio-economic changes.

Within this framework, the opportunity arose to examine and delve into the dynamics of constructing commons and practices of care in such contexts, considering different territories in comparison. This reveals a substantial difference related to the dynamics of identifying the entities presenting the project in the territory, the possibilities of economic sustenance, the territorial policies in place, and the possibilities of action. Specifically, through some interviews with members of Collectif Etc and other associations present in ASOC, an attempt was made to focus on some of the issues at the center of this reflection. Field experience has amplified the collective's awareness of the situationality of their practices as designers, where situating oneself and situating one's practice are central themes in feminist discussions. To elaborate on this need, one can refer to feminist geographies by citing the work of Donna Haraway (2015): this project need arises from the architects' awareness that their action will depend on the actors involved in a broad sense, designers and non-designers.

The architect transforms from "author" to facilitator of processes (Straus, 1978). As described above, the involvement of the local community in the La Place des Possibles project was progressive, through a series of phases that allowed a connection to be established with the territory's inhabitants. Firstly, the initial step was to meet and connect with the people, associations, and groups already involved in the project. This initial involvement allowed understanding the needs, goals, and dreams of the community, providing a solid foundation for the continuation of the work.

5. OPEN QUESTIONS

Conceptualizing and framing commons as contextually grounded processes, this contribution explores how Collectif Etc – and specifically the project La Place des Possibles – demonstrates attention to the processes of appropriation and reactivation of marginal spaces of various kinds. This attention is shaped around the different realities that host them, transferring aspects of the experience of urban practices to extra-urban contexts. The focus on how commons reproduce over time in relation to the infrastructure of relationships that are created can help highlight further questions about how they are produced, generating effects on the place where they take root. In such processes, commons often play a role in shaping the outcomes of the common resource system and in producing specific local identities (Appadurai, 1996; Mosse, 1997). Using the concept of commoning introduced by Linebaugh (2008) and later developed by Bollier and Helfrich (2015), commons are assumed to be processes rooted in the general reproduction of the community, emphasizing their blurred nature, which encompasses not just a set of property relations but also associative practices around specific resources, places,

and buildings that are collectively managed regardless of their legal form (Ostrom, 1990; Hardin, 1968). From this perspective, commons are not just legal and economic resources but also important social resources that bring people together in a space for a common purpose. In this way, the concept of commons is close to that of community, as their shared use can be seen as an important part of the symbolic construction of society itself (Cohen, 1985; Fournier, 2013). These spaces and the related processes of occupation and reactivation can be seen as a socio-ecological glue that helps to constitute the communities that inhabit them. By conceptualizing commons in this way and exploring how they reproduce over time in relation to broader social changes, it is possible to understand not only the dilemmas of resources but also how specific places and identities are constructed. It is not simply about explaining how the use of resources influences commons but rather exploring how different processes of commoning co-evolve and how they are embedded in the societies that use them (Nightingale, 2011). In these processes, the role of the designer is also changing, increasingly focusing on recognizing and valuing local skills, acting as an observer and facilitator in the process of caring for the territory. The described projects demonstrate how openness to dialogue and collaboration with communities, as well as the creation of networks of local actors, can enrich the professional background of architects and lead to more meaningful and ecosystemic results, albeit fragile in some cases. Specifically, within the context of the collectives, there is a clear desire to make themselves available to this knowledge, enriching it with experiences matured in urban contexts and transferred elsewhere. This synergy between the architect's skills and local knowledge allows for greater integration and mutual enrichment, contributing to a more inclusive practice sensitive to local specificities.

6. BIBLIOGRAPHY

AA.VV. (2021). Tiers-lieux à but non lucratif, open access

Appadurai A. (1996). The Production of Locality. in Appadurai, A. Modernity at Large: Cultural Dimensions of Globalization. University of Minnesota Press, Minneapolis, London.

Bollier D., Helfrich S. (eds) (2015). Patterns of Commoning. The Commons Strategies, Amherst, Massachusetts. pp. 1-12.

Carrosio G. (2019). I margini al centro. L'Italia delle aree interne tra fragilità e innovazione, Donzelli, Roma.

Cohen A. P. (1985). The Symbolic Construction of Community. Ellis Horwood, London.

Delfini A., Snoriguzzi R. (2019). Contre Euralille : une critique de l'utopie métropolitaine, Les Étaques, Lille.

Federici S., Caffentzis G. (2007). Notes on the Edu-factory and Cognitive Capitalism. The Commoner, vol. 12(2007), pp. 63-70.

Fournier V. (2013). Commoning: on the social organisation of the commons, M@n@gement, vol. 16, no. 4, pp. 433-453.

Hardin G. (1968). The Tragedy of the Commons. Science, vol. 162, pp. 1243–1248.

Hardt M., Negri A. (2004). Multitude: War and Democracy in the Age of Empire. Penguin Books. New York

Hooks B., Nadotti M. (2020). Elogio del margine/Scrivere al buio, Tamu Edizioni, Napoli.

Koolhaas R. (2021). Countryside, A Report. Taschen, Cologne.

Lefebvre H. (1973). La rivoluzione urbana, Armando, Roma.

Linebaugh P. (2008). The Magna Carta Manifesto: Liberties and Commons for All, University of California Press, Berkley, Los Angeles and London.

Oldenburg R. (1989). The Great Good Place, Da Capo Press, Boston.

Ostrom E. (1990). Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press, Cambridge.

Mosse D. (1997). The Symbolic Making of a Common Property Resource: History, Ecology and Locality in a Tank-Irrigated Landscape in South India. Development and Change, vol. 28(3), pp. 467–504.

Nightingale A. (2011). Beyond Design Principles: Subjectivity, Emotion, and the (Ir)Rational Commons. Society & Natural Resources, vol. 24(2), pp. 119–132.

Straus D., Doyle, M. (1978). The Architect as Facilitator: A New Role. Journal of Architectural Education, vol. 31(4), pp. 13–17.

Tantillo F., (2023). L'Italia vuota: viaggio nelle aree interne, GLF editori Laterza, Bari.

THE AMBIGUITY OF CARE, EXPLORING MUSEUM AMBIENCES THROUGH THE LENS OF DISABILITY

A AMBIGUIDADE DO CUIDADO, EXPLORANDO AMBIENTES DE MUSEUS SOB O PRISMA DA DEFICIÊNCIA

Julien Salabelle
PhD Student in Architecture
GERPHAU, ENSAPLV, CNAM
julien.arq@gmail.com

ABSTRACT

Art museums' extreme care for the fragile objects they preserve and the public they receive create sophisticated ambiences. These ambiences thus lead to a process of distancing that excludes alternative relationships with artefacts, especially for people with functional diversity. In order to understand care as ambience and its limits, museums are examined from the perspective of people with impairments and disabilities, who develop a perceptual and conceptual acuity to their surroundings, inviting us to think beyond the caregiver/receiver binary. Care can thus be understood as practices that involve an ecological dynamic. In this perspective, ambience is a vehicle for care, connecting heterogeneous elements to create a coherent living environment through sensibility. This paper explores museum spaces through the practices of people with disabilities and proposes a new narrative based on a caring relationship with the environment.

KEYWORDS: ambiences. care. museum. disability. representation. narrative. milieu

RESUMO

O extremo cuidado dos museus de arte com os objetos frágeis que preservam e o público que recebem criam ambientes sofisticados. Essas ambiências conduzem, assim, a um processo de distanciamento que exclui relações alternativas com artefactos, especialmente para pessoas com diversidade funcional. Para compreender o cuidado como ambiência e os seus limites, os museus são examinados a partir da perspetiva de pessoas com impedimentos e incapacidades, que desenvolvem uma acuidade preceptiva e concetual ao seu entorno, convidando-nos a pensar para além do binário cuidador/recetor. O cuidado pode, assim, ser entendido como práticas que envolvem uma dinâmica ecológica. Nessa perspetiva, a ambiência é um veículo para o cuidado, conectando elementos heterogéneos para criar um ambiente de vida coerente por meio da sensibilidade. Este artigo explora espaços museológicos por meio das práticas de pessoas com deficiência e propõe uma nova narrativa a partir de uma relação de cuidado com o meio ambiente.

PALAVRAS-CHAVE: ambiências. cuidado. museu. deficiência. representação. narrativa. meio.

1. INTRODUCTION

The concept of care has become increasingly ambient in academic research, from philosophy and the socio-medical field to architecture. This proliferation has led to a polysemic meaning of the term, so that as care has become more ambient, it has also become ambiguous and sometimes misused. Both care and ambience are indeed ethereal concepts and difficult to grasp.

The art museum is a good place to understand the interaction between care and ambience, because it is a space that conscientiously produces both. Its mission to preserve and exhibit works of art implies a high level of attention and care towards the objects and the visitors. At the same time, the aesthetic experience is directly linked to the notion of ambience. The presence of a work of art generates a spontaneous and unreflected knowledge and emotion that one is invited to experience. Museums intensify this exposure by creating a series of explicit and sophisticated ambiences. Finally, the museum is also a place of mediation. It links bodies, space and objects through care and ambience.

This paper will explore museum ambiences as a product of care for artefacts and visitors, and the practices that these ambiences generate. It then proposes an interpretation of ambience as a process of care, using disability as a critical concept to characterize both notions. Finally, the hypothesis of an ecology of care will be outlined.

2. ARGUMENT
2.1 Museum ambiance as a function of care
2.1.1 staging art pieces to arouse attention

The role of art museums is not only to collect, and conserve works of art, but also to exhibit them. They give the public the opportunity to connect with rare, patrimonial and extraordinary objects. This connection with art is fragile and special. Museums are therefore designed to facilitate intimate encounters between visitors and works of art. This encounter can lead to an aesthetic experience, a process that involves the emotional, cognitive and sensory capacities of the viewer's body. This refined relationship is prepared beforehand, from the very entrance of the building, through a series of architectural moments. From then on, the exhibition spaces articulate a series of mechanisms designed to increase the receptivity of the body.

From this perspective, the museum is a stage for art. Theatrical schemes are used all along the way to create emotion, tension and surprise, through layouts and perspectives.

As the first museums were housed in aristocratic residences, the architecture of the museums preserved palatial references: high ceilings, monumental façades and

imposing entrances. The solemnity emanates from the architecture. The distance between the building and the cityscape is reflected in the distance to the objects through gaps, fences and glass displays. They participate in the exceptionality of the moment and the disruption of everyday routine.

The monumentality, the guards and the dim lighting create a religious atmosphere appropriate to the meeting. The ramp is a typical feature of museum architecture from Wright to Le Corbusier and Meier. It participates in the setting of the visitor's body and mind. It allows a spatial continuum between the levels, inviting one to wander, creating an "architectural promenade".

All these spatial strategies demonstrate attention to the built environment and to the visitor. These mechanisms aim to sharpen their attention and create a sense of care.

2.1.2 The infrastructure of care: "disavowing loss"
Just as it exposed them, the museum is also dedicated to the conservation of artefacts that are extremely fragile and unstable. These objects are usually very sensitive to light, temperature changes or movement. It can therefore be seen as an intensive care unit, leading to an extremely controlled environment.

Antiques, classical paintings and contemporary works of art are not created to defy time and preserving them in their original state is a major challenge. The museum is organized according to conservation needs, depending on the nature and materiality of the artefacts. Photographs, paper or textiles require specific conditions to be exposed. Vibration, UV light, air quality, every single element of the ambience is carefully designed and operated.

Through his studies of the Moma, Fernando Dominguez Rubio (2020). reveals the extreme efforts made to maintain the illusion of permanence and solidity. He presents the museum as a mimeographic infrastructure that tends to hide the traces of time. The visitor's experience must be reproducible, regardless of the season or the time of day. Part of this infrastructure defines and composes the atmosphere of exhibition spaces that do not allow for variation. He uses the term "disavowing loss" to qualify this phenomenon of hiding the work of maintenance to perpetuate the myth of authenticity, originality and singularity of works of art.

2.1.3 Objectives toward care that produce disconnection
In the magazine Mouséion, Auguste Perret (1929) wrote: "The museum should not be a labyrinth, the visitor should not be haunted by the idea that he is forgetting rooms, that he has not seen everything". This is a humorous reference to one of the architectural diapositives of the museum space: the pleasure of getting lost in the accumulation of rooms. This detachment from the familiar, the unsettling strangeness of the space, is part of the ambience and experience of museums.

The conditioning of the viewer's attention and the infrastructure of conservation and care lead to a marked physical distance from the works of art and ultimately to a general disconnection. They prevent the space from being influenced by the immediate external environment and by the visitor.

The ambience created by these care processes prevents any other interaction with the work of art. They predetermine the behavior of the beholder and thus contribute to the normalization of behavior.

2.1.4 Practices implied by museum ambience

The practice of the museum disturbs these ambiences. Perhaps the greatest challenge for the museum today is to manage the flow of visitors. The entrance door acts as a sluice to control temperature, dust, security, but also the number of visitors. The entry process creates a huge queue outside and inside the building. In order to create a perfectly controlled ambience inside the exhibition space, it creates a residual, unexpected and uncomfortable atmosphere in the rest of the building.

Furthermore, the normalization of behavior excludes other ways of appreciating works of art. Georgina Kleege (1997), a legally blind academic and curator, reveals and explores the rich interaction that blinds and people with low vision entertain with visual art. She highlights nonvisual qualities such as "texture, temperature, weight, resilience, and density" of art pieces, besides visual qualities that are part of shared culture (Kleege, 2017). She is extremely aware of ambiance as part of the art piece, and explains her frustration not to be able, for example, to come near the canvas as she like to scan the panting very close because of her visual impairment. Those practices limit specially people from the functional diversity.

There is a paradox between a certain idea of care, both for the visitor's attention and for the object being conserved, and the uneasy experience of the museum space, especially for people with impairments and disabilities. Ambiences reveal this tension, as they are the result of a caring intention. But "care is both a practice and a disposition" (Tronto, 2008), it implies flexibility and adaptation. It can't be self-referential or self-absorbed, but has to take into account everyone's perspective. it's an ongoing process.

The examples shown above represent care as a function. It follows a mechanistic and functionalist logic that doesn't take into account the experience of space by impaired and disabled people.

2.2 Disability as a practice of care

2.2.1 Disability as a critical concept

Using disability and impairment as critical concepts gives a new perspective on an issue and allows for intellectual shift. This exercise is particularly relevant in the field of architecture.

Disability was once considered to be the direct consequence of a physical peculiarity perceived as a deficiency. Today, the notion of disability is emancipated from this individual-centred biomedical model and takes into account the interaction within existing physical and social contexts. It thus defines a situation of mismatch between an individual's specificities and their built environment. Non-standard bodies thus develop a perceptual and conceptual acuity to their surroundings, according to their own functional diversity, but also as a tool of awareness and adaptation. In this perspective, they can be considered as architectural experts, as disability is a way of connecting with the built environment and a reinvention of the practice of space.

Thus, disabled individuals are not only "recipients of care" or "objects of care". They are, first and foremost, agents and authors of care, both for their environment and for their bodies and minds (Pereira Paulo & Tourette-Turgis, 2014). . We could hypothesize that individuals who are considered outside of health and well-being standards are also experts in care.

We use the term impairment to refer to a psychological or physical characteristic that excludes a body from the standard of health and well-being. According to David Gissen (2022), impairment "can become a 'disability' or part of an identity as 'disabled' in relation to modern ideas of social and economic functioning. ".

2.2.2 Milieu and ambiance or the art of connection

The German neurologist and psychiatrist Kurt Goldstein (1939) developed a holistic theory of the organism. He moved away from purely biological or health considerations to focus on illness as a global phenomenon that profoundly alters all aspects of an individual's life. He starts from the observation that the physiological dysregulation of an organism requires it to renegotiate its mode of existence. The milieu is both the site and the product of this process.

George Canguilhem (1966) followed this idea. For him, to create a milieu is to be able to use one's surroundings to create a living environment in which one's existence has meaning and value for oneself. It is a way of experiencing and creating one's own norms and environment. This process is particularly acute for people with disabilities. They have no choice but to invent new ways of relating to themselves, to others and to the world.

Ambience can also be seen as a way of bringing together heterogeneous elements of chaotic environment to form a coherent living environment, not through function or performance, but through sensibility. (Tallagrand, Thibaud & Tixier, 2021).

Milieu and ambience follow the same logic, they are ways of establishing an intimate and profound connection with one's surroundings. They blur the distinction between subject and object. The environment becomes easier to manipulate, more readily available, and the individual can almost cocoon in it. If we think of them not as a fixed element but as a continuous process, both notions can be considered as practices of care.

2.2.3 The ecology of care

Care and ambience are ways of experiencing and creating one's own norms and environment, from a therapeutic (Goldstein, 1951) or aesthetic perspective. (Bégout, 2020). In both cases, it implies a constant reconnection with the existing environment, the objects that make it up, and the body of the beholder. As the new phenomenology (Böhme, 1995) reveals our capacity to be affected by ambience, we believe that ambience is also perceived from a subjectivity according to personal cultural references and individual perception. Ambience is not a quality of space, but a way of relating to it. In this respect, it must be able to welcome cultural and functional diversity.

Legally blind refers to visual acuity and peripheral vision to be able to read print and manoeuvre through space without assistance, but 'the law is not concerned with the person's ability to perceive colour, light or form, visual skills that may have more to do with looking at art' (Kleege, 2017). By the same logic, disability is most often understood in purely functional terms. The relationship with the environment, the inventiveness and the tactics (De Certeaux, 1994) involved are not taken into account. The myth of the integrity of the artefact, exposed by Fernando Dominguez Rubio, echoes the myth of the autonomy and independence of the individual. On the contrary, the culture of the disabled is based on constant feedback and interaction with the environment and with others. The environment is also an ecology. Pierre Dufour (2013) explores how tetraplegics have to use the hands and body parts of others in order to function in everyday life. Through the paradigms of independence and performance, these collective and shared gestures are made invisible, just as the care of artworks is made invisible to satisfy the illusion of authenticity and integrity of the objects. Thus, beyond perception and interaction, care as ambience refers to an ecology of gesture (Denis & Pontille, 2022).

3. CONCLUSION

The experience and knowledge of impairment and disability exposes the ambiguity of care in museum spaces. A functional perspective tends to create ambience as a result of care, towards objects and individuals, without considering their interaction. Ambience can also be understood as a process of care that emerges from an intimate interaction between the viewer and his or her environment. They invite us to think beyond the caregiver/receiver binary to consider care as a practice that necessarily involves both in an ecological dynamic.

Recent academic work in architectural theory, history and archaeology takes a different approach to disability, drawing the contours of an extraordinarily rich culture of fragility. Starting from vulnerability makes it possible to define new conceptual frameworks capable of revealing it (Denis & Pontille, 2022). Our environment is already the receptacle and witness of impairments and disabilities. They are present in the memory of past uses, sometimes evoked in decorations and iconography,

embodied above all in the site, whose conservation problems make it a place of care. It was therefore possible to hypothesise a heritage of fragility that has not yet been exploited.

BIBLIOGRAPHY

Bégout, B. (2020). Le Concept d'ambiance. Essai d'éco-phénoménologie. Seuil.

Canguilhem, G. (1966). Le vivant et son milieu, in La connaissance de la vie, Vrin.

Canguilhem, G. (2001). The Living and Its Milieu. Grey Room, 7-31.

De Certreaux M. (1994). L'invention du quotidien, 2. Habiter, cuisiner, Gallimard.

Denis, J. & Pontille, D. (2022). Le soin des choses. Politiques de la maintenance. La Découverte.

Domínguez Rubio, F. (2020). Still Life. Ecologies of the Modern Imagination at the Art

Museum. Chicago University Press.

Dufour P. (2013). L'expérience handie, Presses universitaires de Grenoble.

Gernot Böhme, G. (1995). Atmosphäre : Essays zur neuen Ästhetik. Suhrkamp.

Gissen, D. (2022). The architecture of disability: buildings, cities, and landscapes beyond access. University of Minnesota Press.

Goldstein, K. (1939). The organism: A holistic approach to biology derived from pathological data in man. American Book Publishing.

Kleege G. (1999). Sight unseen, Yale University Press.

Kleege G. (2017). More than Meets the Eye: What Blindness Brings to Art, Oxford University Press.

Muhle, M. (2024). Temptations of the Milieu. Revue internationale de philosophie, 307, 133-153

Pereira Paulo L. & Tourette-Turgis C. (2014). De l'accès à l'expérience des malades à la professionnalisation de leurs activités : reconnaître le care produit par les malades, in Le sujet dans la cité, 5 (2), 150-159.

Perret A. (1929), Le musée moderne, in Mouseion, 9.

Tallagrand, D., Thibaud, J. & Tixier, N. (2021). L'usage des ambiances: Une épreuve sensible des situations. Hermann.

Tronto J. (2008). Defining care. in revue du Mauss, 32(2), 243-265

L30

URBAN TEMPORALITIES BETWEEN HERITAGE AND PROJECTION

CHAIRS Noha Gamal Said
Toumadher Ammar

The ambiance is traversed by various apprehensions of time. The long duration that inscribes it into history. The immediacy of the lived experience leads us to contemplate its incessant evolution through an infinitely actualized present, where concrete reality never repeats itself. Through ambiance, we inhabit time through internally lived experiences. The felt ambiance, as it subtly transforms over time and space, contributes to the actualization of our inner states—an adjustment that occurs more in succession than juxtaposition, aligning with the conception of ambiance as a perpetual process or being in becoming. Ambiance projects us into the past, into the future, and sometimes detaches us from our present.

Ambiance encompasses time as rhythm, embrace, nonchalance, slowness, eagerness, and more.

We perceive time through ambiance. Our apprehension of time is also influenced by cultural, geographical, and climatic filters. Some research has explored the notion of ambiance through concepts that shape time, such as palimpsest and hybridity. The question of temporality prompts us to consider ruptures or continuities of ambiance over time and space.

That said, there remains ample room for debate regarding the quality of ambiances concerning the temporal aspects of urban spaces. We believe that city construction necessitates an understanding of time: its perceptible nature, objective measurement, and instrumentalization throughout the project's duration.

The theme of urban temporality encompasses time within operational concepts, analytical tools, and representations of urban projects. The intended objective is to comprehend the complexity of urban history, which includes spatial history (materials, devices, processes), the history of social practices (ordinary acts, exceptional occupations, forms of appropriation, well-being and/or ill-being situations), and the inseparable sensitive history intertwined with memory. Additionally, it involves the production of historical narratives at three levels: habitation, neighborhood, and the city itself.

The aim is to uncover the interconnections and relationships between these dimensions and their uses, as well as their impact on city construction (urban planning and design). In this context, several questions arise: How does the built space of a city intersect with these temporal dimensions?

How does a sensory history unfold through urban construction and permeate urban culture? What sensory design tools are currently suitable for capturing and producing time, and how can new ones be created? Which concepts related to the lexicon of ambiance are capable of incorporating and representing the temporal and historical challenges of architecture and urban planning?

How do we perceive urban temporalities in the era of the Anthropocene, digitalization, and the post-pandemic era?

THE ATMOSPHERE OF MOUNTAIN TERRITORIES: URBAN TEMPORALITIES IN THE VILLAGES OF THE ITALIAN APENNINE

A ATMOSFERA DOS TERRITORIOS DE MONTANHA: TEMPORALIDADES URBANAS NAS ALDEIAS DOS APENINOS ITALIANOS

Camilla Sette
PhD Student in Building-Construction Engineer
Department of Civil, Building-Construction and Environmental
Engineer-DICEAA, University of L'Aquila, Italy
camilla.sette@graduate.univaq.it

ABSTRACT

This study examines the villages located in inner areas of Gran Sasso National Park, in Abruzzo, Italy, focusing on the dynamics of depopulation accelerated by the 2009, 2016 and 2017 earthquakes. However, these events did not cause the decline but intensified an already ongoing process. The analysis considers population growth and decline as natural phenomena, currently in their downward phase. Studying these places is essential to prepare for a future reversal of the trend and recover their identity. The approach taken combines qualitative and quantitative data, with descriptions and photographs by the author. The concept of 'urban atmosphere' is central and difficult to define, involving multi-sensory dynamics. Place attachment and place identity are explored through theories of topophilia and hauntology. The methodology uses quantitative indicators and phenomenological exploration on foot, documenting bodily interaction with the environment. Photographs and narratives complement the analysis, highlighting the urban atmospheres and levels of temporality stratified in the villages.

KEYWORDS: atmospheres. temporalities. inner areas. hauntology. photography.

RESUMO

Este estudo examina as aldeias localizadas nas zonas interiores do Parque Nacional Gran Sasso, em Abruzzo, Itália, centrando-se na dinâmica de despovoamento acelerada pelos terramotos de 2009, 2016 e 2017. No entanto, estes eventos não causaram o declínio, mas intensificaram um processo já em curso. A análise considera o crescimento e o declínio populacional como fenómenos naturais, atualmente em fase descendente. O estudo destes lugares é essencial para preparar uma futura inversão da tendência e recuperar a sua identidade. A abordagem adoptada combina dados qualitativos e quantitativos, com descrições e fotografias do autor. O conceito de "atmosfera urbana" é central e difícil de definir, envolvendo dinâmicas multi-sensoriais. A ligação ao lugar e a identidade do lugar são exploradas através das teorias da topofilia e da assombração. A metodologia utiliza indicadores quantitativos e a exploração fenomenológica a pé, documentando a interação corporal com o ambiente. Fotografias e narrativas complementam a análise, evidenciando as atmosferas urbanas e os níveis de temporalidade estratificados nas aldeias.

PALAVRAS-CHAVE: atmosferas. temporalidades. zonas interiores. hauntologia. fotografia.

1. INTRODUCTION

Interrupted. This is how many of the villages in the inner areas of the Abruzzo Apennines in Italy appear. In this specific case we refer to villages within the Gran Sasso National Park. Here, time seems to have stood still, or are the villages that have stood still while everything around flows by. Still, yes, to the date of the earthquakes (to those of 2009, then 2016 and 2017). However, the course of events in these villages was not altered/changed by the earthquake (at least in most of them); the event only contributed to accelerating the process of depopulation and abandonment that had already been underway for several decades in these areas (Macchi Janica & Palumbo, 2019; Sette & Romano 2022; De Rossi, 2020; Barbera et al., 2022). Considering this in the long term, however, the processes of demographic growth and decline are natural over the centuries; we are currently in the descending phase of the parabola, but precisely for this reason it is necessary to study and understand these places, their atmospheres and their relationship with urban temporalities, in order to prepare posterity for a reversal of the trend in the future and recover the sense of the places for a return to life there.

Defining the urban atmosphere of a village is difficult because it is a holistic unit and involves multi-sensory body dynamics. One of the main difficulties is precisely to bring to light the *'affective content'* of the village space. Different types of approaches have been developed over the years and in the various sciences. The one we are going to refer to is a type of approach that is in the vein of "hybrid approaches - based" on both qualitative and quantitative data and descriptions/photographs made by the author himself (Kiib et al. 2017). To construct this hybrid quantitative/qualitative methodology, a variety of descriptive methods need to be brought together, which is why the paper has a predominantly methodological orientation.

2. URBAN TEMPORALITIES AND SENSE OF PLACES

Historical villages in inner areas of Italy are closely linked to the concept of time, as they are the product of historical stratifications that have taken place over the centuries; they are not static, but subject to the passage of time and the sedimentation of memory. The traces of the past, of the past life that flowed between those streets, in those houses, permeate the urban landscape and when we pass through these places our bodies resonate with them (Bohme, 1995; Pallasmaa, 1996; Griffero 2016; De Matteis, 2019; Schmitz, 2019; Fuchs, 2020).

Wyle (2007) states that places affected by past catastrophes or traumas are somehow 'paralysed', affected by that Schmitzian "emotional paralysis" (Schmitz, 2011). The link with the rural urban environment has been abruptly severed and therefore needs to be slowly restored, stimulated to a new departure, not by searching for the "as it was and where it was" (physical and emotional), but by going to act on the affective dimension of the space existing today, because this has undergone not only a physical transformation, but also a transformation of the atmosphere of places (De Matteis, 2022).

It is now therefore necessary to introduce the theme of "place identity" and "place attachment", to the development of which Tuan (1974, 1977) and Relph (1976) contributed extensively. "Topophilia" (literally "love of place") is the neologism coined by Tuan (1974) to refer precisely to the emotional and affective bond that unites individuals to places, absorbing concepts and ideas from existentialism and phenomenology. Since then, this theme has been extensively investigated and debated in various disciplines and fields of research (Buttimer & Seamon, 1980; Seamon, 1996; Chow & Healey, 2008; Bernardo & Palma-Oliveira, 2013, Belanche et al., 2017, Cook et al., 2007; Mihaylov & Perkins, 2014; Kyle et al., 2004).

Tuan (1977, p.137) writes: "Of young lovers we say that they dwell in each other's gaze. They are free from attachment to things and place; they will leave their homes and flee if necessary. Older couples are attached to place, but they are even more so to people, to services and to each other".

This statement well summarizes on the one hand the phenomenon of depopulation that afflicts inner areas of Italy, and on the other hand, the main reasons for the attachment to the place. Again Tuan, about the definition of place, asserts:
It is a unique mixture of sights, sounds, such as the times of sunrise and sunset, of work and play. The feeling of a place is registered in the muscles and bones. A sailor has a recognizable walking style because his posture is adapted to the sunken deck of a boat on the high seas. Similarly, though less visibly, a farmer living in a mountain village may develop a different set of muscles and perhaps a slightly different walking style from a man from the plains who has never climbed. (Tuan 1977, p.184)
Buttimer, editor together with Seamon of the collection of essays The Human Experience of Space and Place (1980), also emphasizes that the affective relationships that individuals establish with the places in which they live are crucial and determine the sense of belonging.

3. METHODOLOGY
The methodology of the research is that of a quantitative analysis complemented by a "verification" of the method through a dialectical and image-based articulation. In a nutshell, based on on-site inspections and surveys, and on data collected in situ or present in national databases (ISTAT), a descriptor was derived that can be traced back to the analysis of urban and socio-economic architectural matrices. This descriptor is associated with a newly coined indicator that expresses, in a synthetic and expeditious form, the "State of residual conservation of high-value historical-architectural features", or the "Qualitative Recoverability Credential" (QRC). This method, which is part of the broader field of indicator engineering (Papa et al., 1993; Brown & Raymond, 2007; Cerreta & Malangone, 2014; Sun et al., 2020; Romano et al., 2022; Romano et al., 2023), thus goes to make an assessment on the "quality" (broadly understood) of the hamlets, carrying out a comparison and clustering of them.

The results obtained will be used to guide political and planning decisions and choices in these villages. The innovation of this methodology lies in having, as a complement to this quantitative analysis, a descriptive capacity to have a method of verification of this indicator, through images, snapshots, combined with descriptions of the experiences of the subject (narrator) and the object (urban environment), through an exploration on foot of these villages, a sort of urban promenade. We ask ourselves: 'What aspect of phenomenal reality can I not assess with an indicator? And what phenomenographic tools (Marton, 1986; Hasse, 2015; De Matteis et al., 2019) do we have to reveal the temporalities of these places?" The experience of exploring "on foot" is a tool for describing places, perceived atmospheres, which combined with the use of the photographic device can highlight urban atmospheres and the different levels of temporalities that have stratified within these villages.

As De Matteis (2022) well summarizes, "is it not necessary to widen our gaze beyond the dimension of the architectural objects that constitute cities alone, admitting that what makes them alive - the web of resonant relationships and affections - has just as much need to stay alive and be preserved?".

The synaesthetic character of atmospheres is not only multisensory, but also capable of triggering different types of cognitive or involuntary sensory associations; it is therefore necessary to expose ourselves directly to the urban experience in order to document our body's response when subjected to it. Physical, social and atmospheric changes over the centuries influence our perception and experience of the urban atmosphere.

4. URBAN ATMOSPHERES AND HAUNTOLOGY

But what is an urban atmosphere? What is its connection to time and urban space? And how does it affect the lives of people (residents and visitors)? Many authors in many disciplines have written about atmospheres in recent years, addressing them in a wide variety of ways (Hasse, 2008; Anderson, 2009; Bissell, 2010; Thibaud, 2011; Hasse, 2012; Edensor, 2012; Edensor, 2015; Ash, 2013; Buser, 2014; Thibaud, 2015; Sørensen, 2015; Bille et al., 2015; Kazig et al., 2017; Buser, 2017). In particular, in this research the interest is toward the relationship between atmosphere and time. In this regard, Bille et al. (2015) state that "... atmospheres emerge as multi-temporal tensions: they are at once a product of the past and the future". This peculiar reading of atmospheres makes me introduce the theme of hauntology, so dear to English human geographers; inspired by Derrida's writing "Marx's Spectres", they have investigated the theme of hauntology (Maddern & Adey 2008; Till 2005; Till 2012) and spectrality (Degen & Hetherington 2001; Cameron 2008; Edensor, 2005). Maddern and Adey in their introduction to the volume Cultural Geographies (2008) state, in relation to time, that past and future, are in additional relation to the present; spaces and times are 'folded' allowing distant presences, events, people and things to become more 'intimate'.

Wylie (2007) writes that "the spectral confuses the established orders of past and present", suggesting how spectral relations tangle the threads of temporal linearity (Maddern & Adey, 2008), questioning the straight "arrow" of time (Merleau-Ponty (1945) already stated that "time is not a line but a web of intentionality") between what has already been and what is yet to be: present past and future, especially within these villages, are not separate, but always have a bit of one within the other, are not linear, and thus allow something to be noticed as 'absent' in the present, through the recognition of traces of the past. In a way, atmospheres are the 'prototypical' way in which hauntology manifests itself, as they lie between subject and object, characterized by their quasi-cosality (Griffero, 2017a; Böhme, 1995; Böhme, 2017). As Buse and Stott (1999) write, for hauntology, the relations between past and present, between presence and absence, are not only "relations in tension", but "are inseparable because each term contains traces of its opposite" (Anderson, 2009). Tuan asserts:

> "The readiness with which we confuse spatial and temporal categories is evident in language. Length is commonly indicated in units of time. Architectural space, because it seems to reflect the rhythms of human feelings, has been described as 'frozen music' - spatialized time. The passage of time, on the other hand, is described as 'length'". (Tuan, 1977 p.120)

Regarding the body's relationship with the world, Merleau-Ponty wrote:

> "Visible and mobile, my body is a thing among things; it is caught in the fabric of the world and its cohesion is that of a thing. But because it moves and sees, it holds things in a circle around it. Things are an annex or extension of itself; they are encrusted in its flesh; they are part of its full definition". (Merleau-Ponty, 1945)

And it is precisely in the corporeality of subjects that the affective knot of spatial experience is located (Griffero 2017b; De Matteis, 2018; Feldon et al. 2018; De Matteis, 2019). We perceive what kind of space surrounds us, and this has consequences for the perception of architecture: if it is true that architecture creates spaces, then to evaluate them, you have to enter these spaces, to be bodily present. (Böhme, 2017).

5. WALKING THROUGH PLACES AND IMAGES

"To walk is to know, to understand, to change..." So writes Teti (2022) describing the act of walking through the narrow streets of these villages, synaesthetically perceiving their quality. Sartoretti (2016) also writes that "...by walking one can easily make a place one's own and discover/experience it... the narrative gives synthesis and order to all the experiences and emotions lived". Our different reaction to, for example, a stone wall and a plaster wall is generated by my emotional response; the reflections of dawn or sunset on the windowpanes, the empty houses, the quiet

streets… In these small mountain villages, everything seems to speak about the past: the gates to be repainted, the neighborhood shops with outdated signs (Figure 1), the seats waiting for the ladies for their evening chats…

Speaking of chats (far from being futile) and language, these have taken centre stage in the recent interest in so-called "emotional geographies", linked to affectivity and feelings within cultural geography. In particular, the interconnections between emotions and space are revealed by language (Sharp, 2009). It seems that most interpersonal verbal communication serves to create an atmosphere between people. That is what gossip, chat is for. At stake is neither the exchange of information nor verbal interaction, but above all the act of talking itself. And as Böhme (2017) states, this has "a procedural function, i.e. its main purpose is the actualization of an underlying interpersonal atmosphere".

As I walk through these villages, I imagine what it must have been like to live there years ago, when life flowed through those narrow streets, when at every door you could hear a hubbub, the smell of biscuits and warm bread invading all the streets and children running in the streets or riding their bicycles (Figure 2)… but then suddenly, here are some children playing football! (Figure 3) And how much life shone through those clothes hanging out to dry in the warm May sun! (Figure 4)

"The experience of architectural space - including historical space - goes beyond the cultural and cognitive dimension alone, bringing out a dense web of bodily sensations that the subject feels and registers, without being able to articulate them precisely" (De Matteis, 2022).

With the power of photography and images, we wanted to capture what may have remained hidden in the wide-meshed web of the indicator, and even in the denser ones of words, filling the gaps of the former and the 'difficulty' of verbalization.

The image, prejudicially, is always regarded as denotative and documentary; images, however, "do not merely speak of an atmosphere, but create it; the images themselves "are" this atmosphere and not its representation". Atmospheres are "diffused" in the very image that generates them (Griffero, 2010). Photographs "represent" the lives of inhabitants, past and present; photographs can in fact be the reiteration of a past memory, still present, becoming a social 'memory bank' (Shanks, 1997). Photography thus works on memory and time, crystallizing a past moment that becomes present again. And if "memory is the act of remembering from the point of view of a later time" (Shanks 1997), photographs help us in the reactivation of the same, soliciting a bodily resonance felt through multi-sensory effects.

In the encounter with these places, previous events become vivid and visible through the presence of traces that call to mind "memories of a wide range of practices and materialities" (Meier et. al, 2013). Our goal, as De Matteis (2021) asserts, should be

precisely "the archaeological extraction of the emotional content implicit in lived space and its re-installation through the tools of architecture". Sørensen (2015) also states that at least part of the emotional content of the built environment can re-emerge as an archaeology of human space. Still about traces, Edensor (2012) asserts that through the marks engraved on building stones he can reach the people, things and places that have left their traces in the stone. And in this way, you can understand what is absent.

"The city does not tell its past, it contains it like the lines of a hand, written in street corners, window grills, staircase handrails, lightning rod antennas, flagpoles, each segment striped in turn with scratches, serrations, notches, twists". (Calvino, 1972, p.11).

And moreover, Zumthor:

> ...or is it the people who give the space this unique atmosphere? I ask myself this question because I am convinced that a good building must be able to absorb the traces of human life, thus acquiring a special richness. Of course, I am thinking of the patina that time deposits on materials, of the countless scratches that mar the surfaces, of the shine of paint that has cracked and become opaque, of the edges that wear and tear has smoothed out...a feeling of awareness of time passing, a feeling towards human life that takes place in places and within spaces, giving them a special charge...Architecture is exposed to life. If its body is sufficiently sensitive, it is able to develop a quality that can guarantee the reality of the life that has passed. (Zumthor, 1988 p.18)

Figure 1. The sign of an old shop
Source: Author's photo (2024).

Figure 2. An abandoned children's bike.
Source: Author's photo (2024).

Figure 3. Children playing with a ball.
Source: Author's photo (2024).

Figure 4. Clothes hanging in the sun.
Source: Author's photo (2024).

6. CONCLUSIONS

We have seen how, by means of this quantitative and qualitative 'hybrid' method, we can have an evaluation that is as complete as possible, and not just 'data-driven'. Crossing quantitative data and atmospheric description, enriches the understanding we have of places; the salient aspect encountered in the promenades, which is somewhat "transparent" to the purely quantitative method, is that of the "vitality" of the places, of the network of relations and affections present; this aspect "escapes" the indicator, but at the same time is absolutely necessary for an accurate assessment of the state of the places and to understand how to operate for their recovery.

We must be careful, however, because as Teti (2022), the "father of restanza", writes: "the rhetoric of the village tends towards the creation of a meta-historical village, a non-place that may be easily filled but which risks becoming full of numbers and not of relationships. Then it will not be a village, it will be something else…".

We have to think about "what can compel us to prefer nostalgia for the future rather than for the past?" (Rowe & Koetter, 1984); not only planning how to physically recover these villages, but also how to keep alive and preserve the network of resonant relationships and affections, which are what makes them alive. It is necessary to opt for a "homeopathic and non-surgical method, a selective and discreet way, which cures by accepting even the pathological conditions of the context and starts from this to introduce innovative elements" (Zagari, 2008). The particular and singular

intervention strategies for these places will have to be aimed at enhancing all those natural and anthropic contexts in which those characteristics, in which a community can represent and recognize itself, are recognizable.

7. BIBLIOGRAPHY

Anderson, B. (2009). Affective atmospheres. Emotion, Space and Society, 2(2), 77-81. *https://doi.org/10.1016/j.emospa.2009.08.005*

Ash, J. (2013). Rethinking affective atmospheres: Technology, perturbation and space times of the non-human. *Geoforum,* 49, 20-28. *https://doi.org/10.1016/j.geoforum.2013.05.006*

Barbera, F., Cersosimo, D. & De Rossi, A. (Eds.) (2022). Contro i borghi. Il Belpaese che dimentica i paesi. Donzelli editore, Rome.

Belanche, D., Casaló, L. V., & Flavián, C. (2017). Understanding the cognitive, affective and evaluative components of social urban identity: Determinants, measurement, and practical consequences. *Journal of Environmental Psychology, 50, 138-153. https://doi.org/10.1016/j.jenvp.2017.02.004*

Bernardo, F., & Palma-Oliveira, J. M. (2013). Place identity: A central concept in understanding intergroup relationships in the urban context. In L. Manzo & P. Devine-Wright (Eds.), *Place Attachment: Advances in Theory, Methods and Applications (pp. 35-45).* Routledge. *https://doi.org/10.4324/9780203757765*

Bille, M., Bjerregaard, P., & Sørensen, T. F. (2015). Staging atmospheres: Materiality, culture, and the texture of the in-between. *Emotion, Space and Society, 15, 31-38. https://doi.org/10.1016/j.emospa.2014.11.002*

Bissell, D. (2010). Passenger mobilities: affective atmospheres and the sociality of public transport. *Environment and Planning D: Society and Space,* 28(2), 270-289. *https://doi.org/10.1068/d3909*

Böhme, G. (1995). *Atmosphäre: Essays zur neuen Ästhetik*. Suhrkamp, Berlin.

Böhme, G. (2017). *Atmospheric architectures. The aesthetic of felt spaces*. Bloomsbury Publishing, London.

Brown, G., & Raymond, C. (2007). The relationship between place attachment and landscape values: Toward mapping place attachment. *Applied geography, 27(2), 89-111. https://doi.org/10.1016/j.apgeog.2006.11.002*

Buse, P., & Stott, A. (Eds.). (1999). *Ghosts: Deconstruction, psychoanalysis, history.* Springer.

Buser, M. (2014). Thinking through non-representational and affective atmospheres in planning theory and practice. *Planning Theory, 13*(3), 227-243. *https://doi.org/10.1177/147309521349174*

Buser, M. (2017). The time is out of joint: Atmosphere and hauntology at Bodiam Castle. *Emotion, Space and Society, 25*, 5-13. *https://doi.org/10.1016/j.emospa.2017.09.006*

Buttimer, A. & Seamon, D. (Eds.) (1980). *The Human Experience of Space and Place.* Routledge, London.

Calvino, I. (1972). Le città invisibili. Giulio Einaudi Editore,

Cameron, E. (2008). Indigenous spectrality and the politics of postcolonial ghost stories. *Cultural Geographies, 15(3), 383-393. https://doi.org/10.1177/1474474008091334*

Cerreta M., & Malangone V. (2014). Valutazioni multi-metodologiche per il paesaggio storico urbano: la valle dei mulini di Amalfi. *BDC. Bollettino Del Centro Calza Bini*, 14(1), 39-60. *https://doi.org/10.6092/2284-4732/2664*

Chow, J., & Healey, M. (2008). Place attachment and place identity: First-year undergraduates making the transition from home to university. *Journal of Environmental Psychology, 28(2), 168-178. https://doi.org/10.1016/j.jenvp.2007.10.007*

Cook, C. C., Martin, P., Yearns, M., & Damhorst, M. L. (2007). Attachment to "place" and coping with losses in changed communities: A paradox for aging adults. Family and Consumer Sciences Research Journal, 35(3), 201-214. *https://doi.org/10.1177/1077727X06296794*

De Matteis, F. (2018). The city as a mode of perception: Corporeal dynamics in urban space. In *Handbook of research on perception-driven approaches to urban assessment and design (pp. 436-457).* IGI Global.

De Matteis, F. (2019). *Vita nello spazio: Sull'esperienza affettiva dell'architettura.* Mimesis, Milan.

De Matteis, F. (2021). *The Affective City. Spaces, Atmospheres and Practices in Changing Urban Territories*. Lettera Ventidue Edizioni, Siracusa.

De Matteis, F. (2022). *The Affective City. Abitare il terremoto*. Lettera Ventidue Edizioni, Siracusa.

De Rossi, A. (Ed.) (2020). *Riabitare l'Italia. Le aree interne tra abbandoni e riconquiste.* Donzelli Editore, Rome.

De Matteis, F., Bille, M., Griffero, T. & Jelić, A. (2019). Phenomenographies: describing the plurality of atmospheric worlds. *Ambiances. Environnement sensible, architecture et espace urbain*. *https://doi.org/10.4000/ambiances.2526*

Degen, M., & Hetherington, K. (2001). Hauntings. *Space and culture, 11*(12), 1-6. URL: *https://www.researchgate.net/profile/MonicaDegen/publication/42796412_Spatial_Hauntings/links/63d2d2ca62d2a24f92ce7082/Spatial-Hauntings.pdf*

Edensor, T. (2005). The ghosts of industrial ruins: ordering and disordering memory in excessive space. *Environment and planning D: society and space, 23*(6), 829-849. *https://doi.org/10.1068/d58j*

Edensor, T. (2012). Vital urban materiality and its multiple absences: the building stone of central Manchester. *Cultural geographies* 20(4) 447-465. *https://doi. org/10.1177/1474474012438823*

Edensor, T. (2015). Introduction: Sensing and perceiving with light and dark. *The Senses and Society, 10*(2), 129-137. *https://doi.org/10.1080/17458927.2015.1042227*

Feldon, D. F. & Tofel-Grehl, C. (2018). Phenomenography as a foundation for Mixed Models research. *American Behavioral Scientist.* 62(7), 887-899. *https://doi. org/10.1177/0002764218772640*

Fuchs, T. (2000). *Leib, Raum, Person: Entwurf einer phänomenologischen Anthropologie.* Klett-Cotta, Stuttgart.

Griffero, T. (2010) *Atmosferologia. Estetica degli spazi emozionali*, Roma-Bari, Laterza.

Griffero, T. (2016). Atmospheres and felt-bodily resonances*. Studi di Estetica. 1, 1-41.* URL: *http://mimesisedizioni.it/journals/index.php/studi-di-estetica/article/view/457/798*

Griffero, T. (2017a). *Quasi-things: The Paradigm of Atmospheres*. SUNY Press.

Griffero, T. (2017b). Felt-bodily resonances. Towards a pathic aesthetics. *Yearbook for Eastern and Western Philosophy*. 2, 149-164. *https://doi.org/10.1515/yewph-2017-0013*

Hasse, J. (2012). Atmosphären der Stadt. Aufgespürte Räume. JOVIS Verlag, Berlin.

Hasse, J. (2015). *Was Räume mit uns machen - und wir mit ihnen: Kritische Phänomenologie des Raumes*. Karl Alber, Freiburg-Munich.

Hasse, J. (Ed.). (2008). *Stadt und Atmosphäre*. BAG-Verlag.

Kazig, R., Masson, D. & Thomas, R. (2017). Atmospheres and mobility: An introduction. *Mobile Culture Studies.* 3, 7-20. *https://doi.org/10.25364/08.3:2017.1.1*

Kiib, H., Marling, G., & Jespersen, L. M. B. (2017). The Orange feeling. Mood and atmosphere at Roskilde festival. *Ambiances. Environnement sensible, architecture et espace urbain*. *https://doi.org/10.4000/ambiances.829*

Kyle, G. T., Mowen, A. J., & Tarrant, M. (2004). Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology,* 24(4), 439-454. *https://doi. org/10.1016/j.jenvp.2004.11.001*

Macchi Janica, G. & Palumbo, A. (Eds.) (2019). Territori Spezzati. Spopolamento e abbandono nelle aree interne dell'Italia contemporanea. CISGE – Centro Italiano per gli Studi Storico-Geografici, Rome.

Maddern, J. F., & Adey, P. (2008). Spectro-geographies. *Cultural Geographies, 15(3),* 291-295. *https://doi.org/10.1177/1474474008091328*

Marton, F. (1986). Phenomenography. A research approach to investigating different understandings of reality. *Journal of Thought*. 21 (3), 28-49.

Meier, L., Frers, L., & Sigvardsdotter, E. (2013). The importance of absence in the present: Practices of remembrance and the contestation of absences. *Cultural Geographies,* 20(4), 423-430. *https://doi.org/10.1177/1474474013493889*

Merleau-Ponty, M. (1945). *Phénoménologie de la perception.* Editions Gallimard, Paris.

Mihaylov, N., & Perkins, D. D. (2014). Community place attachment and its role in social capital development in response to environmental disruption. In L. C. Manzo & P. Devine-Wright (Eds.), *Place Attachment: Advances in Theory, Methods and Applications* (61-74). Routledge. *https://doi.org/10.4324/9780203757765*

Pallasmaa, J. (1996). *The Eyes of the Skin: Architecture and the Senses.* John Wiley and Sons Inc, Hoboken, NJ, United States.

Papa, R., Bolondi, L. M., & Galderisi, A. (1993). Modelli interpretativi e metodi di analisi per la costruzione di un sistema di indicatori della qualità urbana. In *Ambiente urbano, Qualità e Innovazione Tecnologica (77-106).* Unesco MAB Italia-Progetto 11; Comitato CNR Scienza e Tecnologia per l'ambiente e l'habitat. URL: *https://iris.unicampania.it/handle/11591/362035*

Relph, E. (1976). Place and placelessness. Pion Limited, London.

Romano B., Marucci A., Zullo F., Fiorini L., Saganeiti L., Cattani C., Di Berardino L., Di Dato C., Di Pietro G., Donolo R. M., Falasca F., Montaldi C., Sette C. & Tomei V. (2022). *SOSTENERE - Sostenibilità, resilienza, adattamento per la tutela degli ecosistemi e la ricostruzione fisica in Italia Centrale.* Università dell'Aquila, L'Aquila.

Romano, B., Sette, C., Zullo, F., & Montaldi, C. (2023). Patterns of Urban Compactness: Indicators of Balance between Built-Up Area and Voids. *Current Urban Studies*, 11(1), 179-193. *https://doi.org/10.4236/cus.2023.111009*

Rowe, C. & Koetter, F. (1984). *Collage City.* The MIT Press, Chicago.

Sartoretti, I. (2016). Intimi Universi. Mimesis, Milan.

Schmitz, H. (2011). *Der Leib*. De Gruyter.

Schmitz, H. (2019). *New phenomenology: A brief introduction.* Mimesis, Milan.

Seamon, D. (1996). A Geography of the Lifeworld: Movement, Rest and Encounter. Routledge.

Sette, C. & Romano, B. (2022). New keywords for the inner areas of the Country. Small municipalities, territorial cohesion, demographic "repopulation".Disegnarecon, 15(28). *https://doi.org/10.20365/disegnarecon.28.2022.5*

Shanks, D. R. (1997). Representation of categories and concepts in memory. In M. A. Conway (Ed.), *Cognitive models of memory (111–146). The MIT Press,* Chicago.

Sharp, J. (2009) Humanistic geography. In: Gregory, D., Johnston, R., Pratt, G., Watts, M. and Whatmore, S. (eds.) *The Dictionary of Human Geography. Wiley-Blackwell*, Chichester, UK.

Sørensen, T. F. (2015). More than a feeling: Towards an archaeology of atmosphere. *Emotion, Space and Society, 15*, 64-73. *https://doi.org/10.1016/j.emospa.2013.12.009*

Sun, P., Zhang, S. & Zhang, T. (2020). Exploration of Rural Development Potential Under the Strategy of Rural Vitalization in China, *Proceedings of the 2020 5th International Conference on Humanities Science and Society Development (ICHSSD 2020)*. *https://doi.org/10.2991/assehr.k.200727.128*

Teti, V. (2022). *La restanza*. Giulio Einaudi Editore, Turin.

Thibaud, J. P. (2015). *En quête d'ambiances: éprouver la ville en passant.* MétisPresses, Gèneve.

Thibaud, J.P. (2011). The Sensory Fabric of Urban Ambiances. *Senses and Society,* 6(2), 203-215. URL: *https://hal.science/hal-00978343*

Till, K. E. (2005). Emplacing memory through the city: the New Berlin. GHi Bulletin, 35, 73-83. URL: *https://mural.maynoothuniversity.ie/2729/1/KT_Emplacing.pdf*

Till, K. E. (2012). Wounded cities: Memory-work and a place-based ethics of care. *Political Geography,* 31(1), 3-14. *https://doi.org/10.1016/j.polgeo.2011.10.008*

Tuan, Y. (1974). *Topophilia: A study of Environmental perception, attitudes and values.* Columbia univ Press.

Tuan, Y. (1977). *Space and place: The perspective of experience*. University of Minnesota Press.

Wylie, J. (2007). The spectral geographies of WG Sebald. *Cultural Geographies, 14(2), 171-188*. *https://doi.org/10.1177/1474474007075353*

Zagari, F. (2008). *Questo è paesaggio. 48 definizioni*. Mancosu Editore, Rome.

Zumthor, P. (1988). *Thinking architecture*. Birkhauser Verlag, Basel.

MULTITEMPORALITIES OF URBAN HERITAGE: HANFU FESTIVALS, SOCIAL MEMORIES, AND ATMOSPHERIC ENCOUNTERS

Chu Xu
PhD candidate
Utrecht University
c.xu@uu.nl

Ilse van Liempt
Associate Professor
Utrecht University
i.c.vanliempt@uu.nl

Ajay Bailey
Professor
Utrecht University
a.bailey@uu.nl

ABSTRACT

This article examines urban atmosphere by focusing on the sensory and temporal dimensions of urban heritage festivals. It presents an empirical study of Hanfu festivals within heritage sites in Chengdu, China, drawing on in-depth interviews (27) and participatory observations. Hanfu refers to traditional clothing worn by the Han Chinese. We delineate four distinctive vignettes of atmosphere accounts, namely liveness, solidarity among communities, sense of place, and cultural nationalism. Various temporal aspects, including present-day experiences, personal and collective memories, and imaginaries of the future, shape the sensory and cognitive experiences of festival atmospheres in heritage spaces. The article underscores the role of social memories in mediating affective responses, thereby enabling diverse individual interpretations of festival atmospheres within heritage settings. It also demonstrates how festivals can be a potent sensory design tool that influences the way people understand and live in the city.

KEYWORDS: Urban heritage. Festivals. Atmosphere. Memories. Hanfu. China

RESUMO

Este artigo examina a atmosfera urbana focando nas dimensões sensoriais e temporais dos festivais de patrimônio urbano. Apresenta um estudo empírico dos festivais Hanfu em locais de patrimônio em Chengdu, China, baseado em entrevistas em profundidade (27) e observações participativas. Hanfu refere-se às roupas tradicionais usadas pelos Han chineses. O artigo delineia quatro relatos distintos de atmosferas, nomeadamente vivacidade, solidariedade entre comunidades, senso de lugar e nacionalismo cultural. Vários aspectos temporais, incluindo experiências contemporâneas, memórias pessoais e coletivas, e imaginários do futuro, moldam as experiências sensoriais e cognitivas das atmosferas dos festivais em espaços de patrimônio. O artigo destaca o papel das memórias sociais na mediação das respostas afetivas, possibilitando interpretações individuais diversas das atmosferas dos festivais em cenários de patrimônio. Demonstra também como os festivais podem ser uma poderosa ferramenta de design sensorial que influencia a forma como as pessoas entendem e vivenciam a cidade.

PALAVRAS-CHAVE: patrimônio urbano. Festivais. Atmosfera. Memórias. Hanfu. China

1. INTRODUCTION / INTRODUÇÃO

Hanfu refers to traditional clothing worn by the Han Chinese. On October 16, 2010 (Double Ninth Festival), a woman in Chengdu, China, was forced to remove and burn her Hanfu after it was mistaken for a kimono, traditional Japanese clothing, by radical anti-Japanese individuals. At that time, many people in China had limited awareness of Hanfu. Hanfu was frequently mistaken for Japanese kimonos or Korean hanboks. Public discourse often portrayed wearing Hanfu in public as akin to theatrical costumes, accompanied by derogatory terms such as *Xizi,* carrying connotations of immorality and discrimination. Decades later, China has now enthusiastically embraced Hanfu cultural festivals nationwide. National, provincial, city, and district levels are each developing their own Hanfu cultural brands. What social contexts have altered the city's perceptions and attitudes towards Hanfu? What are the meanings of performing Hanfu in urban heritage festivals? In this paper, we respond to the call to "pay more attention to the manifold bodily capacities, personal and social histories which mediate and position in diverse ways how places are experienced" (Degen & Lewis, 2020). It examines how personal and collective memories interact with the physical and social fabric of the city through the lens of Hanfu festivals. Through this exploration, we shed light on the multiple temporal dimensions of heritage experiences through individual narratives of meaning-making of atmosphere.

Heritage plays a crucial role in shaping collective remembering by providing physical spaces and cultural expressions that reinforce and transmit memories, contributing to a shared sense of identity and belonging (Graham & Howard, 2016). An experience economy (Finkel & Platt, 2020) approach to heritage emphasizes performative acts, theming, and a hybrid mode of consumption that revolves around individual experiences, spatial dynamics, and social memories. During festival events, heritage narratives are meticulously crafted through symbolic storytelling and sensory engagement to provide visitors with an "authentic" experience (Erb & Ong, 2017). Despite that, the persuasive quality of atmosphere is not suggesting that the calculative engineering of atmosphere can determine individual feeling and sense-making at a fully unconscious register. Rather, this reminds us of exploring the attunement (or process) of space and mood in creating certain atmosphere (Stewart, 2011). To explore these dynamics, we raise the following questions: 1) what sensory and emotional experiences are elicited during festivals and their enactment, and 2) how have social memories shaped the affective atmosphere of urban heritage spaces as perceived and lived.

Our empirical study, based on a three-month fieldwork in Chengdu, China, utilizes participant observation and photo-elucidation interviews with 27 Hanfu wearers at Hanfu festivals in Wenshu Square. Wenshu Square, located around Wenshu Monastery dating back to the Tang Dynasty, stands as one of Chengdu's most important heritage streets. Recently, Wenshu Square has emerged as a significant site for Hanfu cultural activities and festivals. In 2023, we focused on two major Hanfu festivals: the Chengdu Hanfu Cultural Week from Sep 29 to Oct 5, and Hanfu Tour

Day on November 25th. Employing a critical phenomenological methodology (Revill, 2016), we approach the study of Hanfu atmosphere as encompassing both social and corporeal dimensions – cognitive and intuitive, sentient and emotional experiences. Every participant acknowledges the internal differences within Hanfu communities. Generally, modern Hanfu is categorized into traditional style, everyday style, fairy style, and studio style, with the latter two often criticized as too commercial. Among groups that value traditional connotations, some participants believe that Hanfu should be meticulously restored based on historical records and materials, while others advocate for innovation within the bounds of tradition to encourage wider acceptance and engagement. Many modern Hanfu incorporate plastic shoulder straps into the chest-length Hanfu dresses. In daily life, people often pair shirts or short-sleeved tops with Han horse-faced skirts. In this study, we include Hanfu wearers who don modified and mixed-matched Hanfu, as they identify themselves as such

2. HANFU HISTORY AND ITS REINVENTION

Hanfu, referring to the traditional clothing of Han Chinese, is a modern invented term (Zhou, 2014). Contemporary Hanfu encompasses various clothing styles and, by extension, hairstyles, makeup, and accessories that reflect perennial ideas of Hanfu ethnic histories that dominate the ancient China (Carrico, 2017). Later during the colonial period 1840-1949, China began to eagerly purse modernization and learn advanced Western science and systems. Certain Han traditions, including traditional clothing, were therefore once denigrated as backwards, during efforts to revolutionize old feudal China and establish the People's Republic of China (PRC). This marginalization continued during the 1978 Open Up and Reform period when China embraced the global market and modernity (Carrico, 2017). For a quite long time, Hanfu "disappeared" in Chinese history of painful modernization. The historical memory of the "centuries of humiliation" (1840-1949) has been an integral part of the construction of Chinese nationalism and involves an active notion of history and recovery – the notion of national rejuvenation (Callahan, 2004).

Since the early 21st century, a group of Hanfu enthusiasts have started to recreate Hanfu based on historical relics to reinvent and revive Hanfu as a symbol of Chinese traditional culture and identity (Carrico, 2017; Law & Qin, 2022), developed to a grassroot Hanfu movement (Carrico, 2017), lamenting the moral decline and loss of cultural identity in contemporary China. Still, the promotion of Hanfu is community-wide and not engaged by the public. Three components significantly contribute to today's Hanfu popularity. First, Hanfu arise with the social media-mobilized nationalism discourses, with a high participation of postreform-generation who witnessed China's economic affluence (Liu, 2012). Furthermore, the revival of Hanfu is argued to be consequence of the effort to promote cultural confidence in the post pandemic China. During a moment of national health crises, a "defensive nationalism" arises again, in response to hostile sentiments and racism against China around the world (Cui, 2023; Ip & Fan, 2024). To-date, the public policies have strongly promoted the

reinvention of Hanfu. Since cultural confidence was first mentioned by President Xi in 2016 in public, the central and local governments have successively issued a series of policies to promote traditional culture, such as Planning of key projects for the 14th Five-Year Plan for the inheritance and development of China's excellent traditional culture (2021). Hanfu is becoming more and more a mass consumer culture, and its driving force for traditional culture and related industries is huge, including local heritage technologies such as silk weaving. Along this unique path, Hanfu has moved from stigma to glory, from a niche to the mass, and from history to urban stage.

3. VIGNETTES OF HANFU FESTIVAL ATMOSPHERE
3.1 *Renao* and co-creation of lively atmosphere

Hanfu visitors usually plan today's theme and style before travelling to Wenshu Square, ranging from choosing specific historical or aesthetics themes, including different style(ing), makeup, and atmosphere, to see whether it suits landscapes and activities because cloth dressing help enhance the "immersiveness" of Hanfu festival experiences. In a vibrant atmosphere within Hanfu festivals, people may want to perform very theatrically in festivals to make it playful and memorable. Almost every program list of Hanfu festivals includes Hanfu wearers cruising, and some of them has itinerated to activities of "Thousands of people holding lanterns" in procession. These engineered landscapes constituted by Hanfu visitors, functioning as affective labors, has multisensory effects that create the ambiances transcending visuality, constitutive to the creation of atmosphere that make the festival experiences immersive:

> "I quite like it, but others may think it is too crowded. However, I think Chinese people like to be lively [*renao*] during festivals. Just like what we saw in TV dramas, they set up stalls in the market and performed various acrobatics and the like, and then changed their faces on the spot, and it really felt like everyone was participating together. And in the evening, it also has an activity called iron flower making. As you just saw (we watched the video together), the final activity of making iron flower is very... something that is in line with our traditional festivals. Things like a market and selling things, there may be almost all of them, but it lacks some traditional and intangible cultural heritage performances." --- Joyce (28 years old women, work in the traditional Chinese medicine industry)

Renao is an adjective Chinese word used to describe a scene, atmosphere or activity that is full of enthusiasm, joy and bustle. Sound of noise, light and red or bright colors (lantern and iron flowers), singing together, smell of warm foods, incense from the temple, tea, touch gained from seeing joyful faces are stimulus that create a sensory geography of *renao* (Pottie-Sherman & Hiebert, 2015; Yu, 2004), combined with the immersive experiences of wearing Hanfu. On the other hand, for participants seeking more cultural exchanges, *renao* can also evoke feelings of excessive commercialism and noise: "In essence, these people are the same as some loud hawkers and aunties

in shopping malls." (28-year-old man, work in cultural tourism field, Chengdu Hanfu association member). As mentioned earlier, individuals within the Hanfu-wearing community possess varying levels of perception and understanding of traditional culture. For those who are highly experienced, the threshold for excitement and expectations for Hanfu events is quite high. They believe that this Hanfu Festival is the very first step in promoting Hanfu, and higher-level cultural activities must be needed in the future. Therefore, how people feel excited about the same atmosphere depends on individuals' understandings and expectation.

3.2 Tongpao: Memories of Hanfu movements and solidarity

The shared history of Hanfu communities, marked by a time when wearing Hanfu was considered "abnormal" on urban streets, are easily brought to mind by the vibrant festival atmosphere. It prompts reflections on their collective past as they engage in promotion and community activities. Their memories of the early Hanfu movements intensify their emotional experiences affected by Hanfu festivals' atmosphere. For Hanfuist, these grand Hanfu festivals represent significant milestones and a positive legacy of the Hanfu movement, bringing together hundreds of like-minded people who share their interests and goals:

> "Seeing this, I couldn't hold back my tears. Every time I think of our predecessors (of Hanfu movement), they were under great pressure to revive Hanfu. To be honest, our pressure has been reduced a lot. Standing on the shoulders of our predecessors, we have achieved today's prosperous age. I am grateful and fully aware of the hardship of the original environment. You have worked hard. Nowadays, with more and more tongpao, there will be fewer and fewer strange eyes. We will all be here from now on. All *tongpao* unite and don't let others bully you. Borrowing my reflection from yesterday: it has been twenty years, to those of you who have worn Hanfu for a long time, let me say that this prosperous age will be as you wish." --- Heng (32 years old woman, event organizer)

Using the phrase "great pressure", this participant retrospects a period when the central government and the Chinese public did not support the Hanfu movement, as we mentioned earlier. Therefore, solidarity and mutual support are considered valuable and critical in promoting Hanfu. In Hanfu communities, they call each other members "tongpao". This world itself has a strong connotation of sense of communities, and the action of wearing Hanfu is a signifier of tongpao identity. Specifically, the term *tongpao* comes from ancient Chinese and usually refers to people who wear the same kind of clothes. In Chinese culture, it has gradually become a symbolic discourse to describe the emotional connection between people with common goals and ideals, emphasizing unity, mutual support, and common interests. It now refers to people who share the same background, identity, interests or goals. Encounters between *tongpao* are intimate, making *tongpao* feel empowered, unity, and support. Mass gatherings and progressions are also a form of worship to memorize ancestors who

have contribute greatly to today's prosperities. A sense of achievement, therefore, is born from collective fears of a hard time. In addition, feelings of confidence and belongings occurs in embodied interactions, such as wearing it with friends or encountering people wearing Hanfu on the street, being appreciated by other. The sense of achievement and belonging gained from festivals also strengthens their commitment to the community and feeds their courage to continuously wear Hanfu in everyday life.

3.3 Everyday experiences and sense of place

Imaginaries of inclusiveness and practices of social infrastructures are crucial elements supporting the experiences of festivals' vibrancy. Almost all famous historical tourist sites in Chengdu are "equipped" with diverse commercial services and Hanfu experience stores that rents Hanfu, help style tourists, and sometimes provide photographers accompanying tourists and take pictures for them. These stores are often the image-creators and promoters by proactively posting Hanfu pictures and videos online to attract consumers and visitors. Near the Wenshu Monastery, Hanfu festival experiences are enhanced by the material presence of temple heritage. In addition, within the square, there are Intangible Cultural Heritage Protection Centers, independent Hanfu design store, shops selling traditional local specialties, and teahouses, all of which contribute to creating a vernacular cultural atmosphere of heritage:

> "Maybe it is the emotional aspect, the joyful feeling, that is what I like most about wearing Hanfu. After putting on Hanfu, or slowly drinking tea in a teahouse, you feel very relaxed, and you feel that time is slowly passing by, which makes you feel deeply relaxed. Usually, we invite a few friends to cook tea around the stove together." --- Tang (29 years old woman, unemployed, jointly opened a Hanfu wedding store)

In this case, the affective qualities of a teahouse experience are deeply tied to its ability to foster relaxation and socialization, deeply embedded in Chengdu's social and cultural fabric, representing a unique blend of tradition and community (Wang, 2000). Hanfu-oriented socialities, therefore, are supported by local leisure lifestyle, welcoming and inclusive environment, and everyday socializing spaces, such as teahouses. These social infrastructures allow visitors to feel a sense of familiarity and attachment during the Hanfu festivals, drawing on their everyday emotions and practices associated with these spaces. Inclusiveness of Chengdu was frequently mentioned by participants when describing their feeling about wearing Hanfu in urban streets in Chengdu:

> "Chengdu is such a city… Even if you are an uncle wearing only red pants and go out, you may attract small attention, but others will not pay much attention. When others see Hanfu wearers, they will only think it is beautiful, or will have doubts in their heart, but will not come up to talk to or stop you. There are no

restrictions, and people around me don't look at me strangely (in the public space). Chengdu is a very inclusive city, right? Everyone can accept special and unique clothes. At the place where I work, the aunts, uncles, and young handsome guys around me never judge me. They all say it (Hanfu) looks good."
--- Qiu (26 years old, in the traditional Chinese medicine industry)

Interviewees shared ideas that people in Chengdu do not judge others in the public space, creating an inclusive atmosphere that makes individuals feel comfortable and confident engaging in any "unusual" activities. This inclusiveness is reflected in their lived experiences, sensed through subtle cues such as glances, and through explicit interactions such as compliments. Due to historical reasons, the general Chinese public lacks education and knowledge about Hanfu. Wearing Hanfu in public spaces is often seen as "abnormal" behavior and easily discriminated against because it is rare and sometimes mistaken for Korean Hanbok or Japanese kimono due to global cultural influences. Against this backdrop, the perceived inclusiveness has fostered a welcoming urban atmosphere for Hanfu, nurturing the local Hanfu culture and communities. While imbued with festival activities, Hanfu experiences are bolstered by social infrastructures, including preserved buildings, experiential stores, teahouses, and everyday practices. The urban atmosphere of Chengdu is therefore a particular affective space in which performing Hanfu is embraced, contributing to a sense of local pride and fostering attachment to the place.

3.4 National identity and cultural nationalism

A spirit of cultural nationalism is evident in festival experiences in which Hanfu festivals and enthusiasts valorize traditional Chinese history, culture, and literature. Festivals often serve as vibrant celebration. In Hanfu festivals, lively atmospheres evoked a sense of economic success and cultural vitality closely associated with Chinese nationalism, particularly among the youth. Participants express their excitement, a sense of accomplishment, and hope while appreciating Hanfu festivals atmosphere:

"We talked about cities with history and culture, and there are many in China. In this case, when you go there to play, you will not only feel its modern atmosphere, but more people may taste the combination of ancient and modern, you will have that sense of historical travel. I think it is also a very unique charm of China that is not found in other countries. I think this is a charm of our country. And because Chinese culture is actually five thousand years old and profound, other countries do not have such histories as a support for their culture, or there are relatively few." ---Momo (21 years old woman, primary school teacher and part-time Hanfu model)

The discourse of "Five thousand years of Chinese civilization [*Zhonghua Shangxia Wuqiannian*]" performs the cultural nationalism by emphasizing China's long histories and rich heritage, evoking a sense of pride. Hanfu festivals further animate this cultural nationalism through their immersive, interactive, and engaging setting,

with Hanfu readily serving as an "affective apparatus" that deeply defines Chinese identity and unites Chinese as a nation (Ip & Fan, 2024). Particularly, they view Hanfu as a powerful tool against cultural colonialism and as a means to reaffirm Chinese national cultural confidence, especially in light of China's notable achievements in economic development:

> "Besides, I still firmly believe that China has something, right? And the clothes (mean Hanfu here) are indeed beautiful and worthy of inheritance. For example, the suits or dresses that everyone wears on formal occasions now, aren't these things all originated from the modern West, right? I think we have traditional dresses, which will be available one day when it reaches a certain level, everyone will be able to wear dresses on some formal occasions." --- Lang (27 years old woman, postgraduate student)

When mentioned critiques that Hanfu represents the clothing of the ancient ruling class rather than that of ordinary Han Chinese, interviews feel upset and argued:

> "Why don't you ask why Japan's traditional clothing kimono is not the common people's linen clothes? Aren't the traditional costumes inherited by Western countries also inherited shapes and formats instead of coarse linen? Aren't the so-called traditional costumes in European countries only worn by royal families and nobles in the past? Why, other people's traditional clothes can be beautiful, but your own has to be linen? Can't you stand up after kneeling for a long time?" --- Nan (27 years old man, sales)

"Can't you stand up after kneeling for a long time?" is an intensive statement embodying defensive nationalism. It metaphorically suggests the assertion of one's identity or culture after a period of subservience or neglect, reflecting on China's "humiliating" colonial history. A defensive form of nationalism emerges within cultural nationalism, where Hanfu is positioned discursively as a cultural tool to distinguish and compete with other countries, particularly neighboring Asian nations and developed Western countries. In such large gatherings of Hanfu performances, the atmosphere cultivates affective geopolitical encounters shaped by historical trauma, a progressive present, and aspirations for a hopeful future:

> "I hope that during the Chinese New Year, everyone wears Hanfu, and no one wears long pants." --- Ying (24 years old woman, work at the laboratory)

If "long pants" symbolize a modern cultural paradigm colonized and dominated by Western developed countries, then wearing Hanfu is positioned as a traditional, authentic expression of Chinese lifestyle and values. In the lively, red-colored, familiar, urban yet culturally rich atmosphere of festivals, Hanfu wearers experience a sense of empowerment and envision a brighter future, aspiring to cultivate a more confident national identity for themselves and to uphold their cherished Hanfu culture and country.

4. URBAN TEMPORALITIES BETWEEN HERITAGE: MEMORIES, AND LIVED EXPERIENCES, IMAGINARIES OF FUTURE

In Hanfu festivals, heritage and culture are imagined, sensed, and experienced through atmosphere rich with spatialized affective forces, including lights, sounds, noise, smells, material symbols, Hanfu, crowds of body. Various temporal aspects, including in-situ stimuli, memories of the past, present-day experiences, and traumatic histories, shape the sensory and cognitive experiences of the festival atmosphere in heritage spaces; this dynamic interplay fosters a sense of hope and projects a vision for a foreseeable future. An extended temporal perspective reveals that individuals bring with them diverse memories and feelings from past experiences, shaping their unique narratives of the atmosphere within Hanfu festivals. Second, the shifts of public attention and emotion towards Hanfu also tell us how the affect is mediated and modularized through a long-term process. It raises questions about how body-mind is constructed, mobilized, and prepared for being affected. We highlight the role of social memories in modularizing and mediating affect (affective atmosphere) by exploring individual meaning-making of festivals in urban heritage settings.

Finally, we argue that festivals and other affect-oriented heritage management strategies can be potent sensory design tools, connecting individual with the national and present-day urban life with its past and future. Particularly, festivals and events atmospheres are capable of introducing and experimenting with new ways of knowing and living the city (Ernwein & Matthey, 2019), such as performing Hanfu in heritage spaces. These festivals atmospheres are supported by and permeate into daily social infrastructures, including preserved buildings, experiences stores, teahouses, and sociocultural practices. This underscores an emerging affective urbanism that emphasizes the role of urban atmosphere in influencing urban spaces and how people experience the city (Paiva & Sánchez-Fuarros, 2021). Grounded in the individual narrative of spatial experiences and feeling, it becomes evident that atmosphere-oriented authenticity, driven by social activities, is increasingly important compared to mere object-related cultural authenticity (Zukin, 2012). An atmosphere perspective challenges some traditional notions of authenticity tied to objects and offers more nuanced insights, particularly affective ones, into historical and cultural narratives within heritage preservation and renovation

7. BIBLIOGRAPHY

Callahan, W. A. (2004). National Insecurities: Humiliation, Salvation, and Chinese Nationalism. Alternatives: Global, Local, Political, 29(2), 199-218.

Carrico, K. (2017). The great Han: race, nationalism, and tradition in China today. University of California Press. *https://doi.org/10.1525/california/9780520295490.001.0001*

Cui, X. (2023). Hanfu as therapeutic governance in neo/non-liberal China: a multimodal discourse analysis of Hanfu videos on Bilibili. Chinese Journal of Communication, 16(2), 186–203. *https://doi.org/10.1080/17544750.2022.2135548*

Degen, M., & Lewis, C. (2020). The changing feel of place: the temporal modalities of atmospheres in Smithfield Market, London. Cultural Geographies, 27(4), 509–526. *https://doi.org/10.1177/1474474019876625*

Erb, M., & Ong, C.-E. (2017). Theming Asia: culture, nature and heritage in a transforming environment. Tourism geographies, 19(2), 143–167. *https://doi.org/10.1080/14616688.2016.1238501*

Ernwein, M., & Matthey, L. (2019). Events in the affective city: Affect, attention and alignment in two ordinary urban events. Environment and Planning A: Economy and Space, 51(2), 283-301. *https://doi.org/10.1177/0308518X18757509*

Finkel, R., & Platt, L. (2020). Cultural festivals and the city. Geography Compass, 14(9). *https://doi.org/10.1111/gec3.12498*

Graham, B., & Howard, P. (2016). Heritage and identity. In The Routledge Research Companion to Heritage and Identity (pp. 1-15). Routledge.

Ip, P. T. T., & Fan, C. (2024). Reinventing Fashion as an Affective Apparatus by China's Youth: Bilibili, Danmaku Commentaries, and the Online Hanfu Ceremony During the COVID-19 Outbreak. Emerging Media. *https://doi.org/10.1177/27523543241231823*

Law, A. M., & Qin, Q. (2022). Reflexive Han-Ness, Narratives of Moral Decline, Manchurian Subjects and "Mass" Societal Others: A Study of the Hanfu Movement in the Cities of Beijing, Chengdu, Shanghai, Wuhan, and Xi'an. Journal of Current Chinese Affairs, 18681026221135082.

Liu, F. (2012). 'Politically indifferent' nationalists? Chinese youth negotiating political identity in the internet age. European Journal of Cultural Studies, 15(1), 53-69. *https://doi.org/10.1177/1367549411424950*

Paiva, D., & Sánchez-Fuarros, I. i. (2021). The territoriality of atmosphere: Rethinking affective urbanism through the collateral atmospheres of Lisbon's tourism. Transactions of the Institute of British Geographers, 46(2), 392-405. *https://doi.org/10.1111/tran.12425*

Pottie-Sherman, Y., & Hiebert, D. (2015). Authenticity with a bang: Exploring suburban culture and migration through the new phenomenon of the Richmond Night Market. Urban studies (Edinburgh, Scotland), 52(3), 538–554. *https://doi.org/10.1177/0042098013510954*

Revill, G. (2016). How is space made in sound? Spatial mediation, critical phenomenology and the political agency of sound. Progress in human geography, 40(2), 240–256. *https://doi.org/10.1177/0309132515572271*

Stewart, K. (2011). Atmospheric Attunements. Environment and planning D: Society & space, 29(3), 445-453. *https://doi.org/10.1068/d9109*

Wang, D. (2000). The idle and the busy: Teahouses and public life in early twentieth-century Chengdu. Journal of Urban History, 26(4), 411-437.

Yu, S.-D. (2004). Hot and Noisy: Taiwan's night market culture. In D. K. Jordan, A. D. Morris, & M. L. Moskowitz (Eds.), The Minor Arts of Daily Life: Popular Culture in Taiwan (pp. 129).

Zukin, S. (2012). The social production of urban cultural heritage: Identity and ecosystem on an Amsterdam shopping street. City, Culture and Society, 3(4), 281–291. *https://doi.org/10.1016/j.ccs.2012.10.002*

PAST AND PRESENT SENSORIAL LIVING EXPERIENCE WITHIN THE ROMAN BASINS URBAN SQUARE IN GAFSA OLD CITY (SOUTH OF TUNISIA)

EXPERIÊNCIA SENSORIAL DE VIDA NO PASSADO E NO PRESENTE NA PRAÇA URBANA DAS BACIAS ROMANAS NA CIDADE ANTIGA DE GAFSA (SUL DA TUNÍSIA)

Dorsaf Zid
Architect, Ph. D. in architecture, Adjunct Lecturer
University of Carthage, ENAU, LR21ES20, LarPAA, 2026, Tunis, Tunisia
dorsaf.zid@enau.ucar.tn

Hind Karoui
Architect, Ph. D. in architecture, Professor Lecturer,
University of Carthage, ENAU, LR21ES20, LarPAA, 2026, Tunis, Tunisia
hind.karoui@enau.ucar.tn

Azeddine Belakehal
Professor,
Mohamed Khider University, Faculty of Sciences and Technology,
Department of Architecture,
LACOMOFA Laboratory, Biskra, Algeria
a.belakehal@univ-biskra.dz

ABSTRACT

This study focuses on the old city of Gafsa (Tunisia) through the concept of "ambience", and considers its past and present urban temporalities. At the city's historic center lies a hydraulic structure dating back to the Roman period. This water system known as the "Roman basins" remains vital, attracting both local inhabitants and visitors. This research investigates the physical characteristics and social practices of this place, assessing the water system's impact on users' experiences. A comparative analysis of past and present ambiences identifies what is considered 'permanent' both on site and in the inhabitants' perceptions. Such identification will contribute to better preserving this oasis medina and considering ambiences as a heritage. The outcomes confirm that water continues to play an important role, increasing the level of social interaction and creating an 'urban empathy' specific to the place, while reminding its rich past.

KEYWORDS: Oasian historic center. water system. Physical characteristics. Sensorial experience. Heritage Ambiences.

RESUMO

Este estudo explora a cidadeantiga de Gafsa (Tunísia) através do conceito de "ambiente", concentrando-se nastemporalidadesurbanaspassadas e presentes. No centrohistórico da cidadeencontra-se umaestruturahidráulica que data do períodoromano. Este sistema de água, conhecidocomoos "tanquesromanos", continua vital, atraindo tanto oslocaisquantoosvisitantes. Esta pesquisainvestiga as característicasfísicas e as práticassociaisdeste local, avaliando o impacto do sistema de águanasexperiências dos usuários. Uma análisecomparativa dos ambientes passados e presentesidentifica o que é considerado "permanente", tanto no próprio local quantonaspercepções dos habitantes. Tal identificaçãocontribuirá para umamelhorpreservaçãodesta medina oásis e para consideraros ambientes comouma forma de patrimônio. Osresultadosconfirmam que a água continua a desempenhar um papelimportante, aumentando o nível de interação sociale criandouma forma de "empatiaurbana" específicaao local, enquantoevocaseurico passado.

PALAVRAS-CHAVE: Centro históricooasiano. Sistema de água. Característicasfísicas. Experiência sensorial. Ambientes patrimoniais.

1. INTRODUCTION

As a main component of urban design, water motivates our spatial sensory experience through the effects it produces and the practices it stimulates. In parallel to the evolution of the notion of 'ambience', that has become a recurring term in urban and architectural discourse (Belakehal, 2013), water inspires more and more researchers, designers and architects through various approaches and perspectives (Vinet, 2000; Robitu, 2005; Bouyer, 2009; Monshizade, 2012; Zid 2022). These modalities go beyond the technical aspects to encompass the social and cultural dimensions

related to experience, sensitivities, feelings, and usages. The continuous study of water systems, implemented over time, reveals that geographical and climatic data act as factors giving them shape and meaning, especially in arid regions where water is scarce and precious. This led that, in these hot-climate environments and with their strong ties to water, cities and oasis societies are becoming objects of interdisciplinary study and reflection. This mission is crucial for the development of Saharan and pre-Saharan environments, both in Tunisia and other countries of the Maghreb as well as elsewhere within similar contexts. It must be reminded, here, that the development is considered in its spatial, economic, and social dimensions.

In this research, we are particularly interested by the ancient urban core of Gafsa oasis located in the south-west of Tunisia. This medieval district, known as, 'Guebli-Gafsa', was built on the remains of the ancient Numido-Roman Capsa city. Organized around a square, this district encloses a water system built in the 2nd century that serves to harness and worship the ancient city's main water source. Since 1915, this antic structure, known nowadays as the 'Roman basins', is a part of Tunisia's national heritage.

Considering the environmental and climatic constraints of Gafsa city physical context, we suggest to reconsider the role of water within the Roman basins' square in order to explore what these 'water-related urban atmospheres' could provide as outdoor living conditions generating well-being and comfort for its users. These developments could make a significant contribution to the heritage enhancement and to the requalification of this historic oasis center in southern Tunisia. The arising question is about the persistence of this square's ancient atmosphere of the Roman basins at the present time and if its related practices are still surviving. Hence, this research work concern two temporal situations, that of the past time and that of the present one. The main aim is the identification of the ambient potential of the basins in terms of urban enhancement based on the sensory and sensitive experiences.

2. ROMAN BASINS: CATALYSTS OF URBAN TEMPORALITIES, FROM YESTERDAY UNTIL TODAY

Being the study object of this research work, and as a generator of urban ambience within the medina of Gafsa, it will be first necessary to understand the Roman basins' history. This will lead to elucidate the spatial and chronological evolution of this historical urban square's appearance and 'status'. Various testimonies from ancient and medieval times (Durosoir, 1865; Africain, 1896; El Bekri, 1858) attest to the authenticity of the Roman basin structure, evoking its various functions (living water fountain, water sanctuary, source of irrigation for the oasis, drinking water supply, place of hygiene for the inhabitants) and the characteristics of the natural springs that fed it (hot water, running water, thermal water). Similarly, the European explorers, who visited the town of Gafsa in the late 19th and early 20th centuries, noted in their chronicles and travel reports similar information to that of the preceding eras. Indeed,

by the mid-19th century, the Roman basins had been preserved almost as they were in medieval times. The complex is often described as consisting of two large open-air water basins, around five meters deep, built with cut stone blocks (Figure1). The two basins are connected by a vaulted underground gallery. Flowing, by gravity from the first basin to the second, water goes then throughout the underground rooms, probably converted in the early Islamic period into ablutions rooms for men and women. Finally, water follows the irrigation channels' paths within the oasis.

Figure 1. Aerial view of the Roman Basins Square.
Source: Abdelkefi, 2009, p.224.

Previously and until the 20th century's first decades, almost all the water used to irrigate the historic oasis of Gafsa came from natural springs gushing from the bottom of the Roman basins. Consequently, the oasis was strongly associated to the medina that irrigated it by means of the traditional water distribution system that emerged from its main central urban square. In 1881, the French protectorate was established and the Roman basins have benefited from specific interest and several restoration projects. These actions are due to their historical value, their vital function and their key role in the economic and socio-cultural activities of Gafsa's oasis inhabitants. In fact, the continued persistence of this hydraulic element is vital for the development and sustainability of this old city. Water is very important there because it symbolizes and protects the unique resurgence of this old city, by constituting the main source of life and irrigation of the palm grove of this oasis. Unfortunately, the natural springs that once fed the Roman basins dried up definitively in the early 2000s. Nowadays, the 'occasional' supply is based on the use of water from deep boreholes. This controlled replenishment takes place mainly during the warm season, from April to October. The current hydraulic state produces two contrasting situations: presence and absence of water in the Roman basins (Figure 2).

Figure 2. Presence and absence of water in Roman basins.
Source: Authors.

Nowadays, the basins and surrounding square are a place of leisure and relaxation, especially when the water is present. Also, several cultural and festive events held there. The place still occupies a central location in the old town of Gafsa, with its present-day urban landscape (Figure 3).

Figure 3. Examples of Current Events in the Roman Basins Square.
Source: Archives of the Association of Friends of the Roman Basins.

3. ATMOSPHERE AND HERITAGE: FROM THE ABSTRACT CONCEPT TO IN-SITU OPERATIONALIZATION

As a concept, 'ambience' could involve what "surrounds us, envelops us and influences us" (Thibaud, 2012, p.158) and that illustrates a sensory experience (Piombini, 2013). Alike complex situation becomes even more pronounced as we consider the ambience in the context of a public space, and in addition when taking into account its different temporalities. In such a way, P. Amphoux (2003) suggests that "public space-time" should be used than "public space". Hence, it will be possible to highlight the differences in terms of time experiencal sensitivity towards the Other as well as the difference, with the Other, of the space's perception. Ambience's temporal dimension requests appropriate and efficient methods for investigating a "spatial, microclimatic or social situation", dynamic and constantly evolving in time and space. As reported by M. Hovanessian (2005), G. Althab develops the notion of the 'anthropology of temporalities' and highlights the complexity of human trajectories. He stresses the importance of considering individuals in the plurality of their situations as well as the unity of their existence. This approach requires the simultaneous consideration of different temporal scales, linking past and present experiences to understand current social dynamics. Thus, and in order to assimilate and characterize the ambience of a public space, we need to consider it from different point of views that should be possible by associating various research techniques. Such a process will enable us to better grasp the components essential to the emergence of an 'ambient reality', particularly for the case of a historically significant water feature, where water alternates between a presence state and an absence one.

Moreover, the complexity of the urban ambience phenomenon grows particularly for the 'heritage ambiences' situation. In fact, the methodological approach should be both multidisciplinary and interdisciplinary, aiming hence at identifying its various components as well as their interrelationships (Belakehal, 2012). Within the framework of a methodological triangulation, the qualitative and quantitative approaches' outcomes' crossing should provide us with knowledge on the ambiences' qualities and evolution as they have been experienced and perceived by the occupants of this 'place-palimpsest' still alive since antiquity until nowadays.

In such a way, the approach adopted simultaneously encompasses historical, spatial, microclimatic and urban aspects, while combining three research methods. The first one is spatial-morphological analytical method enabling a configurationally and functional reading of the Roman Basins urban square. The second is environmentally physic, very appropriate for a microclimatic study relating mainly to physical signals and climatic parameters in relation to the presence of water. Lastly, the third is sensitive consisting mainly on an experiential behavioral. It studies the users' practices within this historical urban space during both past and present eras.

To sum up, the various used research techniques are: i) a spatial-morphological analysis of the Roman Basins square, ii) numerical simulations of solar and air flow data, as well as in-situ measurements focusing on climatic parameters linked to the presence of water, iii) in-situ immersion work (observation and survey of inhabitants by means of questionnaires), and finally i) an 'Ambience' based thematic content analysis applied for travelers' accounts and historical iconographic sources. Finally, the various outcomes will be crossed for each temporal situation and then compared in respect of the temporal situations considered for this investigation (past and present times).

4. THE WATER OF THE ROMAN BASINS: REFLECTION OF THE SPATIAL AND BIOCLIMATIC QUALITY OF THE SQUARE

Occurred during the warm season, the measurement campaigns concerned air temperature, relative humidity, wind direction and speed. Direct observations were undertaken by immersion along several days, within various time slots as well as in respect of the observation and measurement points. The combination of all the data acquired experimentally through digital simulations and those measured in situ enabled us to identify and assess the physical environmental impact of the water presence on the spatial quality and bioclimatic performance of the Roman Basins urban square.

From a spatial point of view, the Roman basins urban square is distinguished by its four face-to-face entrances. Such character makes it a converging place for the main streets and lanes of the medina's ancient urban core. The Roman basins are centrally located in the historical place that provides for this latter the appearance of an 'urban patio' at the heart of the medieval fabric of Gafsa's old town.

Climatically, the outcomes reveal that water presence helps to significantly refresh the thermal environment; thus, creating "zones of enhanced thermal quality". These latter are closely related to the spatial configuration of the square and the daily variation of the shaded and ventilated areas inside it. When water is present, the Roman pool system can be assimilated to a "freshness island", providing well-being and thermal comfort for users, in a specifically harsh arid context with a hot, dry climate.

In order to point out the interactions between the set of the studied physical factors and the relational aspects of "form-physical phenomena" inside the area of the Roman basins, we felt it essential to draw up a synthetic, combinatory and compilatory cartographic representation of the collected outcomes. In such a way, the physical data are integrated into the investigated context, and all phenomena can be analyzed in their spatial dimension (Figure4-5).
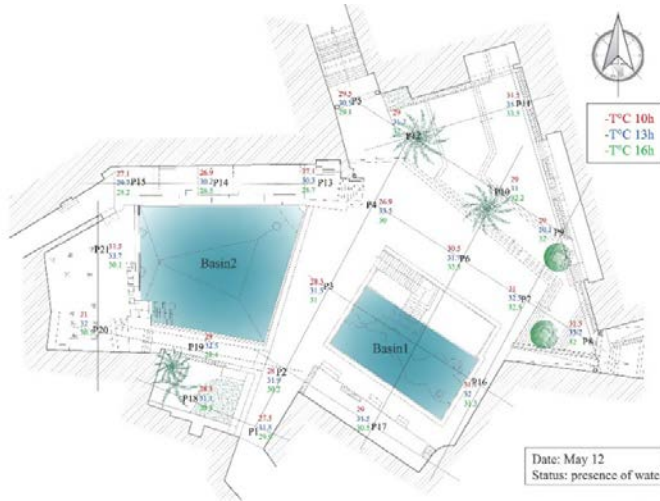
Figure 4. Example of spatial distribution of in-situ temperature measurements (°C) on Saturday, May 12, at three times during the day (10 AM, 1 PM, and 4 PM).
Source: Authors.
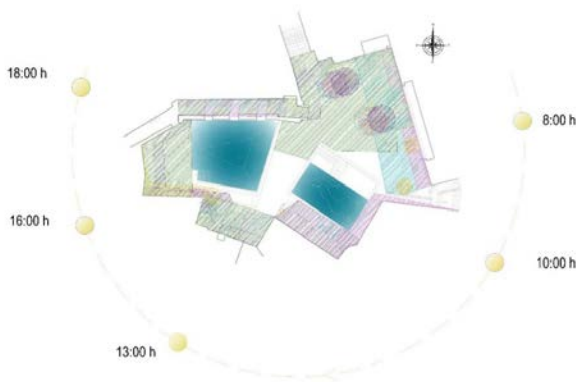
Figure 5. Example of cartographic representation showing the overlay of shadow evolution on May 12th at the Roman Basins Square (simulation data at 8 AM, 10 AM, 1 PM, 4 PM, and 6 PM).
Source: Authors.

This synthetic microclimatic cartographic characterization of the Place des Bassins Romains highlights the influence of the urban space's morphology on fine-scale microclimatic variations and on thermal comfort within this historical place. This approach also allows identifying "micro-spaces" that are exposed or, oppositely protected, suggesting questions about a possible "thermo-aeraulic topology". The latter should need to be confirmed or invalidated by specific, more concise observations, to be carried out as part of surveys focusing essentially on users' behavioral and perceptive behaviors.

5. SENSORY EXPERIENCE BETWEEN YESTERDAY AND TODAY: THE PERMANENCE OF A SHARED SPACE AROUND WATER

The behaviors, sensory perceptual modes (visual, auditory, tactile, etc.) and experience of place of both current and past users have been revealed as being strongly influenced by various elements of the context of this oasis region (historical, natural, socio-cultural, etc.) and additionally by the urban and architectural configuration of the urban square and its Roman basins. The water presence or absence and daily climatic variations also play a decisive role. What emerges is that this public square is perceived by its inhabitants as a place of attraction and shared subjectivities, centered on water and bringing together different user profiles. Perceptions, practices, movements and occupation as an expression of use in the square studied thus provide a rich and varied field allowing the understanding of the spatial experience lived there.

The place's identity stems from the fact that it is a "living and sharing place", combining visual, sound and thermal effects. The social practices that take place in, particularly those of a playful nature in direct contact with the water, have reinforced the sense of belonging and appropriation towards the built environment around the place of Roman basins. Additionally, nowadays uses help to preserve the ancestral link established in the past. In the presence of water, the behaviors and perceptions that have survived over time breathe new life into the space, transforming it into a territory of encounter, familiarity and collective memory (Figure 6).

Figure 6. Photos showing similarities in use over time, between 1920 and 2014.
Sources: photo 1: delcampe.net, photo 2: Authors.

Besides, the outcomes underline the persistence of the sensory relationships with the Roman basins today, as it was often described by past time's travelers. This "inter-sensory connection" to the basins, centered on water, remains anchored in the memory of the inhabitants. They continue to gather near and around the water surfaces, bathing, resting and refreshing themselves. These shared social and cultural activities are deeply linked to the historical and sacred values associated with the presence of water. All these activities and practices bear witness to a cultural memory

that transcends the city's previous eras experiences around the Roman basins. Such a "durability" of ambiences in this place, which could be stated as "heritage", is strongly associated to the presence of water.

6. TOWARDS URBAN EMPATHY AROUND THE ROMAN BASINS

Our interest is devoted towards issues relating to the enhancement of oasis spaces, through an ambient "water-sensitive" approach, highlighting not only its practical and utilitarian value, but also its symbolic and sensitive dimension. In such a way, water has been at the heart of our investigation, acting as a catalyst for significant cultural practices in which visual, sonic, thermal and inter-sensory dimensions combine to create an environment where life is good. The in-situ approach combined with temporalities' analysis, allows us to demonstrate how past era's components continue to shape the current living environment, reinforcing local cultural identity and contributing to the requalification of this historical oasis' main urban space. This methodology enabled us to shed light onto the intrinsic logic of social dynamics, while taking into account issues of collective memory and intergenerational transmission processes.

A kind of urban empathy has then been developed within this place in respect of its definition as the ability to perceive and share the emotions and experiences of others in an urban context, creates a deep connection between individuals and their living space (Duarte & Pinheiro, 2016). This is what is truly observed in the case of Roman Basins Square, throughout a valuable collective attachment to water and the social and cultural practices that stem from it.

Thus, we could attest that the presence of water in the Roman basins has had an extensively significant influence on the settlement patterns and lifestyles in the historic center of the oasis town of Gafsa, during both past eras and nowadays. The water plays an important role as a generator of urban ambience, reinforcing local cultural identity, enhancing heritage and reconsidering the oasis human establishment from an environmental point of view.

In order to better understand the past and present eras users' lived experiences interacting with this water related cultural heritage (ICOMOS, 2011), we confronted the past practices to the present time's ones. This has been undertaken throughout an interactional and interdisciplinary approach combining historical-social reconstruction and etiology. This confrontation reveals the persistence of an urban empathy that transcends epochs, where present-day inhabitants reinterpret and reinvest the historical urban square by undertaking practices that have survived across generations. Keeping this in mind, we built our arguments upon the integration of altogether different spatial, physical and human dimensions. This methodological process highlights what could be considered as "permanent" in the social and

cultural representations of local inhabitant, and to suggest an intelligible model of the "water-related urban ambiences" based on a retrospective, interdisciplinary and forward-looking approach. This model opens up a wide range of research possibilities, both in terms of investigative methods and the various problems associated with architectural and urban ambiences, particularly those within historic oasian human establishments (Figure 7).
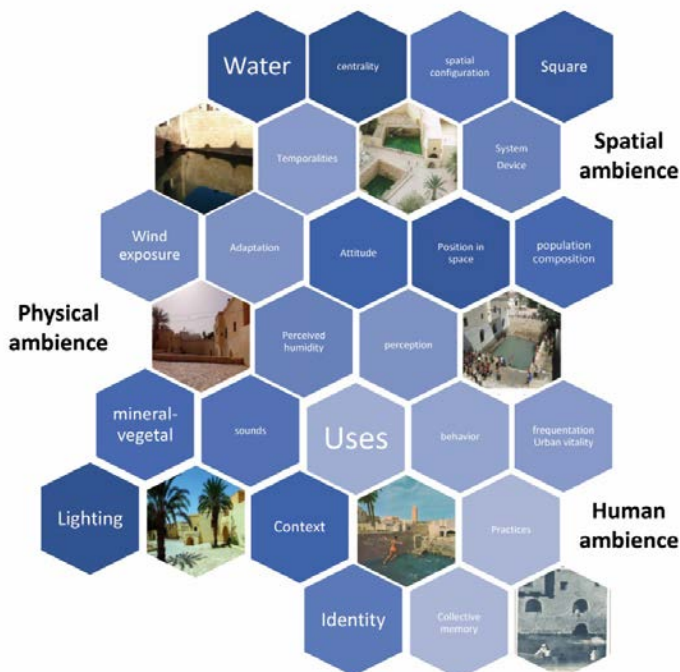
Figure 7. Synthetic diagram showing the various components of the urban ambiances studied
Sources: Authors.

7. CONCLUSION

This research aims to explore the ambient, physical and sensitive potential of a heritage-valued water feature known as the "Roman basins", located in the historic oasis center of the ancient urban core of the medina of Gafsa, in southern Tunisia. From a methodological point of view, a set of varied research techniques was used to encompass the different aspects of the ambiences generated by water in this historical and still surviving urban square. The complex collected data has been submitted to crossing, comparing and combining analysis approaches.

To sum up, this study led to specific conclusions that are potentially useful to the development of historic oasian centers, due to the homogeneity of the tangible and intangible characteristics of these urban spaces and their occupants. The outcomes

of this study provide some answers to the question of the role of water-generated atmospheres in the development of a new approach to the sustainable enhancement of oasis areas, which are increasingly fragile and marginalized. This raises the question of water as an object of research in its own right, capable of shaping a quality public space and an enriched urbanity. Through a "water-sensitive" strategy, it is possible to develop modalities and strategies for both preserving and requalifying the local oasis heritage.

8. BIBLIOGRAPHY

Africain, J.L. (1896). Description de l'Afrique tierce partie du monde. Vol 3. Paris, Ernest Leroux.

Amphoux, P. (2003). Ambiances urbaines et espaces publics. InG. Capron& N. Haschar-noé (Ed.), L'espace public en question : usages, ambiances et participation citoyenne. Presses universitaires de Toulouse-Le Mirail. 50-56.

Belakehal, A. (2012), Les ambiances patrimoniales. Problèmes et méthodes. Actes du 2nd Congrès International sur les Ambiances, 19-22/09/2012, Montréal, Canada,505-510.*https://shs.hal.science/halshs-00745537/document*

Belakehal, A. (2013), De la notion d'Ambiance. Revue Courrier du Savoir Scientifique et Technique, N°16, October, 49 -54. *https://www.researchgate.net/publication/261552572_De_la_notion_d'Ambiance*

Bouyer, J. (2009). Modélisation et simulation des microclimats urbains : Étude de l'impact de l'aménagement urbain sur les consommations énergétiques des bâtiments (Doctoral dissertation). University of Nantes. France.

Duarte, C.R. & Pinheiro, E. (2016). Spatial empathy and urban experience: a case study in apublic space fromRio de Janeiro. Ambiances, tomorrow. Proceedings of 3rd International Congresson Ambiances. September. Volos. Greece.611 - 616.*https://hal.science/hal-01414016*

Durosoir, C. (1865). Œuvre complète de Salluste. Paris : édition Garnier Frère.

El Bekri, A.U. (1858). Description de l'Afrique septentrionale (1040-1094). Paris : imprimerie impériale.

Hovanessian, M. (2005). Une anthropologie des temporalités. Journal des anthropologues. 102-103. 457-467. URL : *http://jda.revues.org/1438*

ICOMOS. (2011). Le patrimoine culturel de l'eau. Journée internationale des monuments et sites.*https://www.icomos.org/18thapril/2011/index_fr.html*

Monshizade, A. (2012). L'eau comme élément d'ambiance, le jardin persan entre abondance et rareté (Doctoral dissertation). University of Grenoble. France.

Piombini, A. (2013). Contexte spatial des ambiances urbaines et usage des lieux, Ambiances. *http://journals.openedition.org/ambiances/261* ; DOI : *https://doi.org/10.4000/ambiances.261*

Robitu, M. (2005). Etude de l'interaction entre le bâtiment et son environnement urbain : influence sur les conditions de confort en espaces extérieurs (Doctoral dissertation). University of Nantes. France.

Thibaud, J.P. (2012). Petite archéologie de la notion d'ambiance, Communications (90),155-174.*https://hal.science/hal-00978345*

Vinet, J. (2000). Contribution à la modélisation thermo-aéraulique du microclimaturbain. Caractérisation de l'impact de l'eau et de la végétation sur les conditions de confortenespacesextérieurs (Doctoral dissertation). University of Nantes. France.

Zid, D. (2022). Les potentialités ambiantales des dispositifs d'eau dans les centres historiques oasiens, cas des bassins romains de la medina de Gafsa au sud de la Tunisie (Doctoral dissertation). University of Carthage. Tunisie.

CONTINUITIES AND DISCONTINUITIES WITH THE EXISTING CITY IN PUBLIC SPACES OF THREE MODERN HOUSING COMPLEXES OF SANTIAGO DE CHILE

CONTINUIDADES E DESCONTINUIDADES COM A CIDADE EXISTENTE NOS ESPAÇOS PÚBLICOS DE TRÊS COMPLEXOS HABITACIONAIS MODERNOS DE SANTIAGO DO CHILE

Ximena Arizaga
Doctora en Arquitectura y Estudios Urbanos/ Assistant Professor
Pontificia Universidad Católica de Chile

ABSTRACT

In Santiago de Chile, as in other parts of the world, the mass housing complexes of the modern movement encompassed large patches of land inside the city. In these, a different logic to the traditional compact block of the Latin American city was configured, with important interior spaces, circulations and commercial plates that were dissociated from the street and vehicular traffic. The research seeks to reveal the preferences of users for these public spaces considering the lessons that could be deduced from this way of densifying the city. With this purpose, the public spaces of three modernist housing complexes are disassembled, the uses are registered, and the ambiances identified to relate the spatial characteristics with the preferences of the users. Through this analysis, the aim is to understand the values that underlie in the preservation of continuities; and also, the breaks imposed by renewal policies adopted in the consolidated city of Santiago de Chile.

KEYWORDS: Permanencies. Modern housing complexes. Palimpsest. Ambiance.

RESUMO

Em Santiago do Chile, como em outras partes do mundo, os complexos habitacionais do movimento moderno abrangiam grandes extensões de terra dentro da cidade. Nestes, configurou-se uma lógica diferente do tradicional quarteirão compacto da cidade latino-americana, com importantes espaços interiores, circulações e placas comerciais dissociadas da rua e do tráfego de veículos. A investigação procura revelar as preferências dos utilizadores por estes espaços públicos considerando as lições que poderiam ser deduzidas desta forma de densificar a cidade. Para isso, são recortados os espaços públicos de três bairros sociais modernistas, registados os usos e identificadas as ambiências para relacionar as características espaciais com as preferências dos utilizadores. Através desta análise pretende-se compreender os valores que estão subjacentes à preservação das continuidades; e ainda, as ruturas impostas pelas políticas de renovação adotadas na consolidada cidade de Santiago do Chile.

PALAVRAS-CHAVE: Permanências. complexos habitacionais modernos. Palimpsesto. Ambiências.

1. INTRODUCTION

In Santiago de Chile, the mass housing complexes of the modern movement covered large patches of urban land, situated mostly at the edge of the consolidated city, and also inside the existing city as the three cases studied, occupying spaces disaffected from their uses considered obsolete. In these, a different logic to the traditional compact block of the Latin American city was configured, with important interior spaces, circulations and commercial plinths that were dissociated from the street and vehicular traffic (Figure 1). However, the break with the city in which they are inserted was not total, on the contrary, the respect of both the irreducibilities and the landscape marked the relationships that these ensembles maintain to this day: continuities that induce their potential of use and their ambiances. The research seeks to understand whether the preferences of the inhabitants coincide with the overlapping of the modern urban fabric with the ancient and contemporary city considering the lessons that could be deduced from this for the rehabilitation of the deteriorated urban spaces and the densification of the city.

The modern complexes were promoted by the welfare state during the government of Eduardo Frei Montalva (1964-1970) and were continued by the government of Salvador Allende (1970-1973). In 1965 the Urban Improvement Corporation, CORMU (1965-1969) was created to developpe a policy of "urban renewal", with the expressed idea of improving and renewing deteriorated areas of cities, increasing urban density, freeing up a high proportion of land and proposing a counterweight to the expansion of the urban sprawl. Since the creation of the CORMU, many complexes were built in the principal cities of Chile. Afterwards, the work of CORMU was followed by the CORVI (Corporación de la Vivienda) until 1976, redirecting its aims to the dwelling problem. The public spaces of these complexes experienced deterioration unevenly depending on their typological condition; however, their homes remain attractive and maintain an average price in the real estate market, especially due to their central location.

That is why this text focuses on exposing the search for an understanding of the different formal conditions that could influence in the preferences for the different pieces of public space considering its continuities within the urban frame and its breaks.

The public spaces of San Borja (Bresciani, Valdés, Castillo y Huidobro Architects, 19691976), Torres de Tajamar (Bresciani, Valdés, Castillo, Huidobro and Prieto Vial, 1967) and Ines de Suarez (Barrenechea, Ehijo, Lawner, 1970) are disassembled, the uses are registered, and the ambiances identified to relate the spatial characteristics with the preferences of the users. The characterization of the spaces in four types: squares, connectors, shelters and remnants show that the shelters understood as backwaters are the more used spaces and the ones with the featured ambiances, challenging the role of the square as a primary space. The proposition aims to delve into the idea of the shelters as a space in which continuity with metropolitan

permanencies, times and rhythms is materialized, allowing the suture and integration of these modern complexes with the city while protecting interior residential life.

Ambiance is here understood as the emerging feature of the relationship between inhabitants' spatial practices, space and its sensory elements, since built environment becomes meaningful when used, inhabited and enhanced by individuals (Augoyard, 2004; Augoyard, 2010; Thibaud & Grosjean, 2010). The study of the environment — in the sense of ambiance — would focus therefore on understanding the spatial and sensory devices that allow social practices to produce a particular and identifiable characteristic of a given space. The text exposes the spatial analysis of the possible motivations that lead to the choice of the shelter versus the square, by observing the use in practice. The choice of ethnomethodology, in that case, substitutes the study of perception per se by the study of the implementation of perception in practice; aiming to understand how individuals' coexisting ways of perception are incorporated in daily activities and are their constitutive elements (Thibaud, 2004; Thibauld, 2002). A summary of the previous works that analysed the four typified spaces is presented and a detail of the observation of the inhabitant practices located in the connectors, squares and shelters exposed to relate them to the characteristics of the built space and its continuities and discontinuities with the existing city.

Figure 1 : San Borja: the plinth a balcony to the city.
Source : Own elaboration, 2024.
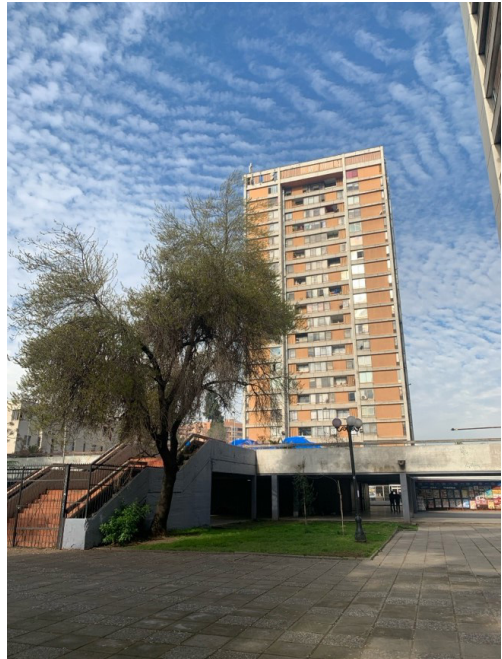
Figure 2 : Inés de Suarez, upper square acces.
Source : Own elaboration, 2024.

Figure 3 : Torres de Tajamar, the shelter in a sunny winter noon. Source : Own elaboration, 2024.

2. FOOUR TYPOLOGICAL FORMS PROPOSED
FOR THE ANALYSIS OF THE PUBLIC SPACE

In previous research, the public spaces of the three chosen modern complexes were studied and cropped into four typological spaces that were identified and catalogued for each complex (as shown in the Figure 4). The square is the prime space of urbanism since the Renaissance (Choay & Lengereau, 2010), and in the modern architecture of this large residential ensembles takes the most significative space between towers. In the three of them it is elevated from street. Especially in San Borja and Inés de Suarez it was conceived as a double square, one more public accessing to the buildings and an upper square more intime, conceived for the dwellers. In both cases, these upper squares are closed, denied to residents and the public by metal bars. In San Borja, the upper square is on the roof of the commercial premises, so it does not affect the space below; on the other hand, in Inés de Suarez, it generates a covered lower space so its closure deprives the inhabitants of a sunny square, especially in winter.

The connectors were the most singular characteristic space of these Chilean modern complexes, supposed to allege fluid access to the residential towers, and the

expression of the new free experience of space. In Torres de Tajamar, the connectors are at the same level of the square and access, and maintain their condition of a corridor. In Ines de Suarez they were double: on the same level of the street and also on an upper level, connecting with the second square, now closed. In San Borja, connectors were conceived as a second possibility to experience and access the ensemble, connecting it with the city and at the same time, isolating the peasant from its realm. Today, these connectors appear completely closed, and were only opened in San Borja on exceptional days in recent years, showing the immense possibilities of the upper space: concerts, movie nights and handy crafts markets were implemented; and the interest of the residents of the towers and the surrounding area was notable. The shelters are probably the most difficult to describe. It references to the haven created by the setback of the buildings in relation to the official street line. This is produced at the same time by the will of the modern complex to generate spatial rules differentiated from the traditional checkerboard pattern; and, by the need to solve the contact space with the pre-existing city. In this space the insertion of the modern complex within the urban realm is negotiated: the shelter is the space of Sola Morales' urban acupuncture (2018), the place where the gaps of the urban layout are harmonically combined. By resolving both the different heights of the plinth and the street and the distances with the pre-existing buildings, it offers a space for mediation. It is in this space where the suture between the modern complex and the urban permanencies are played. Adopting mostly the appearance of a bay, these spaces reveal to offer the most interesting possibilities for multiple uses.

Lastly, the remnants are constituted by the spaces with no conceived use. Mostly thought as gardens or similar, there are abandoned and deteriorated. Especially present in San Borja withs different forms, leftover spaces are better solved in the other two complexes and particularly nearly absent in Inés de Suarez. Remnants contribute to the unpleasant vision of the modern complexes and suffer from the unsolved administration of the common spaces.

The decoupage of the four typological public spaces is shown in the figures 4-5-6 and an example of each space in one of the modernist housing complexes is shown below.
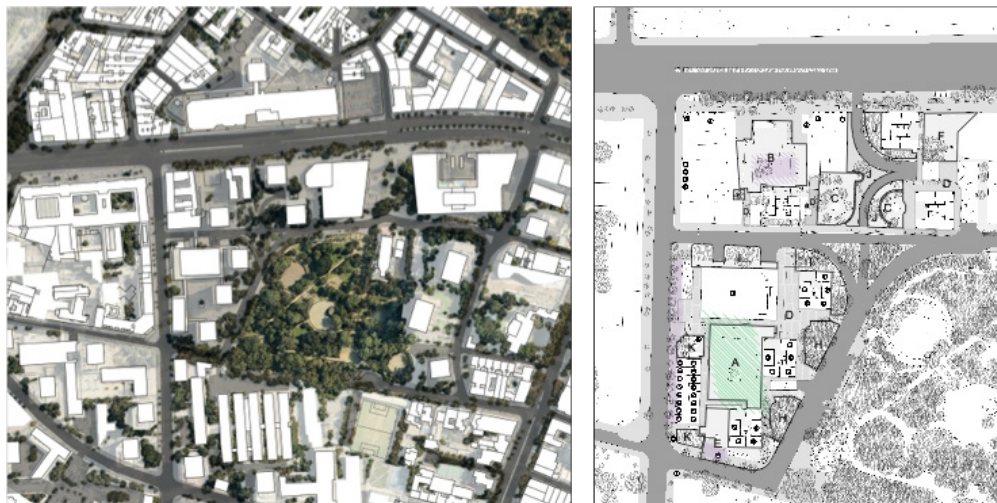
Figure 4. Public Space in San Borja: the insertion of the ensemble in the neighbourhood, the different pieces, ambiances (coloured) and usages. Arquitectos: Bresciani, Valdes, Castillo, Huidobro (1969-1976) Source: Own elaboration (2023).

Figure 5. Public spaces in Torres de Tajamar: the insertion of the ensemble in the neighbourhood, the different pieces, ambiances (coloured) and usages. Arquitecto: Luis Prieto Vial (1965-1967) Source: Own elaboration (2023).

Figure 6. Public spaces in Inés de Suarez: the insertion of the ensemble in the neighbourhood, the different pieces, ambiances (coloured) and usages. Arquitecto: Miguel Lawner (1971) Source: Own elaboration (2023).

3. THE RELATIONS WITH THE INMEDIAT CITY, ITS PERMANENCES AND THE LANDSCAPE

The modern projects realized in Santiago, specially, in these cases, shows a sensitive relationship with the preexistences and irreducibilities of the city. Particularly in San Borja, as shown in the figure 7, not only the surrounding buildings are respected, also the urban mega block of the ancient hospital San Borja is conserved. The park and the church are maintained, and also the trees. Not only that, in addition, the new buildings that can be seen to the east of the complex also respected a certain composition, thus demonstrating the potential of the complex to evolve by the subsequent recognition of the contemporary city, which takes shape and height of modern sets. This linked to the patina of time builds a continuum.

As well, in Chilean architecture, the relationship with the landscape is always present. The Andes cannot be ignored. The buildings always observe the mountain range and the Coastal mountains. In the case of the position between the Mapocho River and the principal avenue marked the imaginary of the ensemble and positioned it in the city.

As Rossi points out: "the difference between past and future from the point of view of the theory of knowledge consists precisely in the fact that the past is lived in part now, and that, from the point of view of urban science, can be the meaning that we have to give to permanencies; they are a past that we still experience" (Rossi, 1999: 99). In these ensembles it can be said that far from there being no rules as is usually the premise of the modern movement, these modern ensembles respond

to a series of careful rules that the project inserts into the city. These rules at street level are especially evident in the shelter or backwater, the plaza being the space of discontinuity, separated from the life of the city, either by height or by its isolation. This desire to isolate a space for the life of the residents, although presents its advantages a priori, ended up being fatal for the future of those spaces, especially in the Tajamar Towers, as explained below.

Edificaciones que están presentes en las planchetas del catastro de 1910	Edificaciones que están presentes en las planchetas del catastro de 1939	Edificaciones que están presentes en las planchetas del catastro de 1960-(1970)	Edificaciones que están presentes en las planchetas del catastro de 2010	Edificaciones galpones y garages
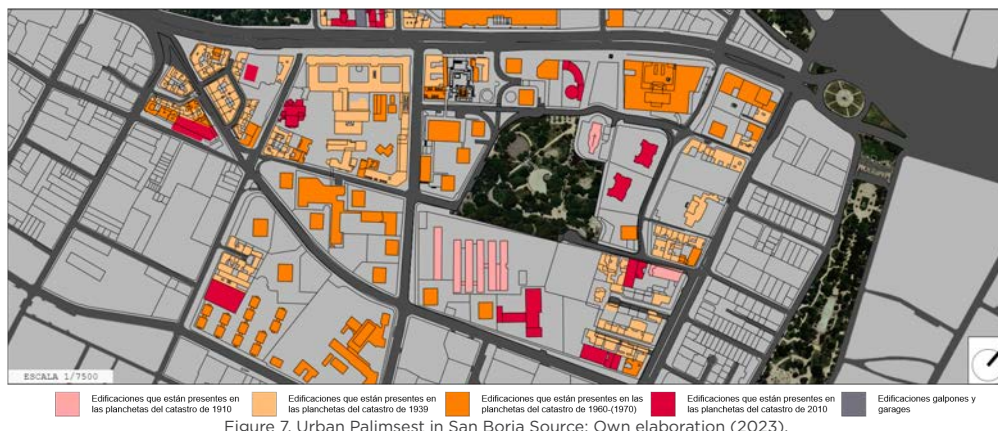
Figure 7. Urban Palimsest in San Borja Source: Own elaboration (2023).

4. USES, RYTHMS AND TERMPORALITIES OF THESE SPACES

The studied ensembles are located in well-served places in the city, with access to the subway and are adjacent to important avenues. The three ensembles are also characterized by being inhabited by similar socio-economic groups; and have different typological residential units, especially in Inés de Suarez where a peculiar four stages duplex building has a kind of original family town houses.

The uses of the three neighborhoods studied are grouped and arranged around the typological spaces. Thus, in the connectors, only Tajamar accounts for uses that are today offices and services, some hair salons remain and reflect a past elegance. In San Borja, the connectors were replaced by unresolved passageways and by crossing the plaza. In Inés de Suarez, however, the lower connectors that are the reflection of the higher ones are only access to the departments. The square in San Borja brings together food places and specialized art-stores related to the presence of the nearby architecture school. In the ensemble Tajamar the square has a bar, a card game store and some stores that occupy the long-abandoned kiosks. In Inés de Suarez, on the other hand, the uses of the covered plaza correspond to warehouses and a dojo, which is the most representative space of this place.

The atmosphere in San Borja has only been getting worse in recent years, the premises have deteriorated and each building has defined its own fenced space; the open

space of the square was subdivided by flower pots and pergolas that only worsened the decay of the place. People cross the square at full speed, some drunks occupy the benches, mainly sadness invades the place, only on the edges, near the architecture school, a place to stay stands out. Before, when the study of this place began, about 10 years ago, in the backwater that faces the zocalo to the south, there was a fruit and vegetable kiosk. This place was the favorite place of all those who crossed this sector of the San Borja complex. Full of colors, smells and conversations, the kiosk attracted not only shoppers but also simple observers. It was the most prominent ambiance in the place, a synthesis of Santiago's urban history concentrated in a single corner. In an interview, his owner said that his father had settled the premise during the construction of the towers, benefiting from this activity to consolidate his business; and also said that he still shares out neighbors who had left the quartier. Under trees older than the towers, at the foot of the modern complex and facing the old regiment that was once a market and now an architecture school, one of the typical businesses of Santiago was preserved: the tradition of selling fruits and vegetables in kiosks. With everything that this entails: the order of the products, always impeccable, the strong conversations, the exchange of cooking recipes, the neighbors who just pass by quickly and say hello, the nurses from the nearby hospital who come to buy lunch. All that disappeared, just as on other occasions, the political events in the city devastated the atmosphere.

In Torres de Tajamar, the square is always empty, desolate, it is crossed quickly and rarely given that its corridors, roofed and with noble floors are more attractive. It is rarely activated, in the evenings with the bar's consumers, some afternoons when the card shop has activities and exceptionally for an artistic event. On the contrary, the edges of the complex, the backwaters, are particularly active, especially on weekdays. Occupied by cafes, they are particularly valued at lunch time, because of the interior space between the backwaters of this complex and the exit of the gallery that faces them, with a dialogue between facades that invites you to stay. Santiago is mainly a sunny city, although cold in winter, so terraces in the sun are very desirable, while in summer, the fountain located in this intermediate space refreshes the public space by inviting passers-by to sit on its benches. This space between the main avenue that crosses Santiago under different names from east to west also benefits from the air current generated by this point between the city and the river, taking advantage of this condition, as its name indicates, of being a tajamar (wall to defend against the river waters).

Inés de Suarez, is characterized by its residential condition, on an avenue further away from the center of the capital. It borders a park that represents an attraction for those who live in the complex. Therefore, it is traveled mainly by its inhabitants and neighbors of the neighborhood. The covered square is very popular for different youth activities: dancing, dojo-related training of martial arts and mainly skating due to its soft ground. In winter, it is dark, despite above there is a sunny square closed. Within the complex, the first floors have other businesses: laundry, pizzeria,

veterinary, other martial arts venues, hairdresser. On weekends, a mobile fruit and vegetable kiosk is located inside, which produces that characteristic atmosphere described above, of familiarity and good neighborliness. All the backwaters that face the street, in this case, are occupied by cafes, bakeries and prepared food sales: although they are not full as in the Torres de Tajamar, they always enjoy clients. Each year, since this ensemble's study began, the number of coffee shops has increased and their audience is representative of a neighborhood that attracts more and more young families, especially since the arrival of the subway.

In this way, the uses set the rhythm of each complex, adapt to the solar calendar and take advantage of the relationship with the city to highlight different ambiances. Urban, political and historical time has also marked these spaces: affecting their reappropriation by new inhabitants, particularly in Inés de Suarez and also scaring away users, especially in San Borja, the most marked by the outbreak of October 2029, and before that by the military coup of 1973 and the dictatorship that followed. The metropolitan context in turn impacts these spaces, subjected to the strong flow of people that cross the city on weekdays, these are forgotten to their fate on weekends, particularly the most central ones such as San Borja and Tajamar. These appear, then sad and deteriorated, when the bustle of the city and the atmosphere of the week is replaced by the monotony of Sunday that characterizes family Sunday customs of Santiago.

Figure 8: San Borja: the greengrocery kiosk (2026); Tajamar: for the art fairy "espacios revelados" produced by the artists Courtney Smith and Iván Navarro (2016); Inés de Suarez: skating (2023).
Source: Own elaboration.

5 CONCLUSIONS: THE AMBIANCE OF THE SHELTER THE MANIFESTATION OF COMPLEXITY AND RICHNESS OF THE CITY

complexes chosen. In San Borja, this is the only space in the plinth that invites you to stay, take advantage of both the shade of the oldest trees, planted on the sidewalk in counter bass; as well as the retreat from the noise and bustle of the street. In Inés de Suarez, each of the bays are occupied by cafes, restaurants, with tables and chairs. Away from the street and the vehicular traffic, here too, the space invites you to stay longer, it hosts a commerce that benefits from this condition of both edge

and contact with the surrounding city. In the Tajamar Towers Complex the haven is the space of urban life, several cafes enjoy this space of friction with the city, a sort of small square is created in the distance from the galleries across the street. Every weekday it is possible to see these spaces occupied by an important number of persons. Shelters, also named as havens or backwaters, are usually places separated from the noise of the main avenues, protected from the hustle and bustle of the street.

These spaces, were the modern complex meets the external neighborhood are flexible: the space of friction with the involving city. This condition favors the existence of a kind of commerce open to a public use, inviting the pedestrians to access and stay in the modern architectural ensemble. It's the space for social interactions, and urban conviviality. The coffees and restaurants usually installed in these shelters take advantage of the architectural form: where a fold is made in the form these premises take advantage of the space to install their tables, their chairs and invite the passer-by to sit down.

The haven is the space of continuities, the space of the suture and the opportunity that has provided a respectful architecture that was conceived for these modern complexes. It is also a challenging space, where the city exposes it demands, and the users can appropriate the space, by multiple practices, especially commercial ones. In the contrary, the squares are the less flexible spaces. Around these spaces, commerce has less relation with the surrounding city, which probably hinders its development, the desire of the modern movement to isolate these spaces affects their potential for appropriation. Then ambiances take place in the most rich and flexible spaces which result to be also the richer in urban relationships, representative of the history of the city and takes advantage of its geography.

6. BIBLIOGRAPHY

Augoyard, J.F. (2010) Pas à Pas. France : Éditions À la Croisée, Bernin.

Augoyard, J.F. (2004) Vers une Esthétique des Ambiances. In Amphoux, P. ; Thibaud J.P., Chelkoff, G. (Eds.), Ambiances en Débat. France : Éditions À la Croisée, Bernin.

Choay, F. Lengereau, E. (2010). Place. In Merlin, P. Choay. F. (Eds.), Dictionnaire de l'urbanisme et de l'Aménagement. France : Presses Universitaires de France.

Solá-Morales i Rubió, M. (2008). De cosas urbanas. España: Editorial Gustavo Gili.

Thibaud, J.P. Grosjean, M. (2020). L'espace urbain en méthodes. Marseille, France: Éditions Parenthèses.

Thibaud, J.P. (2002). Regards en Action, Ethnométhodologie des Espaces Publics. France: Éditions À La Croisée, Bernin.

L32

AMBIANCE ET PROPAGATIONS

CHAIR Pascal Amphoux

Hypothesis 1: An ambiance spreads, it is contagious, it operates through proximities. It is viral, sometimes even virulent, always and infinitely variable. Effects of amplification, fading, or collapse... It self-organizes or self-destructs. It escapes the sole will of those who create it, yet is not structurally determined by its initial conditions.

Hypothesis 2: The concept of propagation allows for the fundamental reintroduction of time into the analysis or production of ambiances. The question of time is often treated as an "ambiance factor" (a duration, a moment, an event that contributes to perpetuating, disrupting, or interrupting its course), but it is rarely addressed head-on, as such and as constitutive of the phenomenon of ambiance itself. Exploring the countless links between propagation phenomena and ambiance situations will be the focus of this session.

The perspective can be theoretical or methodological. What role can the notion of propagation play in the conceptual definition of the ambiance concept? A catalyst, a capacitor, a resonator? Is it an attribute, a modality, an effect? Could it open a third way between the technical approach to ambiances (disciplinary and disciplined) and human approaches to Ambiance (transdisciplinary and undisciplined)? ...

It can be pragmatic or analytical. What propagates in the lived, or better yet, alive reality of an ambiance situation? A rumor, a gesture, a ritual? How are propagation phenomena experienced? What is the relationship between the propagation speed and the living or deadly nature of an ordinary or extraordinary, domestic or public, spatial or media situation? ...

It can still be that of perception or creation. How does the propagation of images, sounds, smells, or information operate in sensory perception? How does it give consistency to an ambiance? How does it resonate with it? Or how does it ensure its persistence through its infinite variations – of inertia, speed, or acceleration?

From the reactualization of the notion of time giver from chronobiology (Zeitgeber or synchronizers) to the new sociology of propagations (proposed by Dominique Boullier), from cross-cutting approaches of rhythmology (Graff and Gwiazdzinski) to algorithms tracing biological, social, or attentional virality, the field of disciplines invoked and the choice of communications will strive to cover this passage between technical sciences, physical sciences, and social sciences.

From the physical and sensory analysis of sound phenomena to the stance of architectural, urban, or territorial projects, from the anthropological narrative recounting the processes of installing a festive ambiance, a political demonstration, or a community gathering to the study of chains of contagion in critical situations of pandemic, rumor, or conflict, the field of concerned Ambiances research is widely open to the... propagation of the concept! It could be framed under the sign of a distinction between three temporal logics: cadence, rhythm, and pulsation.

AFFECTS AND RITUALS THROUGH THE ZAD.
THE PHENOMENON OF PROPAGATION IN PROTEST ATMOSPHERES

AFECTOS E RITUAIS ATRAVÉS DO ZAD.
O FENÓMENO DA PROPAGAÇÃO EM ATMOSFERAS DE PROTESTO

Alberta Piselli
PhD Student in Landscape and Environment
Sapienza, University of Rome, Department of Architecture and Design
alberta.piselli@uniroma1.it

ABSTRACT

The contagious dimension of atmospheres is particularly evident in protest landscapes.

While spatial aspects have been recently explored, the affective perspective, focusing on contagion and diffusion, remains under-researched.

Some authors have discussed phenomena like the "transmission of affects" in crowd dynamics, others; the spread of everyday practices and rituals in protest camps as "infrastructures".

Based on the dual aesthetic-sociological perspective, we aim to frame the phenomenon of propagation of atmospheres through the territory of the ZAD of Notre-dame-des-Landes. We will discuss on the one hand the unfolding of rituals within the "daily flow of doing" within a resisting community, and, on the other, the phenomenon of resonance in the large-scale manifestations connected to it.

New perspectives will be opened on the topic of the reproducibility of atmospheres.

KEYWORDS: propagation. protest atmospheres. resonance. affects. rituals. ZAD.

RESUMO

A dimensão contagiosa das atmosferas é particularmente evidente nas paisagens de protesto.

Embora os aspectos espaciais tenham sido recentemente explorados, a perspetiva afectiva, centrada no contágio e na difusão, continua a ser pouco estudada.

Alguns autores discutiram fenómenos como a "transmissão de afectos" na dinâmica das multidões, outros, a difusão de práticas e rituais quotidianos em campos de protesto como "infra-estruturas".

Com base na dupla perspetiva estético-sociológica, pretendemos enquadrar o fenómeno da propagação de atmosferas através do território da ZAD de Notre-dame-des-Landes. Discutiremos, por um lado, o desenrolar de rituais no "fluxo quotidiano do fazer" de uma comunidade resistente e, por outro, o fenómeno da ressonância nas manifestações de grande escala que lhe estão associadas.

Abrir-se-ão novas perspectivas sobre o tema da reprodutibilidade das atmosferas.

PALAVRAS-CHAVE: propagação. atmosferas de protesto. ressonância. afectos. rituais. ZAD.

1. APOLLONIAN AND DIONYSIAN. TWO SIDES OF THE SAME COIN

After being ignored for a long time, the spatial dimension of protest has only recently become an object of investigation in urban studies (Auyero, 2005; Deschézelles, Olive 2016 et al.). Alongside this, the debate has also revived interest in the question of atmospheres, in the belief that affects are not private or inaccessible states belonging to the interiority of individuals, but posses a spatial character. Many scholars have investigated the role of emotions in political processes (Jasper, 1998; Ahmed, 2004;

Della Porta, 2016), while others, have investigated the issue of collective atmosphere through specific perspectives (Thrift, 2008; Anderson, 2009; Edensor, 2015; Runkel, 2016, 2018; Trigg, 2020). These studies reveal that atmospheres, especially through in the context of protests, have a viral and contagious dimension, capable on the one hand of triggering protest events and on the other of strengthening the social cohesion of activist groups. Through this dual role, the thesis we aim to discuss is precisely the relevance of protest atmospheres to the phenomenon of propagation: understood as both the transmission of affects, and the diffusion of practices and rituals over time.

In this regard, much literature focuses on the particular spatiality of the protest camp as "infrastructure" (Feigenbaum et al., 2013; Frenzel et al., 2014). Defined as a collection of organised services and structures necessary to support a community, this primarily stages a poetics of the everyday. The regular patterns of separation between domestic and non-domestic spaces are overturned (Frenzel et al., 2014) because protest camps, as public spaces of community, are primarily spaces of domesticity and everyday life practices. Networks and flows of objects (which are often recycled) are used to assemble ephemeral creative structures, giving new life to fragments of tools and saving them from abandonment.

Naturally, since "affects are not separate but, rather, constitute one kind of infrastructure in a protest camp" (Näre, Jokela, 2023, 168), we speak of "affective infrastructures".

On the other hand, when referring to large-scale urban protest camps (such as the Arab Spring or Occupy movements), the camp, and with it the protest atmosphere, takes on the meaning of aggregating multitudes who "act in concert" (Arendt, 1998), or simply, a "crowd".

In this context, with regard to the Occupy experience, the reference to Canetti's phenomenology of the crowds seems clear:

> In these tents, bodies are pressed to bodies, and the fear of being touched disappears. In tents, the crowd is able to be a crowd: in tents, all who belong to the crowd get rid of their difference and feel equal and free themselves from the burdens of civil distance and hierarchy. (Ossewaarde, 2013, 145)

The protest atmospheres of the crowds, in this perspective, express an exquisitely Dionysian character, different from the character of the protest camp as infrastructure.

Maffesoli (1996) first put forward this idea, starting from the belief that European societies, with their rigorous systems designed to order a chaotic reality, were decidedly anti-Dionysian and had therefore contributed much to the marginalisation of the crowd, which was considered irrational and immoral. Canetti would later have

the merit of reversing this narrative. The Dionysian dimension of crowds is evident in their constant urge to expand, destroy, and absorb everything around them.

In contrast, the protest atmospheres inherent to communities in struggle, which identify themselves as "infrastructures", are the result of organised management and planning, although they retain some characteristics of spontaneity. In cases of direct occupation, they inhabit the territory through huts, mostly made of recycled materials, "Architectures without Architects", expressing a precariousness converted into a cry of accusation.

Within this apparent distinction, however, a similar structure can be discerned in the phenomenon of propagation of subversive atmospheres. Crowds and protest camps as infrastructures enact dynamics such as collective contagion (Scheler, 1923; Thrift, 2008) or the phenomenon of resonance (Brennan, 2004; Rosa, 2019; Landweer, 2019) in the former case; and the diffusion of tactics or rituals, that contribute to the creation of spaces of attunement, bearers of values capable of enhancing a sense of belonging (Trigg, 2020) in the latter.

Crossing the two aesthetic and sociological perspectives, we will discuss the dual nature of this phenomenon through the history of the ZAD of Notre-Dame-des-Landes. A case of occupation and direct action on 1,650 hectares of agricultural and bocage land north of the metropolis of Nantes against the construction of an airport – the ZAD will serve as an observation ground for these dynamics.

The first part of the article will deal specifically with the phenomenon of the transmission of affects in the main mass demonstrations of the complex history of this territory in struggle. The second part will discuss the diffusion of everyday practices as a material substratum for increasing the spread of the movement, as well as its durability over time.

As two sides of the same coin, this double mode of propagation as transmission of affects and diffusion of practices resonates with a dual conception of atmospheres: on one hand understood as affects in a broad sense – landscapes, sentiments (Landweer, 2019); on the other as fields of affective materiality, according to the thesis of spectral geographies proposed by McCormack (2008).

Starting from the phenomenon of propagation as the transmission of affects and the diffusion of practices, new perspectives will finally open up on the still debated theoretical knot of the reproducibility of atmospheres.

2. ON CROWDS AGAINST THE AIRPORT AND ITS WORLD

The atmosphere of a protesting crowd is first a soundscape. The affective dimension may be different from each other, but nevertheless they share some common premises, including the phenomenon of transmission of affect and resonance (Landweer, 2019), as a modality that enacts the phenomenon of propagation of atmospheres.

Choirs, screams, noises of broken objects. Destructions. Police whistles, tear gas jets, gunfire. A burst. Screams again, then more shots. Motor vehicles, silence. Quick footsteps on the ground, faster and faster, broken objects trampled on, choruses rising from afar. Shouts of enthusiasm, applause.

These are discontinuous noises, except for a few overlaps, crisp because each one occupies its own frequency. This is what was recorded during the demonstration of around 50,000 people in Nantes on 22 February 2014, two years after Operation César evicted the occupiers. This was a situation of great urban disorder, with violent attacks and clashes. Listening to the sounds, one seems to recognise Canetti's words on the destructive impulse of the crowd:

> The crowd particularly likes destroying houses and objects: breakable objects like window panes, mirrors, pictures and crockery; and people tend to think that it is the fragility of these objects which stimulates the destructiveness of the crowd. It is true that the noise of destruction adds to its satisfaction; the banging of windows and the crashing of glass are the robust sounds of fresh life, the cries of something new-born. (Canetti, 1962, 19)

In this case, it could be said, in Schmitz's terms, that in these urban disorders, the crowd is not "tuned", but consists of a series of bipolar, misaligned interactions, oriented according to different rhythms and directions, which are often conflicting.

Diametrically opposed, however, was the situation during two demonstrations on the territory of the ZAD: the "reoccupation" of 17 November 2012, and the "sticks" protest of 8 October 2016, which attracted around 40,000 participants from all over France. Here, drums, choirs, flutes, the sound of sticks hitting the ground and coordinated steps testify to the festive character of the processions. The crowd, as Canetti would say, in this case is a "rhythmic crowd". Where many people walk, others walk with them.

> Steps added to steps in quick succession conjure up a larger number of men than there are. (...) The sound of their steps does not die away, for these are continually repeated; there is a long stretch of time during which they continue to sound loud and alive. What they lack in numbers the dancers make up in intensity; if they stamp harder, it sounds as if there were more of them. (...) First, it is important that they should all do the same thing. They all stamp the ground

and they all do it in the same way; they all swing their arms to and fro and shake their heads. The equivalence of the dancers becomes, and ramifies as, the equivalence of their limbs. (Canetti, 1962, 31-32)

Apart from the common character of the rhythmic crowd and the almost "festive" atmosphere, what these two protest events have in common is the ponderous presence of a purpose, goal or direction. In the first case, i.e. the reoccupation demonstration where the protesters carried beams, planks and tools of various kinds, they were heading towards Chat-Teigne: here, the construction of a "resistance headquarters" marked the climax of the procession. In the second case, three processions coming from different entrances to the ZAD, converged towards Bellevue farm, at the edge of a field where thousands of sticks had been planted on the ground, quickly forming a long hedge of thorns on a hill. This choral action consumed the meaning of the demonstration (Figure 1).

Figure 1. Rhythmic crowds towards a direction-goal. Festive demonstrations at the ZAD on 17 November 2012 above, 8 October 2016 below. Source: Drawing by the author (2024).

It is precisely on the basis of directionality as a spatial characteristic of atmospheres – which Landweer does not clarify as "measurable directions", but which can be "felt and perceived" (2019) – that it is perhaps possible to lump together all three configurations of protesting crowds.

Indeed, a closer observation reveals that even a situation of chaos, such as the urban protest in the opening, is dominated by a certain rhythm and a certain, one might almost say, choreography.

A group of protesters seems to advance discontinuously towards the aligned ranks of the police; at other times, they may retreat and scatter in the open space, dispersed by police action and engulfed by tear gas. « Baiting crowds » alternate with "flight crowds", both, according to Canetti, ancestral figures that bear witness to prevailing emotions or "primary affects" (Runkel, 2018).

These affects propagate in space, thanks to the directional character of atmospheres, which forms the foundation for the phenomenon of affect transmission. When collective feelings affect several subjects simultaneously who become aware of their mutual involvement, affectivity is amplified and affects become more intense (Landweer, 2019). This is what resonance refers to, and what Canetti describes in terms of the rhythmic character of footsteps on the ground, which simulate an increasing presence of people and thus also increase the intensity of the protest. This is also what happens in the case of the shared direction of the "flight crowd" or the common enemy against which the "baiting crowd" is hurled. Since they identify collective affects, their transmission will tend to grow, to spread exponentially.

3. REFRAINS ON THE ZAD

If resonance describes the transmission of affects, here we will describe here the structure of ritual repetition as a way of spreading protest atmospheres over time. Flows of doing, refrains, and practices such as walking across territories bring us closer to the spectral dimension of atmospheres as "fields of circulating materials" (McCormack, 2008, 426).

The sticks used in the 8 October 2016 demonstration are everyday objects.

> Sticks for careful exploration, for probing possible dangers… Sticks for pounding rice or cassava in the mortars that mark the daily life of so many villages, in Africa or elsewhere… Sticks to macerate hemp, to pound wool, to mix laundry… just like our parents did… Sticks of travel and exchange, from those of the travelling salesman to the masts of the largest sailing ships, which ensured the circulation of cultures throughout the world. Sticks that reassure and support us in times of trouble or old age, in the form of many canes… Sticks for protection and defence… (my translation, link to the text in the bibliography)

These are the symbols of all these different uses, is what we read in the "oath of the sticks", written for the event.

It is no coincidence that the same sticks were used as symbols of protest: they are in fact a historical object of protest marches, from the peasant uprisings under the Ancien Régime to the Larzac march in 1978. Through the continuity of time, the repetition of the blows on the ground, stage here a ritual-like performance. What we intend to demonstrate through this is in fact the possibility of diffusing atmospheres even through the mechanical dynamics of the reiteration of a gesture or the repetition of a refrain.

This is what emerges from the numerous documentaries that focus on life in the ZAD, especially after the years of struggle. Here, a hypnotic flow of shared doing marks the community's days. Clouds rush past behind the lighthouse – a symbolic tower of resistance – in an indefinite temporal dimension. In the bakery of Les Fosses Noires, hands knead bread in a series of repeated and magnetic gestures, a long line of crêpes – intended for one of the various collective lunches – is carefully flipped and turned on successive pans. Then, the rhythm of farming or "cow making", repetitive activities that are relaxing to watch, punctuates the day. There are certain "refrains" as Deleuze (1988) puts it, which in a sense help to perpetuate the life of a community and which refer back to the same practices carried out during the years of struggle, bringing even different moments to the same level of temporal continuity. Not dissimilar to Mircea Eliade's definition of ritual time as a sacred time: a "succession of eternities" (1957), that is periodically recaptured during festivals, in the same way, community practices seem to disclose a direct passage to the experiences of place, through a model of non-linear temporality.

From some years now, several geographers have questioned the notion of "spectrality", evidently dissatisfied with the clear separation that distinguishes what is material from what is immaterial, understood simply as that which cannot be touched. In this sense, certain specific practices would provide privileged access to this "other materiality": writing, encounters with affective affordances specific to certain places of memory, rhythms and refrains of spiritual activities, and practices such as walking.

In February 2024, several years after the protesters' victory, I crossed the territory of the ZAD on foot, looking for traces. Indeed, some paople made me aware of the existence of "a new ZAD", in continuity with the legacy of the struggles. So, I drove through the forest of Rohanne, stayed in a collective, crossed the muddy bocage territory and travelled along the "Route des Chicanes", the departmental road D281 where unusual fantasy constructions made of rubbish and broken objects were used as barricades to slow down the police. Here is brief note, in combination with some photos of the incursion.

I am walking on Route des Chicanes. The section is dual carriageway, so narrow that it almost encourages crossing from one side to the other. There are two ditches at the edges, preceded by a very short, slippery stretch of grass that makes it almost

impossible to walk along the edge of the road. Every now and then, a few crossings towards the forest reveal wilder and increasingly muddy glimpses. I look for something, but find almost nothing.

Apart from a few signs on the tarmac indicating the trace of the past of this disputed road, today only an unusual strong sun beating down on the asphalt. I register a few marks on the ground, exposing my physical body to the risk of finding myself right in the middle of the roadway, right there where a car had reached 100km/h a few minutes earlier. Where once the Chicanes forced you to stop, or at least slow down, the cars are arrows, not at all intimidated by the sight of a pedestrian. I walk a few hundred metres, then a large downward slope suggests a forward momentum, opening my gaze to a kind of valley, revealing the prospect of a surprising... cosmic nothingness.

I turn back. I still feel a sort of "fullness" in having taken some photographs of these unusual graffiti. Some are clearly legible, others barely visible, half-erased, blurred, others, finally, barely shadows. Perhaps the touching fate of all things is really that of leaving no trace.

Or at least, it is meant, not a "material" trace in the canonical sense of the word. The graffiti imprinted in the photographs are the result of the vibrant, exceeding dimension of this landscape. The refrain of walking, along with the other practices carried out during my stay at the ZAD, seems to have stimulated the matter itself to tell a story, thus contributing to transmitting and spreading over time the atmospheres of protest (Figure 2).

Figure 2. Traces on the Route of Chicanes. Phenomenography of the ZAD as a field of circulating affectivity. Source: Photographs by the author (2024).

4. FROM PROPAGATION TO REPRODUCTION

We have clarified how the phenomenon of the propagation of atmospheres takes place through a dual register: the transmission of affects through the atmospheres of the crowd and the diffusion of atmospheres over time through refrains or everyday practices. These atmospheres correspond to a double meaning, now understood as affects and now as "affective fields of circulating materials" (McCormack 2008, 426).

Affects and rituals, as vectors of atmospheric propagation, trigger and maintain the cohesion of protest landscapes, consolidating them, sometimes entrusting them to an "other" temporality.

One could almost say that through the phenomenon of the transmission of affects and the propagation of atmospheres through practices or rituals, these atmospheres are in a sense reproduced, as they are continuously regenerated.

Indeed, with respect to the transmission of affects, based on the phenomenon of "collective contagion" (Thrift, 2008), the dominant structure is that of imitation. In the case of the diffusion of practices and rituals, the dominant mechanism is instead that of repetition, while in the case of refrains, we would say that the dynamic triggered is almost hypnotic.

What all these modes of propagation have in common is that they all have to do with a mechanism of emulation, i.e. the duplication of the original, thus including, in this sense, the question of reproduction. As far as atmospheres are concerned, the question is crucial, the voices are not clear and the debate is still open.

Landweer (2019), and with her Trigg (2020), distinguish atmospheres into two categories: those with objective spatiality – those that are reproduced in film or empathetically felt by others – and those with intersubjective spatiality – those that are felt in one's lived body. This distinction helps to resolve the theoretical issue of their potential reproducibility. Obviously, only atmospheres in an objective sense would be reproducible; with these, there would be no issues of their potential reproduction. Moreover, one can easily be affected in a bodily affective way – intersubjective spatiality – by atmospheres such as those in films – objective spatiality – so that the latter can in a sense trigger, propagate, and reproduce the former.

The showing of a film, the reading of a story, the repetition of a ritual, or the sequence of certain images are enactments of objective atmospheres – as we feel the pain of others, through which we propagate protest atmospheres, thereby continually re-generating them.

This is why further research is desirable that considers the issue of the propagation of affects and rituals as a key to the theoretical knot about the possibility of reproducing an atmosphere.

7. BIBLIOGRAPHY

Ahmed, S. (2004). *The cultural politics of emotion.* Edinburgh University Press.

Anderson, B. (2009). Affective atmospheres. *Emotion, Space, Society,* 2(2), 77-81. https://doi.org/10.1016/j.emospa.2009.08.005

Arendt, H. (1998). *The human condition.* Chicago: University of Chicago Press. (Original work published 1958)

Auyero, J. (2005). L'espace des lutes. Topographie des mobilisations collectives. *Actes de la recherche en sciences sociales*, 5(160), 122-132. *https://doi.org/10.3917/arss.160.0122*

Brennan, T. (2004). *The transmission of affect.* Ithaca, NY: Cornell University Press.

Canetti, E. (1962). *Crowds and power.* New York: The Viking Press.

Dechézelles, S., & Olive, M. (2016). Lieux familiers, lieux disputés – dynamiques des mobilisations localisées. *Norois*, 238-239(1-2), 7-21. *https://doi.org/10.4000/norois.5843*

Deleuze, G., & Guattari, F. (1988). *A Thousand Plateaus: Capitalism and Schizophrenia* (B. Massumi, Trans.). Athlone Press. (Original work published 1980).

Della Porta, D. (2016). *Where did the revolution go? Contentious politics and the quality of democracy*. Cambridge University Press. *https://doi.org/10.1017/9781316783467*

Eliade, M. (1957). The sacred and the profane: The nature of religion (W. R. Trask, Trans.). New York: Harvest, Brace & World.

Edensor, T. (2015). Producing atmospheres at the match: Fan cultures, commercialisation and mood management in English football. Emotion, Space and Society, 15, 82-89. *https://doi.org/10.1016/j.emospa.2013.12.010*

Feigenbaum, A., Frenzel, F., & McCurdy, P. (2013). *Protest camps: Imagining alternative worlds.* Zed Books.

Frenzel, F., Feigenbaum, A., & McCurdy, P. (2014). Protest camps: An emerging field of social movement research. The Sociological Review, January, 1-40. *https://doi.org/10.1111/1467-954X.12111*

Jasper, J. (1998). The emotions of protest: Affective and reactive emotions in and around social movements. *Sociological Forum*, 13(3), 397-413. *http://www.jstor.org/stable/684696*

Landweer, H. (2019). The spatial character of atmospheres: Being-affected and corporeal interactions in the context of collective feeling. *Studi di estetica*, XLVII(IV serie), 2. *https://doi.org/10.7413/18258646087*

McCormack, D. (2008). Engineering affective atmospheres: On the moving geographies of the 1897 Andree expedition. *Cultural Geographies*, 15(4), 413-430. *https://doi.org/10.1177/1474474008094314*

Näre, L., & Jokela, M. (2015). The affective infrastructure of a protest camp: Asylum seekers' 'Right to Live' movement. *The Sociological Review, 63*(3), 472-490. *https://doi.org/10.1177/00380261221102025*

Ossewaarde, R. (2013). The crowd in the Occupy Movement: A critical analysis. *Current Sociology, 61*(4), 565-579. *https://doi.org/10.1080/1600910X.2012.732954*

Rosa, H. (2019). *Resonance: A sociology of our relationship to the world*. Medford, MA: Polity Press.

Runkel, S. (2016). Atmospheres and crowds: Techno-ambiental interventions and affective spaces of protest. In *Ambiances, tomorrow: Proceedings of 3rd International Congress on Ambiances* (pp. 853-858). Volos, Greece. *https://hal.science/hal-01409184*

Runkel, S. (2018). Collective atmospheres: Phenomenological explorations of protesting crowds with Canetti, Schmitz, and Tarde. *Ambiances: Environnement sensible, architecture et espace urbain*, 1-17. *https://doi.org/10.4000/ambiances.1067*

Scheler, M. (2008). *The nature of sympathy* (P. Heath, Trans.). New Brunswick: Transaction Publishers. (Original work published 1923)

Thrift, N. (2008). *Non-representational theory: Space, politics, affect.* Routledge.

Trigg, D. (2020). The role of atmosphere in shared emotions. *Emotion, Space and Society,* 35, 100671. *https://doi.org/10.1016/j.emospa.2020.100658*

https://reporterre.net/Sur-la-Zad-de-Notre-Dame-des-Landes-des-milliers-de-batons-enracinent-la

https://reporterre.net/Le-serment-des-batons

PROPAGATION AND NEW ATMOSPHERES WITH THE WATERS DIASPORA

PROPAGAÇÃO E NOVAS ATMOSFERAS COM A DIÁSPORA DA ÁGUAS

Ana Luiza Nogueira
Graduanda, UERJ, Brasil.
analuizanogueira17@gmail.com

Patricia Drach
Professora Associado, UERJ, Brasil.
Professora Permanente, PROURB, FAU, UFRJ.
patricia.drach@gmail.com

ABSTRACT

This study is an exploratory investigation of Caxambu Santa Isabel in the city of Petrópolis, aimed at understanding this territory through its material characteristics. These characteristics serve as a foundation for the atmospheres created by the interactions between the different communities and their daily lives. The atmospheres play a crucial role in generating territorial data from residents' perceptions, ephemeral uses, and appropriations of public spaces. This study promotes local knowledge in collaboration with the inhabitants and their memories, allowing for a sensitive understanding of the past and present of this community.

KEYWORDS: Atmospheres. Water. Rural. Disaster. Ambiances.

RESUMO

Este estudo é uma investigação exploratória do Caxambu Santa Isabel, na cidade de Petrópolis, com o objetivo de compreender esse território através de suas características materiais. Essas características atuam como suporte para as atmosferas criadas pelas interações entre as diversas comunidades presentes e seus cotidianos. As atmosferas desempenham um papel crucial na geração de dados territoriais a partir das percepções dos moradores, usos efêmeros e apropriações dos espaços públicos. Este estudo promove o conhecimento local em conjunto com os habitantes e suas memórias, permitindo uma compreensão sensível do passado e do presente dessa comunidade.

PALAVRAS-CHAVE: Atmosferas. Água. Rural. Desastre. Ambiências.

1. INTRODUÇÃO

O presente trabalho propõe uma pesquisa exploratória na região do Caxambu, na cidade de Petrópolis, Rio de Janeiro. Busca-se entender este território através das suas características materiais que serviram de suporte às atmosferas resultantes das relações das diferentes comunidades presentes e seus cotidianos. O Caxambu não estava inicialmente planejado no projeto "Povoação-Palácio de Petrópolis" concebido pelo Major Júlio Frederico Köeler a pedido de D. Pedro II. O plano de Köeler dividiu a Fazenda do Córrego Seco em três categorias de "prazos" (lotes), incluindo os próximos ao Palácio Imperial, os ao redor do Quarteirão Vila Imperial (chamados de "quarteirões coloniais"), e os periféricos. Petrópolis testemunhou um significativo fluxo migratório europeu no final do século XIX e início do XX, incentivado pelas autoridades brasileiras influenciadas por teorias raciais. Isso se refletiu na ocupação de áreas próximas aos Quarteirões Coloniais por imigrantes, como franceses e portugueses, que encontraram no Caxambu uma oportunidade devido às técnicas agrícolas adequadas à região. Os pulsos migratórios variados marcaram a ocupação da região, com portugueses chegando gradualmente, ao contrário de colonos alemães, italianos e japoneses, que vieram em grande número. Os açorianos, por exemplo, chegaram por volta de 1840, antes da fundação da cidade,

contribuindo para a construção da região. As questões socioeconômicas do Estado Novo português também impulsionaram migrações adicionais. O Caxambu Santa Isabel (Figura 1), fronteira com o Parque Nacional da Serra dos Órgãos, permaneceu relativamente isolado, permitindo o surgimento de dinâmicas distintas. Hoje, subdividido em Quarteirão Suíço, Luzitano e Santa Isabel, o Caxambu é uma região predominantemente agrícola, com ambiências resultantes das interações sociais e práticas cotidianas, refletindo percepções do espaço, usos efêmeros e interações comunitárias. O estudo desses aspectos históricos e demográficos da região possibilita uma compreensão mais profunda das paisagens e do modo de vida das pessoas que ali habitaram e habitam. Essa compreensão é essencial para preservar e valorizar o patrimônio cultural e ambiental da região para as futuras gerações. Além disso, será abordada a "diáspora da água", um processo de urbanização na década de 1990 para abrigar vítimas da chuva de 1988 em Petrópolis. Os novos moradores inseridos na região já consolidada criaram novas ambiências e, por vezes, conflitos.
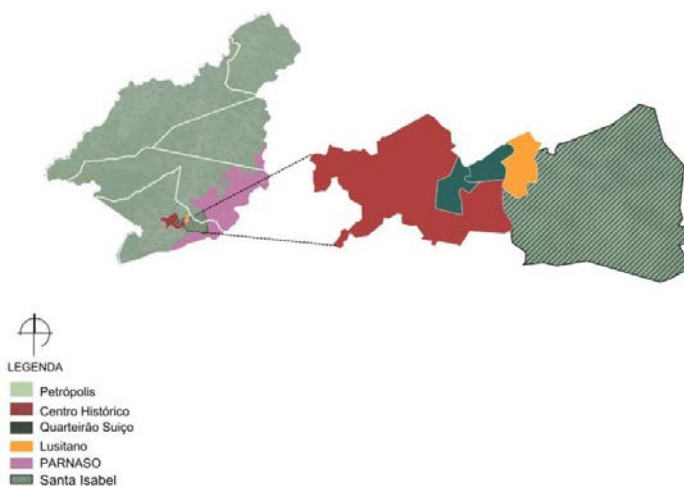
Figura 1. Localização da região do Caxambu e suas subdivisões: Quarteirão Suíço, Lusitano e Santa Isabel.
Fonte: Prefeitura de Petrópolis, adaptado pela autora (2024).

A interação e propagação dessas diferentes atmosferas, juntamente com suas relações com o meio ambiente, resultaram em conflitos que envolvem tanto o caráter religioso das comunidades quanto as atividades locais desenvolvidas. É interessante notar que, embora a população da diáspora da água tenha adotado alguns hábitos comuns à comunidade já presente, essas semelhanças não foram suficientes para que as duas comunidades compartilhassem uma atmosfera comum ou atuassem de forma integrada.

2. PROCEDIMENTO METODOLÓGICO

A dificuldade na obtenção de dados locais acerca da região fez com que o procedimento metodológico da pesquisa envolvesse a análise qualitativa do Caxambu. Assim, através da memória associada ao suporte territorial buscou-se significar as vivências através da atmosferas. Por meio desse estudo, estabelece-se um diálogo próximo com os habitantes locais, permitindo a coleta de suas percepções, memórias e experiências. No primeiro momento é elaborado um percurso comentado documentando a atmosfera de um espaço urbano vivenciado fisicamente quando se movimenta por ele como descrito por Thibaud (2004, p.09) ao colocar que "caminhar num ambiente urbano constitui aqui o caso paradigmático a partir do qual a atmosfera é corporificada". Pode-se dizer então que caminhar em campo é uma forma de colocar o corpo como sensor dos estímulos como cheiros, sons, luz e clima, entre outros. A segunda etapa se desenvolve atraves de entrevistas dinâmicas com os moradores que ao caminharem descrevem seu lugar indicando as sensações, memórias e percepções, gerando a documentação dessas vivências.

 O uso de ferramentas para identificar as atmosferas locais e a experiência vivida no espaço urbano deste bairro traz um esclarecimento e um reconhecimento sensível de um território muito peculiar e intrigante da cidade. Através do mapeamento de manifestações, é possível obter de forma visual as sensações ao caminhar no local, além de levantar os aspectos materiais por meio da observação e das fotografias. A utilização das linhas afetivas funciona como uma ferramenta para captar o clima emocional do bairro, trazendo à tona questões relacionadas a dois grupos: um fortemente vinculado às suas memórias, aspectos culturais e até nostálgicos de sua descendência, e outro grupo, o do BNH, com memórias de dor e perda com as chuvas e os desastras.

3. EXPERIÊNCIA LOCAL

A análise através das atmosferas permite um preenchimento do contexto urbano incluindo as atividades cotidianas e possibilita observar a cidade através das sensações. Duarte (2013) defende que a ambiência é o conjunto urbano somado com todas as demais sensações que o envolvem: cheiro, sons, temperatura, movimento, pessoas, entre outros. Afirma ainda que a ambiência não é a soma de fatores isolados e, sim, a união do suporte espacial formada pela cidade como ponto inicial e concluindo em dados memoriais e culturais, sendo uma potência na compreensão dos significados. Essa definição condiz com a estrutura em que essa pesquisa irá se conduzir levantando o suporte espacial na geração de dados locais e posteriormente, incluindo a memória e os demais elementos.

Thibaud (2015) define que a experiência da cidade diz sobre situação ambiental, clima emocional e expressão sensível de uma forma de vida. Colocando a atmosfera sensível como elemento que dá cor ao lugar num ambiente contribuindo na nossa forma de ser em sociedade. A cidade sem as atmosferas sensíveis constrói um

lugar impessoal, o afeto com as dinâmicas urbanas e a familiaridade gera uma visão espacial enriquecedora como descreve Duarte:

> "A prática de ler os espaços da cidade, ouvir as narrativas dos lugares, entender as reações dos usuários e o impacto das culturas e subjetividades às formas espaciais tem se mostrado uma estratégia extremamente rica e . Com isso, acredita-se estar enriquecendo e alargando as possibilidades de compreensão da relação pessoaambiência sensível, e criando subsídios para novos paradigmas de intervenção na área da Arquitetura e do Urbanismo."(Duarte, 2013)

No seu núcleo inicial, a Venda, essa comunidade Portuguesa e agrícola ocupou as áreas mais afastadas e montanhosas com suas plantações. Segundo Lage (2020) essa escolha se deu pela similaridade do solo do seu lugar de origem, o Alto-Minho, norte de Portugal e pela proximidade com a água. Essa configuração espacial não só permitiu a prática agrícola como deu a esse grupo de moradores um território propício para se constituir e manter suas tradições trazidas e mantidas pelos seus descendentes. Uma das práticas está vinculada a atmosfera católica inserida e mantida por esse grupo que se manifesta no espaço urbano com as procissões quanto na arquitetura das casas que apresentam a representação dos seus símbolos religiosos estampados em ladrilhos ou em capelas expostas nos jardins das casas. Cabe ressaltar na região a presença até os dias de hoje das diferentes atmosferas (Figura 2) fortemente ligadas à origem de sua população. É interessante observar que tal diversidade ocorre em um pequeno território capaz de abarcar a representação dos elementos necessários à sobrevivência da população minhota na Serra de Petrópolis.

Figura 2. Atmosferas local.
Fonte: autora.(2024).

No Caxambu Santa Isabel diferentes dinâmicas surgiram a partir de novas chegadas, dentre elas, uma marcante com forte interferência nas relações locais foi a implantação do conjunto do BNH - Banco Nacional de Habitação.

4. ATMOSFERAS DE DOIS POVOS

A Venda ou BNH (Figura 3) é um local de conflito e dupla atmosfera essa diferença aparece até na nomenclatura da região que recebe dois nomes, para os moradores descendentes de portugueses esse local é nomeada como venda, pois era ali que aconteciam as vendas e escoamento das flores produzidas nas suas chácaras. Já para os moradores novos a região é chamada de BNH vinculado ao seu local de moradia após as tragédias.
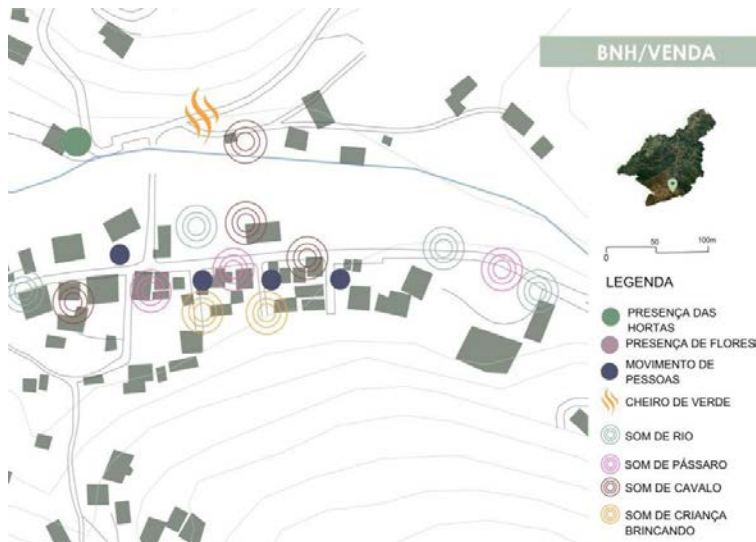
Figura 3. Mapa de manifestações
Fonte: Autora (2024).

A memória de cada grupo se entrelaça e se consolida nesta região que desempenha um papel de centro, esse local abriga os principais equipamentos, comércios e as Igrejas e os espaços de lazer. E sempre desempenhou esse papel ao longo do tempo pela sua localização e pelo terreno plano, facilitando a implantação desses equipamentos. Ao caminhar no local é possível identificar um maior movimento de pessoas, essa região é a única do bairro que não tem a predominância das hortas é possível ouvir crianças brincando na praça que se encontra próxima às casas do conjunto.

Os diferentes grupos demarcam o território de forma quase inconsciente. Os moradores que chegaram em 1988 utilizam as calçadas como uma extensão de suas casas, permitindo que suas crianças brinquem nas ruas. Isso ocorre principalmente porque a área é urbanizada e as casas do BNH possuem lotes menores, incentivando

o uso das ruas como espaço de brincadeiras. As imagens da Figura 4 apresentam a atmosfera de lazer na pracinha próxima ao BNH (4a) e o dia a dia na horta dos descendentes (4b).

(a)   (b)

Figura 4. Atmosfera de lazer – moradores BNH (a) e o dia a dia na horta (b).
Fonte: Autora (2024).

Por outro lado, os descendentes tendem a permanecer mais dentro de suas propriedades, que têm áreas livres mais amplas, facilitando a permanência dentro dos limites de suas casas. Este grupo também frequenta bares e comércios locais.

5. DIÁSPORA DA ÁGUA

A palavra "diáspora" é utilizada aqui para descrever a dispersão de um povo de seu local de origem para outras regiões. Neste caso, a dispersão resulta das forte chuvas que, em 1988, deslocaram moradores de diversas áreas de Petrópolis, inserindo essa população no bairro Caxambu. A região é banhada pelo rio Itamarati, que possui a capacidade de abastecer a cidade, o principal subsistema de abastecimento de água chamado Montevideo tem uma capacidade de 350 l/s, conforme destaca o Plano Municipal de Saneamento Básico de Petrópolis (2014). Esse plano sublinha a importância da água para a região, que apresenta uma dualidade de significado. Para a comunidade portuguesa, a água representa a reprodução da vida e a geração de alimentos através das práticas agrícolas. Em contraste, para a comunidade do BNH, a água simboliza a perda, o deslocamento e o recomeço.

Para compreensão das novas atmosferas criadas com a diáspora da água é necessário direcionar o olhar para escala da cidade, compreendendo que Petrópolis enfrenta frequentes chuvas que causam deslizamentos de terra e deixam inúmeras pessoas desabrigadas. Essas chuvas destrutivas afetam a cidade criando uma atmosfera de medo nos meses de fevereiro e março, alterando a rotina dos seus habitantes devido

às ameaças de novas chuvas e gerando uma sensação de insegurança e apreensão em consequiência dos grandes desastres vivênciados ao longo dos anos como apresentado no gráfico baixo (figura 5) que mostra o número de óbitos nos últimos desestres.
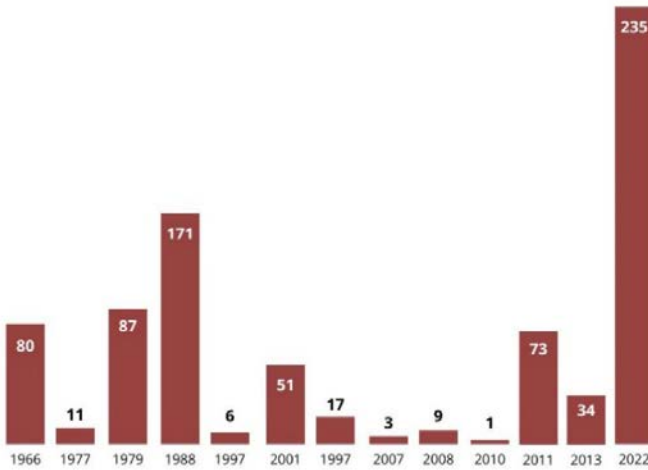
Figura 5. Gráfico de número de óbitos registrados em episódios de chuva intensa no município de Petrópolis, entre 1966 e 2022.
Fonte: Prefeitura Municipal de Petrópolis (2023).

Em 1988, um desastre resultou na perda de 171 vidas e deixou mais de 1.000 pessoas desabrigadas. Parte desse grupo foi realocado para um conjunto de moradias unifamiliares no bairro Caxambu Santa Isabel. A inserção dessas pessoas, vindas de áreas urbanas, em uma comunidade portuguesa rural gerou uma série de conflitos identitários. Muitas dessas famílias realocadas no desestre viviam em áreas de risco e foram assentadas para o conjunto habitacional, que inicialmente não tinha infraestrutura adequada. A chegada desse grupo distinto urbano no Santa Isabel gerou conflitos atmosféricos por se tratar de uma área já consolidada e fechada pelos Portugueses agrículas criando uma ruptura tanto no tecido urbano alterando as características materiais, quanto no tecido social local.

6. ATMOSFERAS – LINHAS DE MEMÓRIAS AFETIVAS

A construção das linhas de memórias afetivas começa na região da Venda/BNH e duas moradoras colaboraram através da entrevista dinâmica: Andrea (Figura 5), de 57 anos, moradora da região que identifica como Venda e Elizabeth (Figura 6), 65 anos, moradora da região que se identifica como BNH. Ao caminhar pelos espaços de memória, as lembranças emergem e, em cada nova atmosfera, as entrevistadas experienciam momentos de emoção e recordações inesperadas. Essas entrevistas geraram linhas afetivas, destacando as falas das moradoras e suas principais memórias relatadas.

Andrea, ao ser entrevistada, se emociona ao recordar sua infância, quando brincava nas ruas e rios próximos à sua casa, num local sem áreas definidas para lazer. Ela conta sobre seu pai, que veio de Portugal em 1928 para trabalhar na fazenda de Abelardo, e foi uma figura importante na construção do bairro Santa Isabel, colocando a primeira pedra da igreja em 1947. Andrea também fala sobre a dinâmica da venda, relacionada ao escoamento de flores das chácaras, que estruturou a economia local e criou uma memória da paisagem das grandes chácaras. A venda era o local onde os produtores levavam flores até o galpão do seu Bernardino, antes de serem transportadas principalmente para o Rio de Janeiro. Andrea descreve suas sensações vinculadas ao passado, lembrando-se das brincadeiras e da rua que seu pai ajudou a pavimentar, o que fortalece sua compreensão nostálgica do passado e do presente local.

Figura 6. Linha afetiva da moradora Andrea.
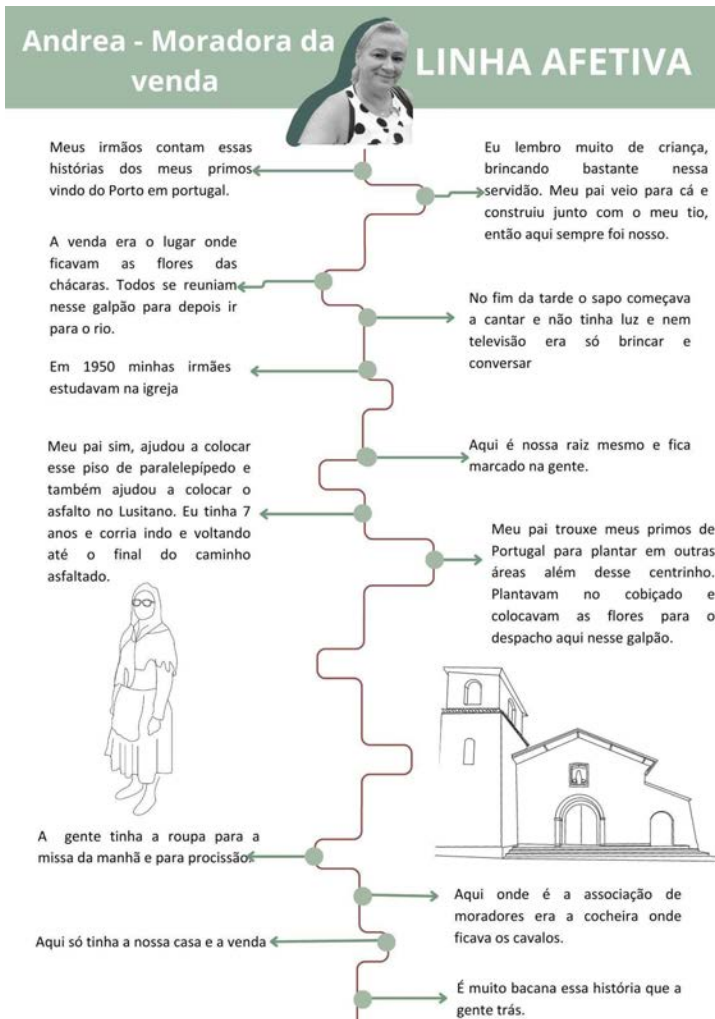Fonte: Autora , 2024.

Elizabeth, em sua entrevista, destaca que veio morar na região após perder sua casa na chuva de 1988. Ela elogia as casas do BNH pela qualidade da materialidade das moradias e relembra a chegada de muitas pessoas de diversos bairros para viver nas "casinhas" unifamiliares, conforme descreve.
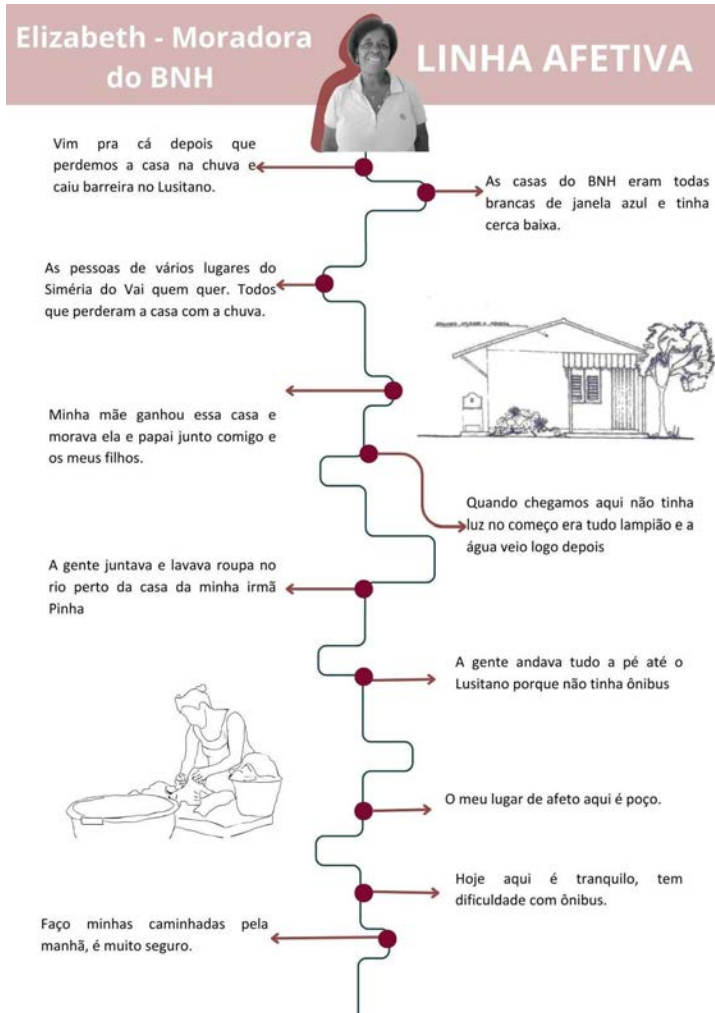

Figura 7. Linha afetiva da moradora Elizabeth.
Fonte: Autora, 2024.

CONSIDERAÇÔES FINAIS

A região Venda/BNH é a área possui o maior movimento de pessoas nas ruas devido à sua configuração espacial. Essa região compartilha as diferentes atmosferas de cada um dos grupos. As habitações estão mais próximas umas das outras, favorecendo o uso do espaço público. É a região mais urbanizada, com a presença de comércio local e todos os equipamentos públicos de Santa Isabel, como escola, posto de saúde e quadra, atraindo as pessoas para essa localização. A atmosfera de um pequeno centro urbano está também presente. Embora ainda mantenha uma atmosfera rural, ela se distingue das demais áreas pelo maior movimento de pessoas nas ruas. As casas são mais simples e com maior altura; algumas estão sem acabamento, deixando a alvenaria de tijolo exposta. Ao caminhar pelas ruas da Venda, é possível sentir-se seguro tanto pelo movimento quanto pela presença de calçadas que promovem essa segurança.

As entrevistas de Andrea e Elizabeth revelam a complexa teia de memórias e experiências que moldam a comunidade de Santa Isabel. Andrea, com sua profunda conexão com o passado do bairro, destaca a importância das tradições e da contribuição de sua família na formação do local. Sua narrativa sobre a dinâmica da venda de flores e a pavimentação das ruas demonstra como as memórias pessoais se entrelaçam com a história coletiva do bairro. Elizabeth, por outro lado, traz à tona as mudanças mais recentes e os desafios enfrentados pela comunidade após o desastre de 1988. Suas observações sobre a qualidade das casas do BNH e a integração das novas famílias sublinham a resiliência e a capacidade de adaptação dos moradores.

No levantamento inicial do território da região do Caxambu, foram identificados conflitos atmosféricos decorrentes de novas emergências na área. Observou-se que a propagação ocorre nas práticas religiosas e agrícolas da população oriunda do norte de Portugal, que contrastam com as práticas trazidas pela "diáspora da água". Esta última inclui uma diversidade cultural e religiosa, o que gera tensões entre as diferentes tradições e modos de vida estabelecidos na região.

Essas histórias ilustram como o espaço urbano é continuamente reconfigurado pelas vidas e memórias daqueles que o habitam. A convergência de histórias de vida tão distintas, mas igualmente significativas, ressalta a importância de compreender e valorizar as diversas camadas de experiência que constituem o tecido social e histórico de uma comunidade.

BIBLIOGRAFIA

Jean-Paul Thibaud. 2015. En quête d'ambiances: éprouver la ville en passant: Genève: MétisPresses

DUARTE, Cristiane Rose de S.; PINHEIRO, Ethel. Imagine uma tarde chuvosa... pesquisas sobre ambiência, alteridade e afeto. Anais do, v. 6, 2013.

LAGE, Natália. A imigração portuguesa e a formação da comunidade de Santa Isabel na cidade de Petrópolis na primeira metade do séc. XX. Petrópolis, 2020. 74 p. Monografia (Licenciatura em História) - Centro de Teologia e Humanidades da Universidade Católica de Petrópolis.

PROPAGATION OF ATMOSPHERES FROM THE ANCIENT TO THE PRESENT - BRINGING ARCHEOLOGICAL OBJECTS TO LIFE IN HIGH SECURITY GLASS DISPLAYS

PROPAGAÇÃO DAS ATMOSFERAS DO ANTIGO AO PRESENTE - DANDO VIDA A OBJETOS ARQUEOLÓGICOS EM EXIBIÇÕES DE VIDRO DE ALTA SEGURANÇA

Jonas Rasmussen Kirkegaard
PhD candidate & lecturer
Sonic College, UC SOUTH Denmark, ATMOSphere Research Group Denmark
JRKI@ucsyd.dk

Birgitte Folmann
Associate professor & PhD
Sonic College, UC SOUTH Denmark, ATMOSphere Research Group Denmark
BFOL@ucsyd.dk

ABSTRACT

This paper examines how artefacts in museum exhibitions can become more dynamic by utilizing innovative display technologies and augmented mediation, moving beyond traditional glass displays. We propose methods for organizing and staging artefacts with temporal considerations, suggesting that their atmospheric influence spreads through the exhibition space like slow ripples in water, in contrast to Böhme's concept of instantaneous radiation. By theorizing and incorporating temporal structuring into artefact staging, we offer practical strategies for curators and designers to blend the sensory, emotional, and factual aspects of artefacts into the exhibition atmosphere. This approach involves a timeline-based layout of media content, emphasizing how the key atmospheric phenomenon of attunement unfolds over time, enhancing the artefacts' atmospheric, factual, and relational impact within museum spaces.

KEYWORDS: Atmosphere. Museum. Agency. Propagation. Attunement. Design. Sound. Light. Affect. Temporality. Augmentation. Artefacts.

RESUMO

Este artigo examina como artefactos em exposições de museus podem se tornar mais dinâmicos ao utilizar tecnologias inovadoras de exibição e mediação aumentada, indo além das tradicionais vitrines de vidro. Propomos métodos para organizar e encenar artefactos com considerações temporais, sugerindo que sua influência atmosférica se espalha pelo espaço expositivo como lentas ondulações na água, em contraste com o conceito de radiação instantânea de Böhme. Ao teorizar e incorporar a estruturação temporal na encenação de artefactos, oferecemos estratégias práticas para curadores e designers misturarem os aspetos sensoriais, emocionais e factuais dos artefactos na atmosfera da exposição. Esta abordagem envolve um layout de conteúdo de média baseado em uma linha do tempo, enfatizando como o principal fenômeno atmosférico de sintonização se desenrola ao longo do tempo, aprimorando o impacto atmosférico, factual e relacional dos artefactos dentro dos espaços dos museus.

PALAVRAS-CHAVE: Atmosfera. Museu. Agência. Propagação. Sintonização. Design. Som. Luz. Afeto. Temporalidade. Aumento. Artefactos.

1. THE TEMPORAL COMPONENT OF ATMOSPHERES

Coming from a background in sound and atmosphere studies in museums, we have often wondered why time and temporality is underrepresented in atmosphere theory compared to the concept of space. Temporality plays a fundamental role in attunement-processes which is a key element in atmosphere formation, and we believe that attention to temporality could address some challenges in atmosphere theory, particularly in developing a methodological framework for atmosphere design. We propose reframing Böhme's concept of radiation (Böhme, 2016; Rauh, 2019), which describes how physical objects exert atmospheric agency through the *ecstasy of things*, by using propagation as an analogy instead. Radiation is typically associated with light, and something that occurs fast, affecting everything in its surroundings instantaneously. The nuance that atmospheres does not form instantaneously might be lost in this framing, and thus "propagation" may be a better way to imply a perceivable, temporal, wave-like spread, where atmospheric elements "meet" the agents as sensory affordances at discrete points in time, as we move along a given (exhibition) space. This might seem rhetorical, but we believe that this temporality of how atmospheres form, transform, and dissolve over time and how attunement is a crucial part of this process, is essential to our understanding of them. Attunement involves continuous evaluation of sensory stimuli against internal representations, expectations, and memories which consequently results in motor sensory responses and cognitive processes of meaning making.

1.1 A temporal taxonomy of agency

Bjerregaard (2014) suggests that the aesthetic nature of atmospheres and the split between what Böhme frames as Realität and Wirklichkeit (Böhme, 2001) make it challenging to stage museum artefacts to disseminate scientific facts while fostering relational and emotional involvement. While we don't disagree, this paper focuses on the temporal interactions between visitors, museum artefacts, and atmosphere. Building on Böhme's view that objects have atmospheric agency, we explore how exhibition technology can augment this agency and enhance the experience of the visitor. We believe artefacts can offer different affective affordances over the timespan of a museum visit, allowing visitors to attune to evolving experiences, balancing affective, sensory processes with conscious meaning-making and reasoning about the exhibition's theme. We call this a temporal taxonomy of agency, which suggests that by augmenting different perspectives of a given museum artefact over time, the artefact can exert different types of agency in the exhibition space.

2. MUSEUMS AND ARTEFACTS
2.1 A practice led development project

To develop and evaluate these reflections, we draw on a current practice-led project with Vejlemuseerne, a regional art, culture and history museum in Denmark. Museums are vital cultural resources, investing heavily in exhibitions to make their

collections and knowledge accessible to the public. These exhibitions are often complex, multimodal experiences (McMurtrie, 2016), using various modes and media: artefacts, images, text, built forms, gestures, movement, audio, video, and virtual and augmented reality. However, the core experience usually remains the interaction between a visitor and a displayed artefact. We will explore how even a static artefact can influence a visitor's perception and presence through ambiance and atmosphere.

The project involves creating a new type of glass display incorporating sensors and technology to augment the artefact within. This includes lights, sound, video projection, and movement (rotation), all conveying mediated information organized along a timeline of events. As the project is under development, we provide a preliminary example of how organizing media elements in a "timeline" for a given artefact, can morph between different types of agencies. This structure mimics "awakening" or "becoming aware" of the audience's presence, varying from subtle atmospheric elements to animations, narration, music, light animations and object rotation. Thus, this example and the following discussion aim to inspire practitioners, curators, and designers to recognize the importance of temporality in specific exhibition design as well as the overall atmospheric temporal structuring.

Figure 1 - Glass display prototype with artefact placeholder Super Mario.
Source: Jonas R. Kirkegaard (2024)

2.2 The material turn and exhibition design

The emergence of the 'material turn' in the early to mid-1990s renewed the interest in museum artefacts. This shift, reacting against the discursive turn, emphasizes the role of material objects in human actions and blurs the boundaries between human actors and non-human actants (Latour, 1993). Museums adapted their exhibition designs to reflect these new perspectives on material culture within the humanities and social

sciences. The central claim of the material turn is that things not only serve human purposes but also influence and guide human actions. Objects might even "talk" (Daston, 2004), act (Latour, 1993), or "step out of themselves" (Gunbrecht, 2004).

2.3 Agency of artefacts

Even though artefacts sometimes are understood to speak for themselves, they are in contemporary museum practice, very often augmented to elicit rich storytelling illuminating a culture through the details of their creation and use (materials, craft skills, exchanges, rituals) as well as through their associated symbolism (Collins, 2005). These objects are not just staged within a setting of objects and media, in order to make it possible to decipher them, but also to sense and experience them in different ways. Since rare and exquisite artefacts often are fragile and valuable it is impossible to allow directly, physically engagements with the objects which could engage the public in a more profound way. This makes the idea of a new glass displays and its propagation of atmospheres pertinent.

Exhibition design clearly affects how an object is perceived, particularly in terms of art or artefact, however, museums also need to address the question of how different sensory experiences influence visitor impressions of material culture (Edwards et al., 2006, p. 2). Alongside with the materiality turn, there has also been a considerable discussion in the process of 'meaning making' in museums, the power of objects to "accumulate meanings as time passes" (Pearce, 1994, p. 19). This process involves altering the use, or context of an object before and after it enters the museum, as well as considering visitors' reactions to the display.

2.4 Artefacts and atmosphere

Going with Bjerregaard (2014) in our endeavor to design a new glass display for superior artefacts, our starting point is that objects are essential to museums, but the question is whether the objects, and the stories they carry, is the most important element of the museum experience? Bjerregaard argues that in all our concern with objects we have neglected the role of the atmosphere as a focal point for understanding museum experience. When attending to atmospheres museum object changes from a concern with what the object may tell us or what it may express to a concern with how subjective experiences of the museum guest, that is articulated through sensorial experiences, is forming the overall experience and how the object is a part of the atmosphere (Bjerregaard, 2014).

This underlines that it is the capacity of the museum to generate a kind of embracing experience, wrapping the visitor in an atmosphere, which seems to have a much more lasting effect than the information accounted for (ibid:2). Atmosphere even seem to dissolve the individual objects at display allowing them to become part of the general experience of space and enable us to be present. It is important to look at not only the experience of the artefact, but also on the relation between the objects and human experience.

3. ATMOSPHERE
3.1 The atmospheric turn

The German Philosopher Gernot Böhme is a famous proponent for the 'atmospheric turn' in the understanding of the connection between materiality, architecture and space (Böhme 1993; 1995; 2001; 2016). Böhme argues that atmospheres are an integrated part of the interaction between humans and the material. From his philosophical point Böhme is claiming that atmospheres extend spaces and that they origin from humans and things in comparison. Atmospheres are a product of subjective experiences of an object-world and becomes a manifestation of the co-presence between the subject and the object (Böhme, 1993).

3.2 Ecstasies of things

Furthermore, Böhme argues that things are not limited to their physical form or extension. The thing can exceed itself and be "ecstatic". In example, if the exhibition of a blue glass vase is alone in a white room, it will present itself as much more affective than if it was displayed among other glass vases. This is what Böhme call the ecstasies of things (1993, p. 120e2) – that force us to rethink what we understand of the delineation of physical objects. Instead of focusing on the object as an enclosure, focusing on atmosphere will point our focus to the object as a physical extension in space. "The object is, thus, not characterized by what it 'contains', but by the way it radiates into space, by its ecstasies" (Böhme in Bjerregaard, (1993, 120e2) 2014).

4. TEMPORALITY AND PROPAGATION
4.1 The temporality of atmospheric formation

Conceptualizing atmospheres by applying the theories of Böhme in combination with the concept of propagation (temporality), we aim to have both a focus on affect (the guest's experience) and on the material grounding in the design of the glass display. Going with Bille et al (Bille et al., 2015, p. 5) who propose that 'in essence it [atmosphere] must be understood as a spatial experience of being attuned in and by a material world' we also aim to include theories of the senses and perception, since 'atmosphere folds together affect, emotion and sensation in space' (Edensor, 2014, p. 2).

We suggest that it is not the presence of atmospheres that is in question, but rather in order to be able to design a new way to exhibit artefacts in a museum we must understand the specificities of particular atmospheres that are generated in the context of actual designs, and the temporal contingencies in relation to which they shift and change, as well as the different ways in which they might be perceived. As Sumartojo notices (2020, p. 124), it is impossible to predict or predetermine exactly how an atmosphere unfolds, and that is the pivotal point of the discussion whether it makes sense to even talk about atmospheres as a design "artefact". Our hope here, is however, that by replacing Böhmes radiation with the temporally charged concept of

propagation; while undertaking the process of developing the glass display, we hope to move the atmosphere discussion further. In this light this project can be seen as a direct answer the call of Sumartojo and Pink (2019) for a closer dialogue between atmosphere theory and empirical work (Ibid., p. 35).

4.2 Temporal agency

Though atmospheres are abstract and ephemeral, they are anchored in the configuration of spaces, materials, and the sensory and affective experiences they afford. They are always present, and we constantly attune to them. Focusing on atmospheres can help enhance what museum visitors sense, imagine, feel, and remember. By temporality in relation to atmosphere and attunement, we refer to the pace at which individual guests process and internalize impressions, integrating them into their sense of presence and responding with sensorimotor gestures, shifting attention, reflection, and meaning making.

While static museum artefacts possess agency, they do not exert temporal agency. They change over time, but primarily in the way sociologist John Law describes as "continuously enacting relational effects," being endlessly generated and potentially reshaped through human encounters (Law, 2004, p. 161). Our hypothesis is that we can curate and enhance this process, allowing artefacts to contribute varying taxonomic levels of relational effects through sensory and disseminative expressions over time. We have identified three types of agency that can be addressed in the exhibition design, but before discussing these, we will describe the physical and technical conditions of the glass display.

5. DESIGN CONSIDERATIONS
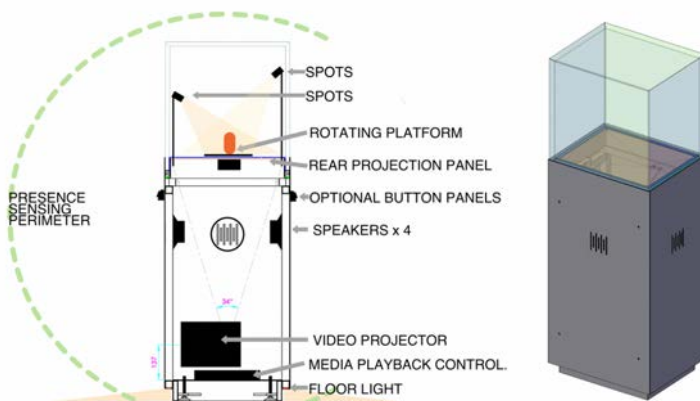## 5.1 Glass display design and the possibilities

Figure 2 - Annotated cross section and 3D rendering.
Source: Vejlemuseerne & Jonas R. Kirkegaard (2024)

The glass display has been designed in collaboration with designer Kamilla Lang Betak and archaeologist Charlotta Lindblom from VejleMuseerne. While the museum already owns many high-security glass displays, the upcoming exhibition features a small valuable artefact just a few centimeters in size, prompting us to brainstorm ways to enhance its presentation. This led to the idea of equipping the display with audiovisual communication and motion-based gestures.

In the initial phase, we compiled a list of technical "wishes" for media representation to test in a prototype, seen in figure 1. Figure 2 illustrates the resulting set of the viable functions to incorporate in the final version. The museum has decided to create two glass displays for the upcoming exhibition (figure 3) — one small display for the tiny artefact and a larger one for two Viking helmets. The outer construction of these displays is currently being produced by System Standex in Odense, Denmark, and the technical installations are scheduled for late summer 2024. The media content will be designed by audio designers and animators.

A key idea behind the design and technical solutions is that the glass display should resemble a traditional display from a distance, ensuring it does not overshadow other exhibition elements as an extravagant audiovisual contraption. The display is equipped with a presence sensor that activates the timeline of events when people are within the distance of one meter. At some point, the audience will be invited to push a button, but this interaction will need to be tested.

Figure 3 - Early render of the exhibition space, showing the placement of one the glass display.
Source: Vejlemuseerne & Jonas R. Kirkegaard (2023/2024)

5.2 Three types of agency

We have identified three types of agency as a theoretical configuration to focus on when designing the content for the glass display. Discussing the agency of things, Latour doesn't specify different types of agency. He sees agency as a type of "borrowed grace," where agency acts on behalf of something or someone else" (Miller, 2013, p. 55). In this context, an artefact can represent many aspects, such as the reason for its production, the original atmosphere and historical context, connections to related practices of today's society to mention a few. We use Latour's framework to define three relevant types of agency we aim to augment.

- Affective Agency: This refers to the artefact's ability to contribute to the exhibition's overall atmosphere.
- Factual Agency: This encompasses the scientific truths the object holds, including its material, design, function, and historical context.
- Relational Agency: This pertains to how the artefact creates a connection between visitors and the life and people from its original context, fostering empathy and perhaps compassion.

Bjerregaard (2014) argues that achieving an exhibition design where both precise scientific dissemination and affective exhibition design occur simultaneously is challenging. As mentioned, he suggests prioritizing the affective aspect to help museums serve as bridges for visitors to imagine new potential futures beyond common knowledge. However, the core of this paper is to suggest that by augmenting different types of artefact agency, with a delay in presenting it to the visitor simultaneously, we hope that these affective, factual, and relational agencies complement each other as affordances or potential knowledge, with the purpose of providing visitors with a richer and more diverse experience and understanding of the given topic during their museum visit.
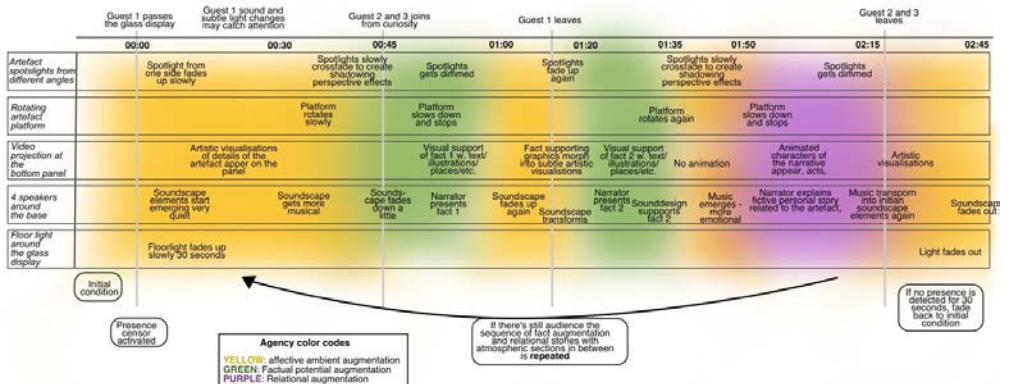
5.3 Event-based timeline

Figure 4 - Example of temporal augmentation. Source: Jonas R. Kirkegaard (2024)

Gibson suggests that we don't perceive time directly but rather as events. Therefore, we propose an event-based timeline (Gibson, 1975) for the glass display, where events represent different audiovisual content and motion gestures. Figure 4 illustrates an example of these events could be organized. The taxonomy and temporal order of the different types of augmented agency are color-coded along the timeline from left to right. Events—such as audio, light, animation, and rotation—are divided into "tracks" on the vertical axis, with each event's specific gesture (e.g., fading up, dimming, starting, transforming) described in text. In this example, the presence sensor triggers the event sequence. If the audience remains after one "cycle", the sequence seamlessly loops back (indicated by the arrow), but with content variations in the factual and relational elements, creating a non-repeating, quasi-generative experience for audience staying long. This method aims creating at augmenting artefact agency as affordances for visitors to attune to in a taxonomic structure, ranging from the atmospheric/aesthetic to factual dissemination to more affective and relational engagement, providing visitors with a rich and dynamic museum experience.

6. CONCLUSION

What we can deduct from the work with the design of the new glass display and theorising about atmosphere is that for the atmosphere of an object or place to endure across time, it should be in continuous dialogue with its immediate context. In this way, the atmosphere the display generates is continuously renewed and unique to each visitor and/or each moment. By introducing temporality in exhibiting artefacts in the new designed high security glass montre, we are aiming at making room for a more diverse affordance which possibly can enhance the affective, factual, and relational agencies and the possibility for humans to attune to the overall atmosphere and the lived experience that the artefact represent. Whether this is possible will be posed as an empirical question for the forthcoming research planned around the exhibition.

While the visual impact of metaphorical atmosphere still remains an important consideration in traditional design of museum exhibitions, the propagation of atmospheres using sound, sensors and light has the power to psychologically transform a space and effect the mood of the visitor. The potential of redesigning and regenerating physical atmosphere in a temporal way opens an exciting realm of responsibility for new museum design practice to transform the museum scape beyond its traditional, formal sphere of displays. It is to communicate, transform, and adapt to the ever-changing contemporary, environments we find ourselves in – to reawaken the role of the body as we - sensibly and sensitively are perceiving and consciously immersing in and contributing to the atmosphere. These attunement practices of the guests are linked to time – not only to space. Underestimating the temporality of these processes and thus the propagational pace in atmosphere formation, can lead to oversimplified conclusions about the nature of atmospheres and derail the process of conceptualizing and designing atmospheres in exhibitions.

7. BIBLIOGRAPHY

Bille M., Bjerregaard P., Flohr Sørensen T. (2015) Staging atmospheres: Materiality, culture, and the texture of the in-between. Emotion, Space and Society, *15*: 1–8. *https://doi.org/10.1016/j.emospa.2014.11.00*

Bjerregaard, P., (2014). Dissolving objects: Museums, atmosphere and the creation of presence, Emotion, Space and Society, *http://dx.doi.org/10.1016/j.emospa.2014.05.002*

Böhme, Gernot, 1993. Atmosphere as the fundamental concept of a new aesthetics. Thesis Elev. 36, 113e126.

Böhme, Gernot, 1995. Atmosphäre: Essays für Neuen Ästhetik. Suhrkamp, Frankfurt am Main.

Böhme, Gernot, 2001. Aisthetik. Vorlesungen über Ästhetik als allgemeine Wahr-nehmungslehre. Wilhelm Fink Verlag, München.

Böhme, Gernot 2016. The Aesthetics of Atmospheres. London/New York: Routledge, 2016.

Collins, M, 2005, 'Introduction', in Collins, M and Millard D (eds), Showcasing Space (London: Science Museum), pp 1–6

Daston, L. (ed.) 2008. Things That Talk. Object Lessons from Art and Science. New York: Zone Books.

Edensor T (2014) Producing atmospheres at the match: Fan cultures, commercialization and mood management in English football, 10 January. Emotion, Space and Society.

Edwards, E., Gosden, C. & Phillips, R. (eds.) 2006. Sensible Objects: Colonialism, Museums and Material Culture. Oxford: Bloomsbury.

Gibson, James J. (1975). Events are perceivable but time is not. In J. T. Fraser & Nathaniel M. Lawrence (eds.), The Study of Time II: Proceedings of the Second Conference of the International Society for the Study of Time Lake Yamanaka-Japan. Springer Verlag. pp. 295-301.

Gunbrecht, Hans Ulrich, 2004. Production of Presence: What Meaning Cannot Convey. Stanford University Press, Stanford, California.

Latour, Bruno (1993). We have never been modern. Harvard University Press. p. iv. ISBN 978-0-674-94839-6.

Law, J. 2004. After Methods: Mess in Social Science Research. London. Routledge.

McMurtrie, R.J. (2016). The Semiotics of Movement in Space (1st ed.). Routledge. *https://doi.org/10.4324/9781315640273*

Miller, A. S. (2013). *Speculative Grace: Bruno Latour and Object-Oriented Theology.* Fordham University Press. *https://doi.org/10.2307/j.ctt13x0cck*

Pearce, S. (ed.) 1994. Interpreting Objects and Collections. London: Routledge.

Rauh, A. (2019). The Atmospheric Whereby: Reflections on Subject and Object. *Open Philosophy, 2*(1), 147–159. *https://doi.org/10.1515/opphil-2019-0017*

Stogner, M. B. 2009. The Media-enhanced Museum Experience: Debating the use of Media Technology in Cultural Exhibitions. Curator: The Museum Journal 52, 385–397

Shanti Sumartojo. Atmospheres + Design. Session 3 – Introduction. Proceedings of the 4th In- ternational Congress on Ambiances, Alloaesthesia: Senses, Inventions, Worlds, Réseau International Ambiances, Dec 2020, e-conference, France. pp. 122-125, 10.48537/hal-03220280. hal-03220280

Sweetman, R J & Hadfield, A L 2018, ' Artefact or art? Perceiving objects via object-viewing, object-handling, and virtual reality ', University Museums and Collections Journal, vol. 10 , pp. 46-66 .

Sumartojo, S., & Pink, S. (2019). Atmospheres and the experiential world: Theory and methods. Routledge.

L42

METABOLIC ATMOSPHERES

CHAIR Hsuan L. Hsu

This panel will explore interactions between atmospheric aesthetics and metabolism. How do human and nonhuman bodies—and their interrelations—register the metabolic influences of atmospheric properties like smell, temperature, and humidity? How do bodily and technological emanations contribute to these atmospheric properties? How have artists, writers, activists, and other researchers been addressing these metabolic influences in ways that challenge and move beyond racist and colonial notions of climatic determinism (e.g., the idea that climate's metabolic effects account for biological and "temperamental" differences between races)?

Bringing recent conversations about atmospheric aesthetics (e.g., Derek McCormack, Peter Adey, Peter Sloterdijk) into conversation with work in New Materialism (e.g., Stacy Alaimo, Karen Barad, Mel Chen) and sensory studies (e.g., Desiree Foerster, David Howes, Hi'ilei Hobart), papers should explore the nuances of "air conditioning" (Sloterdijk) in urban spaces and/or in other spaces and scales affected by urban processes. Possible topics include immersive & multimodal art installations; literary engagements with atmospheric influence; environmental media; smellscape; architectural ambiance; atmospheres of securitization, militarization, and policing; queer atmospheres; the multiplicity of fragmented, urban atmospheres; and subaltern projects of atmospheric worldmaking

L42

THEORIZING THE THERMOCLINE

TEORIZANDO A TERMOCLINA

Hsuan Hsu
Professor
University of California, Davis
hsuanLhsu@ucdavis.edu

ABSTRACT: THEORIZING THE THERMOCLINE

Building on recent work in "critical temperature studies" (Starosielski), this paper theorizes the "thermocline" as a spatialized difference in thermal experience that is at once ambient, historically conditioned, and socially and corporeally inflected. This includes ambient temperatures, but also bodily predispositions, access to air conditioning and medical interventions, socio-economic circumstances, and access to thermal knowledges and mutual aid. Understanding the thermocline requires historical perspective on the ongoing "thermal violences" enacted by colonial and racial capitalism, as well as attention to the lived sensory experience of thermally differentiated subjects. After offering theoretical and historical discussions of the thermocline, I will turn to a range of aesthetic works—such as Spike Lee's Do the Right Thing and Fradique's film Ar Condicionado--that appeal in different ways to the sense of thermoception in the course of exploring the simultaneously racial and thermal violences shaped by urban infrastructures.

KEYWORDS: heat, temperature, infrastructure, racialization, environmental justice

RESUMO: Teorizando a Termoclina

Com base em trabalhos recentes em "estudos de temperatura crítica" (Starosielski), este artigo teoriza a "termoclina" como uma diferença espacializada na experiência térmica que é ao mesmo tempo ambiental, historicamente condicionada e inflexível social e corporalmente. Isto inclui temperaturas ambientes, mas também predisposições corporais, acesso a ar condicionado e intervenções médicas, circunstâncias socioeconómicas e acesso a conhecimentos térmicos e ajuda mútua. Compreender a termoclina requer uma perspectiva histórica sobre as "violências térmicas" em curso perpetradas pelo capitalismo colonial e racial, bem como atenção à experiência sensorial vivida por sujeitos termicamente diferenciados. Depois de oferecer discussões teóricas e históricas sobre a termoclina, passarei a uma série de trabalhos estéticos - como Do the Right Thing, de Spike Lee, e o filme Ar Condicionado, de Fradique - que apelam de diferentes maneiras à sensação de termocepção no decorrer da exploração. as violências simultaneamente raciais e térmicas moldadas pelas infraestruturas urbanas.

PALAVRAS-CHAVE: calor, temepratura, infraestrutura, racializacao, justice ambiental

THE METABOLIC AESTHETICS OF BREATHING

A ESTÉTICA METABÓLICA DA RESPIRAÇÃO

Suzel Balez

Professor at the École Nationale Supérieure d'Architecture de Grenoble
Searcher AAU, Cresson team
suzel.balez@grenoble.archi.fr

ABSTRACT

Shared air is central to contemporary crises, highlighting the immediacy of breathing during an airborne pandemic and the extensive anthropogenic transformations of air. The Sensibilia research seeks to investigate the tenuous sensory perceptions of environmental changes. A part of this research focuses on the worlds of air and the atmospheres of life. It is interested in the ordinary transformations of sensibilities to air, by air and for air.

It involves collecting about 150 micro-stories related to air and breathing, highlighting different modalities of metabolic interaction with the world, such as inflection, anticipation, synchronization, or resistance. These interactions are interpreted in terms of potential danger and air modifications as markers of space and time. Additionally, the research connects recent discussions on atmospheric aesthetics and sensory studies, examining the subtleties of breathing in ecologically altered environments, as cultures are seen as collective situations of immersion in air and a system of signs.

KEYWORDS: Air. Breathing. metabolic aesthetics

RESUMO

O ar compartilhado é central para as crises contemporâneas, destacando o imediatismo da respiração durante uma pandemia aerotransportada e as extensas transformações antrópicas do ar. A pesquisa Sensibilia busca investigar as tênues percepções sensoriais das mudanças ambientais. Uma parte desta pesquisa enfoca os mundos do ar e as atmosferas da vida. Interessa-se pelas transformações ordinárias das sensibilidades ao ar, pelo ar e pelo ar.

Envolve a coleta de cerca de 150 micro-histórias relacionadas ao ar e à respiração, destacando diferentes modalidades de interação metabólica com o mundo, como inflexão, antecipação, sincronização ou resistência. Essas interações são interpretadas em termos de perigo potencial e modificações do ar como marcadores de espaço e tempo. Além disso, a pesquisa conecta discussões recentes sobre estética atmosférica e estudos sensoriais, examinando as sutilezas da respiração em ambientes ecologicamente alterados, pois as culturas são vistas como situações coletivas de imersão no ar e um sistema de signos. Palavras-chave: Ar. Respiração. estética metabólica

1. INTRODUCTION

"The atmosphere was heavy, and I felt oppressed in the tram between the people around me who were at a distance of about fifty centimeters, I was very hot in my down jacket, and I felt the mask on my face. I felt it as a real barrier between my breath and those people who surely went to work. For fear of contaminating them, since I was convinced to be positive given the symptoms, I tried to breathe as little as possible. I took quiet breaths that I exhaled for a long time in small quantities, and I started again[1]."

Shared air is at the heart of contemporary crises. The vital immediacy of breathing during an airborne pandemic and the planetary scales of anthropogenic transformations of air question anew its sensory legibility. Thinking about the contemporary socio-ecological crisis also calls

to revisit our sensory relationship to the world and the categories used to describe this relationship (Blanc, 2008).

The Sensibilia research attempts to both question and map inherited concepts and to draw attention on individual and collective ways of feeling. To this end, it is about valuing sensitivity as a power of intensification and transformation of our relationship with the world, not as a simple passive relationship (Laplantine, 2005). This research, therefore, focuses on a wide spectrum of sensory and attentional modalities. It includes four case studies, or «worksites[2]». The "Atmospheric impregnations" project explores the worlds of air by paying attention to their qualities, conditions and effects. The ordinary, shared, and diffuse experience of air is questioned, this reflection particularly unfolded in the context of COVID-19. The project initially revolved around three questions: How does air become manifest? How does it transform experience? How does it enter politics?

Part of this project involved collecting anecdotes related to air and breathing. The corpus gathers about 150 micro-stories on «air situations» or breathing. Among them, some highlight a metabolized relationship with the world. The aim of this article is to question the place of the metabolic apprehension of air in these micro-stories. What happens when one is confronted with a metabolic transformation of the air (organic or inorganic) of oneself and others?

First, the «metabolic» anecdotes show different modalities of metabolic interaction with the world: inflexion, anticipation, synchronization or resistance. Second, breathing human bodies seem to interpret these interactions in terms of two main stakes: potential danger and air modifications as markers of space and time.

---

1 Anecdote 104 (extract) "Covidal movements" (Sensibilia Research, 2020-2025). All the anecdotes cited here have been translated by me (from French).

2 On the themes of the metropolitan ecology of Grenoble, the sensitive experience of the lower atmosphere, the care of the living through geobiology and finally the imprinting of places by breathing.

In conclusion, by bringing recent discussions about atmospheric aesthetics and sensory studies into conversation, the subtleties of breathing in places and scales affected by ecological alterations will be questioned. As Sloterdijk (2006, p. 149) underlines, cultures are collective situations of immersion in the air and in a system of signs. The ordinary, shared, and diffuse experience of breathing may be a shared, and diffuse experience of a metabolic aesthetic, giving access to singularities and variabilities of environmental transformations.

2. MODALITIES OF METABOLIC TRANSFORMATIONS OF AIR

Metabolic transformations of air modify an ordinary experience that remains the reference point. They manifest in various ways. They can inflect a usual situation or completely overturn it. They can be anticipated, for example, visually, before the modified air conditions affect the act of breathing. They can be synchronized with oneself or others, and they can correspond to resistance or opposition, even if futile, to the act of breathing itself.

2.1 Modalities of Inflection or Disruption

Several anecdotes mention evaluations of air transformation, sometimes subtle, like changes in odor, or very marked, such as differences in air quality when moving from one place to another (air consistency, humidity, smell, etc.). For instance, the cold, associated with a feeling

of air purity, brings specific sensations, underlined by the transition from one type of air to another, a contrast, or even a rupture:

"We drive about 45 minutes, and we arrive near a field completely covered with snow. And by opening the door of the car it is the whip. An icy air swells my nostrils, the mucous membranes start to peck but yet it is so beautiful that I quickly pay no attention to it. It is as if the lungs were working again, after a long period of hibernation." (125/ First snow)

The transition from the tempered interior of a car or airplane to the outside constitutes an opportunity to perceive new air. Beyond meteorological conditions, these air transitions act as revealers of the respiratory metabolic function that transforms the air: *"In the morning I open the bedroom window because I think it smells like a beast. I mean, I don't realize when I'm inside... I get up, I go to the bathroom, I make my tea, I come back to my room and then I find it stinks. So, I open the window (...) that's automatic in the morning... to open the window."* (016/ The bedroom window)

2.2 Modalities of Anticipation

While breathing remains the ultimate instrument for evaluating air, sight can help anticipate upcoming changes. Seeing suspended particles (dust, vapor, smoke, etc.) can signal a future change in air quality. Inhaled particles, such as smoke or sand, directly affect metabolism by influencing the quality of inhaled air and gas exchanges in the lungs. The sight of "laden" air is thus interpreted as a forthcoming respiratory difficulty: *"Arrived at the top we enjoyed the view of Grenoble, as beautiful as usual. But an immense wave of smoke appeared in the sky, it evoked the shape of an atomic mushroom, and the wind pushed it in our direction. We had to go down in any case to return and plunged into this opaque and black tablecloth. The smell was horrible and suffocating, like burnt plastic, and we decided to stop running for less breath."* (116/ The besieged Bastille)

2.3 Modalities of Synchronization

Similarly, synchronized breathing during collective activities (such as watching a movie together or experiencing the same landscape) can create a sense of cohesion and unity. Watching a movie provides the sensation of shared emotions because breaths are often taken at the same moments. During shared physical efforts, synchronizing body movements with breathing also creates a collective pleasure:

"… We walk for a while on this tree lined trail, my breathing is regular. Walking allows you to focus more on feelings, you are more attentive to your body. The phenomenon of breathing, so natural and innate, is not dictated by a voluntary thought: inspire! Exhale! But when we walk, we become aware of the path of this air that we welcome in us, which crosses our lungs and is accompanied by the more or less catchy beats of the heart. Moreover, after a long climb, we are happy to find a flat ground. Breathing calms down, stabilizes." (110/ At the rhythm of the walk)

In the same way, situations of respiratory calmness create modes of alignment. After physical exertion, these situations provide intense satisfaction; conversely, they can also be part of respiratory management with various goals. As conscious and rhythmic breathing can aim for relaxation, stress management, meditation, or sports training. Controlled and rhythmic breathing influences the parasympathetic nervous system, it reduces stress and promotes relaxation. Thus, synchronization constitutes a metabolic response to manage stress or to share a common air with others.

2.4 Modality of Resistance

The metabolic relationship with air can also operate in a mode of resistance, whether voluntary or not. Paradoxically, this can sometimes target stress management through forced breaks in breathing. More often it is about trying to avoid contaminating others, or pathological breathing hindrances. The awareness of one's own metabolic contribution to the environment is expressed through stories of voluntarily modifying one's breathing to minimize its impact on the ambient air. Knowing they contribute

to the ambient air, people may sometimes want to withdraw and contribute as little as possible to avoid negatively affecting it. Out of tact and respect, individuals know how to modify and adapt their breathing. Sometimes, this requires cleverness, using synchronization with other noises to reduce one's own impact during a breath, which otherwise might be accomplished with almost impossible resistance:

"... one of my first outings, during the first confinement. Just before entering the grocery store, I put on my mask, and there, as I crossed the doors, I was taken with an irresistible urge to cough. But the atmosphere was so scary at the time, I tried not to cough, not to worry other customers.... A mischievous fiber had to slip into my throat and my body ordered to expel it: I had tears in my eyes by holding me back!" (068/ Irresistible urge to cough in public during the first lockdown)

Resistance to respiratory metabolism can occur under constraint. Respiratory pathologies, such as asthma or bronchitis, disrupt metabolism by reducing the efficiency of gas exchange and increasing the respiratory effort required. They make the act of breathing painful, highlighting vulnerability and vital dependence on air. In other words, respiratory pathology provides access to the awareness of the physiological relationship with air, where the pain is even more intense because it is suffered:

"...what were asthma attacks, those before the ventolin – late 1970s, early 1980s – and for which I could do much better than opening the window at night, taking a wet glove to apply to my forehead (...) and hope that the breathing pipe remains quite open, enclosed by two red bricks (I lived in the North, it must be that... In any case this is the image I used)." (055/ Memories of asthma attacks)

Finally, stories of suffocation experiences in confined and densely populated environments, leading to a flight reaction in response to perceived insufficient or polluted air, suggest an exacerbated awareness of the respiratory metabolization of others present, expressed through claustrophobia. Certain respiratory atmospheres are thus constrained by the bodies present and the limited space. They lead to suffocation and a flight towards freer air.

"... I feel like trapped. I had managed to calm down a bit, but this unpleasant feeling of oppression catches up with me. I can't turn around. I decide to try to climb the tower but from the first three steps, my anxious and frantic breathing gives way to a breath taken. The ceiling is very low, the space between the walls very narrow, the staircase goes up in a spiral in the darkness. I suffocate. There is just enough room for one person at a time. I'm starting to panic, and if I keep going, I'm really not going to be able to turn back. I'm getting out of here while there's still time." (109/ A little too cramped ...)

3. INTERPRETATIONS OF METABOLIC TRANSFORMATIONS OF AIR

Changes in air quality can occur through metabolic transformations but also abiotic ones (such as air transformed by a photocopier, which becomes odorous and ozone-laden). These transformations are then interpreted as systems of signs, often leading to actions (habitually managing air quality). Two categories of sign systems particularly stand out from our repertoire of micro-stories: those indicating a situation of metabolic danger (via breathing) and those serving as spatiotemporal markers.

3.1 Dangers of Respiratory Metabolism

Domestic spaces are the primary locations for modified air experiences. The transformation of exhaled air by each individual was particularly highlighted in the context of confinement and contamination prevention. COVID-19 reshaped living conditions in these spaces, turning them into shared air volumes where routine trust was disrupted.

Air can kill, and the respiratory metabolic function, when compromised, can lead to death. For example, with carbon monoxide, the senses are ineffective, and the act of breathing itself becomes a mortal danger. The metabolism is affected by compromising the blood's ability to transport oxygen. The vulnerability of metabolism to inhaled air is then underlined.

Similarly, collective breathing and certain practices, such as smoking, alter air quality, requiring adjustments to maintain a healthy (or perceived as healthy) respiratory environment. In shared and private spaces, maintaining good respiratory conditions involves managing air quality through actions like ventilation. Indoor smoking practices necessitate agreement on respiratory civility.

3.2 Air modifications as markers of space and time

Repeating air transformations creates specific space-time markers. These air transformations concern both biotic metabolism and technical devices, such as engines, air conditioners heating... The metabolisms of the living are then placed on the same plane as the physicochemical transformations of machines.

"In my office in Cayenne they had the good taste to install carpets, including in the walls. And on Monday morning, where there had been no air conditioning the whole weekend, well there was a smell of cat pee. The humidity, the... whatever it was, it smelled like cat pee. (...) Monday morning was characteristic." (022/ The carpeted walls)

4. DISCUSSION

When Gernot Böhme (2018) emphasizes that the term atmosphere immediately shifts the focus from judgment (what is represented) to sensory perception (how something is present), he restores "aesthetics" to its original meaning. Yet the "what" and "how" of the representations of experienced air transformations are at the heart of many of the microstories collected as part of the «Atmospheric Impregnation» project of the Sensibilia research. These lived transformations manifest through various metabolic modalities—brutal, gradual, anticipated, synchronized, or halted. They are interpreted either as (non) indicators of danger or as perceptions of reality, contributors to the sensory identities of specific place-times.

The sensation of the world is not limited to distant perception; it is integrated and metabolized within us, nourishing us both physically and emotionally. This metabolization involves a process by which we absorb elements from the outside world, transforming them into a part of ourselves while expelling a transformed portion. This phenomenon is threefold: it allows us to feel the world in an intimate and direct way; it reveals our deep dependencies and the imprints we leave on and receive from our environment. The common and widespread act of breathing may then represent a collective metabolic aesthetic, allowing individuals to perceive the unique and variable transformations of their environment.

David Abram (1997, p. 239) emphasizes that for the Navajos and in the roots of the Greek world, the experience of air was considered the source of the psyche and soul, as the very substance of consciousness. He shows how, in our civilization, air has become de-animated: «Lacking all sacredness, stripped of all spiritual significance, the air is today little more than a conveniently forgotten dump site for a host of gaseous effluents and industrial pollutants» (p. 258). Understanding the experience of air under the aegis of contemporary socio-ecological issues may thus involve a return to a vital consideration, in its most universal sense, of air.

To this end, architectural and urban design disciplines, also engaged in a sensory turn, must consider the dynamics of air. Alberto Pérez Gómez (2016) underlines the connection of atmosphere in architecture to air and its relevance in the discussion of architectural meaning. The dynamics of air should not be understood merely as movements, as they are currently conceived in macro-sculptural architecture, firmly separated from outdoor air by air conditioning. They should be understood as processes of intrinsic transformations at work. Paul Ricœur's architectural definition as «surroundings» (2017) highlights negotiating with fresh air upon opening, stressing endless modulation possibilities between complete openness and airtightness. What Sloterdijk calls «air design» then questions both the relationships between human groups among themselves, with other living or non-living entities, and the relationships between their interior living spaces and exterior spaces. Air can constitute a key element of this new thinking about the relationships between places with antagonistic spatial scales.

Because respiratory metabolism is fundamentally a form of communication with the outside world, it embodies our intrinsic and inseparable connection with it. It thus refers us to a nondualistic ontology and a cosmology different from traditional naturalism. In such an aerial metabolic perspective, architecture is no longer immutable and in search of eternity but changing and interacting with the airs and beings that surround and inhabit it. "Lacking all sacredness, stripped of all spiritual significance, the air is today little more than a conveniently forgotten dump site for a host of gaseous effluents and industrial pollutants." (Abram p. 258). 5

5. BIBLIOGRAPHY

Abram, D. (1997). *The spell of the sensuous: Perception and language in a more-than-human world*. Vintage Books.

Blanc, N. (2008). *Vers une esthétique environnementale*. Éditions Quae.

Böhme, G. (2018). *The Aesthetics of atmospheres* (J.-P. Thibaud, Ed.). Routledge.

Laplantine, F. (2005). *Le social et le sensible: Introduction à une anthropologie modale*. Téraèdre.

Pérez Gómez, A. (2016). *Attunement: Architectural meaning after the crisis of modern science*. The MIT Press.

Ricoeur, P. (2017). Architecture and Narrativity. Études Ricoeuriennes / Ricoeur Studies, *7*(2), 31–42. *https://doi.org/10.5195/errs.2016.378*

Sloterdijk, P. (2006). Écumes sphérologie plurielle -Sphères III (O. Mannoni, Trans.). Hachette Littératures.

TRANSLATING THE ATMOSPHERE: RESEARCH-CREATION AS A COLLECTIVE EXERCISE IN DESCRIBING ATMOSPHERE AS A MATTER OF CONCERN

TRADUZIR A ATMOSFERA: A INVESTIGAÇÃO-CRIAÇÃO COMO UM EXERCÍCIO COLECTIVO DE DESCRIÇÃO DA ATMOSFERA COMO UMA QUESTÃO DE PREOCUPAÇÃO

Laure Brayer
Lecturer
ENSAG, UGA, AAU-CRESSON
laure.brayer@grenoble.archi.fr

Marc Higgin
Lecturer
IUGA, AAU-CRESSON, PACTE
marchiggin@icloud.com

Olivier Labussière
CNRS Researcher
Équipe Environnements, PACTE
e-mail

Yves Monnier
Artist
Member of the research project SENSIBILIA
contact@yvesmonnier.com

ABSTRACT

How can we become aware of the atmospheric world in which we live and breathe and to which we daily contribute? How do we find the words to describe our relationship with this diffuse yet vital world in our lives? This paper will describe a research-creation in which 'atmospheric prints' became the means to assemble different publics around the plural question of atmosphere. The aesthetic experience provoked by the materialization of atmospheric metabolisms as imprinted image opens a space of translation in which a diffuse and 'immaterial' background becomes 'material': material that renders the atmosphere as a 'matter of concern' (Hache, 2021) as the scale of everyday experience. The project, and the research-film within it, open a collective exercise in describing a basin of air by the collection of observations and stories from different locations and situations, and feed the proposition to develop metabolic approaches for thinking and building the city.

KEYWORDS: Atmospheric print. Research-creation. Ordinary experiences. Basin of air. Stratification.

RESUMO

Como podemos tomar consciência do mundo atmosférico em que vivemos e respiramos e para o qual contribuímos diariamente? Como é que encontramos as palavras para descrever a nossa relação com este mundo difuso, mas vital nas nossas vidas? Esta comunicação descreverá uma investigação-criação em que as "impressões atmosféricas" se tornaram o meio de reunir diferentes públicos em torno da questão plural da atmosfera. A experiência estética provocada pela materialização dos metabolismos atmosféricos como imagem impressa abre um espaço de tradução no qual um fundo difuso e "imaterial" se torna "material": material que torna a atmosfera um "assunto de preocupação" (Hache, 2021) à escala da experiência quotidiana. O projeto, e o filme de investigação que o integra, abrem um exercício coletivo de descrição de uma bacia de ar através da recolha de observações e histórias de diferentes locais e situações, e alimentam a proposta de desenvolvimento de abordagens metabólicas para pensar e construir a cidade.

PALAVRAS-CHAVE: Impressão atmosférica. Investigação-criação. Experiências comuns. Bacia de ar. Estratificação.

1. NEW DESCRIPTIONS FOR A METABOLIC WORLD

If the Anthropocene is marked, amongst many other scars, by the furious pace of humanity's – or rather, capital's – extraction and combustion of the fossilized strata of the Carboniferous as an epochal destratification of the earth (Clark, 2017; Clark & Szerszynski, 2021), what, then, are the processes of stratification taking place today? How do they inform our relationships with the land, the landscape and the atmosphere? These are the questions the project Strates explores, a collaboration between the artist Yves Monnier and researchers from the social sciences, that turns

around a dispositif that we call atmospheric prints in which the atmosphere is invited to participate in the very creation of an image. This collaboration sits within a larger project – Sensibilia[1] – that explores questions of how to describe and document the relations to the world that are currently being invented, negotiated and recomposed in the context of the ecological changes we are experiencing. How can experiments in the social sciences, the humanities and the arts – grouped around the notion of 'le sensible'[2] – be relevant to understanding the transformation that our relationships with the environment are undergoing in these times of social and ecological crisis? Although 'le sensible' is a complex and polysemous concept (Howes & Marcoux, 2006) that we won't attempt to untangle here, it is worth underlining two strengths of the approaches that fall under its banner in francophone literature. Firstly, they bring the question of the Anthropocene down to the level of the everyday, situating the rumblings of these profound planetary transformations in ordinary and in situ practices, gestures and experiences. Secondly, they suggest that the life of the senses cannot be reduced to just a matter of passive reception. Rather, the senses, the sensuous, have the power to intensify and transform our relationship with the world.

How can we become aware of the atmospheric world in which we live and breathe and to which we daily contribute? How do we find the words to describe our relationship with this diffuse yet vital matter and medium? Within our project, atmospheric prints became the means to assemble different publics around the question – always plural – of atmosphere. The aesthetic experience provoked by the materialization of atmospheric metabolisms as the imprinting of an image opens a space of translation in which a diffuse and 'immaterial' background becomes 'material': material to pay attention to, material to talk about, material to think with, in short, it renders the atmosphere as a 'matter of concern' (Hache, 2021) at the scale of everyday experience. Each image becomes an opportunity to speak with different publics (students, employees, members of associations, residents, etc.), each from their own point of view on the basin of air they share. Our paper will question the role of art, and its materiality, in developing social descriptions of inhabiting the atmosphere – as what we have in common – that provides critical angles vis-à-vis existing spatial tools (and corresponding imaginaries) in order to develop metabolic approaches for thinking and building the city. We will also expose the central role of a research-film in that process.

---

1 *Sensibilia - Sensitive Approaches to Transforming Living Environments* is founded by ANR (French National Research Agency), 2020-2024, ANR-20-CE22-0006-01. More details here: *https://sensibilia.hypotheses.org/*

2 This francophone term does not have a readymade equivalent in the anglophone literature but it resonates with work on affect theory, perception of the environment, embodiment and the senses.

2. APPROACHING THE ATMOSPHERE BY THE LOCAL

What do we mean by an atmospheric print? A negative photographic image is printed onto plastic film and glued to the surface of a Fermacell panel, from which the positive areas of the image are removed by hand to create a stencil. Twenty-one of these were placed throughout the Grenoble Metropolitan area (French Alps), left exposed to the rain, wind and whatever else falls from the sky. In the mountainous basin in which the city sits – rising rapidly from 200 to 2000 meters and where the atmosphere acts as a receptacle for what comes out of chimneys and exhausts – a fortnight is enough to create an image. With these prints, the 'weather-world' (Ingold, 2010) is invited to participate in their development (in the photographic sense) as an image. At the end of this period in situ, the remaining stencil is peeled away, revealing the image in the contrast between the color and texture of the protected and exposed parts of the Fermacell. The diversity of sites of deposit (near a highway, in the middle of a field, next to a demolition site, under high-altitude forest…) and the plural temporalities of the exposure (marked by episodes of snow, the spring pollens, an ozone peak, or the passage of a Saharan sand cloud…) lead to a palette of differing colors, shades and textures which participate in rendering visible different atmospheric situations.

Figure 1. Print placed near the ATMO Station of the main city boulevard.

Source: Yves Monnier (2022).

The starting point of the project was to place three atmospheric prints next to three air quality measurement stations run by ATMO[3] in the urban center of the Grenoble metropolitan area (Figure 1). For a month, we observed them in situ, filming them regularly to get a better idea of how long it took for the image to form and how the materiality of the dispositif interacted with the environment, supplemented by

---

3 ATMO Auvergne-Rhône-Alpes. Agency charged with monitoring air quality by region in France, following EU regulatory guidelines and advising the Prefecture when safety limits risked being breached.

conversations with engineers from ATMO and access to the air quality data from these stations for the period, helping us narrow down the possible atmospheric participants of the image in the making. This led us to develop three thematic lines to explore the atmospheric basin of this city in the Alps. The first winds its way up from the urban center up the slopes of the Belledonne massif, on the tracks of the pollen of various plant species that were identified. The second follows the atmospheric particulates detected in high concentrations near the Grands Boulevards of the city center, and moves southwards between sites of major urban development, motorways and industrial infrastructure. From Vif to Saint-Marcellin, the third line runs along the cliffs of the Vercors massif that surrounds the western side of the city: the surface of these rock faces mirroring the interplay of deposits found on the stencils. By the end of 2024, all 21 of the images will have been placed and developed along these three lines drawn between the earth and the sky; a protocol to sample the forms of atmospheric life to be found here. As will be described in the following sections, the time of production of each print was the occasion to bring together specific publics associated, in one form or another, with the site. Each print became a catalyst with which to solicit people's stories about place and atmosphere. Accompanying this protocol is a research-film led by the three social scientists. Its aim is less one of documentation than to multiply the perspectives from which we might grasp the relation between the city, its inhabitants and the atmosphere in which their, our, lives play out.

3. WHEN THE ATMOSPHERE CEASES TO BE BACKGROUND

It is in the act of participating in the 'revelation' of an image – first by getting close to the print and its materiality while meticulously removing the adhesive layer protecting the stencil after exposure and then stepping back and discovering the image – that a public is assembled and words and stories come to life. The aim is to install a different relationship than that of a spectator face to face with (an already-finished) work exhibited in a museum. Here, the public is an active participant, tweezers in hand, in contact with a process of creation *in situ*. Each of these 'revelations', as we called them, are an opportunity for us to meet a different public and discuss their relationship with the air from the very place in which the image has been developing over three, four weeks. Nursery school children equipped with magnifying glasses set off in search of traces of the sky, while students from the Beaux-Arts school question the place of atmosphere in the history of representation of the Alps, workers and guides from a ski resort talk with members of an environmental protection association, and residents of a SEVESO zone talk about living in a high-risk living environment. As people pick away at the plastic, avoiding the lichen and sap on the surface of the Fermacell, up close to the materiality of the dispositif, they focus on the objects and traces of life deposed on the surface, as well as on the quality of the material (its transformations from standardized industrial panel to activated surface, its colorations, deteriorations, inscriptions, engravings). These traces became the basis for speculative voicings of what they might reveal: the passage of a squirrel, the staining by this or that particle

or pollen, the snow and rain weathering the surface of the Fermacell; signs of what we might call *meteors*, of the many things that populate the atmosphere (Zimmer, 2017). After this initial focus on the close surface, held horizontally to facilitate the collective work, the board is straightened and installed in the landscape. This gesture transforms the participant into a spectator and the stencil into an image. We could speak of a double appearance: firstly, of the image (originally issued from a photographic work) and, secondly, of the diffuse background. The image emerges from the contrast created between the sheltered and exposed parts of the Fermacell. If you stand three meters away from the image you will see it take on the line of a tree or motorway exchange but as you move forward again, the images and its lines give way, the eye finds the surface again, its patchworked materiality becoming the tenuous expression of the atmospheric environment. The participants' perception juggles between the atmospheric print as a representation of the place in which it takes shape, and the expression (the exhalation) of the environment that nourishes the former. Thereby, perception is enriched by the back-and-forth between the two appearances of the atmospheric print, between the figure and the background, each of them enlightening and complexifying the other.

When the prints are exhibited as a series, they make visible a palette of nuances, of shadings of color and texture. Each print does not represent the atmosphere as a whole but becomes, rather, a singular condensation of it, situating it in a given place and time. This material 'nuancier' tells us nothing distinct about the atmosphere, but it nevertheless opens up possibilities for new encounters and descriptions.

If you go up close to the material of the image, you realize how much is deposited amongst the fibers of the Fermacell. These prints are very hospitable, they take in whatever comes their way. Therein lies the difference with an air quality measuring station, with its instruments and filters targeting specific particles. The print, on the other hand, doesn't filter; it takes in dust, rain, pollen, insects, sand, seeds, animal tracks and so on. If it rains, the layer on the surface of the stencil is washed away; if it's sunny, it dries out. Whereas air quality monitoring instruments adopt a cumulative approach, recording the sum of particles deposited in a given periodicity. The print puts us in touch with the *weather-world* that Tim Ingold describes (ibid.). In this meteorological landscape, the air is less an object of perception than a prism that colors our perceptions and experiences, that renders them possible in the first place. The surface of the print contains elements that are as much local, regional and trans-national – such as the presence of Saharan sand carried by the Sirocco – all mixed together in the Grenoble air basin. The print's description of the atmosphere is therefore both more complete than an air quality measurement station – it tells us how close we are to particulates, to pollen or a grain of desert sand – but also much more imprecise, since it doesn't offer a detailed inventory of these elements, and doesn't allow any hierarchical classification. The atmospheric print places us in the middle of several environments and multiple temporalities. Peter Szendy (2021) suggests that it is this *tensile* quality that gives an image its ecological dimension.

4. A RESEARCH-FILM TO ASSEMBLE DIFFERENT REGISTERS OF THE ATMOSPHERE

The *Strates* project provides an opportunity for a collective exercise in describing a basin of air by collecting observations and stories from different locations. The advantage of this approach is that it takes a step away from the dominant view of the atmosphere from a perspective of public health, which is accompanied by fairly narrow and prescriptive descriptions and values. *Strates* does not ignore this vital question of public health but it does presume that this perspective is the only means by which to raise awareness of, and transform our relationship with, the air.

The research-film, which runs along the protocol described above, brings together the different perspectives on our relationship to the air. It brings together public health reports, residents' lived experience and practices, aesthetic considerations about the atmospheric world, with human and non-human (animal, vegetal, meteorological) contributions to air quality. The film follows different characters – Christelle, a technician agent from ATMO; Clément, a technician in charge of air quality for Grenoble-Alpes Métropole; Joëlle, a curator at the Musée de Grenoble in charge of their collection of works from the 19th century Ecole Dauphinoise that pioneers 'open-air' painting; Yves, the artist creating the atmospheric prints; and the publics assembled by the project, with each person or group developing its own unique description and expertise. The film works as a narrative vehicle for these stories and opens towards other non-representational accounts of the atmosphere not mediated by humans (Simpson, 2020).

5. SCENES FROM THE FILM

Night. The sound of crickets and cicadas fill the air. A group of students, their footsteps illuminated by the light of their cell phones, are trying to find their way "out of here". Here is the Bastille, a maze of fortifications built on a hillside that juts into the city like a prow of a ship. In the distance, a cable-car pylon illuminated in red. The 'bubbles' whiz past the metal frame with a roar and a cloud of cheers. The cables clatter and the sound of a motorcycle emerges from below. The view opens onto the city at night. The red light of the pylon suffuses the foreground, coloring the vegetation, dyeing the bodies. In the distance, Grenoble sparkles in the heat of a summer's night.

Buzzing. The incessant drone of measuring instruments fills the bright space of an enclosed room. They run continuously, singing to the rhythm of the pulsing seconds. Christelle is busy at work, opening machines, extracting a stack of filters and delicately manipulating them, her fingers sheathed in latex gloves. Samples are meticulously wrapped in aluminum foil, each one dated and joining a series of others in a plastic pouch that will be sent to the laboratory for analysis. She fills in elaborate spreadsheets on a computer, then turns to the next machine. A canister

needs changing. Meanwhile, ants trace the walls, evacuating waste from their nest in the roof, using the tube connecting the outside air captured by instruments to the inside of this ATMO measuring station as an access. This monitoring station (Les Frênes), located in the center of an urban park in the heart of Grenoble, records atmospheric gases and particulates away from major roads, agricultural sites or industrial chimneys. What is measured here represents, for ATMO's models, the base measure of diffuse pollution breathed in by Grenoble residents, the 'background' as she says.

Rain. The intense green of the vegetation bears witness to a wet spring. In the light breeze that accompanies the rain, pollen floats. The grass catches the silky fluff, the pavement carries a thick carpet, that is set in motion by the shoes of a passing runner. Above, the branches of a poplar tree come alive in the wind, shedding new clusters of pollen. The magnificent tree covers part of the towpath on the dyke hemming in the Isère River. A cyclist passes a runner, each of them making a path through clouds of pollen. The river below comes into view through a gap in the vegetation. In its tumults and convolutions, the grey surface of Isère carries pollen and other petals from upstream. It's the first Wednesday of the month, midday: the sirens warning of imminent danger start their haunting song, enlarging the dimension of the atmosphere made visible by the flight of pollen. Relationships of proximity are replayed, the clouds clinging to the mountains at the bottom of the valley suddenly seem closer, the sound of the alert reminding us that we share this air with nuclear plants and chemical factories.

Fluorescent light. Yves is in his studio, sitting at his work table. Concentrated, his body and eyes bent over the surface of a Fermacell stencil. A scalpel in his right hand is wielded with precision, cutting tiny bits of black adhesive film, which he removes using the tweezers in his left hand. After cutting, he wraps the board in a protective sheet, lifts it up and reveals the image he's been working on: an aerial view of a motorway interchange.

Another fluorescent light. The board now sits on a table in the middle of a building site cabin, among safety shoes and yellow vests. Through the window of the Portakabin, we can see the pulse of vehicles on the nearby expressway. A conversation is happening in the background, a voice saying "this has always been the knot of Grenoble's road and motorway problems". It is the voice of Clément, invited to discuss his work on air quality for Grenoble-Alpes Métropole, while participating in the 'revelation' of the print that has been previously placed for 4 weeks next to this major road transport hub. A wooden model lies next to the print and a map of the city, making visible the topography of the Grenoble basin, its slopes, curves and plateaus. Above the model, Clément's hands mimic atmospheric phenomena that keep him and his colleagues awake at night: the stagnation of pollutants during winter and summer months marked by periods of anticyclones. In winter, when the cold of air descends the slopes of the mountains that surround the city creating a temperature inversion, a

sort of ceiling installs itself at around 1000-1500 meters altitude, trapping pollutants emitted by human activities below. Outside the Portakabin, the construction site is in full swing, with cement trucks delivering concrete, in the distance, the mountains catch the clouds and the last snowfalls of this end of winter. "Yesterday, the central pylon of the Bastille was red. This lighted pylon is the totem of air quality for the city, its color indicating the air quality for the next day so that people can adapt their behavior, both to protect themselves and to reduce emissions, according to what is causing the pollution, by reducing heating wood or by promoting car sharing".

Sunlight. A cloud of yellow leaves blown by the autumn wind fills the frame. Yves places a stencil at the foot of a three-hundred-year-old lime tree. The board is placed on the ground, revealing the silhouette of the tree whose shadow appears on the carpet of fallen leaves. Close-up of leaves still attached to the tree. A panoramic shot of the bark takes the form of a long journey through a topographical micro landscape. Then the air basin, caught halfway up the slope between the rock faces, becomes the focus of attention: an atmosphere enlivened by the passage of layers of white and grey clouds, sometimes masking the distant mountains, sometimes pierced by the rays of a late-day sun. Another day, at dusk; the lime tree stands on its terrace overlooking the road, next to the chapel. Under its crown, the stencil is almost completely buried under a carpet of shimmering leaves. Night falls with the evening song of the blackbird. Midday; trembling low branches. Close-up of the surface of the stencil: apparently the wind has cleaned it free of leaves. The interplay of wind and branches cast shadows and light, making the material flicker. A cool afternoon; the seasons are at a point of change. Shreds of cloud swirl over the surrounding hills. On the upper slopes, in the background, a light dusting of snow covers the fir trees, while here the sparrows chirp close by. A church chimes the evening hour, while cars pass below. It's time to go home. Sound drips, it pours, torrents and pools form on the surface of the road. Under the tree, drops bounce off stones of the wall. The wood of the increasingly bare branches glistens with water. The clatter of drops bouncing off the surface of the stencil, the few leaves on it are soggy. Sudden silence: a layer of snow covers the tree, the terrace and the roofs of the neighboring houses. A gust of wind unloads the tree and spirals of snow cross the screen. Underneath, the stencil is covered in a white frosting. The crackling sound of the flakes deposited on its surface plunges us into a microscopic world of small accumulations that will soon melt away.

A poppy dances with the wind at the top of a grassy knoll while crickets and swallows sing incessantly. In the distance, black mountains surround the flat agricultural plains of Reymure, just to the south of the city a storm threatens. A child plays in the grass, the plastic fabric of the greenhouses floats slightly, and a few people share a beer under an arbor. It's market time at the Malissoles gardens. Yves installs a print in the grass near a monumental swing. Ripe wheat sways in the wind, a walnut tree alone in the center. Sparrows hop from stem to stem, chirping continuously. In the distance, we can see again the chaotic lines of the Chartreuse mountains. The blue and white of the sky crisscrossed by the flight of swallows, the pale moon behind. The ropes

of the swings come and go to the rhythm of the children's voices. It's a busy place. People are running and shouting, while Yves and Pierre remove the print from the ground and place it on a pile of plastic crates to be used as a work table. On the ground, it has left its mark: a square of yellowed grass and earth has served as a refuge for a colony of ants busy amongst the galleries they have dug. Five people bend over the print with tweezers as Yves explains the reasons for placing a print here: "We're in the Rochefort water catchment area, and we know that there may be different legislation, different practices, due to the fact that this is the drinking water catchment for the city of Grenoble". Pierre and Anne-Sophie, the farmers who own the property, explain: "We are indeed on a protected perimeter, because there's no right to urbanize here. There's a whole zone that's on the catchment perimeter on which you can't put fertilizer, herbicides or pesticides and there's only room for farmers, nobody has the right to build". The conversation stops for a moment as Yves rips off a large piece of cling-film, bits of dried straw falling away with the movement. Pierre continues: "As far as the air is concerned, it's quite funny because we're on a protected perimeter, but we're right next to the Pont-de-Claix and Jarrie chemical plants. Behind the hill there, there is the Drac river, and just behind there are the factories, one kilometer away. So, you get the impression that you're in a very unspoiled spot, right in the middle of the countryside, but in reality, if you take a leap 100 meters up, you will see that you're very, very close to the chemical plants". Another participant comments: "I met someone who was working on air currents, who told me that at the top of the Obiou – a mountain in the South of the region, rising to nearly 2800 m – you have almost as much pollution as in downtown Grenoble". The revelation comes to an end, the image is straightened, Yves blows on the surface to knock off the excess straw. The motif appears: a tractor tilling the soil stirs up a cloud of earth in its path, testifying to the dryness of the season. The square of dry grass left by the stencil installation appears again as if cut out of the luxuriant vegetation resulting from a rainy spring. A final shot places the wheat field in the heart of the plain, in the heart of the mountains, in the heart of the air basin.

6. CONCLUSION

This film is at the heart of our contribution as social scientists – as a geographer, an architect, an anthropologist – to the project. As mentioned earlier, the aim is not documentation – of an artistic practice, as source material for scientific analysis that would take place elsewhere – but, rather, to develop a form of scientific writing through the film itself. As a research tool, film is something each of us has been working on for a number of years, but this project has been the opportunity to develop a collective approach that has found its place within the collaboration with Yves. Adopting a form of *horizontal* writing by means of juxtaposition, the film follows one sequence after another, opening windows on a plurality of atmospheric situations and issues without imposing a hierarchy. The point is not to impose a singular logic, allowing place for what the sociologist John Law and his colleagues (2014) call an epistemological ethic of *noncoherence*. The expert points of view of

the technicians of ATMO and the Métropole do not stand above, and explain, the points of views of the inhabitants of Pont-de-Claix or the experience of entering into the duration of a scene depicting a carpet of pollen covering the tarmac of the road. Each fragment is *partial* manifestation of the atmosphere in a double sense: incomplete but also situated in particular practices, particular forms of life. As a scientific tool, film also displaces our reliance – as social scientists – on what people say, on verbatims. As a medium, it gives us the gestures and bodily postures that tie what is being said to a living, breathing body, a body in constant, rhythmic relation to its milieu. Words spoken keep their connection to the breath, to the air itself. Hands gesture, their motion invoking that of the air they are describing. Noses are wrinkled and heads turned away to mimic discomfort or backs straightened and nostril dilated to describe a great gulp of air. All these hesitations and surprises in our relationships with the lower atmosphere which cannot be read in a simple selection of verbatims.

These fragments, rooted in the everyday of our modes of inhabiting the atmosphere, open a window onto a mode of spatiality other than that of geographical longitude and latitude; they apprehend – in a partial, always situated, way – a fluid spatiality, in movement, in which proximities are constantly redrawn. This *atmospheric* mode of spatiality, which cannot be abstracted from its medium, is not chaotic either. It has its regularities, both on the scale of the flat and on the scale of the valley. The winds, and the lack of them, create a plurality of atmospheric conditions that temper the forms of neighboring with which we learn to live and breathe in the city. These considerations point towards an atmospheric imaginary, such as that developed by Philippe Rahm (2020) in a text raising the question of meteorological architecture. He invites architects and urban planners to design climates rather than geometric shapes, taking into account the many movements of air and the almost permanent transformation of its qualities and properties. Changes in temperature and convective movements, the dynamics of high- and low-pressure phenomena, the sunshine as it changes with exposure and the season, and the effects of conduction and radiation of materials; these are the primary tools of a spatial design whose compositional modes must evolve from geometry to meteorology. Instead of imagining spaces with temperate climates at all times (the air-conditioned American Dream), the atmospheric imaginary invites us to design houses and cities as made up of potential spatial polarities that can be activated or practiced according to the atmospheric conditions of the moment. During a heatwave, urban cool wells (Tixier et al., 2011) such as parks with ponds will be invaluable in the city, while sunny squares will delight café terraces in the depths of winter. Such places need to be designed according to human needs and comfort, while for some others it is the practices deployed in these spaces that can be adapted to the constraints (of pollution, humidity, etc.). Near expressways, reserve areas will allow the wind to dissipate particles and they will be spaces to be avoided at peak traffic times, but can be used at night.

In 2024 through to 2025, the project Strates is being shared with publics through a series of exhibitions[4] in which the 21 atmospheric prints are shown alongside the film as well as selection of texts written by the project or by others. The aim is that the narrative of the project is embodied by a variety of forms, each giving the public a partial insight into the plurality of atmospheric experiences at the heart of Grenoble's air basin. The question of the atmosphere sits as much between each of these forms as within each of these manifestations. It is the space between each of these media that allow the atmosphere to become manifest.

7. BIBLIOGRAPHY

Clark, N. (2017). Politics of strata. Theory, Culture & Society, 34(2-3), 211-231.

Clark, N., & Szerszynski, B. (2021). Planetary multiplicity, earthly multitudes: Interscalar practices for a volatile planet. In Dürbeck, G., & Hüpkes, P. (Eds.), Narratives of Scale in the Anthropocene: Imagining Human Responsibility in an Age of Scalar Complexity (pp. 75-93). Routledge.

Howes, D. & Marcoux, J-S. (2006). Introduction à la culture sensible. Anthropologie et sociétés, 30, n° 3, 7-17.

Ingold, T. (2010). Footprints through the weather-world: walking, breathing, knowing. Journal of the Royal Anthropological Institute, 16, S121-S139.

Law, J., Afdal, G., Asdal, K., Lin, W. Y., Moser, I., & Singleton, V. (2014). Modes of syncretism: Notes on noncoherence. Common knowledge, 20(1), 172-192.

Rahm, P. (2020). Écrits climatiques. Éditions B42.

Simpson, P. (2020). Non-representational theory. Routledge.

Szendy, P. (2021). Pour une écologie des images. Les éditions de minuit.

Tixier, N., et al. (2011). L'ambiance est dans l'air : la dimension atmosphérique des ambiances architecturales et urbaines dans les approches environnementalistes. Rapport de recherche, n°81. Cresson.

Zimmer, A. (2017). Brouillards toxiques : Vallée de la Meuse, 1930, contre-enquête. Zones sensibles.

---

4 Espace Vallès, Saint-Martin-d'Hères, 27/01-24/02/2024 ; La Conciergerie, La Motte Servolex, 07/03-04/05/2024 ; Experimenta, Musée de Grenoble, 08/02-01/03/2025.

"HOW THE OTHER HALF" OVERHEATED: THE ATMOSPHERIC ENVIRONMENT OF URBAN SUMMERS

Kara Schlichting
Queens College [CUNY] – United States
kara.schlichting@qc.cuny.edu

ABSTRACT

This paper investigates the atmospheric environment of summertime in turn-of-thetwentieth-century New York City. It highlights the aesthetics of weather to interrogate the sensorial environment-and thermal inequalities-of the pre-climate-controlled city through the work of artists who captured bodily experiences of summer weather.

New York exposed residents to thermal inequalities due to quotidian seasonal highs, extreme heat events in heat waves, and the way the cityscape held heat, what we today know as the urban heat island effect. The New York Times deemed those who could afford to seek respite in cooler climes "heat refugees," while Harper's pointed out that for the working-class and poor who spent "the whole summer long...shut up in the great city, the dog-days came like a scourge." Before the widespread adoption of ventilation and cooling technologies in the mid-twentieth century, New York's working class and poor lived far more attuned-and exposed-to their city's climate. As significant as New York's urban heat island has been to the city's social and cultural history, its impacts have eluded historians. Temperature, a weather phenomenon that is primarily felt, is often difficult to trace in archives. Heat is largely invisible and incorporeal. But bodies register temperature sensations. In summer, the materiality of the atmosphere is perceived as a thermal environment. Sweat and individual behaviors make heat visible.

I argue the interaction of summer weather with the city's pavement, brick, and stone created a "heatscape" in New York. Geographer J. Douglas Porteous argues that visual perception of landscapes requires objectivity and distance. Yet sensory experiences environ and permeate. The heatscapes evoke the tactile and kinaesthetic qualities of an environment, qualities perceptible by bodily senses. The experience of heat is a dynamic circulation between bodily thermoregulation and environmental thermodynamics. Summer's heatscape is at once cultural, spatial, and atmospheric.

This paper focuses on early 1900s realist artists known as the Ashcan School. Rejecting American Impressionism, their art famously captured New York's working-class and poor at labor, in the street, and in tenement apartments. In so doing, Ashan artists also captured the atmospheric environment of the heatscape through hemmed in street scenes and the physicality of overhead bodies. The heatscape also made the coolness of breezes on tenement rooftops a precious environmental commodity. Tenement districts, overcrowded and devoid of trees and parks, created unique temporal and spatial microclimates-they created thermal inequalities. The heatscape's atmospheric environment illuminates a "sensorial urbanism" in which bodily perceptions are inseparable from the environment. Nineteenth-century urbanites understood their cities as metabolic systems. The city-as-body translated corporeal circulation into spatial terms, linking bodily health to urban form: to ventilation, water systems, and parks. And this relationship was inherently climatic in nature. "How the other half" overheated reveals the physicality inherent to the city's climatological environment, in this case summer heat. This paper investigates the atmospheric aesthetics of summer to reveal a collective sensory experience, and collective visual order, of heat in turn-of-the-century New York.

KEYWORDS: thermal inequalities, atmospheric environments, summer heat, urban heat island effect

SENSORY EXPLORATIONS

AMBIANCES IN A CHANGING WORLD

UNIVERSIDADE
LUSÓFONA

UFRJ

ambiances
RÉSEAU INTERNATIONAL
INTERNATIONAL NETWORK

CNPq

CRAB

SEBRAE