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Editorial

Dear Reader,

On behalf of the Editorial Board, it is my pleasure to present to you the first issue of the *Loci Communes. International Journal of Studies on Spaces in Arts and Humanities, Anthropology and Architecture*. It is a scientific journal focusing on the contemporary research on the cultural and anthropological aspects of newly created spaces, the modernisations of already existing ones, and the newest methodologies of design in urbanism and architecture. Through the journal treated as a platform for exchanging ideas, we would like to stimulate the discussion on the latest research findings in different contexts and between the abovementioned disciplines.

The articles we publish in this issue focus on three thematic areas. The first is shifting away from designing and building objects distanced from people in favour of more human-centred design which is based on understanding human perception, cultural and geographical conditions, and everyday life needs. The second – the inspiration for architectural design coming from art. The third area is the place and understanding of the environment and cultural landscape in design processes.

The author of the first article, Zuzanna Bogucka, introduces the reader to the issue of perception from the perspective of behavioural psychology. The author analyses two important qualities of space perception: legibility and coherence, their understanding and functioning in architecture and urban planning, environmental psychology, and subjective user experiences. In architecture, the author emphasises a tendency to treat legibility as an objective visual quality, a feature of a space organised according to specific patterns. Coherence, in turn, is understood by architecture and urban planning as resulting from the relations existing between parts within the whole space (Lynch, 1960). Environmental psychology, however, treats both the qualities not as objective features of the environment but rather as features perceived by users, subjectively experienced.

Subjectively experienced legibility and coherence, the author emphasises, are used in studies of users' spatial functioning (spatial orientation, navigation, and mental maps). They also determine users' aesthetic and spatial preferences, along with two other qualities – the mystery and complexity of space. According to the researchers, Bogucka emphasises, coherence gives us an immediate understanding of space, while complexity encourages exploration. Legibility is the quality that we infer from the perceived characteristics of the environment. It facilitates the prediction of the features of the environment, understanding its layout, orientation as to what is outside the visible zone. The legibility and coherence of spaces strengthen our sense of independence, supporting our mobility and participation in society.

The issues of independence, mobility, and participation in social life referred to by Bogucka are further examined, this time in the social context, in the text co-authored by Acoyani Adame Castillo, Linda Moreno Sanchez, and Norma Riveros Monsalve, as well as in the article by Eva Alvarez and Carlos Gomez. The authors consider the issues mentioned above illustrating them by describing examples of the situation of women – both as architects and users of space. What is stressed by Adame Castillo et al. is the way we experience our cities. The everyday lives of men and women differ in terms of experience, which often results from their place of residence, belonging to a specific social group or profession. The authors indicate the need and possibilities of reintegrating the public and private spheres into a whole and considering human corporeality as a vital point of reference in design processes. People get closer, understand, and appropriate the space inhabited through the body and perception. According to the authors, urban planning does not recognise the diversity of inhabitants, turning cities into territories for the few.

An important issue that should be reflected in the architecture and urban planning is the daily care of dependent people. In this regard, the authors of both the mentioned articles refer to the feminist ethics of care. If a city facilities care and, at the same time, champions the autonomy of dependent people, it helps to reconciliate private and public lives of men and women, which is made visible in the emotions that the authors treat as indicators of "well-being," the fundamental analytical axis of the feminist critique of the right to the city.

Alvarez and Gomez, in turn, emphasise the need to introduce gender-sensitive criteria into designing buildings and architectural and urban spaces. As a conceptual framework for developing such standards, the authors adopt the methodology proposed by Bernard Tschumi, treating "theory" as "practice". Tschumi claims that "theory is the practice of concepts." In their article, the authors understand the need for and a way to reconstruct the theory of design, especially the concept of space based on

real life. They argue that a theory derived from the needs of everyday life can help redefine quality standards in architectural design and create more inclusive and equitable spaces.

The perspective of the following two articles is set by the relationship between architecture and fine arts, already well-established both in theory and in design practice. Agnieszka Kurkowska considers the possibilities of using artistic activities to integrate the inhabitants of prefabricated housing estates. The author postulates the use of art in the sphere of mental influence, in spaces beyond the tangible physicality and geometrical properties of architectural objects, the sphere of experiences and reflections, ideas and meetings. The space of ideas is a particular category of architecture that requires imagination and combining facts with experiences, ideas preceding a built object. In the areas built-up with prefabricated housing estates deficiencies can be observed, among other things, in the traditional values of the space or the degree of identification with the surroundings felt by inhabitants. Such areas constitute a potential space for activities strengthening the local community in values. The author claims that architectural space, in which the intentions of residents, different perceptions and leading design concepts are combined, are conveyed by the architect to the recipients through the erected object.

Marie Ulber, Mona Mahall, and Asli Serbest present an example of the use of visual arts in redefining the concept of the built environment. To this end, they analyse Allan Kaprow's spatial installations, entitled "Environments", created in the 1960s. According to the authors, they changed the concept of modern art, which extended the idea of a finite object or Closed Form (the Hansens) to a more open process. "Environments" were open both spatially and conceptually. It was possible to enter them – they were conducive to immersive experiences, transformation after joining; briefly put, they provided many alternative ways of becoming. "Environments" were created to blur the lines between production and perception of art, the artist and the viewer, art and life. According to the authors, in today's architecture, a similar spatial and relational change is necessary; it can be made as part of open processes of adaptation of architectural objects while questioning the modernist perception of space. Still, to meet the challenges of the global climate crisis, they must again adapt to new "environments" in order to dynamically react – change over time – along with their users and in line with current social and environmental challenges.

In her article devoted to the issues of the archaeological landscape, Tessa Matteini analyses several vital problems in the field of protection, planning, and management of archaeological landscapes. Taking the landscape architecture approach, the author proposes a set of conceptual and operational tools developed in accordance with the recommendations of

the European Landscape Convention (Florence 2000). According to Matteini, contemporary design culture must focus on the interaction between ruins and vegetation in the archaeological environment. The author focuses on the functions and importance of plant biodiversity in the landscape of archaeological sites and suggests the concept of temporal diversity as crucial for the interpretation and planning of layered landscapes.

Technological progress in the first and second decades of the 21st century made it possible to understand better the human response to environmental stimuli, including cultural and social ones. For that designers try to balance the architecture with ecology and human potential. The Editorial Board of *Loci Communes* hope that articles published in the current issue would encourage the Readers to look at how ecology, human and cultural knowledge, and technology interpenetrate and how their "symbiosis" affect the heritage.

We wish you enjoyable and fruitful reading.

On behalf of the journal's Editorial Board,
Małgorzata Kądziela,
Editor-in-chief

Perception and Experience

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Nonvisual Legibility and the Coherence of Space: A New Theoretical Framework with Examples of Its Implementation in Empirical Research

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Abstract

The legibility and coherence of space are informative qualities as they facilitate the understanding and exploration of the environment. They also function as categories in architectural and urban design theory, as well as environmental psychology. The approaches of those disciplines, including their contemporary continuations, evolved from Lynch (1960) and are based solely on the visual qualities of the environment.

In this article, I argue that relying only on the visual scope of human-environment relations is insufficient for inferring the user's perception of the environment as *legible* and *coherent* and evaluating design solutions from the users' perspectives. The proposed revised theoretical framework combines architecture and urban design perspectives with environmental psychology and broadens concepts of legibility and coherence. The revised framework combines the visual scope of the legibility and coherence with other aspects of human-environment relations by referring them to multisensory perspective, social and spatial functioning, levels and characters of stimulation, and affective appraisal of the environment.

To show how we can address this broadened approach to legibility and coherence in empirical research, I present two examples of experimental research using bimodal research materials. They present how nonvisual qualities contribute to legibility and coherence and how they can be measured (tested) during the data-driven evidence-based design process. The first experiment investigates the relationship between the qualities of soundscapes and the social functioning of users. The second covers the tactile and haptic dimensions and their connections with blind and visually impaired users' spatial functioning.

Keywords

legibility, coherence, nonvisual perception, experiment, user-centred design

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Introduction

In order to meet the standards of the user-centred design paradigm (ISO 9241-210, 2010), a design needs to follow a precise understanding of users' perspective and the context in which they function. The design evaluation becomes focused on users' needs and abilities. The overriding goal of this article is to bring closer the focus on users' perspective as understood in environmental psychology research to architectural and urban design. The scope of this article is limited to a small fraction of a whole spectrum of human-environment relations; that is, the issue of legibility and coherence of space experienced via nonvisual perception. The non-visual perception's delimitation is in contradiction to the ocularcentrism. It also serves as a "special" constraint that lets us examine and verify the common patterns in research of human-environment relations by putting them in a broader context of the environment's multisensory experience.

The central thesis of this article states that it is insufficient to rely on visual information while evaluating the legibility and coherence of the environment as perceived by users. For more accurate verification of architectural and urban design, it is necessary to capture a broader context in which the environment is experienced as legible and coherent. The main research problem is identifying the nonvisual aspects of human-environment relations underlying our environmental preferences in the scope of legibility and coherence of space. Two examples of experiments show how to implement the proposed theoretical framework into empirical research that may serve as a tool for architectural and urban design evaluation.

Basic Concepts of Legibility and Coherence of Space

The legibility and coherence of space are investigated in both disciplines – architectural and urban design as well as environmental psychology (Kaplan & Kaplan, 1989), using the same basic definitions provided by Lynch (1960). They may serve as a common ground for these diametrically different fields and a starting point for the extended approach proposed in the framework. Moreover, Lynch's theory links the environment's perception with the context of human-environment relations, which follows the transactional paradigm of social science empirical research (Altman, 1992, p. 268; Altman & Rogoff, 1987). The transactional approach puts perception (among other psychological processes) in a broader context of people's functioning in the environment and their understanding of it.

Lynch (1960, p. 3) defines *legibility* as "a strictly visual quality" for which cities' parts can be recognised and organised into a coherent pattern. He further discusses the *coherence* of space as the relations between parts and the whole that serves legibility (Lynch, 1960), which gives rise to an impression of a "hanging together" (Kaplan & Kaplan, 1989, p. 54).

In environmental psychology, the continuation of Lynch's concept considers legibility and coherence not as objective features of the environment but rather as its qualities perceived by users. Whereas architectural and urban theory unfolds in two directions: the former takes legibility and coherence as objective measures of spatial organisation, and the latter, similarly to social science, investigates legibility and coherence of the environment as subjectively experienced.

The legibility and coherence treated as objective measures refer to space syntax analysis of spatial configurations and their social consequences (Hillier & Hanson, 1984; Dalton & Bafna, 2003; Hillier, 2007; Long, Baran, & Moore, 2007; Long, 2008; Koseoglu & Onder, 2011; Jiang, 2012; Schumacher, 2012; Mahdzar & Safari, 2014; Gohari, 2019), and to geometrical relations in structure and system configuration (Alexander et al., 1987; Alexander et al., 2002; Salingaros, 1998; Salingaros, 2000; Caliskan & Mashhoodi, 2017).

Subjectively experienced legibility and coherence are used to investigate users' spatial functioning (spatial orientation, wayfinding, navigation and mental maps) (Golledge & Stimson, 1997; Golledge, 1999). They are also the qualities indicated as significant in the Kaplans' environmental preferences theory (Kaplan, 1987; Kaplan & Kaplan, 1989) in the field of the environmental aesthetic (a discipline that investigates aesthetic of places as experienced by people in broad categories of attractiveness, i.e., Nasar, 1988; Porteous, 1996). Kaplan (1987) proposed a theoretical framework of environmental preferences that arise from two primary needs: understanding and exploring. He indicated four environmental qualities that influence our performance in realising these needs: coherence, legibility, mystery, and complexity.

Coherence gives us an immediate understanding, while complexity provokes quick exploration. These qualities refer to simple, easy to grasp information from the environment. Legibility is based on inferred information about the perceived environment. In particular, it allows the prediction of an environment's features, such as understanding its layout, deducing its structure, and predicting how we will orientate ourselves if we go beyond the scenery we can see (Kaplan, 1987). Legibility and coherence of space enhance our sense of independence by supporting our mobility and participation in social life (Metz, 2000; Mulligan, Carruthers, & Cahill, 2004).

Stamps (2004) provides a meta-analysis of 61 articles covering experimental studies following the "typical experimental protocols" given in Kaplan and Kaplan (1989, pp. 207–215). This procedure involves showing respondent static slides of various environments (coloured or in greyscale). Stamps (2004) concludes that it is impossible to predict people's environmental preferences relying on configurations and intensity of environment's qualities from Kaplan's environmental preferences model, because "[…] the correlations between preference and the information variables have not been reproducible" (Stamps, 2004, p. 10). The ranges of the correlations between respondents' preference and informative variables vary between different experiments to the extent that they do not allow to predict how legibility, coherence, mystery and complexity contribute to environmental preferences in a replicable pattern. Stamps (2004, p. 13) further suggests that "if the problem were measurement error, then a possible research strategy would be to try some other ways to measure the desired informational concepts."

Regarding Stamps's (2004) meta-analysis findings, I propose an extended theoretical framework and its empirical implementations that place legibility and coherence of the space in a broader context of other psychological concepts of human-environment relations and provide implications for user-centred design.

Extended Theoretical Framework and Revised Research Approach to Legibility and Coherence Concept

The definitions mentioned above of legibility and coherence have one assumption in common: they investigate qualities experienced by users that serve as predictors of user's environmental preferences, based solely on visual information. If research on people's environmental preferences should be helpful for design practitioners, they should address users' multisensory experience and psychological dimensions of human-environment relations underlying the experience of the environment as legible and coherent. This aim introduces four main elements of the proposed extended framework for research on legibility and coherence of space as perceived by users. These elements are:

1. The functional roles of legibility and coherence of space (spatial and social functioning).
2. The nonvisual perception of legibility and coherence.
3. Stimulation and affective reaction to the environment (based on circumplex model of affective appraisal of the environment (Russell, 1988))

as a background for research on the experience of places as legible and coherent.

4. A methodology enhancement that introduces the above theoretical concepts into the design evaluation process.

The first three elements lay the theoretical foundations that enable the legibility and coherence of the environment to be investigated in a reliable way. The fourth element introduces the use of the design artefacts as valid input in obtaining meaningful data for design evaluation. This is a stepping stone to develop a method easy to use by design practitioners in a professional setting to verify design solutions regarding the legibility and coherence of the environment.

Functional Roles of Legibility and Coherence

Legibility and coherence should be considered and investigated in the functional context. Places perceived as legible and coherent enhance our understanding and exploration activities. Therefore, legibility and coherence (intelligibility and imageability) are linked to our functioning in an environment. They address both spatial and social functioning that provide variables for evaluating the environment and its design.

Spatial functioning refers to the understanding of the spatial organisation, layout, and configuration of elements. It includes spatial orientation, wayfinding, and mental maps (e.g., see Golledge & Stimson, 1997; Golledge, 1999; Allen, 1999). Social functioning relies on our understanding of the social context of a place. It consists of our ability to read situations around us and participate in social interactions. Social functioning thus depends on:

1. Affordances – that is, artefacts and an environment's qualities that facilitate actions and participation in activities and interactions (Gibson 1979/1986), as well as a contemporary notion of indirect perception of affordances deduced from information extrapolated from mental representations and previous experiences with this type of object and environments (Baggs & Chemero, 2018).
2. Experienced ambience, defined as the impression evoked by a site's multisensory qualities, refers to comfort and social and environmental aesthetic characteristics. The experienced ambience is a sum of the experience of a place's distinct character that facilitates or suppresses certain activities (e.g., Chelkoff, 2008; Thomas, 2010; Thibaud, 2011; Böhme, 2017).

Multisensory Instead of Visual Information

Research on legibility and coherence of space should address multisensory dimensions of experiencing the environment. In this article term, "multisensory" refers to considering the visual qualities of the environment,

and these addressed to other senses through which we experience the environment, that is, aural, haptic, and olfactory.

The most straightforward way of thinking about legibility and coherence in architectural and urban design is via a spatial layout and visual information systems. Passini (1996, p. 326) wrote: "Wayfinding difficulties might be due to poor articulation of architectural features such as the indication of entrances, exits, horizontal paths, stairs, lifts and escalators, landmarks serving as anchor points and the circulation system. We feel that these architectural wayfinding cues are not only easy to convey but that they are essential features of architectural composition and should not require signage support. Signs indicating lifts or entrances are manifestations of architectural inadequacies." More evidence-based and data-driven decisions about spatial configuration and articulation would better serve wayfinding without additional signage systems. Instead of relying solely on these additional systems, the legibility and coherence of space address all senses engaged in the experience of the environment and can be precisely planned as the outcome of design decisions on architectural articulation and organisation.

A multisensory approach to legibility and coherence of space as experienced by users is elementary for a universal design paradigm (Preiser & Smith, 2011). The universal design emphasises that designed artefacts and places should be accessible and safe for everyone. This assumption includes the perspectives of various groups of users in the design process. These are the "extreme users" named after Tim Brown (2009, p. 44), who pointed out that we mostly confirm what is already known if we consider only the close to average cases. We instead need to look at users towards the edges of the Gaussian distribution curve – the extreme ones who live differently. For research on legibility and coherence of space, the extreme users will be those with perceptual disabilities, which orientate themselves, navigate and read social contexts using information from the environment differently than average in the population. One presented example of empirical research was conducted with blind and visually impaired participants (Kuryłowicz & Bogucka, 2011). This approach to selecting the research participants helps to verify theoretical assumptions about the legible and coherent environment and design solutions designed primarily for a visual experience.

Architectural articulation addresses not only our vision: using Lynch's (1960) classification, paths, landmarks, edges, districts, and nodes can also be experienced as nonvisual stimuli. For example, the curb separating a sidewalk from a street became Lynch's edge, while a street sign, stand or trash bin at the intersection can be considered a landmark. Changes in pavement textures and cross slopes signal different path sections, nodes, or even

borders between districts. For persons who are blind or visually-impaired, soundscape (Schafer, 1977; Fiebig, Jordan & Moshona, 2020), smellscape (Henshaw, 2013;), and haptic and tactile (Shiff & Foulke, 1982) qualities are the primary sources used in spatial orientation and social functioning. Research comparing the abilities of blind and visually-impaired people to the abilities of those using vision show no differences as to mechanisms and the efficiency levels of spatial functioning . The only difference is the stimuli input, in that the blind and visually-impaired people navigate and orientate themselves and rely on different and a greater number of environmental clues (Golledge & Stimson, 1997, p. 510). For example, instead of seeing obstacles, they hear them through echolocation (Dolański, 1954), such as is the case for the walls, other barriers, and entrances. Such features reflect sounds, regulate airflow and provide nonvisual information about a spatial layout. The affordances are the sources of sounds and social stimulation which provide clues regarding the social contexts. The extreme users' empirical perspective also questions the fundamental and often implicit assumption that links affordances with the ecological approach to visual perception (Gibson, 1979/1986; Lynch, 1960). As empirical research has shown (e.g., Kuryłowicz & Bogucka, 2011; Bogucka, 2011; Bogucka, 2012; Bogucka, 2013; Bogucka, 2018), not solely visual information is responsible for identifying and using the affordances of the environments and objects.

Stimulation and Affective Reactions as a Background of Experiencing Legibility and Coherence

Legibility and coherence of space should be analysed in the context of experienced stimulation from the environment and the affective appraisal of it. The quality and comfort of spatial and social functioning stem from the types and levels of stimulation we experience in a given setting. Our understanding of the environment (in both the social and spatial dimension) depends, among other things, on our perceptual abilities. On the one hand, an environment's qualities contribute or not to its legibility and coherence, while on the other, this legibility and coherence is a result of our capabilities to process the stimuli.

At the elementary level, we in fact do not experience the legibility and coherence of a place. Instead, we experience the stimulation as our reaction to the environment. There are three primary kinds of stimulation: sensory, resulting from social interactions, and this caused by our movement (Wohlwill, 1974). The environment is a source of these three types of stimulation (directly and indirectly). We tend to look for optimal (meaning: desirable) levels of stimulation. There are individual differences in our preferences, but we can distinguish stable trends in how people react to specific stimulations from the environment. Therefore, it is possible

to predict that some settings might be overstimulating, for instance, noisy or overcrowded. Based on Kaplan's Attention Restoration Theory (Kaplan, 1995), natural settings or elements thereof in the urban environment might regulate stimulation positively, while monotonous places (i.e. characterized by a low level of complexity) cause under-stimulation.

We can react to the environment with stimulation on a continuum from low to high. Russell (1980, 1988) adds a second – evaluative – dimension indicating if the stimulation is experienced positively or negatively. Declarative affective appraisal indicates that places with certain qualities can make us feel stressed, irritated, excited, or delighted; others might lower our level of stimulation (i.e. causing boredom and sleepiness) or in a positive way (making us relaxed and calm).

How are legibility and coherence connected with the levels and types of experienced stimulation and affective appraisal of the environment? Their role is best seen when we experience the psychological consequences of them being absent. An environment experienced as illegible and incoherent increases the stimulation level during spatial functioning by decreasing the sense of security (Koseoglu & Camas, 2016). Spatial orientation and wayfinding are complex tasks (primarily when performed without visual information). The Yerkes-Dodson law indicates that the best performance favours a moderate level of stimulation. Therefore, a higher level of stimulation (potentially caused by an illegible environment) impacts our effectiveness in complex tasks like spatial orientation and wayfinding (Yerkes & Dodson, 1908; Diamond et al., 2007). Overstimulation, the lack of coherent and legible patterns makes finding the clues about possible affordances difficult. It leads to "misaffordances" (Heft, 1997), causing environmental stress, frustration, annoyance, and helplessness (Evans & Cohen, 1987; Norman, 1988). On the contrary, legible and coherent environment enhance social interactions and social sustainability by making the environment accessible (Moulay, Ujang, & Said, 2017).

Linking perceived legibility and coherence to stimulation and multisensory experience makes environmental preferences a dynamic and situational concept (i.e. dependent on what we do in the environment) which is also context-dependent and specific (i.e. dependent on what is happening in a given environment and in a given time). Therefore, evaluation of a static picture (like in Kaplan's protocols) is insufficient to conclude about environmental preferences and perceived legibility and coherence of place. Our phenomenological lifeworld is multisensory; the same applies to the perception of legibility and coherence thereof. This extended concept of legibility and coherence accompanied by user-centred design requirements impose methodological changes in empirical research, starting from the research goal.

A New Research Goal – From Basic to Applied Research Measurements and Design Evaluation

The basic research procedure proposed by Kaplan and Kaplan (1989) served a research goal to identify the environmental preferences of the general population. The Kaplans asked what environmental qualities meet preferences of people (what people like or dislike). A review of early research provided by Kaplan (1987) answers this question to some extent: human beings prefer savannah-like environments as this type of scenery provides the right mix of four informative qualities (legibility, coherence, mystery, and complexity) . It does not mean, though, that every designed environment should resemble the savannah. We may try, however, to achieve a balance between informative variables that meet people perceptual capabilities.

As opposed to the basic research goal, the applied research goal is closely connected to the design task. The applied research approach involves changes in research procedures and research material selection. In basic research protocols, we have a set of images: representations of heterogeneous environments to the extent that they facilitate inquiry into general human preferences. In applied research protocols, instead of a diverse set of environment representations, we use research material that refers to various designs of the same place, which makes it possible to verify which design solutions are preferred the most by future or potential users. Employing applied research procedure and goals makes the already mentioned Kaplan's theory applicable in design practitioners' workflow.

Practical Implementation of the Applied Research Approach to Environmental Preferences

The proposed theoretical framework requires different research protocols from those used in basic research. If the empirical research goal should be valid for a design practitioner's workflow, it must accurately verify the design decisions that affect people's environmental preferences.

Summing up the first three theoretical framework elements, we need to address in empirical research the social and spatial functioning accompanied by multisensory experienced levels and characteristics of stimulation (manifested in affective appraisal) and the perceived qualities of affordances and ambience. An experiment is an empirical research method that helps establish the relations between independent variables and dependent ones. Here independent variables are the qualities of the environment and dependent – affective reactions to the environment, stimulation level, perceived comfort of affordances, performance in spatial functioning tasks. Two exemplary experiments presented in the following sections show how

the proposed theoretical framework may be implemented in the research procedure to verify the design solutions from the users' perspective. The first example refers to the legibility and coherence of space inferred from nonvisual information in the context of social functioning. The second one addresses the spatial functioning scope of nonvisual legibility and coherence of the environment.

Experiment 1

The first experiment (Bogucka, 2013) is an example of ways to measure the influence of soundscape on the perceived social functionality of an environment.[1] The research question was: What is the role that soundscape plays in users' perception of ambience, social functionality of place, and in their perception of the built environment's affective qualities?

The research goals include:

- The identification of the role and significance of sound information in the perception of ambience.
- The investigation of a method to verify the soundscape influence on functionality and ambience perception at the design stage.

Method

Experiment Design

In a two-way analysis of variance, three different soundscapes (S0: silence – the control condition, S1: traffic sounds, S2: people activity sounds) were crossed with two public space schematic urban plans (P1 – dominated by infrastructure for cars, P2 – dominated by infrastructure for pedestrians). The additional one-way factorial analysis (two soundscapes (S1, S2) presented without schema of the places) was conducted to identify the differences between soundscapes' perception in two dimensions: (1) audibility of various sounds (people activity, traffic and nature), (2) the characteristics of soundscapes based on the semantic differential scale.

Research Materials

Places' Schemas

Two samples of public spaces as schemas were based on layouts of urban squares in Warsaw, Poland. The presented places' orientation was

[1] R language (R Core Team, 2013) was used for statistical analysis.

changed not to make them as easy to recognise as existing sites. The ratio of the area occupied by the streets to the sidewalk differentiates these public spaces. Place 1 has more road infrastructure than place 2 compared to the sidewalks (see Figure 1).

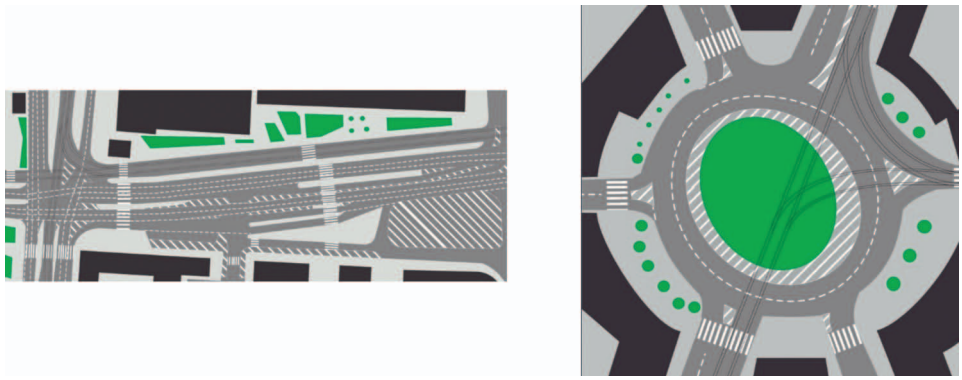

Figure 1

The schematic plans of the two sites used in experiment (Place 1 – left, Place 2 – right)

Samples of Soundscapes

The audio samples were recorded in two public spaces in Warsaw (different from those on schematic plans) using binaural microphones. The soundscapes used in the study were 70 seconds long each. Due to the unbalanced samples of respondents (consisting of various numbers), soundscapes were compared using a non-parametric Kruskal-Wallis rank-sum test in experimental condition without place representation. The number of respondents (subjects) who took part in the experiment amounted to 103.

The rank-sum test results show that soundscape 1 is significantly more dominated by traffic sounds, while soundscape 2 is dominated by people sounds. Nature sounds were heard at the same low level in both soundscapes (Table 1). Only one characteristic differentiates the studied soundscapes significantly: soundscape 2 (S2) appeared more compelling than soundscape 1 (S1). Trends show that soundscape 1 (S1) might be slightly more unpleasant and more homogeneous (Table 2).

Table 1

Differences between soundscapes based on intensity of sounds from different sources

Sound sources	Soundscape	*N*	*M*	*Median*	*SD*	Kruskal-Wallis rank-sum test		
						χ^2	*df*	*p*
People activity	S1	57	2.8	3	1.0	41.6	1	**<0.001**
	S2	46	4.2	4	0.9		1	
Traffic	S1	57	4.4	5	1.0	6.2	1	0.01
	S2	46	4.0	4	1.1		1	
Nature	S1	57	1.8	2	1.1	1.5	1	0.22
	S2	46	1.5	1	0.7		1	

Table 2

Differences between soundscape characteristics

Sound attribute	Soundscape	*N*	*M*	*Median*	*SD*	Kruskal-Wallis rank-sum test		
						χ^2	*df*	*p*
interesting – boring	S1	57	7.3	8	2.51	13.39	1	**<0.001**
	S2	46	5.3	5	2.45		1	
various – homogenous	S1	57	6.1	6	2.80	3.40	1	0.065
	S2	46	5.1	5	2.73		1	
unpleasant – pleasant	S1	57	3.3	3	2.23	3.01	1	0.08
	S2	46	3.8	4	2.05		1	
absorbing – unabsorbing	S1	57	5.4	5	2.63	2.26	1	0.13
	S2	46	4.6	4.5	2.57		1	
disturbing – non- disturbing	S1	57	3.7	3	2.91	0.01	1	0.91
	S2	46	3.6	3	2.64		1	
predictable – unpredictable	S1	57	3.8	3	2.37	1.69	1	0.19
	S2	46	4.6	3	2.86		1	
discordant – harmonious	S1	57	3.3	3	0.20	0.11	1	0.74
	S2	46	3.5	3	2.30		1	
loud – quiet	S1	57	2.8	2	2.51	0.00	1	0.94
	S2	46	2.5	2	1.77		1	
Cronbach's α = 0.69								

Dependent Variables

Soundscapes' Comparison

As shown above, the differences between soundscapes relate to two dimensions:

1. The identification of the level of sounds of people, traffic, and nature that was heard.
2. The semantic differential concerning sound characteristics.

The sounds of people, traffic, and nature were evaluated on a 1–5 scale, where 1 – not heard, 5 – completely dominates. The sounds' characteristics were rated on a semantic differential scale of 1 to 10 using the following pairs of adjectives:

- unpleasant – pleasant,
- various – homogeneous,
- absorbing – unabsorbing,
- disturbing – non-disturbing,
- predictable – unpredictable,
- discordant – harmonious,
- loud – quiet.

Another pair of opposite adjectives, namely: interesting – boring was used to evaluate the characteristic of soundscapes.

Public Spaces' Evaluation

The evaluation of public spaces was based on the following three dimensions:

1. Perceived affordances relating to social functioning and their quality.
2. Place characteristics concerning the ambience of places.
3. Perceived affective quality of the environment.

Social Functionality (Affordances) Scale

The items in this scale evaluate perceived affordances and their qualities. Using a 5-stage scale (from "definitely does not fit" to "definitely fits"), participants evaluated an adequacy of a given place for specific activities grouped into three categories: physical activities, meetings, and mental activities (Table 3).

Table 3

Factor analysis of social functionality scale. Principal axis factoring with varimax rotation

Activities in public spaces	I	II	III	IV
Reading	0.387	0.191	**0.764**	
Spending time in front of the restaurant, cafe (Is there a place suitable for restaurant's tables?)	**0.585**	0.407	0.417	0.140

Table 3 continued

Activities in public spaces	I	II	III	IV
Using laptop, tablet	0.261	0.250	**0.653**	0.200
Scheduling a meeting in characteristic place	0.241	0.405	0.138	**0.431**
walking (or: walking a dog)	**0.692**	0.309	0.260	
meeting with large group of people	0.367	**0.785**	0.271	0.118
meeting with small group of people	0.503	**0.603**	0.324	
spending time with children	**0.754**	0.301	0.251	–0.121
walking through a place without stopping	–0.138			**0.454**
observing the surroundings	0.204	0.203	0.200	**0.667**
sitting on a bench	**0.623**	0.220	0.295	0.377
sports activities	**0.700**	0.180	0.227	
SS loadings	2.993	1.718	1.691	1.079
Proportion Var	0.249	0.143	0.141	0.090
Cumulative Var	0.249	0.393	0.533	0.623
Cronbach's α = 0.89				

The factor analysis with varimax rotation shows four factors that emerged from the questionnaire: physical activities, meetings, mental activities, and being a passive observer. The first factor accounts for 25% of explained variance, the second and third factors account for 14% of explained variance. The fourth factor – being a passive observer – for 9% of explained variance (Table 3).

Ambience Characteristics Scale

The ambience characteristics of places were examined using the semantic differential of 14 items. The respondents answered on the scale from 1 to 10.

The factor analysis with varimax rotation (Table 4) refers to five factors described by the following pairs of adjectives: 1) friendly – unfriendly, 2) constant – variable, 3) comfortable – uncomfortable, 4) inflexible – flexible, 5) varied – homogeneous. The first factor accounts for 24% of explained variance. The second and third factors both account for 13% of explained variance. The fourth factor for 6% and the fifth for 4% of explained variance.

Table 4

Factor analysis of ambience characteristics scale. Principal axis factoring with varimax rotation

Ambience characteristics	I	II	III	IV	V
intimate – open	0.171		**0.508**		
warm – cold	**0.603**		0.322	–0.201	
friendly – unfriendly	**0.802**	0.102	0.412	–0.124	
inviting – unappealing	**0.786**	0.108	0.394	–0.135	
happy – sad	**0.717**		0.181	–0.230	0.299
familiar – unfamiliar	**0.672**	0.121	0.199		0.253
sophisticated – common	0.296		**0.621**	–0.123	0.293
comfortable – uncomfortable	0.515	0.119	**0.648**	–0.141	
ordered – chaotic	0.227	0.476	0.462		0.183
predictable – unpredictable	0.118	**0.819**			
simple – complicated	0.109	**0.635**	0.180		
constant – variable	–0.183	**0.598**	0.101	0.393	–0.195
inflexible – flexible	–0.364	0.302	–0.112	**0.733**	–0.134
diverse – homogeneous	0.346	–0.264		–0.197	**0.470**
SS loadings	3.335	1.882	1.835	0.909	0.576
Proportion Var	0.238	0.134	0.131	0.065	0.041
Cumulative Var	0.238	0.373	0.504	0.569	0.610
Cronbach's $\alpha = 0.79$					

The Affective Quality of Environment Scale

The scale of the affective quality of the environment follows Russell and Pratt's (1980) circumplex model of affect (Figure 2). The affective qualities of places were measured on the 16-items scale (from 1 – "definitely not" to 5 – "definitely yes"). The items were grouped into four factors on two bipolar dimensions: a level of stimulation (arousal – sleepiness) and its sign (pleasant – displeasing). The 16 adjectives were based on the Polish adaptation of Russell's model (Russell, Lewicka, & Niit, 1989) and Russell, Ward and Pratt's (1981) factor analysis of affective quality attributed to the environment.

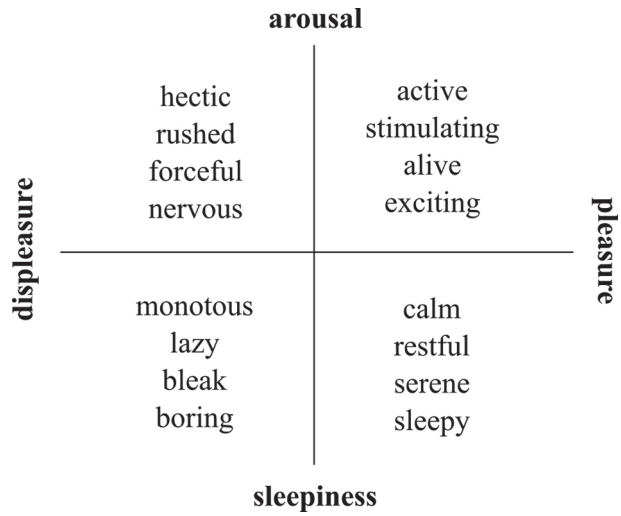

Figure 2

Affective quality of environment scale based on Russell and Pratt (1980) circumplex model of affect and Russell, Ward and Pratt (1981)

Procedure

The study was a computer-assisted web interview. Research material in every experiment condition was presented as a film with a static plan presentation and with or without the soundscape soundtrack. Each film was 70 seconds long. Research material was presented randomly to the participants. After the presentation of a public space, participants filled out the questionnaire about the soundscape characteristics and the place features.

Results

Participants

Seventy-four subjects living in Poland took part in this experiment: 179 (65%) females and 95 (35%) males in the18–63 years age group. Most of them (65%) lived in big cities (with population of over 500,000 inhabitant), 31% in smaller cities (from 20,000 to 500,000 inhabitants), while 4% lived in villages. 68% hold a university-level education, 17% declared unfinished university-level education, 12% declared high school level-education, and 3% have primary school-level education.

How Does the Types of Soundscape and Place Influence Perception of Affordances' Quality?

Physical Activities

A two-way ANOVA shows the significant place effect ($F(1, 268) = 6.704$, $p = 0.01$) on the perceived quality of physical activities (Figure 3). Place 2 was rated as more suitable for physical activities than place 1 when presented without any soundscape.

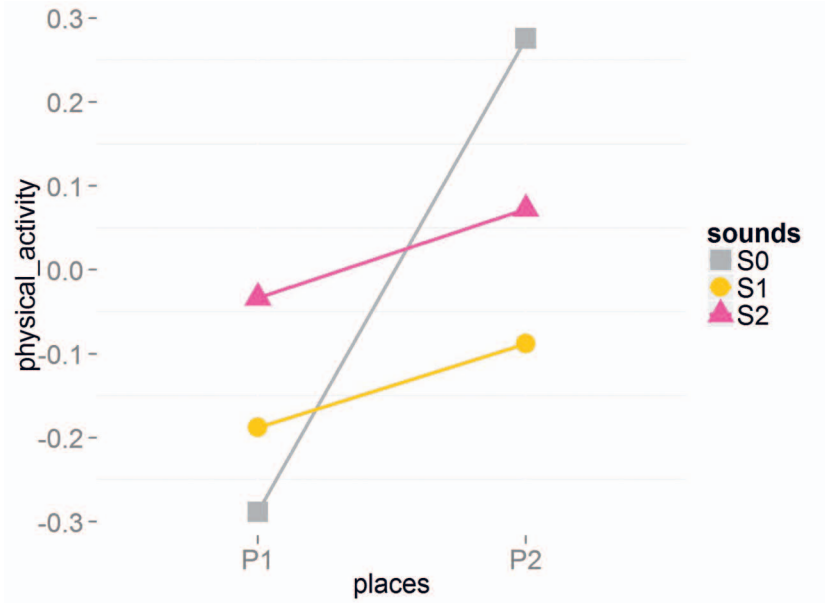

Figure 3

Mean places' suitability for physical activity as a function of the place and the soundscape

Mental Activities

Significant place effect ($F(1, 268) = 4.361$, $p = 0.04$) also influenced the perception of the places as suitable for mental activity. A significant interaction between the place and the soundscape effects ($F(2, 268) = 3.101$, $p = 0.05$) shows that the car soundscape increases the ratings of car place as suitable for mental activities and lowers the ratings of people place in this factor (Figure 4).

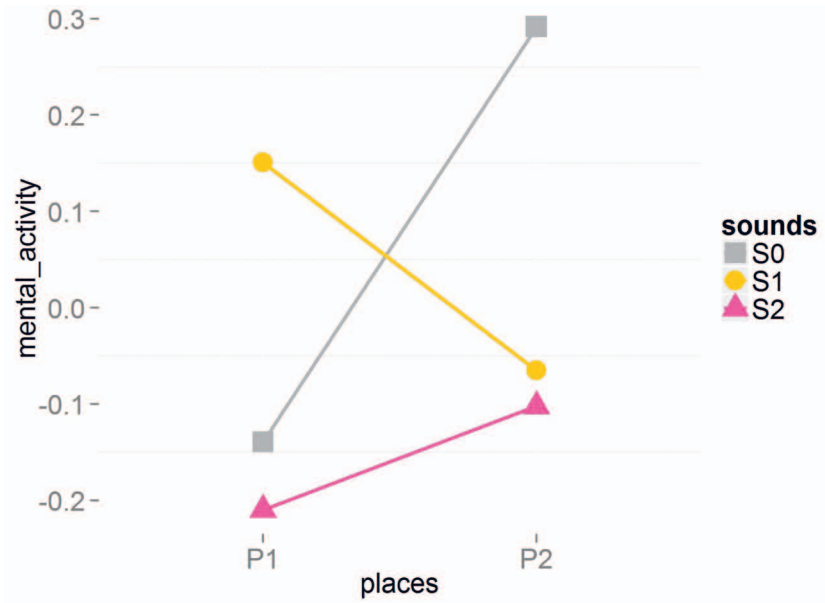

Figure 4

Mean places' suitability for mental individual activities as a function of the place and the soundscape

Meetings

There is a significant sound effect ($F(2, 268) = 8.252$, $p < 0.001$) on the evaluation of the places as suitable for meetings (Figure 5). The Tukey multiple comparisons of means show differences between S0, S1 and S1, S2 ($p < 0.05$ in both pairs) (Table 5). Adding two different soundscapes to the presentation of place 1 (car place) changed its evaluation from good for meetings with people soundscape (S2) to worse with car soundscape (S1).

Table 5

Tukey post hoc tests for soundscape effects on perceived quality of affordances referring to meetings

Comparison	Estimator	Lower	Upper	Statistic	P
S0, S1	0.366	0.270	0.474	–2.883	**0.011**
S0, S2	0.482	0.377	0.589	–0.385	0.930
S1, S2	0.619	0.525	0.706	2.940	0.008

There is also a significant interaction of the place and sound effects ($F(2, 268) = 5.583$, $p = 0.004$) on the place ratings concerning meetings (Figure 5). Soundscapes changed places ratings differently for each place. In

the car place case (P1), people-soundscape (S2) elevate the ratings, causing the place to look more suitable for meetings. In contrast, both soundscapes slightly lowered the car place (P2) ratings compared to the experimental control condition (without soundscapes).

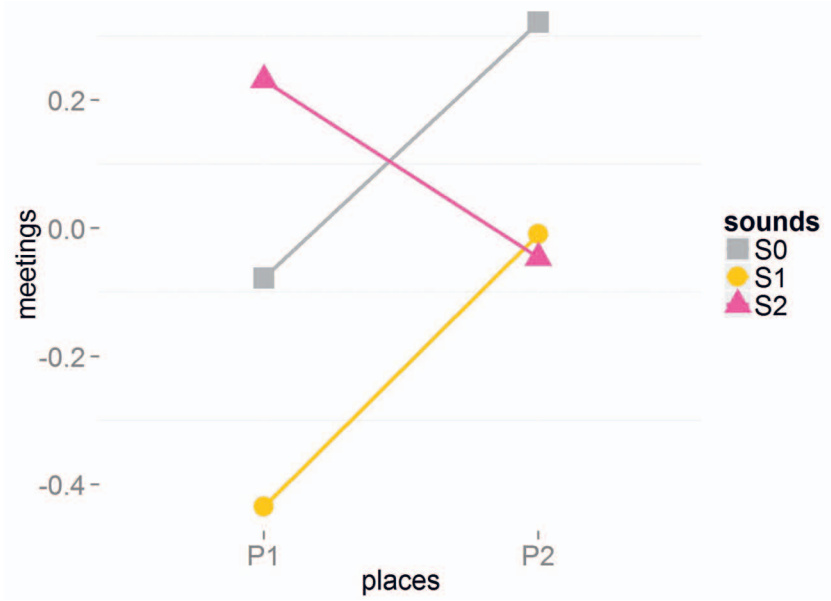

Figure 5

Means of places' suitability for meetings as a function of the place and the soundscape

Passive Observation

There were no significant effects of the places and the soundscapes on evaluating places on the fourth factor – being a passive observer.

Quality of Affordances Summary

The two-way analysis of variance shows that the ratings of the places presented without soundscape (S0) are more polarised than those with soundscapes. The people place (P2) is better for physical activities and mental activities than the car place (P1). Both soundscapes lower the ratings of the people place (P2) (significantly only in the meetings' affordances). The people soundscape (S2) improves the ratings of meetings' affordances in the car place (P1) in comparison to the car soundscape (S1) significantly. In summary, the people soundscape (S2) makes places unsuitable for mental activities, while the car soundscape (S1) does not. Although car soundscape is not disturbing mental activities, car place (P1) with car soundscape (S1) lower the quality of meetings' affordances.

How do Soundscapes and Place Types Influence the Perception of the Place Ambience's Features?

Friendly – Unfriendly Continuum

The two-way ANOVA shows significant place effect ($F(1, 268) = 20.353$, $p < 0.0001$) (Figure 6). The car place (P1) was always rated as more unfriendly. The interaction between the soundscape and place effects is also significant ($F(2, 268) = 5.4$, $p = 0.005$). The soundscape effects varied between places. In the car place (P1) case, the soundscapes lower the unfriendly impression. The soundscape's effect is also significant ($F(2, 268) = 13.457$, $p < 0.0001$). The post hoc Tukey test shows significant differences in S0, S2 and S1, S2 pairs (Table 6). People soundscape (S2) makes both places friendlier.

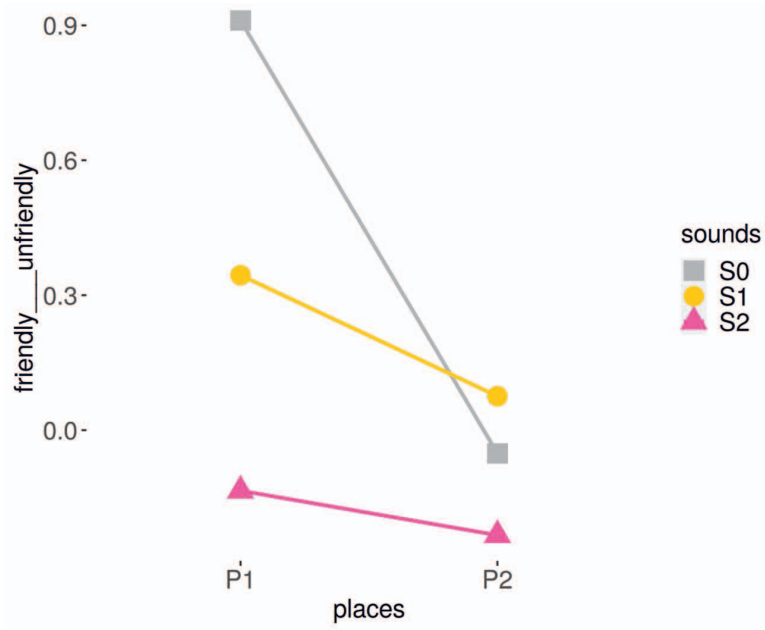

Figure 6

Means on friendly – unfriendly continuum as a function of the place and the soundscape

Table 6

Tukey post hoc tests for soundscape effects on perception of a place's ambience on friendly – unfriendly continuum

Comparison	Estimator	Lower	Upper	Statistic	p
S0, S1	0.454	0.347	0.566	–0.950	0.611
S0, S2	0.361	0.264	0.471	–2.923	**0.009**
S1, S2	0.376	0.290	0.470	–3.063	**0.005**

Comfort – Discomfort Continuum

The two-way ANOVA shows significant place effect (F(1, 268) = 7.38, p = 0.007) influencing the perception of places' ambience. The car place (P1) is perceived as more uncomfortable than the people place (P2) when presented without any soundscapes (Figure 7).

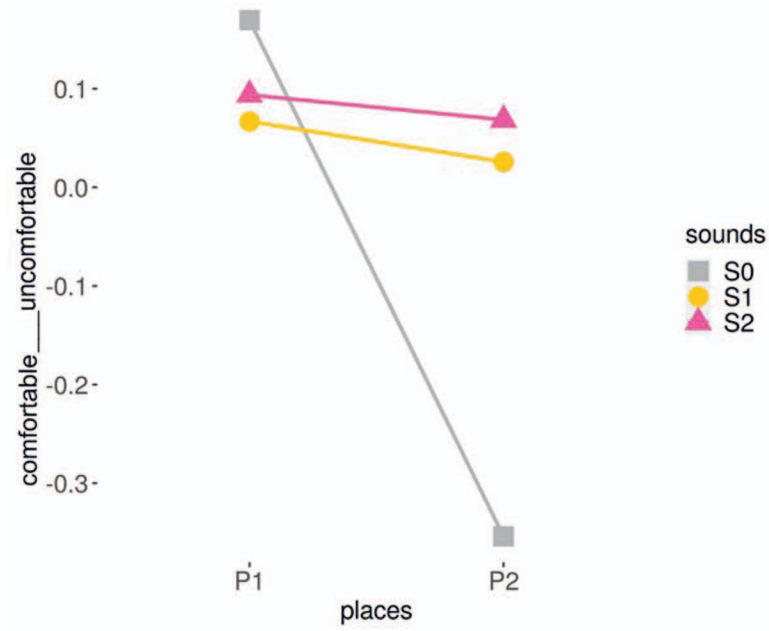

Figure 7

Means on comfortable – uncomfortable continuum as a function of the place and the soundscape

Constant – Variable Continuum

There is a significant place effect (F(1, 268) = 10.367, p = 0.001) on perception of places as more constantly or variable (Figure 8). The car place (P1) was more variable than the people place (P2). There is also a significant soundscape effect (F(2, 268) = 6.58, p = 0.002). Significant differences were between S0, S2, and S1, S2 pairs (Table 7). The people soundscape (S2) moves ratings of both places toward more variables than the car soundscape (S1). In the people place (P2) case, every soundscape moves ratings of ambience toward a more variable characteristic, while in the car place (P1) case, soundscapes change ratings to more constantly characteristic. The interaction effect of the place and the soundscape factors is significant (F(2, 268) = 4.799, p = 0.009).

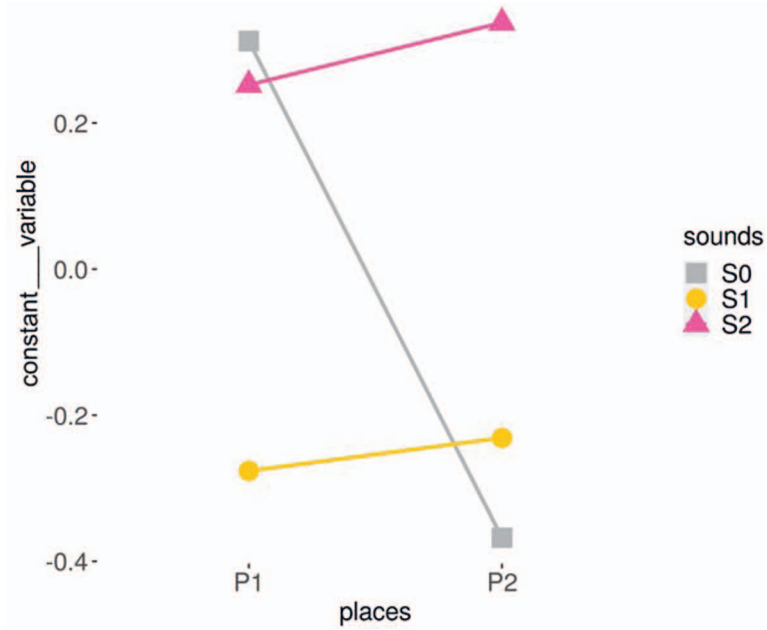

Figure 8

Means on constant – variable continuum as a function of the place and the soundscape

Table 7

Tukey post hoc tests for sound effects on perception of a place's ambience on constant – variable continuum

Comparison	Estimator	Lower	Upper	Statistic	p
S0, S1	0.455	0.351	0.563	–0.983	0.598
S0, S2	0.640	0.530	0.737	2.967	**0.008**
S1, S2	0.687	0.593	0.767	4.522	**>0.001**

Inflexible – Flexible Continuum

The significant soundscape effect (F(2,268) = 5,005, p=0,007) was shown in places' evaluation on inflexible – flexible continuum (Figure 9). The Tukey test (Table 8) indicates significant differences between S0, S2 and S1, S2 pairs. The people soundscape (S2) moves both places ratings toward more flexibility in comparison to the silence experiment condition (S0) and the car soundscape (S1).

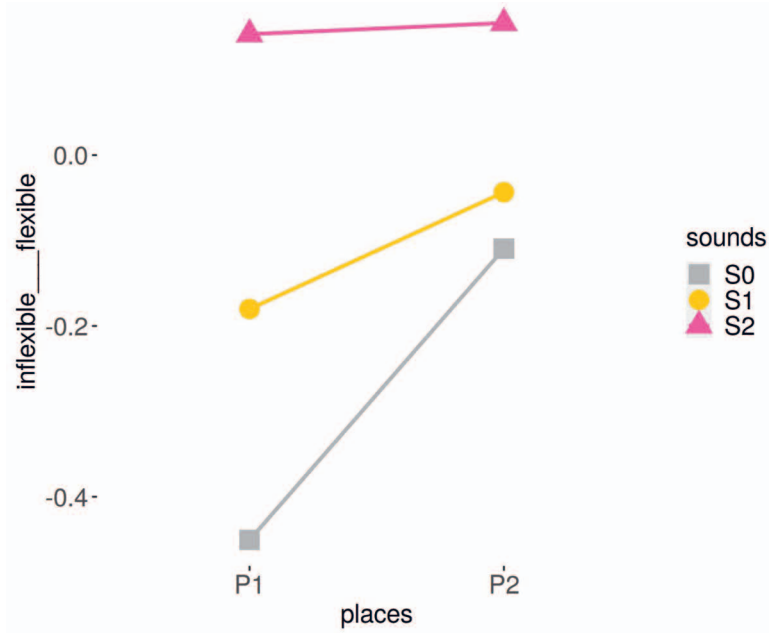

Figure 9

Means on inflexible – flexible continuum as a function of the place and the soundscape

Table 8

Tukey post hoc tests for sound effects on perception of a place's ambience on inflexible – flexible continuum

Comparison	Estimator	Lower	Upper	Statistic	P
S0, S1	0.554	0.445	0.658	1.154	0.484
S0, S2	0.636	0.529	0.731	2.959	**0.007**
S1, S2	0.598	0.503	0.686	2.408	**0.042**

Varied – Homogeneous Continuum

There were no significant effects of places and soundscapes on the evaluation of place concerning the fifth factor: varied – homogeneous dimension.

Summary of Ambience Characteristics

The soundscape with people sounds prevailing makes both places more friendly. More diverse and interesting soundscape (people soundscape, see Table 2) translates into the both places scoring higher on flexible and variable dimensions. The inflexible – flexible continuum of places evaluation was determined only by the information delivered by soundscapes.

How do Soundscapes and Place Types Influence the Perception of the Environment's Affective Qualities?

A two-way analysis of variance was conducted for four factors from Russell et al.'s (1980) circumplex model of affect (Table 9, Figure 10). The two-way ANOVA indicates significant place effects in (a) arousal – displeasure and (d) sleepiness – pleasure continua. The car place (P1) tends to be perceived as more arousal-displeasure (e.g., tense) and less sleepiness-pleasure than the people place (P2).

Table 9

Two-way ANOVA of environment's affective qualities

Source of variance	Dependent variable	ANOVA		
		df	*F*	*p*
Place	arousal pleasure	1	0.7216	0.3964
Soundscape		2	3.8621	**0.0222**
Place x soundscape		2	0.3149	0.7301
Place	arousal displeasure	1	11.0104	**0.0010**
Soundscape		2	0.8756	0.4177
Place x soundscape		2	3.4525	**0.0331**
Place	sleepiness pleasure	1	16.9887	**>0.0001**
Soundscape		2	3.8199	**0.0231**
Place x soundscape		2	7.7092	**0.0006**
Place	sleepiness displeasure	1	0.9937	0.3197
Soundscape		2	4.7295	**0.0096**
Place x soundscape		2	0.0493	0.9519

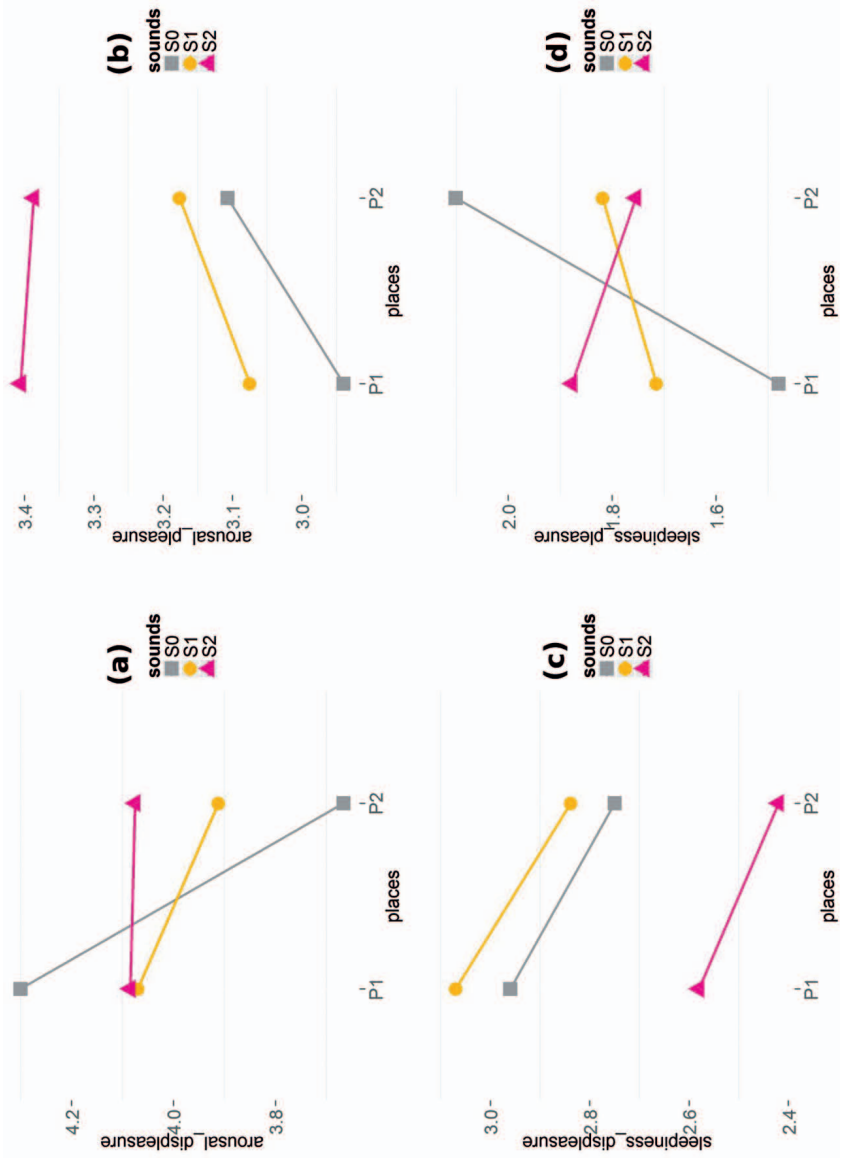

Figure 10

Means of places' affective qualities: (a) arousal displeasure, (b) arousal pleasure, (c) sleepiness displeasure, (d) sleepiness pleasure as a function of the place and the soundscape

The Tukey tests show significant differences in sound effect in (b) arousal – pleasure continuum, in pairs: S0, S2, and S1, S2; in (c) sleepiness – displeasure continuum, in pairs: S0, S2, and S1, S2. The Tukey test also shows no differences between particular soundscapes in (d) sleepiness – pleasure continuum (Table 10). Significant interaction's effects are noticed in (a) arousal – displeasure and (d) sleepiness – pleasure continua. In both cases, the soundscapes equalise the affective evaluation compared to the silence condition (S0). The soundscapes lower the positive (sleepiness – pleasure) rates of the people place (P2) and increase the negative ones (arousal – displeasure).

Table 10

Post hoc Tukey tests for Russell et al.'s (1980) circumplex model of affect

Dimension	Comparison	Estimator	Lower	Upper	Statistic	P
arousal pleasure	S0, S1	0.519	0.414	0.623	0.423	0.913
	S0, S2	0.626	0.520	0.720	2.781	**0.014**
	S1, S2	0.607	0.512	0.694	2.642	**0.022**
sleepiness displeasure	S0, S1	0.541	0.431	0.647	0.868	0.667
	S0, S2	0.390	0.293	0.496	–2.436	**0.039**
	S1, S2	0.341	0.259	0.434	–3.911	**0.0002**
sleepiness pleasure	S0, S1	0.459	0.353	0.568	–0.879	0.653
	S0, S2	0.474	0.368	0.582	–0.563	0.843
	S1, S2	0.510	0.418	0.602	0.258	0.968

Rates of both places with people soundscape (S2) were the highest on the arousal – pleasure continuum (e.g. exciting) and the lowest on the sleepiness – displeasure one (e.g., boring). In the silence condition (S0), both places were rated significantly different on the sleepiness – pleasure (e.g., relaxing) and the arousal – displeasure (e.g. tense) continua. Adding soundscape equalised the places' rates.

Discussion

In this experiment, the design outcomes (two schematic plans of public places) stayed unchanged while their ratings varied under the diverse soundscape conditions. The soundscapes contribute significantly to the changes in the perception of type and stimulation level of the surroundings presented as a schematic plan. The associations people have in relation to

social functionality and the ambience of public space are subject to change when information relating to sound is added.

The sounds in the built environment can bring a considerable amount of information about what is happening (Rodaway, 1994). Besides information, the sounds from the environment are essential sources of certain levels and kinds of stimulation. For example, places designed with the dominance of traffic infrastructure are "the worst-case scenario" for meetings with other people and are experienced not only visually as car places but also aurally. This negative experience of the car-dominated places decreases when it is possible to hear the people soundscape. The soundscape components (like people activities, cars, nature) add information about possible social functionality. Its intensity and diversity might be sources of information about the quality of these affordances based on places' ambience and the experienced affective reactions to the environment.

The soundscape as an emotionally engaging feature of an environment (Fiebig, Jordan, & Moshona, 2020) might be a significant factor in modulating participants' ratings about social functionality and ambience in presented places. That explains why places' adequacy for various activities changes under different sound conditions. Therefore, considering the acoustic dimension of designed or evaluated space contributes significantly to predictions about the final effect of the design process perceived from the users' perspective.

These results lead to practical implications. First, it is worth planning the acoustic features (not only a noise level) parallel to the visual attributes during the design process as the factor influencing the end users' experience. Following that, it is crucial while planning and designing to consider the level and character of the stimulation planned to achieve and then translate it into physical and acoustical features of the designed environment.

Experiment 2

In the second experiment, the research goal was to verify the urban environment's legibility at the concept design stage from a blind person's perspective (Kuryłowicz & Bogucka, 2011). We used tactile maps of four students' urban designs to check which were easier to learn and more legible for blind users. The structured interviews accompanied the experiment method. The main research question was whether it was possible to verify the designed place's legibility based on nonvisual cues about spatial qualities. How can we use tactile maps in the urban and architectural design process? How can we verify the design outcomes

using tactile maps (e.g. legibility of the built environment configuration for blind users)?

The research goal was to verify which of the urban design projects prepared by students were easy to learn, and thus, more legible. It had been anticipated that the complexity of the spatial system of presented projects would alter the ease of learning a given site from a tactile map. It had been assumed that blind persons will be able to indicate, using tactile maps, potential problems concerning spatial orientation.

Method

The research consisted of triangulating the two research methods: experiment and structured interview supported by mapping technique. The experiment was designed as a one-way ANOVA with repeated measures. The order of the presented site's plans was randomised between subjects. Interviews provided qualitative data on the evaluation of design projects and the usefulness of tactile maps of presented spaces. Evaluation of the place's legibility was mapped on schematic tactile maps of design projects.

Research Materials

We used urban designs devised by four students of architecture. Their task was to transform and redesign the Pichelsberg Tip (Olympic Park close to Berlin, Germany) into an attractive, functional, and fully accessible compound for sports and stage events alike. Urban plans were presented to participants as schematic and simplified tactile maps (mobility maps according to James's (1982) classification). The maps were prepared in Braille printing technique.

Dependent Variables

There were five dependent variables in the experimental phase of the study:

1. Time spent on getting familiar with the map.
2. Time needed to find the preferred route from place A to B (from the train station to the amphitheatre).
3. Time of indicating the chosen path from A to B.
4. Number of the attempts to show the path (amount of change in chosen initially route).
5. Number of errors in following the chosen path.

The structured interview's questions that followed the experiment phase regarded the most accessible paths and the most difficult places on the site plans.

Procedure

The study was carried out in three phases:
1. Learning (dependent variable no. 1).
2. Analysing (dependent variables no. 2–5).
3. Evaluating (structured interview).

In the evaluation phase, the participants were asked to show the most accessible paths and potentially most confusing places (where they might have got lost or experienced difficulties in spatial orientation) and explain their choices.

Results

Participants

Twelve blind and visually impaired participants (six females and six males) aged 32–74 took part in the experiment. Ten of them were gainfully employed; nine hold a higher-education degree. Seven people were blind from birth; three had lost sight during childhood. Two respondents were visually impaired: one had lost sight at the age 15, whereas another already in adulthood – two years prior to the experiment. All respondents declared they go out from home every day and use a white cane. Five persons declared the use of a guide. Eleven respondents use public transportation. All of them read Braille and had previous experience with tactile graphics.

Experimental Phase: The Impact of the Differences in the Urban Plan's Features on the Level of Performance in Tasks Involving Maps

One-way ANOVA with repeated measures showed no significant differences between four urban plans on all five dependent variables (Table 11).

Table 11

One-way ANOVA with repeated measures of dependent variables on four urban plans

Dependent variables	Plan A N = 12		Plan B N = 12		Plan C N = 12		Plan D N = 12		ANOVA		
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*df*	*F*	*p*
1. Time spent on getting familiar with the map	117.58	69.02	98.08	47.18	119.50	74.87	92.33	38.02	3. 33	1.25	>.05
2. Time of looking for a preferred route from place A to B (from the train station to the amphitheatre)	39.67	27.84	30.83	19.45	51.50	52.96	51.50	43.73	3. 33	0.83	>.05
3. Time of showing the chosen path from A to B	26.58	25.48	22.50	14.63	12.25	14.47	24.42	30.45	3. 33	1.05	>.05
4. Number of the attempts to show the path (amount of change in chosen initially route)	1.83	0.83	1.42	0.67	1.67	0.78	1.67	0.89	3. 33	0.79	>.05
5. Number of errors in the following chosen way	1.17	1.70	1.08	1.68	0.17	0.39	1.00	0.95	3. 33	1.67	>.05

Spatial and Qualitative Evaluation of Urban Designs Legibility

Structured interviews followed tasks on maps. First, respondents were asked to indicate which map was the easiest and which one the most difficult in terms of learning and analysing tasks. Indicated as the easiest were plans B and D. Plan C was the most frequently indicated as the most difficult to learn (Figure 11).

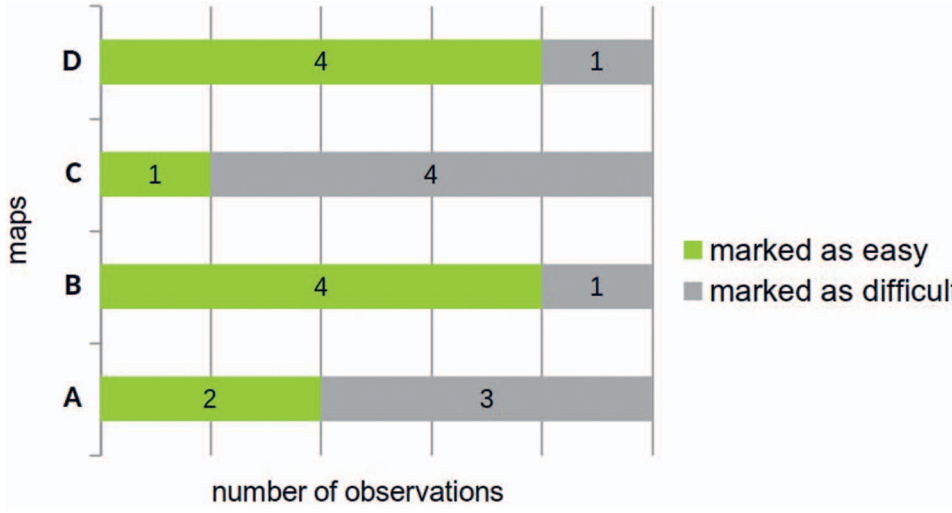

Figure 11

Quantity of general rates of tactile maps declared as easy and difficult by the respondents

Then, the respondents were asked to explain why they choose specific paths, what was especially legible or illegible on the urban plan, which places were potentially illegible and why.

The difficult places. According to the participants' indications, the illegible places on urban designs in question (Figure 12) were:

- intersections of more than two roads,
- intersections of/between non-perpendicular streets,
- the paths that are in an arc shape,
- wide-open spaces without any orientation point(s).

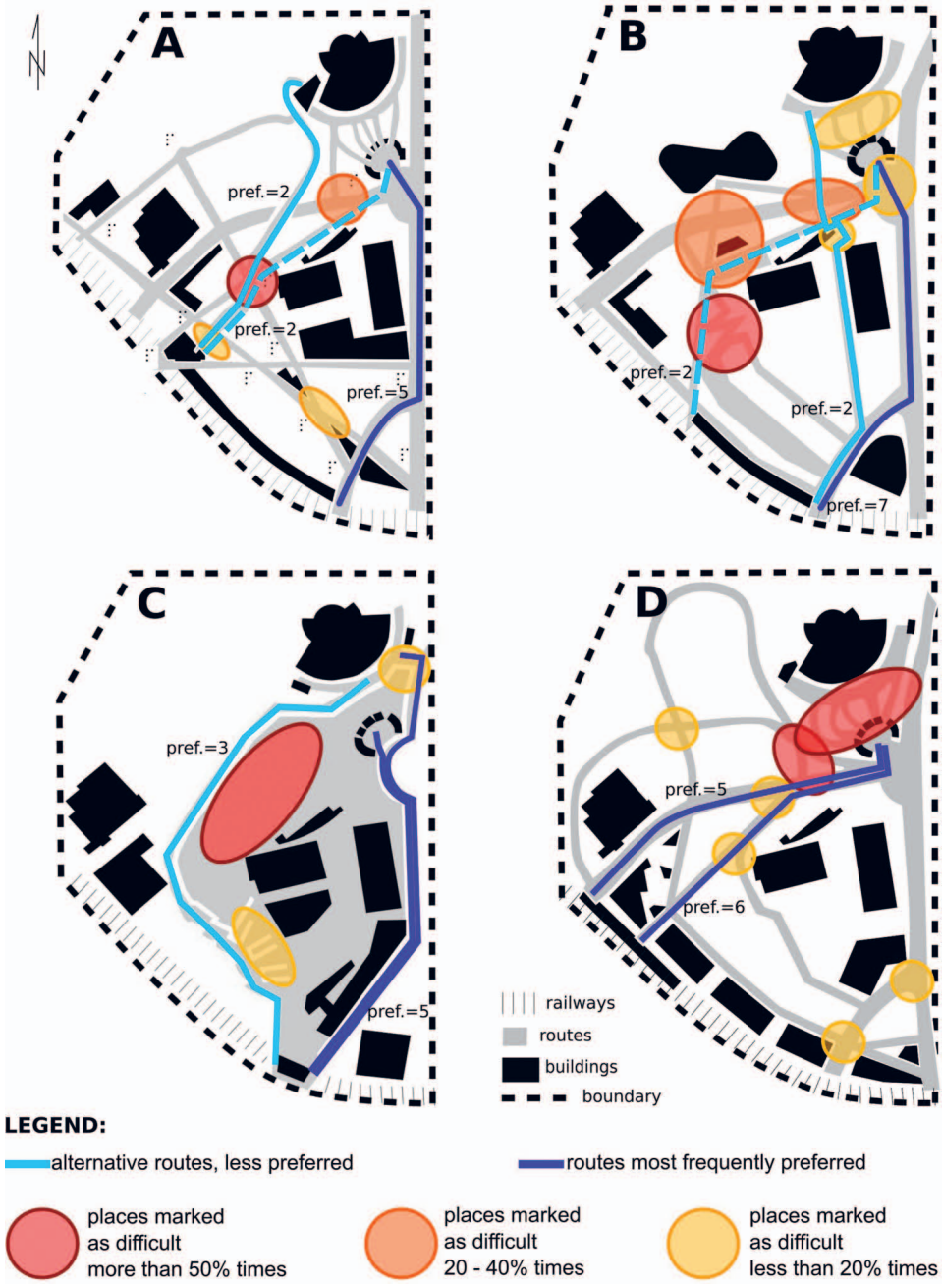

Figure 12

Maps with preferred routes and difficult places indicated by the respondents (N = 12)

The mentioned difficulties in relation to spatial orientation and illegible places affect how respondents perceived the ease of following the paths that ran across these places.

The preferred paths. Respondents indicated routes from the train station to the amphitheatre that were possible to follow and the one that they would have preferred to take.

On the most accessible map (plan B), respondents remarked that there were paths crossing at the right or the near-right angle. Opposite to these solutions was plan C with no intersections at all. However, this design was not perceived as legible enough for spatial orientation and wayfinding because of the wide-open space along the designed route (on the west side of the site plan). The preferred route was the one already existing on the site and not allowed to change in the design (along the eastern border of the map). The designed additional buildings even increased its legibility along the way and serve as orientation points.

Interestingly this route, existing on the site and not allowed to change in the design, appeared as the most legible on every design. It was indicated most frequently as the preferred one (Figure 12, indicated by the purple lines on maps).

Discussion

The experiment consisted of triangulating two research methods: a one-way experiment scheme with repeated measures and structured interviews accompanied by a mapping research technique. Although the experiment results did not significantly indicate which design solutions were more legible for blind and visually impaired people, the experiment served two roles.

First, it showed the tendencies confirmed in qualitative data. For example, the average time of looking for a preferred route and the number of attempts to show the path was slightly lower in design B. These trends align with the qualitative data showing that design B was perceived as the easiest in general. However, the experiment results as to dependent variables for map C could lead to the conclusions opposite to those yielded by in structured interviews. Referring to dependent variables: 3) time of indicating the chosen path from a train station to amphitheatre and 5) the number of errors in following the chosen path, the map C would appear as legible and easy for blind and visually impaired people, which is in opposition to the results of structured interviews. This difference in results may stem from a different context in which respondents analysed the designs. In the experiment phase, the task was to get familiar with a given design

and simply show the path. Time to familiarize oneself with paths may have been shorter if there had been fewer elements and intersections of the paths.

On the other hand, the structured interviews directed the participants' attention and imagination towards how it would have been to walk and orientate oneself in given places. The interviews shifted their attention from the legibility and ease of the design (the drawing) to the legibility of a place represented by the map. Simultaneously, plan C was simpler and more accessible as a graphic and the most difficult as a place in which they were supposed to orientate themselves and navigate through. Given the obtained results, it is crucial to focus the respondents' attention, imagination, and memory on their spatial functioning rather than on the qualities of graphical representations of the environment.

The second role of the experiment was more of a procedural one. Strict and precise instructions directed at every respondent helped to control the process of familiarisation with the research materials. Giving each respondent the same precise tasks enables us to presume that they study every design with the same or similar attention. When planning design evaluation involving users, it is worthwhile to account for a precise and repetitive procedure of familiarisation with the design (as shown in the tasks concerning dependent variables) to keep a similar level of attention and focus among research participants.

The structured interviews supplemented by the mapping technique showed several issues of illegibility in evaluated designs. They were evident for the blind and visually-impaired respondents but not for the designers (students that had prepared the designs). This experiment using the students' task leave us with the main conclusion: "knowing is *not* half the battle." Santos and Gendler (2014) used this negation of a statement from the TV cartoon *G. I. Joe* to show the power of cognitive biases. In our case, the students were equipped with theoretical knowledge on blind and visually impaired people's spatial orientation. The experiment's results showed that knowing the theory about users' perception of space is not enough to prevent the design from the mistakes.

Conclusions

The article presents an approach to research legibility and coherence of space, referring these qualities to nonvisual experience. Legibility and coherence of space as qualities perceived by users are considered herein broader context than solely visual qualities that serve spatial orientation. The context of social and spatial functioning, experienced stimulation and affective appraisal of the environment serve as a theoretical basis for a com-

prehensive research approach to legibility and coherence, including more than one stimulus modality. Described experiments use bimodal research material to show how the nonvisual information from the environment influences legibility and coherence.

The proposed research approach (in both its methodological and theoretical scope) was motivated by the primary goal of bringing the environmental psychology research and architectural and urban design practice closer, so the findings from empirical research might serve as evaluation tools during the design process.

The directions of future research in this field seem to unfold in two ways. First, in the basic research domain, it should investigate the city's (and interior space's) image elements (analogous to Lynch's (1960) five elements) that sum up to the nonvisual dimension of legibility and coherence. The legibility and coherence concept and Gibson's affordances, and most contemporary continuations thereof refer to visual perception. Although, as shown in experimental examples, other modalities of stimuli play a role in spatial and social functioning. It would be also worthwhile to conduct empirical research using protocols that allow measuring the role of more than bimodal environmental stimuli on experiencing legibility and coherence of space.

The second path is a further development of measurement techniques that effectively introduce empirical research from the field of environmental psychology into evidence-based design procedures and verify design solutions from users' perspective. This shift to applied research introduces new challenges for researchers and design practitioners. On the one hand, research procedures need to be adjusted to design questions and the dynamic design process. On the other, from design practitioners' perspective, translating design questions into research questions requires a more thoughtful and precise link between the design solutions and users' experience. These are challenges worth taken when aiming to achieve the built environment of high quality of life.

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Biodiversity and Temporal Diversity in Archaeological Landscapes: Towards a New Perception

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Abstract

Reflecting on several crucial issues regarding the protection, planning, and management of archaeological landscapes from the point of view of the Discipline of Landscape Architecture, the article focusses on the roles of the vegetal component and plant biodiversity in the landscaping of archaeological sites.

After outlining a background framework of the theoretical, cultural, and ecological relationships between vegetation and ruins adopting a landscape architecture approach, the article proposes a set of conceptual and operational tools to deal with active and inventive[1] conservation of archaeological landscapes, striving to adopt the "strong forward-looking" attitude recommended by the European Landscape Convention (Florence 2000).

By re-reading the consolidated concept of biodiversity (CBD, 1992) according to a different research dimension, the concept of temporal diversity is explored and proposed as a key issue in the interpretation and planning of layered landscapes.

Focusing in particular on design issues in the management of ruin and vegetation integration, an innovative approach is presented in regards to various greenery-related potentialities in the landscaping and management of archaeological sites.

The article's concluding remarks aim to open new trans-disciplinary windows of research on active and inventive conservation of archaeological landscapes to foster further exploration of this potentially broad ambit of investigation.

Keywords

landscape architecture, archaeological sites, temporal diversity, biodiversity

[1] The term Inventive Conservation has been proposed and explored by Pierre Donadieu in Aubry et al. (2006).

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Introduction

After outlining a background framework of the theoretical, cultural, and ecological relationships between vegetation and ruins adopting the landscape architecture approach, this contribution proposes a set of conceptual and operational tools to deal with active and inventive conservation of archaeological landscapes, striving to adopt the "strong forward-looking" attitude recommended by the European Landscape Convention (Florence 2000).

The disciplinary field of Landscape Architecture has undergone a long yet quite discontinuous evolution relating to the protection, planning, and management of archaeological landscapes.

There have been many case studies since the earliest Archaeological Promenades were conceived in Europe at the beginning of the 18th century, especially in Italy and south of France (Matteini, 2009).

In the previous century alone, some extremely skilful professionals (such as Giacomo Boni in Rome from 1899, Ralph Griswold in 1953, and Dimitris Pikionis in 1954 in Athens, Pietro Porcinai in Selinunte from 1972) developed and applied their consolidated methodologies for shaping landscapes to outstanding heritage places.[2]

Grounded in these experiences, contemporary design culture needs to focus on a specific and crucial issue, which this article attempts to explore: the fertile and complex interaction between ruins and vegetation in the archaeological ambit. To deal with this topic, a preliminary investigation into the background of the theoretical and cultural framework seems to be necessary in order to develop further research leading to the recognition of the multiple roles of vegetation and the importance of plant biodiversity in landscaping archaeological sites.

Ruins and Vegetation: A Cultural Framework

The literary and iconographic coupling of ruins and vegetation was consolidated in the 16th century with the discovery by humanists and painters of the "archaeological landscape" and thus its representation in paintings by such artists as Andrea Mantegna and Giorgione and in the pages of a founding text of European garden culture, the *Hypnerotomachia Poliphili* (Poliphilo's Strife of Love in a Dream) by Francesco Colonna (Matteini, 2011, pp. 465–466).

[2] A detailed exploration of all these cases has been presented in Matteini (2009). For Porcinai's work in Selinunte, see also Matteini (2012, 2015).

Observing the desolate landscapes that characterize Mantegna's San Sebastian (1480), we see the *continuum* of time depicted as vegetation in the form of a *Ficus carica* thrusting out of the cracks of crumbling columns (Battisti, 2004, p. 172). This juxtaposition of fig and classical ruins represents a dialectic contrast between Nature and Architecture (see Battisti, 2004, pp. 174–177), and their dissonant pace of transformation is paradigmatic of the continuous evolution and the dynamics of becoming, which were evoked even earlier by Lucretius in *De Rerum Natura* (Battisti, 2004, p. 172).

Around the same time (1499) and in a similar cultural milieu, Colonna described all the biological diversity of the flora inhabiting the ruins explored by Poliphilo during his dream *quête*, which constitutes the principle reference for all subsequent literary and iconographic representations of landscapes with ruins:

> Among the broken and decayed places, wherof great sundrie wall weeds and hearbes, especially the unshaking Anagyre, the Leatise of both kindes, beares foote, dogges head, Gladengreene, spotted Ivie, Centarie, and divers such like. And in the myldered places of broken walles grew Howslike, and the hanging Cymbalaria bryers, and pricking brambles, among the which crept Swifts and Lyzarts which I saw crawling among the overgrowne stones, which at the first sight in this silent and solitarie place, made me warily afraid of them […]. (Collona, 1592, p. 6)

With a passing glance at John Vanbrugh's 1709 *memorandum*, drawn up to preserve the ruins of Woodstock Manor, which already contains indications for the use of "picturesque" vegetation to emphasize the evocative power of ruins (Dixon Hunt & Willis, 1988, pp. 120–121), our rapid *excursus* cannot overlook the equally "picturesque" views of John Ruskin a century and a half later, whose predilection stated in *The Lamp of Memory* was for the "sublimity of the rents, or fractures, or stains, or vegetation, which assimilate the architecture with the work of Nature, and bestow upon it those circumstances of colour and form which are universally beloved by the eye of man" (Ruskin, 1849, p. 178).

In this vein, we can recall that the integrated approach to reading Nature experimented by Ruskin (both as an artist and a writer) generated a powerful theoretical and interpretative device to build a dynamic and systemic vision of natural phenomena, anticipating the richness and the complexity of modern ecological thinking (Frost, 2017).

Moreover, Ruskin's lesson on the ethical and aesthetic value of ruins and the importance given to the work of vegetation in ruderal contexts

can be considered part of a more ambitious and visionary attitude, linked to a landscape and place-making oriented dimension (Dixon Hunt, 1997).

The poetics of landscape gardening, due to the acceptance of both *emblematic gardening* and *expressive gardening*, as proposed by Whately (1771–2005, p. 134), has its main *topoi* in a celebratory combination of vegetation and ruins (authentic or artificial). But we cannot forget that an important precedent defining the image of the 18th century *landscape garden* was the portrayal of the renowned 16th and 17th century formal gardens in Lazio (Villa d'Este, the Farnese gardens, Villa Madama, Villa Barberini), reduced to ruins and abandoned to the vigorously reconquering power of vegetation in the paintings of the young Hubert Robert and Honoré Fragonard (Dixon Hunt, 2002, p. 113; de Cayeux, 1987, pp. 35–47).

It was only at the end of the 19th century with the theoretical and practical work of Giacomo Boni (De Vico Fallani, 1988; Matteini, 2017a, pp. 58, 65) that a "scientific" definition of the subject was formulated; thanks to his professional experience in the setting out of the Roman archaeological areas, Boni was able to study the interactions between archaeological ruins and vegetation over time and, using his *corpus* of observations, delineate the first indications of an intervention method. Starting with the acknowledgment of the documentary and ethical value of ruins, already pointed out by Ruskin,[3] and using the direct observation of spontaneous flora as an indication of processes underway or already concluded on the sites in his charge, Boni acquired solid scientific knowledge of the ecological and environmental mechanisms and equilibriums in archaeological landscapes, eventually introducing the concept of *stability* or *instability* of the relative ecological systems (Caravaggi, 1989, pp. 461–463), and providing critical observations on the presence of exotic infesting species such as *Ailanthus altissima* or *Robinia pseudo-acacia* (Boni, 1912, p. 18; 1913, p. 66; 1917, p. 27).

In 1911, the appearance of Georg Simmel's *Die Ruine* constituted another tile in the vast and composite theoretical mosaic dedicated to the fertile combination of ruins and vegetation. It interpreted ruins from a philosophical standpoint as a "pacification" between the otherwise dialectical categories of architecture and nature. Ruins represented the moment "spiritual" forms were destroyed through the action of "natural" forces and, at the same time, could be perceived as a tranquillizing return to Nature, Goethe's *good Mother*: "In other words, it is the fascination of the ruins that here the work of man appears to us entirely as a product of Nature.

[3] For a detailed analysis of the human and cultural relationships between Ruskin and Boni, see De Vico Fallani (1988, pp. 21–29) and Matteini & Ugolini (2019, pp. 296–297).

The same forces which give a mountain its shape through weathering, erosion, faulting and the growth of vegetation; here do their work on old walls" (Simmel, 1958, p. 380).

All the iconographic and theoretical suggestions belonging to this cultural current likely influenced the surprising choice of the Caetani family who, in the early decades of the 20th century, decided to bring back to life the site of Ninfa (a family property since the end of the 13th century), thereby commencing the progressive *landscaping* of an entire archaeological area comprising the ruins of a medieval city enclosed by two rings of city walls on eight hectares of land, with a castle, seven churches, around 150 homes, a lake and waterworks (Matteini, 2011; Rossi Doria, 2017, pp. 193–206).

Throughout these various explorations of aesthetics, philosophy, and design, a *fil rouge* delineating the intimate relationship between archaeological places and vegetation can be outlined and tracked over the centuries.

Consequently, a landscape architecture approach to planning/designing archaeological sites must firstly take into account this valuable cultural heritage and consider all the potentialities of the natural component as along with biodiversity issues.

Landscape and Layering: Exploring the Time dimension

In regards to the concept of biodiversity, we can quote the definition proposed by the Rio Convention (CBD, 1992): "[…] the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems."

Starting from this concept of biodiversity and re-reading it according to a different research dimension, we can venture to speak of *temporal diversity* to define the variability of historical phases and chronological documentation present at a given site (Matteini, 2011).

Potentially richly endowed with biodiversity, archaeological areas are by definition deposits of temporal diversity. In analogy to biological diversity, which tends to increase the complexity, and consequently – the resistance, of an ecological system, temporal diversity evidently contributes to increasing the cultural complexity of an archaeological landscape, definable as a combination of various time frames (Augé, 2004, p. 103).

When temporal diversity combines with biological diversity, as generally happens in places characterized by archaeological remains, the environmental and cultural systems (and therefore, the landscape) greatly increase

their level of complexity and their historical, cultural, and ecological value, introducing particularly tough challenges for project designers and maintenance supervisors. Thus, one of the primary objectives of a landscape project is to succeed in understanding, reconnecting, and communicating an archaeological area's potential and its temporal diversity, and for which the interpretation and restitution of its various chronological layers becomes one of the most interesting research directions (Matteini, 2017b).

In the culture of restoration, Isa Belli Barsali's motto "You don't peel a garden" (Belli Barsali, 1983, pp. 32–36) is used to express the ethical and documentary value of each of the layers present in a historical garden.

Instead, an archaeological site is generally "peeled" back to identify, read and interpret its stratigraphic components according to current scientific methodology. "Temporal windows" are thus opened in the landscape *continuum* that need to be managed when designing a project; in many cases the project can (must?) take on the task of recomposing and associating differing areas, communicating layers that either no longer exist or do not exist yet (in the sense that they are beneath the level visitors walk on) (Matteini, 2009, pp. 111–112).

Biodiversity and Temporal Diversity

For nearly three centuries – the landscaping of archaeological sites has been debated since the 18th century – projects and preliminary studies (with some fundamental and extraordinary exceptions) have mostly attempted to normalize and reduce the complexity of these places, both from the point of view of biodiversity and that of temporal diversity.

The aspiration to the total site control and simplification of site maintenance exhibited by project designers, not always entirely aware of the ecological implications and dynamics of ruins and vegetation (already evidenced, conversely, by Giacomo Boni at the beginning of the 20th century), tended to construct a monumental, abstract image of ruins inserted in a landscape with increasingly well-specified rules for vegetation.

In the cultural context of the early 20th century, and also thanks to the great 1931 exhibition, *Mostra del Giardino Italiano*[4] held in Florence, a non-historical "Italian-style garden" was re-invented according to the autarchic logic of the fascist regime which favoured references to Roman times and a misconstrued *autochthonous* landscape where pines, Holm oaks

[4] A great exhibition illustrating the history of Italian gardens was held in Palazzo Vecchio in Florence in April 1931. See the foreword by Ugo Ojetti in the exhibition catalogue, *Mostra del Giardino Italiano*, published in 1931 by Enrico Ariani for the Municipality of Florence, pp. 23–25.

and cypresses became the only permissible species for archaeological sites (Matteini, 2007, pp. 422–425).

Particularly significant in this sense are the words of Corrado Ricci regarding the arboreal exedras in Piazza Venezia, reported in a letter to Benito Mussolini dated 17th of October 1931: "Frame, nay, isolates the monument from all the other 'anomalous' features enclosed with an immense arboreal exedra […]. No other architectural or sculptural forms near the monument; no other candid marbles; but rather the shade and green of the cypresses and pines in those marvellous appearances that immobile nature has given them and that are as suitable for ruins as for intact buildings" (as cited in De Vico Fallani, 1985, p. 110).[5]

The assimilation of eternal ruins with perennial evergreen species, considered "immobile nature" in the early decades of the 20th century, reveals a total incomprehension of any ecological dynamic in favour of the creation of an unchanging image isolated from the "anomalies" (of the surrounding urban landscape) that has little in common with the complex wealth of variable relationships and transformations actually present in every archaeological site.

This tendency to reduce and simplify the diversity which is naturally present in this kind of environment makes the challenge of cultivating historical and archaeological places more difficult, and therefore more imperative (Matteini, 2017b) in the pursuit of increasing ecological complexity, resilience, and adaptation to climatic stress, in short, of promoting active and inventive conservation (Ugolini & Matteini, 2016, pp. 461–470).

The Vegetation Component in Landscaping Archaeological Sites[6]

Interpretative studies of the vegetation component in the landscape of archaeological sites are complex (Caneva, 1997) and the project aspects addressed therein are numerous and diverse (Morganti, 1999), as already demonstrated by Boni. Based on Boni's writings and interventions on Roman archaeological sites, Massimo De Vico Fallani developed a kind of *manual* for the architect-archaeologist's repertoire of indications, the "Instructions for Greenery in Ancient Monuments", identifying six categories of

[5] The Italian text reads: "Incorniciare anzi isolare il monumento da tutte le 'anomalie' vicine con un'immensa esedra arborea […]. Non altre forme architettoniche o sculture, vicino al monumento; non altri candori marmorei; ma le ombre e il verde dei cipressi e dei pini in quei meravigliosi aspetti che la natura immobile ha dato loro e che convengono ugualmente alle rovine, come agli edifici integri". "Letter to the Head of Government" in *La Tribuna* 1931, October 17th.

[6] Some of the content of this section was explored in Matteini and Ugolini (2013).

intervention which define the system of interactions between archaeological structures and vegetation: "[…] damaging, beautifying, hiding, protecting, functional, and image integration" (De Vico Fallani, 1988, pp. 105–112).

Attempting to carry out a contemporary re-reading of the project variables of these relationships, we can identify the compatibility of species and the plant community as being fundamental since they will need to integrate with such a precious and fragile context as that of an archaeological site and sidestep critical cultural, environmental, and stratigraphic issues while, of course, being appropriate for the specific climatic, edaphic, and historical conditions (Caneva, 1997).

Particular attention needs to be paid to the interaction between archaeological structures and vegetation, to possible conflicts and to the danger that some botanical species pose to historical architectural elements present on the site. While it is true that vegetation can contribute to the conservation and maintenance of an archaeological area (branches and roots function as protection against collapsing walls and as consolidation of unstable crags), it is also true that the same vegetation can become one of the main indirect causes of deterioration (chemical action, mechanical action of the root system, stagnant water). Therefore, the parameters to take into consideration in evaluating risk caused by vegetation (the *risk index* defined by M. Adele Signorini) regard *the biological category*, *invasiveness*, *vigour*, *and type of root system* (Signorini, 1996; Signorini, 2017, pp. 293–299).

Development of the interpretive reading and project of the vegetative structure can potentially take numerous directions when upgrading an archaeological landscape. In some cases, the surface vegetation becomes an important bio-indicator for aerial readings of submerged stratigraphy, or an indicator of anthropic impact; in other cases, the presence of calciphile plants may reveal the location and distribution of underground structures to archaeologists (Caneva, 1997, p. 128).

As also previously formulated by Boni, the suggestion to use vegetation to integrate the image of an archaeological structure, by definition devoid of its original form and function, should be taken into due consideration. The intentional use of certain species or plant communities can provide support for didactic, informative, and organizational communication purposes, contributing to evoke or suggest features of the site's primitive state, its original functions, or ecological dynamics currently underway. In archaeological site projects, the concept of "image integration" (Carbonara, 1987, p. 85) has often been translated as an attempt to reconfigure a space by using vegetative elements that confer a new spatial and narrative structure to a lost historical design in places where there are no original references. In some situations, the vegetation can be used as a volumetric component to reintegrate lost architectural parts of ruins in order to facilitate the com-

prehension and reading of the original profile by suggesting parts of lost curtains, colonnades, pathways, or flooring (Marino, Gaudio, & De Caria, 2003). The application of these practices requires exhaustive comprehension of the ecological dynamics and particular attention to the cultural compatibility of species.

Moreover, it is clear that the re-composition of an appropriate and compatible vegetation structure inside an archaeological area supports important ecological functions since archaeological areas are also essential nodes in the construction of a coherent system of ecological and landscape continuity, particularly in urban contexts. For this reason, attention during the botanical and landscape design of a project becomes essential (especially when it comes to recuperating and increasing biodiversity).

The creation of an appropriate vegetative structure can also favour the conservation of archaeological structures by reducing solar radiation, wind, atmospheric precipitation and polluting agents that are equally important degrading factors.

A technology in widespread use in Anglo-Saxon countries, previously reported by Boni, is to top walls with soil and vegetation in order to preserve them.[7] This has numerous advantages including a potential increase in biodiversity. In 1913, Boni wrote about the *pelliccie erbose* (green mantles, or soft capping): "They grow on a thin layer of humus on the top of ruins and protect them from scorching heat and bitter cold, forming an interlacing of slender fibrous roots. The tops of ancient brick or concrete walls, subject to breaking up from bad weather, are protected from infiltrations by *cocciopesto* on which soil mixed with seeds is spread to favour the formation of a green mantle" (Boni, 1913, p. 66).[8]

For some time it has been known that in many cases, uncontrolled removal of vegetation, even when apparently "invasive," accelerates the deterioration of archaeological structures, triggering processes that are difficult to control.

(Non-)concluding Remarks

As historic iconography confirms, for centuries ruins were a part of the ordinary lives of residents and travellers, inhabiting the many-sided and

[7] For an overview of the techniques and related bibliography, see the term *zolle erbose* by Maglie (Marino, 2003, p. 235).

[8] The Italian text reads: "Le pelliccie erbose, fatte crescere su un sottile strato di humus alla sommità dei ruderi li proteggono dall'arsura e dal gelo, formando un tessuto di radichette. La cresta dei muri, d'opera testacea e cementizia, facile a disgregarsi per le intemperie, viene tutelata dalle infiltrazioni mediante coccio-pesto, sul quale si stende il terriccio misto a seme di fieno, per agevolare il formarsi d'una verde pelliccia."

mutating identity of historic places as familiar, reassuring presences. Andreina Ricci emphasizes how this proximity was progressively lost during the second half of the 20th century (Ricci, 2006, pp. 78–81). Concerns about arbitrarily reproposing "public use of history," linked in people's minds with the instrumental visions of totalitarian regimes, has discouraged attempts to "translate" and communicate the historic value of ruins, which have often been abandoned to a destiny of isolation through physical and perceptual inaccessibility.

In this cultural situation, apart from archaeologists, only a few artists, poets, and designers have continued to dialogue with archaeological remains, bringing them to life as catalysts of narrative energy to reveal their "presence and poetry,"[9] or to imagine new chronological dimensions and possible definitions of landscape.

It is time to consciously reappropriate these archaeological landscapes we have lost confidence in and affection for and re-hone our capacity to socially manage and specifically design projects for them.

We must learn to conserve, re-read, and reinvent the diffuse and diversified archaeological patrimony that inhabits our ordinary rural and urban landscapes, imagining new connections and experimenting with alternative modes of management for future shared "public use" of historical open spaces in which the value of biological and temporal diversity is finally recognized and so preserved and fostered.

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[9] The italian version is "Presenza e poesia" from a Pier Paolo Pasolini's poem "10 giugno 1962". In Pasolini (2006, p. 23).

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Environments. Actions of Adaptation in Architecture

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Abstract

The 1960s Environments emerged as artistic practices to question our modern relationship to objects perceived as isolated entities and as products within a market logic; to context, initiative, authority, ethics, and aesthetics. As open, process-based situations, they should allow for a praxis of reappraising demarcations, roles, and concepts in the art, social, and natural world. Environments had an early, but only short influence. To this day, art and architecture continue to be widely shaped by objectifying and reifying processes, even though the limits of the systems they belong to have become obvious in confrontation with a global climate crisis.

In this article, the authors re-connect to the earlier artistic and architectural practices with the aim to develop a conceptual approach to adaptive architecture. This architecture is conceived as part of open "Environments," able to dynamically react with their users to social and environmental challenges, to mediate and reframe the relations between subjects, objects, and the natural world.

Keywords

Environments, holistic actions, adaptation, process-based, architecture, art

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Environments. Actions of Adaptation in Architecture

As early spatial installations, the 1960s Environments marked a fundamental shift in the conception of modern artwork that expanded on the idea of a completed object or Closed Form (Hansens) into a more open process. Indeed, Environments were open from a spatial as well as a conceptual perspective: they could be entered in order to enable immersive experiences (not just a perception from an object-distance), and the Environments could transform when entered. Thus, they included the idea of other potential ways of becoming. Following a neo-avant-gardist agenda, Environments were set up to blur the borders between the production and perception of art, between the artist and viewer, and ultimately between art and life. Their development, especially in the work of Allan Kaprow, marked a transition in the art world. With the Environments, clearly defined and limited roles of artwork, artists, viewers, and institutions should and would become much more fluid and flexible.

In today's architecture, a similar spatial and relational shift is necessary to re-frame buildings as part of open processes of adaptation and challenging modernist forms of spatial production and aesthetics, that is, of the formation, appearance, and perception of space. Based on processes of reification, described by Karl Marx and Georg Lukács (2015, pp. 13–16) modern buildings have been produced as objects and commodity forms that are hardly adaptable after completion and are disconnected from their location, as well as separated from their inhabitants and other actors. With the intended shift, significant alterations in the relation between buildings, architects, residents, and the social and natural world can become possible.

In this paper, we aim to discuss the conception of adaptive architecture in open "Environments," which are able to dynamically react – to change over time – together with their users in relation to social and environmental challenges. They thus provide an alternative to buildings that are mostly perceived as inflexible or that perform a limited set of predetermined (technical) reactions. Environments, consisting of life forms as well as architectural and technological forms, are characterised by continuously changing states that result from situational adaptations of all actors. They consist of open and collective development processes and significantly expand the dimensions of adaptation in architecture that have been mainly treated in technical terms (Schnädelbach, 2010, pp. 447–542).

By tracing the developments in art and architecture of the 1960s, we conceptualise Environments through their shifted emphasis from object-based to process-based production, with remarkable consequences regarding questions of spatial conception and perception, inclusion, and agency of

all actors. Since Environments unite and significantly expand disciplinary developments in both architecture and technology, we see them as agents for a future in which spatial, social, technological, and natural demarcations and differences can be reformulated. Therefore, we argue that Environments are constituted insofar as they address spatially manifold entanglements between inside and outside, allow for social and aesthetic differences and heterogeneity, and foster bodily participation and reflection. We conclude that if the "preparatory work" of Allan Kaprow and of Zofia and Oskar Hansen is taken seriously, Environments have the potential to challenge our ways of acting and becoming, not just in architecture but also in relation to the social and natural world.

Objects and Processes

To understand the scope of the early Environments as developed by Kaprow and the Hansens, it is helpful to contextualise them within, or better, towards the modernist art conception. Therefore, we cannot avoid reducing and simplifying exemplary works of modernist art and architecture by focusing on a discussion of objects in relation to processes. The sculpture *Cube* by Alberto Giacometti (1901–1966) embodies the concept of modernist artwork at the beginning of the 20th century. The Swiss sculptor, painter, draftsman, and printmaker completed the plaster sculpture in 1934 (Alberto Giacometti, Stiftung, n.d.); two bronze castings were produced in 1959 and 1962. The twelve-sided polyhedron has irregular sides, some are slightly curved, and the surfaces are partially rough and have scratches. Only the first bronze shows drawings of a self-portrait and of the atelier (Alberto Giacometti, Stiftung, n.d.). The line drawings were sealed in the plaster sculpture by the artist before the second casting. With the two casts of one plaster object, the three sculptures share one development process. Giacometti made the first sculpture and decided on the different surfaces of the bronzes that remain unchanged to this day.

Le Corbusier's chapel, *Notre-Dame du Haut*, in Ronchamp, France, is a pilgrimage church from 1955 standing isolated atop a hill, as if on a natural pedestal. With its upturned roof, the architect created the chapel as an irregular, expressive sculpture with thick solid "curved walls [that] simultaneously gather and open to the landscape" (Le Corbusier, as cited in Gans, 1987, p. 74). Le Corbusier completed the sculptural building with three ancillary chapels beneath the tower, two entrances, and an open-air altar underneath the overhanging curved roof. Although Ronchamp's external appearance implies a complicated layout, the interior is simple in plan. It is oriented towards the altar, which is accentuated by a sloping floor and raised roof, the curved west wall, and a series of benches. His

concept envisioned: "Inside, a little talk with oneself. Outside, 10,000 pilgrims before the altar" (Le Corbusier, as cited in Gans, 1987, p. 76).

In museums, Giacometti's art objects are displayed free-standing in the exhibition space, sometimes on a low plinth. Visitors perceive the almost one-meter tall sculpture from a certain distance and may walk around it. The vis-à-vis experience of the exhibited sculpture occurs in relation to other displayed art objects and the surrounding space, and may include historical references. *Cube* is interpreted as an artistic self-reflection with reference to a polyhedron in Albrecht Dürer's *Melencolia I* from 1514 (Guggenheim, 2018a) and to a drawing by Giacometti himself, in which he holds such an object in his hand (Guggenheim, 2018b).

In the design of the chapel, Le Corbusier drew on various personal memories, including the nearby Jura Mountains. The hollow roof shape refers to a crab shell found on a Long Island beach. Furthermore, the Swiss architect drew on his experiences in Athens: "As on the Acropolis, the procession is orchestrated by a sequence of axial perspectives defined but not enclosed by the built forms of ziggurat, chapel, and youth hostel" (Gans, 1987, p. 74). In containing the rubble of the previous but destroyed church, Ronchamp seems to reference history as a continuity. However, Le Corbusier hid the old stones within the thick walls that were plastered and painted white. The iconic building, thus, seems to claim timelessness, even eternity, where "There are presences: the eternal aspect of that which is permanent" (Le Corbusier & Zaknic, 1997, p. 83). The chapel of Ronchamp has been preserved in its form and appearance to this day; since 1967, both the building and the hill are listed. Le Corbusier spoke out against extension buildings in 1959 (Ingersoll, 2001, p. 13), turning it into a Closed Form (Hansen, 2005, p. 43), a monument passive towards the changes occurring over time. Therefore, in 2011, the monastery's extension with a visitor centre was dug into the sloped ground leading up to the chapel. The design by Renzo Piano is intended to keep the view of the chapel Notre-Dame-du-Haut clear.

The use of *Cube* included private owners and galleries before it was purchased by the Alberto Giacometti Foundation in Zurich. Apart from the careful estate management, the foundation encourages interest and research in the artist and collaborates with institutions on shows and new projects. It reproduces the oeuvre, based on objects as collectibles (their mobility and capability of being exhibited), implying and relying on the artist's exceptional reputation (his genius and vocation) (Kinsella, 2017). Early on, the massive *Cube* sculpture had become a celebrated object of the international art world, preferably exhibited even when the artist had already focused on smaller sculptures depicting human and animal figures. Jean-Paul Sartre (1999, p. 12) posed the question that Giacometti ultimately

focused on: "How to make a man out of stone without petrifying him?" As long as he could not answer this question, Giacometti was said to have destroyed his figural attempts and to have started all over. Those sculptures that were rescued by friends later entered the art market as completed works, although actually belonging to an ongoing artistic process. With its fixed conception, aesthetics, and demarcations between the artist and audience, process, and products, the art market has to this day ignored the interest in process even though it has been a major aspect of art production since the 1950s.

Environments

During the late 1950s and early 1960s, Allan Kaprow introduced the concept of Environments and their potential permutations into the American art scene as an alternative to classical modern artwork. Formerly a painter, Kaprow arranged everyday objects such as newspapers, plastic film, broken mirrors, lights, and sounds spatially both inside and outside of art galleries. As a result, the artwork as such was no longer identifiable, even less so as it exited the art space and entered everyday life environments. The artist prepared unfinished settings or open-ended situations that were only completed through the interaction with participants. Kaprow (1958, pp. 11–12) defined this art form "as open and fluid as the shapes of our everyday experience" with "a much greater responsibility on visitors"; these "have differently coloured clothing; can move, feel, speak, and observe others variously; and will constantly change the 'meaning' of the work by so doing." Thus, the artwork literally included the viewers as actors in a process where the so-called Environments continuously changed.

For the *Yard* Environment, Kaprow filled the backyard and sculpture garden of the Martha Jackson Gallery in New York with old car tires. *Yard* is an extension of painting into space, as it draws on the large-format works of Jackson Pollock but transcends the limitations of the canvas. According to the artist: "Environments tended to fill […] their entire containing areas, obliterating the ruled definition of the rooms" (Kaprow, 1968, p. 92). Instead of standing vis-à-vis a sculpture, visitors could actively climb over the tire piles. Following Kaprow (1958, p. 11), visitors "do not come to look at things," instead they "simply enter, are surrounded, and become part of what surrounds [them], passively or actively." In his theory, he mentioned that it was about a self-reflexive engagement with the Environments, focusing on "the very materials, the environment, the activity of people in that environment" (Kaprow & Schechner, 1968, p. 154). He therefore invited visitors into immersive experiences – like being inside a work of art, not opposite of it. Just as Kaprow himself threw an old tire, visitors

were welcome to play and rearrange. In this way, participants actualised their relation to and their perspective on the Environments by being part and actors of the artwork.

"[Kaprow's] Environments offered choices to visitors, like selecting between a fake and a real apple, moving furniture around a room, throwing tires, aligning words on walls to make sense or nonsense" (Hauser & Wirth, n.d.). Thus, Environments included the idea that there were other potential ways to construct them, and arguably, us through them. In particular, art production, regarded as a completable process under the absolute control of the artist, was challenged; with Environments we "cannot possibly see the finished work, extended as it is over time and space. There may not even be a finished work in the traditional sense" (Kaprow & Schechner, 1968, p. 156). In *Fluids* from 1967, Kaprow, together with the participants, built several rectangular cubes from blocks of ice and left them to melt at various locations in California. This work emphasised not only the active participation in the production process of art outside the museum, but also its fragile temporal dimension. In so doing, Kaprow turned against the conception of art as a durable, aesthetically fixed object, prepared to be exhibited, collected, and dealt. By extending the spatial and conceptual borders of an artwork, Environments question the idea of the modernist (art) object and the role of artists and viewers in its production. The emphasis of "process over product" was part of a wider discourse at that time that included Umberto Eco's *The Open Work* (Ital. original 1962) and Zofia and Oskar Hansen's Open Form (French original 1961) developed together with students and colleagues at the Academy of Fine Arts in Warsaw during the 1960s and early 70s. In its interdisciplinary and processual approach, the Hansen's Open Form can be seen as an important link to today's renewed interest in radically opening up artistic and architectural processes.

Similar to Environments, Open Forms include diverse actors and practices to explore the dynamics of art/architecture and audiences within fluid situations and adaptable spaces. Their "permeability to social and technological forces" (Scott, 2005, p. 35), as along with their openness to diverse contributions (by artists, architects, viewers, etc.), make them an important reference for today's approaches to adaptive architecture. The Hansens' first Environment was realised through the combination of polychrome graphics and mirrors in an immersive space that they called a "coloristic, integrative chain of background events" (Hansen, 2005, p. 140). This installation evolved as part of a pavilion in Sao Paulo in 1959 that would be responsive to the wind on site. The Hansens' semi-open house Szumin, with blurred boundaries between inside and outside spaces, natural and artificial elements, public and private spheres, invited villagers, visitors, and students, as well as plants, trees, and birds to become part

of a shared Environment. By playfully engaging with aesthetic apparatuses and adaptable furniture, by collectively caring for the garden and house maintenance, Szumin would constantly change, adapt, and re-create. Over time, it evolved according to needs, desires, and ideas of all involved human and non-human actors.

While the Hansens' design for the Museum of Modern Art in Skopje, a hydraulically powered, transformable Environment with shifting floors and walls allowing for situational changes and aesthetic experiments, was not and probably could not be realised at that time, recent attempts at adaptive architecture solved technological challenges, but most often exclude the social and aesthetic questions addressed by the Hansens.

Techno-spatial Relations in Adaptive Architecture

The notion of adaptive architecture, in its current use, refers to technology-based developments in an interdisciplinary field, even though built structures have been adapted since the first tents were erected (Schmid III & Austin, 2016, p. 11). Today, all adaptive buildings are equipped with technology and computer control based on data collection to obtain energy-efficient or user-adapted solutions; often with the focus on just one way of adaptation, for instance, automated shading, user-adapted heating or light control, voice-controlled doors (Hinte et al., 2003; Kolarevic & Parlac, 2015).

The adaptive Demonstrator high-rise building that is currently under construction in Stuttgart, Germany, serves as a case study (SFB, n.d.). The design includes a variety of adaptive dimensions, for example, concerning the supporting structure of the experimental building which reacts dynamically to wind loads and earthquakes. This is realised with integrated actuators in concrete beams and steel supports (SFB, n.d.). Various façade systems on the different floors of the high-rise react adaptively to sunlight, rainwater, energy demand and surplus animal and plant needs, users' interactions, and others (see Figure 1). The designs convey internal and external desires, such as the façade Wind Veil, which displays passing trains and invisible winds with gentle waves of movement while creating shade and providing ventilation (Ned Kahn Studios, 2000). In the interior of the high-rise, adaptive indoor climates, spatial structures and furniture allow for flexible use and quick change, for instance, residents are able to adapt their homes from living to office space. For the high-rise building, an interactive interior structure that adapts in real time is being developed, among other things. An example of flexible living space design on the part of the residents was shown by Shigeru Ban (2000) with the *Naked House* with its rolling, semi-open cubes used for various functions in a large two-story space. In addition, the appearance in and of the high-

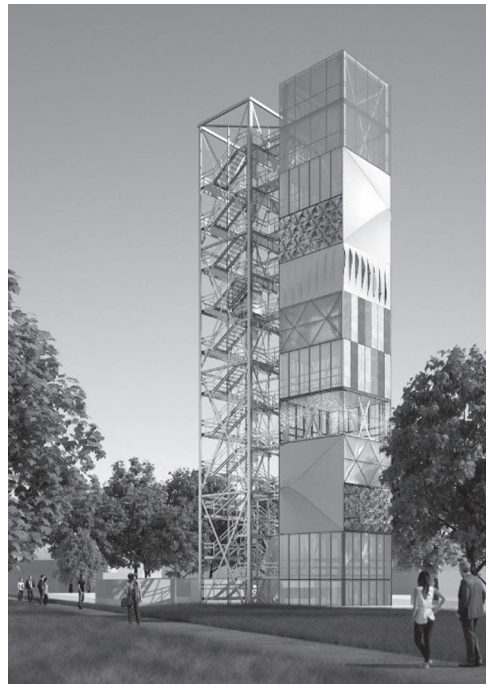

Figure 1

Adaptive high-rise of Collaborative Research Center 1244 of the University of Stuttgart. © ILEK, Institute for Lightweight Structures and Conceptual Design

rise is individually adjustable, for example, through light, sound, and scent control, as well as digital surfaces. The effect of colour-flooded rooms can already be experienced in many works by the artist James Turrell (n.d.), for example, in the *Skyspaces* with an opening to the sky and hidden LED ceilings, that are composed of changing colours. Thus, the formal, spatial, and aesthetic conditions of adaptive architecture change continuously. They are subject to situational adaptations in which the building transforms on the short and long term through extensions, displacements, foldings, and shrinkages. The house for and by Truus Schröder, designed together with Gerrit Rietveld, is an early example (1924) of how users can adapt spatial settings by transforming an open floor plan into subdivided spaces or dissolving the boundary between the inside and the outside by opening the frameless corner window and with overlapping colour-contrasting façade elements. Similarly, slow processes of transformation occur in and around the building that bring on new relationships with nature in the form of green façades and roof gardens, including shelters for bees and bats. Boeri Studio (2014) shows how ecologically and sustainably well this cohabitation of people, plants, and birds in high-rise buildings can work with the

Vertical Forest in Milan. The temporary appearances have an immediate effect on the surrounding and the urban space, as the spatial structure also changes throughout the course of one day, as well as steadily over the years. Apartment and room sizes are adaptable to different needs and uses through flexible spatial boundaries on the inside and in relation to the outside space that thereby shifts temporarily or permanently. Manuel Herz Architects (2017) realised a possibility for temporary spatial extensions of the building via the façade with fold-out balconies for a residential building in Zurich. As a result, spatial perception happens in a transforming environment: not only can rooms be resized, separated, and combined, but the atmosphere in the adaptive high-rise can also be turned from a focused work situation into an open, communicative space in the evening or on the weekend that helps connect to the natural surroundings (Ulber et al., 2020a, p. 123). Thus, space and form of adaptive buildings are conceived, designed, and experienced dynamically.

However, the question initially posed by the Hansens remains: How can diverse actors be enabled to co-design their Environments and co-decide over aesthetic qualities? The discussed adaptive dimensions of the high-rise building in Stuttgart are to become increasingly adaptive to further completion and use over the years (SFB, n.d.). In fact, the design and production process has to be set up to never end and to turn into an adaptation process when use begins (Maierhofer et al., 2020, p. 583), so that adaptive buildings become part of an Environment of change over time and associated with processual relationships and interactions.

Socio-spatial Relations in Adaptive Architecture

In art and architecture, open approaches are part of a large-scale development associated with extended spatial and contextual relations and significant changes in the design authority and agency of all involved actors (see Figure 2).

With the open development of artistic Environments, artists give up control. Simultaneously, artworks are used and perceived through an extended frame of reference. Instead of being limited to artistic expressions in certain traditions (i.e., modernity), they occur at new exhibition sites outside of museums (Land Art) and in social contexts close to everyday life (Happenings). Environments (re)connect with the surrounding, blurring (conceptual) boundaries of art and life, nature and culture (artistic), subjects, and objects; for example, Dan Graham's Mirror Pavilions. With processual art, observers turn into participants with increasing agency; beginning with perception, art experience becomes increasingly accompanied by "active" processes of moving, interacting, participating, and co-creating. This devel-

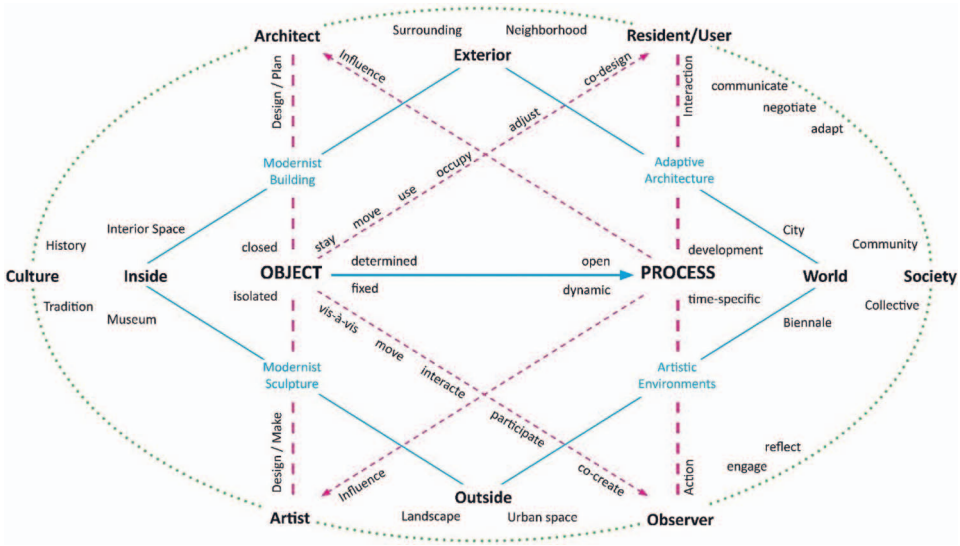

Figure 2

Transition from object-based to process-based art and architecture. © Marie Ulber, Mona Mahall, Alsi Serbest

opment reflects the desire for comprehensive engagement with the natural and social world; for example, at Biennials today.

For a long time, architects thought of themselves as absolute design authorities in the planning of a building, even though they already collaborated with engineers and planners on increasingly complex buildings. For just as long, buildings were considered and designed as completed "eternal" objects, with church buildings being particular examples. While modernist buildings are primarily regarded as "hermetic compositions," such as the Sydney Opera House or the New National Gallery in Berlin, sitting on a distinctive plinth, there have been early projects closely connected to their surroundings (Fallingwater House). In addition to reconnecting with nature, the social dimensions of space were considered by Alison and Peter Smithson in their attempt of "streets-in-the-sky" in residential buildings, such as Robin Hood Gardens in East London, to create new spaces for pedestrians, neighbourhoods, and potential (inter)actions with the surroundings. Following Smithson's idea, Denise Scott Brown established a socioplastic praxis that considers a site-specific analysis of social, functional, and activity patterns, for example, in the design of the University of Michigan's new life sciences complex (Brown, 2010, p. 47). In addition to a particular social architecture, early adaptable buildings emerged which share flexible borders with their surroundings, such as the Rietveld Schröder in Utrecht, Netherlands or Walker Guest House in Sani-

bel, Florida, US. Both allow their residents to adjust the building within certain preconceived states to their current uses, changing between open and subdivided rooms or between open and closed façades.

How do we conceive an adaptive architecture in Environments, which imply an open and collective development process and show constantly changing states in terms of appearance, attributes, material or form and space? How will (human and non-human) inhabitants have an increased agency in and with them, while architects will not necessarily be involved in the further development process? What is necessary to overcome (destructive) modernist demarcations and differences of roles and agencies in the production and use of art and architecture? How is the sustained opening and integration of natural and social dimensions into artworks and buildings possible?

To answer these questions, we argue that Environments have to be dedicated to the deconstruction of fundamental (modernist) differences: between the natural, technological, and social sphere (Morton, 2010, p. 278). By enabling collective, open and, at the same time, dynamic development processes of all involved actors – beyond the timeframe of the first completion, Environments allow the necessary perception, reflection, and adaptation processes which will be crucial in the confrontation of current global and local challenges affecting our nature, society, and cities.

Discussion of Adaptations in Architectural Environments

Artistic Environments have emerged as an alternative to and critique of existing art concepts that were regarded as bound up with the logics of the art market, its object fetish, and, more generally, modern capitalism. Proposing different forms of practice, beyond art institutions and markets, they embodied ideas of process and openness, enabling new relations with their everyday life contexts and allowing viewers to actively participate. People were invited to share new perspectives on life and ideas to initiate change in the existing system.

Adaptive architecture performs the adaptation of buildings. Nevertheless, a change of perspective, exchange, and "negotiation" with and between people on practices, lifestyle, and culture appear equally decisive. The concept of architectural Environments allows us to interrelate (built) surroundings, technologies, perceptions, and uses to perform necessary adaptations but also to initiate and mediate socio-cultural change, as interdependent processes. On the one hand, architectural Environments denote new interrelations and collaborations emerging between actors and adaptive architecture. They address the close entanglement of space, technology, and

cultural practices; architects develop open processes and possible adaptation scenarios for buildings that are inhabited and constantly are adapting in an ongoing development together with inhabitants and interrelated with social and natural surroundings. Specifically, the dimensions of experience and action for all inhabitants of architecture expand as they gain access to active participation and collective co-creation. All actors gain a broader scope of action but also have increased responsibility in the view of current social and global challenges. On the other hand, architectural Environments react to ongoing changes in the surroundings and the world. Considered as experimental labs, Environments embody open-ended design processes that enable contextual flexibility and situational responses to natural, climatic, social, or cultural changes.

For the conception of an open adaptation process, we have to think of adaptive architecture as part of Environments that span the built structures and their technology, as well as inhabitants and their experiences in relation to the local and global surroundings across time (see Figure 3). These new spatial and processual relationships imply paradigmatic shifts. The building cannot be conceived any longer as a passive object, but is regarded as active spatial states, which together with inhabitants, enable situational reactions. The design, formerly conceptualised as a completed project, turns into a multidisciplinary process that is jointly developed by architects, engineers, planners, and users (Ulber et al., 2020b, p. 24). Inhabitation alters from secondary or subsequent use to active participation, illustrating the open approach to adaptation that Environments promote. Their situational processes allow for new forms of communication and collaboration between all involved actors, including buildings, users, and surroundings (Ulber & Mahall, 2019, p. 103). Yet, to communicate and to realise interdependence and entanglement on all levels, be that ecological, social, political, and aesthetic, Environments have to commit to a spatio-political agenda that we tentatively formulate in three main points

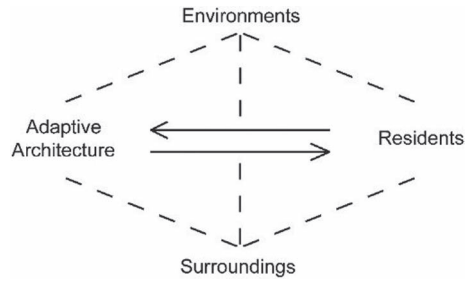

Figure 3

Scheme for Environments in the context of actors and surroundings. © Marie Ulber, Mona Mahall, Alsi Serbest

or "Environmental performances." To ensure open and joint adaptations in Environments with current and upcoming challenges, these focus on three dimensions: (1) How can all actors be involved in the design and further development; (2) How can heterogeneity and diversity be lived; and (3) How can the previously excluded (e.g., things, living beings, processes) be integrated into Environments.

First

In Environments, adaptations include habits and actions, collective ideas, and social-cultural practices, as well as architectural and technological elements and spaces. Adaptation processes are interdependent and address multiple dimensions of action and reaction. They can occur spontaneously, but also during a day to a lifetime. Adaptation is realised spatially and aesthetically, through shifting boundaries within and beyond an apartment where adaptive structures, space, furnishings, surfaces, light, and sound are able to respond to different situations, users, conditions (Ulber et al., 2020a, p. 124). It addresses various uses or social qualities; for instance, the common activities with a building, including stairwell, roof terrace, courtyard, and front garden. Thereby, bodily participation of inhabitants in a collective, communication-oriented production and re-production process, including care, work and adjustments to the seasons, allows them to directly and concretely relate to their built surroundings, to have particular social experiences, for instance by being hands-on, having agency, and being part of a collective, negotiating conflicts, and compromises; and to reflect changing spatial and environmental affordances as well as to test new ideas. Environments – being based on open processes – are fundamentally constituted by the bodily participation of all actors (those overlooked by and those estranged in an industrial production process, e.g. tenants, homeless people, animals), including human and nonhuman inhabitants such as plants; for example, in the open-air staircase in summer and with a winter garden atmosphere in the cold season. The co-existence on this community level might also affect the relationship with nature and with each other on a more general level and open up new forms of dialogue and interaction. In particular, residents and users could be more actively included in the initial planning process and in the ongoing adaptation processes. Thus, being bodily involved means taking part in more experimental design processes (e.g., practices in spatial perception, workshops on site, model or mock-up construction, etc.), "physically" and experientially testing the shared Environment. A new aesthetic might emerge through situational events, dissolving the boundaries between human and nonhuman, built and natural actors, things, and volatiles.

Second

As interdependencies multiply differences everywhere, new forms of exchange and negotiation between human and nonhuman actors, buildings, and natural and social surroundings are necessary. Yet, inhabitants of Environments consciously choose co-existence as a balancing of different (human and nonhuman) needs and as a new form of a co-constitutive community, where all are invited to shape their Environments together, enriched by the diversity and responsibility for the wellbeing of this heterogeneous community. Environments maintain a praxis of differences that helps communicate and negotiate heterogeneity.

Making many and diverse interests visible, including those of nonhumans, Environments allow inhabitants to participate directly or indirectly in decision processes. They provide means and media that make all voices audible as a basis for a more just and inclusive community. They could, for example, turn city halls into open spaces that support participation through communicative and mediating means beyond age, language, or citizenship, thus strengthening inclusive democratic processes. In Environments, digital change of society and life might become easier, but also more differentiated; for instance, in schools which require flexible learning formats of cross-class and free learning. New forms of schools can be conceived, developed, tested, and further adapted together with students, teachers, and the general school community, to more actively include minorities and to get in contact with other life forms, such as animals and plants. Environments, thus, might actually and rightly be regarded as continuous schools of life.

Third

The world is currently affected by a variety of changes, including a climate crisis, which leads to overheating or flooding of land and urban areas. While societies respond with enormous technical answers that aim at controlling or excluding "nature", Environments are built up of techno-cultural adaptations that support a fundamental rethinking of the manifold that discriminates between the inside and the outside. By concretely shifting and dissolving established boundaries, or by keeping them flexible, the fundamental conceptual (metaphysical) separations of nature and culture, building and surroundings, human and nonhuman can be exposed as conventional, historical, and cultural positings. As such, these separations come with inclusion and exclusion, with acts of distancing (from the *Umwelt*) typical to modernity and destructive to the planet. Environments, by contrast, constitute interdependently through the re-inclusion of previously excluded agents. They rely on the urban re-entry of things, beings, and processes, such as forests, agriculture, industry, and waste and thus help

scale down global problems to a level where they become tangible and affective. Citizens may opt for more green spaces instead of commercial areas; streets might be redistributed in Environments after the necessary mobility turnaround. With the temporary dissolution of concreted boundaries, plants, animals, and entire ecosystems can also find a habitat in the city and form new co-existences and alliances.

Conclusions

The "marvelous potentials of transformation and interactivity between art, the public, and nature" that Kaprow (1965, p. 182) saw in Environments depends on mutual interactions and interdependence. In Environments, "the name given to an art that one enters, submits to, and is – in turn – influenced by" (Kaprow, 1962, p. 14), an interplay between adaptive buildings, residents, and surroundings is part of open-ended processes. Unlike permanent objects, the situations in Kaprow's Environments were often "fragile and unstable," where "only the changing is really enduring" (Kaprow, 1958, p. 12). Oskar and Zofia Hansen (2014, original 1961) maintained that the Open Form allows for new spatial dimensions and necessary interactions between all actors; a condition to meet the demands for a more collective and sustainable architecture production and use. The changing relationships and dynamics between human and nonhuman participants, addressed by the Hansens, have lately found resonance in actor-network-theory. Bruno Latour's framework aims to overcome predetermined distinctions by emphasising collaborative actions and shared agencies between things and humans in complex design and use networks. This can be referred back to Environments that offer both a suitable theoretical approach and a practical model based on ongoing processes of change and adaptation during use. Three main aspects have to be addressed to realise the potentialities of Environments: the dissolution of a strict manifold that separates inside and outside (including questions of nonhuman co-habitants and plants); the communication of heterogeneity; and the bodily participation of actors in the development process.

In this sense, Environments span the material, technological, social, and cultural dimensions of adaptation to and for social, climatic, architectural, local and global change. They open up new dimensions of adaptation in architecture and offer an open framework for future design and use, as they involve all actors, including residents, buildings, and the surroundings in the adaptation processes. This is urgently needed in view of global, climatic, and social challenrges.

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Architectural Space of Ideas in the Author's Structures Presented at the Fire Painted Images Art Festival: A Case Study

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Abstract

The article is aimed to discuss the place of architecture in the space of ideas. The present work discusses a specific place, the Zaspa housing estate in Gdańsk, and refers to a specific person, namely, the author of artistic installations temporarily exhibited in the Zaspa housing estate. Also, the wider context of the specific situations in which the exhibitions were displayed is presented. The article attempts to answer the question of the importance of the quality of dwelling in the context of the quality of life of city dwellers. The work focuses on the subjective quality of life, identified most often with the feeling of satisfaction with life in its various aspects and with mental well-being. The quality of living, in turn, may be defined as satisfaction with the structure and functioning of the house and its commonly shared surroundings that constitutes the context of such living. The installations exhibited in the Zaspa estate discussed in the following article represent a potential area for activities with which to change the landscape and/or architectural elements of housing estates that refer to the living space. The essence of the research lies in the analysis of the place architecture occupies in a wider context of the intangible spaces. Homes can be perceived in a phenomenological way. It this case, the spaces of the house are inside us, just as we are inside them (Bachelard, 1994).

Keywords

architectural space of ideas, intentional design, housing estate

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Place of Architecture in the Space of Ideas

The usefulness of the city in the 21st century is perceived on different levels and understood in a variety of ways, depending on the individual understanding of the role of architecture. Apart from the objective physicality, which is currently characterised by various deficiencies (such as lack of an individually shaped space, traditional values, or identification with the surrounding region), there exists a sphere of mental influence that transfers us to intangible spaces (understood here as spaces that go beyond the tangible physicality and geometricity of architectural objects, by means of which they may transfer their users into the sphere of sensations and reflection). These spaces include the space of ideas and the space of meetings. The space of ideas may be understood as not yet a constructed building but one for the potential shapes, form, and a character of which there already are many premises. This concept forms a special category that belongs to the field of architecture, namely, a category that requires imagination and combining facts with elements resulting from having experienced ideas in the forms that preceded the actual building object. This category calls for a phenomenological insight, together with its non-measurable aspects, to fully grasp the issue under study (Merleau-Ponty, 2001, pp. 55, 77). Specific deficiencies, including the lack of individually-shaped space, traditional values, or identification with the surrounding region, are identified in areas built up with large-panel housing estates. Such residential areas represent a major sociological and urban challenge in terms of necessary revitalisation. At the same time, they constitute a potential space for activities with which to strengthen the local community in the sphere of value.

The architectural space of an idea may be understood as the sphere where intention, perceptions, and leading design concepts are conveyed by the architect to the recipients through the erected structure (for more details, cf. Kurkowska, 2016). This can be done by means of a recording, an image, story, or an event, where the said structures constitute a tool of communication. It should also be noted that autonomy constitutes an important distinguishing feature of the forms that comprise the idea of target architectural objects. As defined by Gabriela Świtek, "the model's independence from the process of designing an architectural work which culminates in the realisation of a work on a real scale, possible to live or be used" (2013, p. 424, trans. by the author). Other important features include the synthesis of the form and the conventionality of the material. These, however, may prove difficult to achieve in the case of a building structure. As far as they constitute tangible structures, material objects are a specific medium that participates in a complex process of reconciling their physical presence with the intangible sphere. It is important

to note that a specific building may not be an implemented one. On the contrary, it is possible to use other forms of architectural or artistic structures that include architecture as their subject matter. The creator may present initial elements of the design process, or focus only on an outline of ideas that precede the actual design and implementation stages. In this way, the architect may invite recipients to the space of ideas by conveying certain elements that exert an impact on the understanding and experiencing of architecture and its surroundings. These outcomes may provide purpose to the abovementioned activities and constitute specific objectives related to a particular thematic activity. Such a way of understanding space imbues the city with particular values required for a beneficial dwelling (habitation that is motivating and inspiring, free of shortages, acknowledging its context and people's individuality). Elements of such living conditions include design based on traditional forms, green areas, promoting native plants. Particular deficiencies, such as lack of intimacy, insufficient differentiation of architectural forms or interiors are prevalent in housing areas constructed of large-panel housing estates, commonly known as tower-block housing estates. These layouts of building development pose a major sociological and urban challenge. However, they also are a potential space for the activities aimed at modifications to the landscape or architectural elements of housing estates, and of actions indicating potential directions for these changes to be intoduced. In the case of such estates, it is possible to initiate overcoming of the difficulty of revitalisation, point to the areas of scarcity, set guidelines for feasible solutions, strengthen people's sense of belonging to a given habitat. Such activities may focus upon the value of dwelling, understood as living, in line with a sense of one's identification with the place, understood in a phenomenological way. According to Gaston Bachelard, a place means more than the architectural aspect of a shelter. As he states, a place perceived as a home means that the spaces of the house are inside us, just as we are inside them (Bachelard, 1961). The house is a privileged entity from the point of view of a phenomenological study of the intimate values of its space (Bachelard, 1994). It can also provide a starting point for artistic activities whose aim is to touch the core and sense of inhabitation. According to Bachelard (1994), the house may be understood as a phenomenon in which all particular values are integrated into one fundamental one, both in terms of unity and complexity. This approach can, thus, provide a sprinboard for the analysis of values attributed to the house. Bechelard proposed that we might perhaps be able to isolate an intimate, precise essence of a house by transcending our memories of our previous houses beyond our dream houses. Perhaps, if we know what this essence consists of, we could then make its spirit

permeate different objects in which we would try to place it by means of forming these elements in certain ways.

Revalorisation of the tower-block housing estates may require activities in the space of art, including intentional projects. The intentional nature of those artistic endeavours is embedded in the space of ideas. They are also based on conveying the message between the designer and recipients. The participants experience strong impressions with regards to the artistic projects familiarising themselves with spatial and multimedia content. The architect's message is contained in spatial presentations and received by the participation of recipients in the meeting space in which the idea space is located. All the instances presented in the present article offer examples of "place making" creation and can be treated as a public art, as they provide an element of identification with the place and form relations between the recipient and the objects. Moreover, recipients are treated as participants, which helps to build an urban identity. The aim of the Fire Painted Images project was to emphasise the relationship between the quality of living and the subjective quality of life of the inhabitants. The installations implemented as part of the project were intended as a cognitive inspiration and a stimulus to act towards improving individual living conditions. The assumption of the installations was also to provoke a wider social reflection on the issues raised. It was also possible to focus the attention of recipients not only on the form of the house, its organisation, and equipment, but also on the regional context and specific attributes of the place, such as the location of the aforementioned housing estate in the area of Trójmiejski Park Krajobrazowy, Kashubia and the Polish middle seaside of the Baltic Sea. The projects were supposed to be characterised not only by cognitive values (deepening of knowledge), but also utilitarian ones – specific indications of possible changes ("houses in the clouds"), the motivation to act by reminding the role that the house plays in the life of the resident.

It must be remembered that the modern city is culturally varied: filled with attitudes and needs. It should offer a chance for these needs to be fulfilled. As noted by Joseph Rykwert (2013), the city should have many faces and refer to multiple senses. The role of art introduced to the public space is precisely to provide a multisensory dialogue between the artist and the recipient, it is the awakening of reflection. It asks questions to which we should seek answers within ourselves, it leads to the strengthening of identification, gives a hint for a better understanding of the conditions between the inhabited places. Furthermore, it provides an indication of the values that are individually selected and introduced to our homes, they will make them closer to their inhabitants.

The activities within the Fire Painted Images project are based on the thesis that, because of its intentional content, a model or sketch is an ar-

chitectural object equal in terms of importance to a building (Świtek, 2013, p. 462). In areas where investments may be difficult to implement physically, temporary architectural structures may constitute a form of social activation as well as provide a surplus of exceptional cultural value to the space. Despite their temporariness, purposefulness understood as meeting particular needs through these constructions is achieved. The content and experience gained in such houses may remain in the minds of the residents (in their memories), thus influencing their sense of good habitation. Once the physical impact of artistic objects in the meeting space has ceased, the ideas pass to exist in nonphysical reality. Recalled from memory, they can inspire; they stimulate subsequent reflections and actions. Abstraction meets the reality in the everyday experience of dwelling. This is how architecture may fulfil its role in the special category of architecture, namely, the space of ideas (not referring to an implemented building yet, but to one characterised by many premises of its potential shape, form, and atmosphere). This category requires imagination and engaging experience of the prior concepts, as well as of previously implemented structures of the building object. Liberated intention affects the permanent elements of the physical environment with its strong connotations. Abstraction meets the reality in the everyday experience of habitation.

As examples, intentional structures (projects based on a specific, important meaning, including sketches, drawings, paintings, sculptures) created as part of the Fire Painted Images art festival organised by Gdański Archipelag Kultury are presented in the article. The first project entitled *Identity Capsules* (*Kapsuły tożsamości*, 2018) shows the physical and nonphysical layers of the house, both its concept and image, inside ourselves. The second project entitled *Home into Clouds* (*Domem w chmury*, 2019) refers to the archetypical shelter and to the human need to escape from inconvenience. The values represented by the archetype of a home in our everyday lives may be identified as the feeling of being rooted, a sense of belonging to a group or a region, and being a part of a local society. Those impressions may be located in-between art and architecture. The intentionality of action is supplemented with an account of ideas and spatial creation in the shape of an artwork, which is not only based on the presented form, but also carries a message, an idea. The context of the tower-block housing estate is related to a specific human dwelling, one that provides a place for living, but may also generate a certain dose of anxiety and inconvenience from which social problems arise. This understanding of tower-block housing estates offers an important reference for the author's work. This is how the usefulness of the modern city may be discovered: its difficult context may trigger activities that add new and lost value. It may inspire and activate both designers, artists, and the local community.

The architectural space of ideas exists not only in architectural or urban design, but it also appears in artistic, participatory, and educational activities. By participating in such activities, recipients may strengthen or broaden the range of values they have experienced so far, especially those related to the quality of habitation. During this participation, the partakers co-experience a specific event or co-experience specific structures in a common meeting space. The experience constitutes somehow a confrontation with a structure that initiates a transition to another sphere of experience, and it is an important stage for them to be included in the space of ideas. The sensory involvement stimulates the recipients makes them more sensitised to the content to come. The meeting – in a sense a way of experiencing architecture by the individual reception – is understood as the act of coming in contact with the space of an actual architectural structure or of its conceptual outline. Moreover, participation in an artistic event arranged especially for the purpose of creating a space of meeting may be perceived as an abstract meeting. Social interactions that accompany the community aspect of the meeting strengthen the motivation to understand the content.

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space of ideas (creation).... architectural structure (physical implementation).... meeting space – availability of the space of ideas (reception)

Diagram 1

Reception of architectural structure

Typically (as illustrated by Diagram 1), an architect builds a physical architectural structure. It is a permanent (in accordance with its actual physical existence) object in physical reality. In this case, the space of ideas accompanies the initial stage of the design process. Thus, after erecting of the structure, it is possible to participate by somehow experiencing the structure in the space of a physical encounter with it. These elements are permanent in the process of communication while designing and implementation of architectural structures is conducted. The implemented structures can be revisited in the meeting space or recalled from memory. Thus, the space of ideas, which is the place we want to return to, can be generated in our imagination, whenever needed. This guarantees the constant presence of the structure within the range of the recipient's experience.

In the case of intentional projects that constitute part of temporary events (such as the festival in Zaspa), a different situation transpires. A conceptual architectural structure that creates the content of the message, such as an architectural sculpture, or a picture, a graphic is available to the audience only during an exhibition or an event (in this case, during

a single evening). Therefore, the meeting stage is of limited and unique nature. It is only possible to recall the event by means of memory. This makes it very difficult to access the space of ideas. However, the timeliness of this situation, known to its participants, causes them to focus on a unique single experience. This may make the possible benefits of this fact as significant as it would be in the case of a temporary reception of a long-term exposure. It seems that timeliness, and more specifically the short duration of existence, does not directly affect the advisability of this type of action, other than limiting the extent and time of impact.

Undoubtedly, art plays an important role in the public space of the modern city, especially in its cultural areas, as it diversifies existing spaces by introducing new forms, colours, sounds, smells, materials, and textures into them. In this case, the diversity arises from using forms that originate from local circumstances and are rooted in the tradition and history of surrounding areas. That is why the objects of art located within a public space could enrich a city, or rather a specific district, by adding a new, symbolic layer.

Introduction of objects of art can also be taken into consideration as a part of the "placemaking" concept.[1] Especially when it concerns the art of the festival as a whole, including the fact that the event is of annual character, and is recognisable in the immediate vicinity of the space and the entire region. Some theorists (e.g., Lacy, 1995) distinguish public art as a category of art in a public space, determined by the relations of contexts that connect it with a public space. Oftentimes, the chosen elements of existing historical, social, architectural, and urban realities become more important than the others. Moreover, art in public space has a significant impact on the symbolic sphere, it is an element of identification with the place and helps to build urban identity. This usually happens in the case of art that befits the existing context of a place (the site-specific art).[2] Such artworks are related to a given space, describe it, or are testimony to events, people, or local narratives related to that area.

The events discussed in the article below are directed towards a special aim and related to the annual Fire Painted Images (Polish *Obrazy Ogniem Malowane*) art festival. The aim is to contribute to the revitalisation of the Gdańsk Zaspa housing estate by participating in artistic activities. The

[1] The concept relates "small steps method" as in "manifest" of the Project for Public Space, with attention to the identity aspect of the place which refers to the feelings and needs of residents. This concept relies on the belief that a given place is to serve people, and not the other way around, and therefore it should respond to the needs of users as much as possible.

[2] Online at: https://www.nationalgalleries.org/art-and-artists/glossary-terms/site-specific-art (access date: 14.01.2021).

estate was established in the 1970s and includes overscaled multifamily buildings. The intentional nature of the projects presented by the author of the present article,[3] along with the subject matter, place the art-related activities in an architectural space of ideas based on nonverbal communication between the creator and the recipient. The recipient may experience transient impressions. However, they may also familiarise themselves with the spatial and multimedia content of the presentations while participating in the meeting space where the course of the events takes place.

The article attempts to answer the question regarding the importance of the quality of living in the context of the quality of life of city dwellers. The work focuses on the subjective quality of life, identified most often with being content with one's life in all of its aspects, including mental wellbeing. However, the quality of living can be defined as satisfaction with the structure and functioning of the house and the common space surrounding it that constitutes the context of this living. According to Neil Leach (2000) involvement in the process of aestheticisation is an inevitable consequence of practicing the profession of architect. Architects are expected to see the world in terms of specific representations, such as projections, sections, elevations, and perspectives. The foregoing is the reason why their world is the one of images (Leach, 2000, pp. 9–10). While observing everyday practice, in which obtaining a superficial image seems the ultimate goal, it is difficult to disagree with Leach's concern. More so, the search for an expression of architectural concepts seems to be a trail that allows us to proceed to nonvisual areas, as it moves closer to the art-related abstraction and to reflections closer to poetry. It could be the possible direction for expanding the field of architectural influence. Especially since, as stated by Leach (2000), the consequences of aestheticisation (when aesthetic tendencies are not based on fixed axiological patterns,[4] but rather are simplified to embellishment and styling (Welsh, 1997, p. 20)) are serious. Privileging the image has led to an impoverished understanding of the built environment, turning the social space into a fetishised abstraction. The space of life experience has been reduced to a codified system of meanings. Due to the increased emphasis on visual perception, a corresponding reduction has followed in the participation of other forms of sensory perception (Leach, 2000, p. 10).

[3] All of the projects were created by the author, but in the cases of the chosen ones, additional cooperation took place or some participants joined in the author's workshop, which in a sense made them a part of the project.

[4] Aesthetisation not only amounts to the aforementioned dangers, but also presents an opportunity for free artistic activities from the current cultural canons, which allows art to become a component of life.

The Context

We dwell in houses, housing estates, villages, and towns. Within these various events take place, our lives go on. The specific situation described in the present article occurs in the Zaspa housing estate, Gdańsk, during the successive editions of the Fire Painted Images art festival.[5] Activities in the nearest surroundings or slightly farther from the actual place of residence may relate directly or indirectly to the complex process of dwelling, one which we constantly participate in. It is the author's assumption that these activities may also influence the sense of local and regional, as well as social identity, which is necessary for a good dwelling.

It is important to know the broader context, cultural background, and environmental conditions of the areas one's inhabits. Moreover, by co-creating inhabited spaces and participating in events, may lead to being self-actualised as a resident. Such an effect would result from the sense of purposeful living in a specific place. As Augustyn Bańka notes, "in their living space, a person should understand its logic, the purpose of their actions and existence" (Bańka, 1997, trans. by the author).

Photo 1
The Zaspa housing estate in Gdańsk

[5] Online at: https://gak.gda.pl/flagowe-wydarzenia/ (access date: 16.01.2021).

Zaspa is a district of Gdańsk mostly filled with housing estates (Photo 1), chiefly designed and built in the 1970s. These estates generally consist of ten-storey, multifamily residential buildings assembled by utilising a prefabricated building technology. The size of the flats, their furnishings, and the entire infrastructure and technical parameters complied to the standards of the time (Chomątkowska, 2018, pp. 49–56). However, they diverge from the current standards in variety of ways. This is the reason why these estates, in many aspects, are negatively assessed as a place of residence for the contemporary inhabitants of Gdańsk (Basista, 2001; Chmielewski & Mirecka, 2007). The economic realities dictate the continued existence of these structures, while convenient communication routes and sufficient provision of services seem to be satisfactory in terms of meeting everyday needs of inhabitants. Despite the on-going renovations and modernisations, little significant improvement has been made to the quality of dwellings. The density of the built-up space, which modern building developments have significantly added to, leads to a sense of crowding. People experience the lack of intimacy and differentiation in terms of architectural forms or interiors (see: Graham, 2016). However, the local community is active in many fields, including culture and art.

An institution known as *Plama* Gdański Archipelag Kultury [Plama Gdańsk Archipelago of Culture] is one of the places where activity within these categories is undertaken and remains the main animator in this area (associated with analogous Gdańsk institutions in Gdańsk Archipelago of Culture [Gdański Archipelag Kultury]). Since 1993, *Plama* has been initiating and organising the aforementioned festival on a yearly basis. The diverse themes featured in the festival are linked by the motifs of fire and light by hosting both established artists and amateurs. The event is held during a single evening in early autumn and visited by hundreds of spectators from Zaspa and adjacent areas. The festival has become a popular Trójmiasto (encompassing the cities of Gdańsk, Gdynia, and Sopot) cultural and artistic event. Prefabricated structures from the 1970s constitute the formal context of the event, while a group of initiators from *Plama*, along with local residents and visiting artists, create the social context. Owing to the variety of presentations hosted, the art festival awakens interest among the broadly understood community of the city.

The Author's Structures Presented at the Fire Painted Images Art Festival: A Case Study

The proposed forms could aid identification with inhabitated places, and to cater to the needs of a wider group of recipients (not only those who

inhabit this very place). Art aims to diversify, tame, and help to individualise the anonymous space by breaking the constant artificial repetition of forms and patterns and providing other formal proposals enriched with the context.

In a public space, art often accompanies the revitalisation of places in the city. This is the case, for example, with murals and contribution of such forms of art to the renewal of residential areas. In Lyon, the Cité de la Création group refer in their large-scale works to the artistic and cultural heritage of the city. In Gdańsk, a similar example is the Monumental Painting Collection in the Zaspa estate. The murals are created on the walls of the gable walls of blocks of flats. Thus symbolic elements are introduced that establish a dialogue with recipients. Moreover, the presence of murals differentiates the homogeneous, monotonous architectural tissue of the housing estate.

Objects of art located in the public space contribute to the atmosphere of the city and the urban environment, thus increasing the aesthetic value of the area.[6] They inspire and motivate recipients (see: the assumptions of "placemaking" concept defined as "making places, not empty spaces" and remaking a place for the city regeneration). The intentional projects presented in the present article include works of art by the author (i.e., graphics, paintings, sculptures, spatial installations, and objects transferred directly from the physical world). These result from experimenting with space, physical forms, and nonphysical values, thus they deal with the challenge of communication within the real space of ideas, which usually is the purpose of art. These projects could be treated as pieces of site-specific artwork, because of their cultural context and the content referring to the place of exhibition. Furthermore, these projects are addressed mostly to the inhabitants of the neighbourhood in which the festival is set. Some objects used in the presentations could also be treated as objects based in small homeland. Still connected with the regional landscape, they serve as examples of abstract forms which resemble houses. In a way, the presented objects created by the author could be treated also as a social art (see: Nizołek, 2015), as they focus on the social context and its participatory nature, whereas the main message is the initiation of revalorisation activities within single apartments, understood more broadly as living spaces (see: Chmielewski & Mirecka, 2007).

As observed by Jolanta Brach-Czaina, everything that exists around an individual, including every object (also those of everyday use), as well as the

[6] The Zaspa space requires revaluation in terms of elements co-creating the concept of aesthetics, such as beautiful, sublime, picturesque, or also richness and simplicity, regularity, and proportionality, which are mentioned in aesthetics as the causes of beauty (Tatarkiewicz, 1975, p. 14).

entire environment, can become a piece of art, which is great significance to contemporary art. Even the objects created as unique artworks can be reused in new creation process (Brach-Czaina, 1984, p. 199).

The author's assumption is that an idea, or a concept, a specific message may mediate through actions that border on architecture and art. It is a certain conventionality and symbolism that refers to the area of art. This also includes an intimate scope of action, one that does not match the actual dimensions of the building. Artistic activities, by their nature, are characterised by synthesis, and they often apply transitoriness and indeterminacy. The structures presented as the author's project were constructed in a similar manner. It should be remembered that, as Jeremi T. Królikowski rightly pointed out, "architecture is art when it is a work and not a product" (Królikowski, 2004, trans. by the author). It seems that this is the case when art expresses the content, as oppose to fulfilling solely the criterion of utility. Poetics is closer to art than engineering because engineering can merely become an instrument of expression and not its goal. The author is not certain whether her objects used for presentation could be qualified as works of art. Certainly, if their evaluation leads to them being qualified as products, it is still to be hoped that these would be seen as artistic products.

As mentioned previously, architecture can also be experienced through the intentions and content written into it and then interpreted. Architectural structures, which constitute an elements of the author's objects, are intentional forms that have been turned into physical objects on a small scale. Although conventionality is accepted, these objects are not physical buildings. In the context of the place and the accompanying event, the objects can be described as intentional projects. Their objective is to move people, to convey content, to offer inspiration, and to experience ideas. Certain forms occur in space, and time is required to experience them. In the meeting space, these forms are closely connected to the semantic narrative perceived in the experience process.

As Tim Ingold points out, "when we say that something has been done intentionally, we understand that an outwardly visible human action is the result of thoughts that have been born inside" (Ingold, 2014, p. 6). This is the basis of the author's attitude to intentionality, which also assumes the interpretative activity of the recipients' mind and their open attitude towards the project experienced in the meeting space during the events described in the present work. An open attitude allows for a more complete reading of the intention contained there; it permits a better expression of the conceptual message revealed in the nonphysical space.

The architect enters these projects with an intention to convey a message, to appeal to the senses, and to enrich the experience and knowledge

of the audience. The architect is motivated by an actual intention to act. These actions are thematically coherent. Their distinctiveness is determined by various forms of communication and by the objects presented in subsequent events. Forms of artistic expression are also visually related, as a homogeneous material by the same author. It seems, however, that these remaining forms of art are bestowed with a different potential and nature of the action. Certainly, the context is different, for example, taking into account the passage of time and the changeability of reality.

As specific examples, three intentional projects were presented between 2018 and 2019 as part of the aforementioned Fire Painted Images art festival. The first project entitled *Houses in Clouds*[7] (Agnieszka Kurkowska, workshop participant), drew attention to the issue of the nonphysical structure of the house and the concept of a dream house. The second project entitled *Identity Capsules*[8] (Kurkowska, in cooperation with Maciej Tryba) shows the physical and nonphysical layers of ideas and the image of the house within ourselves. The third project, entitled *Home into Clouds*[9] (Kurkowska), refers to an archetype of shelter and human need to escape from inconvenience. This project, being the leading motif, concerns the concept of a shelter that takes the recipient into the sphere of dreams to overcome adversity.

These projects refer to the values that the home brings into our lives to support our everyday existence and the sense of rootedness. The three activities presented above are located on the border between art and architecture. The intentionality of the activities is accompanied by an artistic record of ideas and spatial creations that depict the form, but also convey a conceptual message. The context is a block housing estate.

Intentional Project Entitled *Houses in Clouds*

Houses in Clouds (Photo 2) is an intentional project implemented in the Zaspa estate in 2018. It was based on an active participation of a group of people willing to create a symbolic house in a box: a structure made on the basis of prepared materials. The collection of these elements was

[7] Cf. https://www.google.com/maps/d/u/0/viewer?fbclid=IwAR2qxBdH0s-r_7GpNp-Ofx45BIYDI3LRP8Bbmr-UkPUceJC20A-xVS9WRL8&mid=1fiaCiVbAI9ppwLoOy3LoNKc48MOpWath&ll=0%2C0&z=18 (access date: 16.01.2021).

[8] Cf. https://www.facebook.com/PlamaGAK/photos/gm.253675132016208/10156207102367690/ (access date: 14.01.2021).

[9] Cf. https://www.gdansk.pl/wydarzenia/obrazy-ogniem-malowane,w,24752 (access date: 16.01.2021).

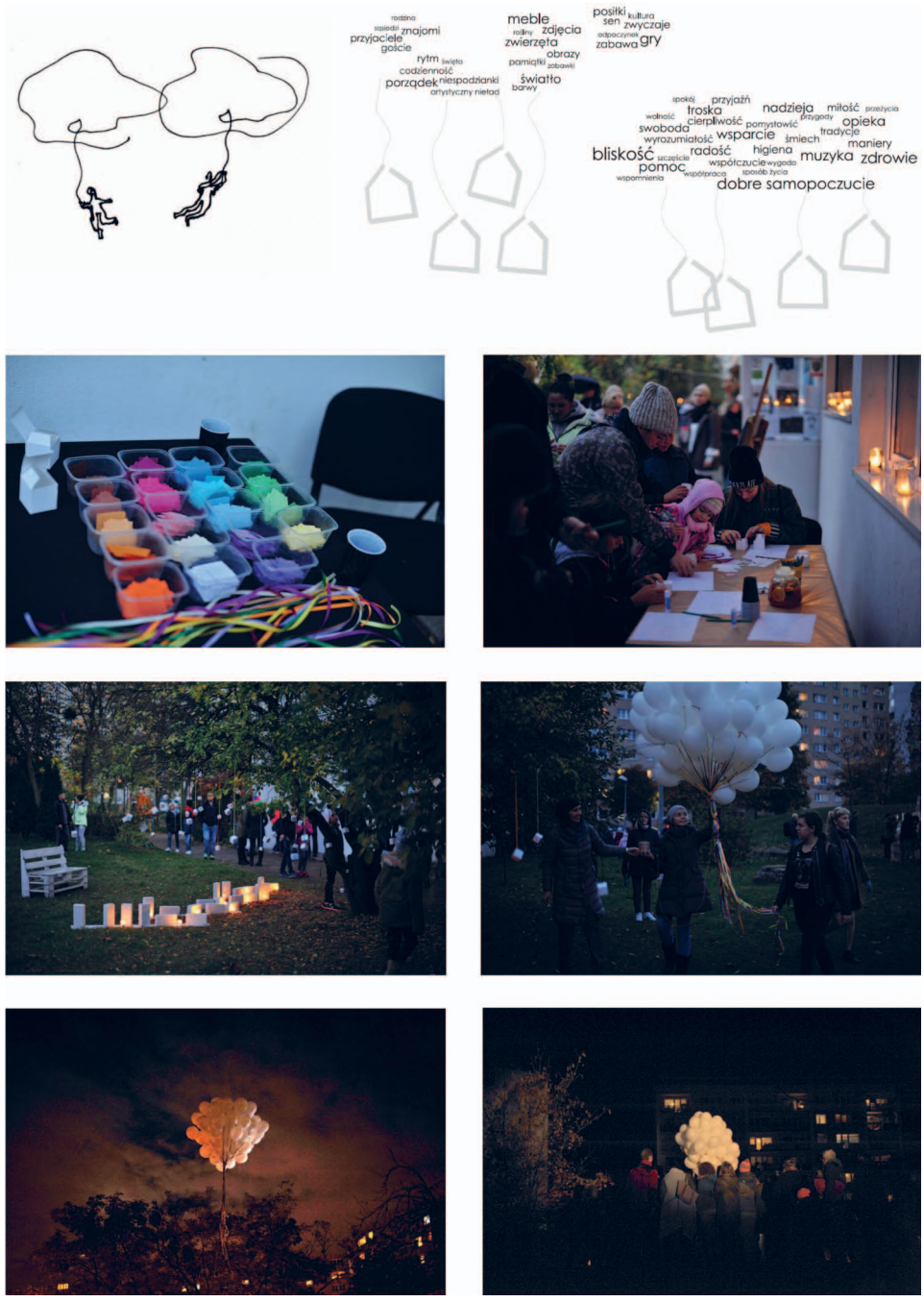


Photo 2
Houses in Clouds

included in the planned event, the course of which was consistent with the previously created scenario.

The theme of the project was related to the house as a special architectural structure which is a response to the multi-faceted need for dwellings and the need for shelter. Both the manner of in which the dwelling is understood and the individual range of aspects and elements accompanying the living space, determine the individuality of the house as a physical structure and a medium of communication (which conveys meaning and evokes emotions). Any house is co-created by individually selected, formed, and juxtaposed physical and symbolic elements. It usually evolves during our lives. It is intuitively created and altered to suit current needs. A house, not necessarily an inhabited one, meets all expectations of its inhabitants. It is sometimes uncomfortable and disliked. Unadapted, mismatched. This sometimes results from ignorance and incompetence on the part of its inhabitants, sometimes also from external conditions that are too difficult to overcome.

What seems to be the most perfect form of dwelling is usually a utopian ideal home, whose image remains imprinted in our minds and souls. It is taken from the family home, or based on it. Sometimes, we have to change our house. Then, the perfect image is invoked in our imagination and called to existence by substitute means, it gives us a temporary sense of security until a new home is created. However, as inhabitants do, we often wonder what our home is and could be like? What are the values and elements that make up the house and which ones are perhaps missing? Can the deficiencies be supplemented? Sometimes, a thorough analysis and self-reflection is enough to improve the house. This is the motivation the *Houses in Clouds* event was dedicated to. During the event, prior to the happening, boxes were gathered and attached to the symbolic cloud, made of balloons, which was jointly brought onto the highest hill in between the blocks of flats of the estate, from where it let to fly (limited by the length of the rope was attatched to) into the sky. Hanging in these houses under the cloud was supposed to symbolise the realisation of one's dreams. The structure drifted for a long time between the blocks, leaving the recipients time for personal reflection on their own ideas of the house, and on the possibility of realisation of those concepts. A cloud flying into the sky floating between the blocks of flats, lifted the dreams. By situating them in a real context and making them confront reality, the existence of a pattern that we are aiming for was revealed. After the flight, the houses returned to their authors so that they could be taken with them as stimuli for further reflection on the subject. It seems that the form of the proposed happening was accessible to each participant, which allowed them to participate at any level of understanding of the subject and offered a temporary situational involvement in the problem. At the same time, it remained clear to those

not directly involved in the event. By means of the project, the inspiration to improve and strengthen the quality of our current living conditions was given. The potential effects obtained are indeed difficult to measure and define precisely, but they certainly lead to broadening the knowledge on nonphysical elements that influence the structure of the house, understood as the inhabited space together with its furnishings. Those intangible elements influence the perception of space and the experience of the sequence of sensations. Enriching the decor with missing details, replacing selected furniture, rearranging attention to colors, smell, and sounds lead to the desired atmosphere. It may be unconsciously overlooked in the absence of knowledge about its importance in the everyday and long-term image of the home. Thus, the participants have a chance for self-reflection, broadening the view of the experienced aspects and their components. Verifying and completing them can help one get closer to creating the perfect home. Moreover, an individual, subjective assessment of selected properties of a residential space broadens the knowledge on the lifestyle, cultural conditions of living, and the relationship between the psychographic features of residents, as well as the perception of the living space. (see: Jansen, Coolen, & Goetgeluk, 2011).

Project Entitled *Identity Capsules*

Identity Capsules (Photo 3) is the title of a project carried out in 2018 in cooperation with Mr Maciej Tryba. The context and elements of the theme included blocks of flats: multi-storey and multi-staircase houses with dozens of flats and hundreds of inhabitants. Located in the Zaspa estate, the blocks seem as if outside the natural regional context, outside the regional tradition. As such, they sometimes generate the problem of lost identity on the part of the inhabitants. However, behind the façade of a prefabricated buildings, we may find our individual and undisclosed world. An image of the outer layer reveals an intriguing depth.

The identity capsules referred to in the title constitute six independent spatial elements, each of which, according to the author's concept, shows a slightly different aspect of the potential of the environment. Under the layer of a photograph of a block covering it each object contains layered graphics showing the figures of the inhabitants and outlines of architectural objects. Each of these objects also contains impressions of forms which result from regional conditions, for which the background is provided by copies of the author's pictures. They illustrate the idea of the objects of dwelling set in the topographical and natural realities of the Kashubian region where the housing estate is located.

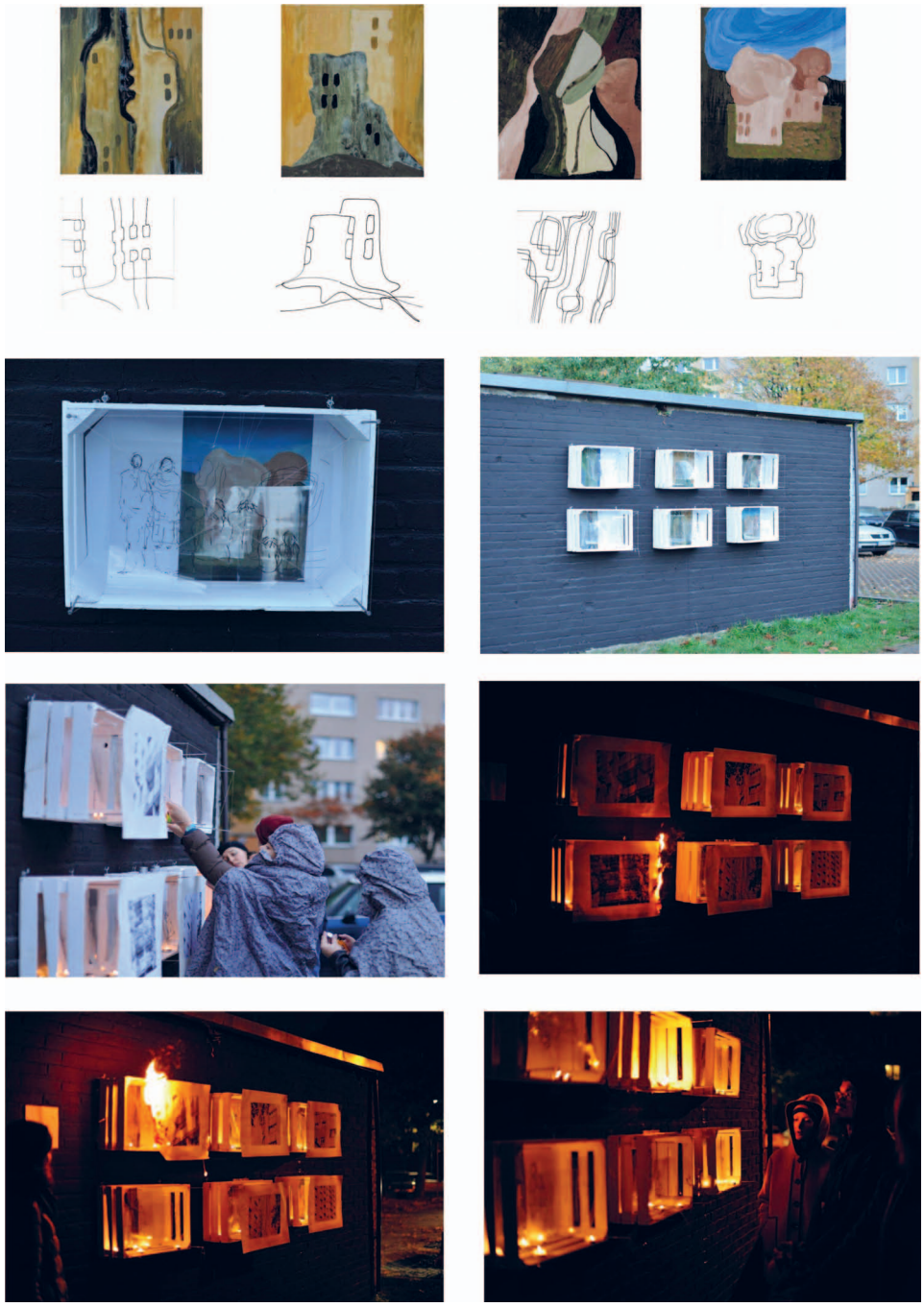


Photo 3
Identity Capsules

The area provides the direct and intentional context of the project. Graphical elements placed in the capsules contain various visions, concepts, and facts. The capsules also include searches, hope, longings for a slightly different house, a different dwelling.

During the event, the paper curtains (the ones that cover the interiors of the spatial objects and illustrate the façades of the blocks) were burnt. They departed the area in a symbolic way. by means of a purifying gesture, their existence was discontinued. In a way, they were freed from their pushy and rigid frames. The observers were then able to see the interior perceived in an artistic manner (through the aforementioned graphics and paintings) showing the multilayered relations between the values of the natural environment and the resulting visions of architectural forms. The intertwined figures graphically complement the image of the inhabitants' connection with the environment's potential shown in this way. These images were illuminated by warm candlelight placed inside and behind them. Flickering, they additionally strengthened the impressional nature of the message. An artistic vision points out a possible direction of the search for identity. It can help complement the deficiencies experienced by the inhabitants of the block of flats. The author made an attempt to inspire the participants to looking for the missing values which could potentially be found in the regional context, as the Kashubian region is full of natural forms and regional design (a source of creative inspiration). These regional forms may also directly constitute a source of value implementable into incomplete spaces both on the architectural and town planning levels.

The spatial objects presented as part of the project symbolically referred to actual residential houses with individually inhabited capsules, that is, individual flats. These flats contain our identity. It is this identity that co-creates the houses located in the space. While blocks lack features that would identify them with a wider region, individual interiors take us into the individual worlds of their inhabitants. This concept provides the second aspect of understanding the title *Identity Capsules*.

As can be quoted after Andrew Ballantyne (2007, p. 4): "Identity is political, in that it is generated through our relations with others. It is not altogether interior, but has an external aspect." Therefore, the capsules relate also to the broadly understood surroundings. Objects, people, events, thoughts. Rather than being one's personal problem, identity is rather a social phenomenon.

The observation of images drawn with warm light in individual capsules offers a moment of personal contemplation related to complex phenomena and relations. Do they reveal the truth about us, the inhabitants of blocks of flats? Can they inspire change in their immediate surroundings? The author, whose intention was to evoke such a transformation of space,

hopes that this may happen. In any case, the proposed project, through its content, has the potential to achieve such effects.

Intentional Project Entitled *Home into Clouds*

The last project presented in this article, also presented in the Zaspa estate in 2019, was entitled *Home into Clouds* (Photo 4). Both elements (clouds and home) return to a similar and yet different thematic and formal approach. The home is indispensable while considering the superior concept of movement in the area of architecture, hence its literal presence as a symbol of the artistic message. In the presentation entitled *Home into Clouds*, a spatial installation was used (which constituted an initial background and, ultimately, the final effect of the event) based on an artistic motif of clouds that lifted individual figures.

Both elements were made of plastic, as outlines of shapes (made of multicolour and shiny wire). Each of the figures was assigned a symbolic house (a wooden schematic element reflecting the form of a house with a gable roof) and a glass bottle with values written on carbon paper. Clouds symbolise dreams and unavailability, but also a nonphysical dimension of reality. Houses are human settlements and shelters. The characters, symbolic inhabitants in their homes, overcome their own fears and weaknesses, take up challenges, and change the world around them. In this installation, the house is a symbol of shelter that envelops human existence and releases their energy for action.

During the event, paper cases that enveloped individual glass bottles with values were burnt. Fire was a symbolic trigger of energy to act: to rise to clouds. The burning paper showed a wire outline/drawing of clouds and revealed the figures attached to them with their homes and values. Next, the bottles were given a source of light (a glow stick), which activated the values written inside, thus showing them to the recipients. It is the values that, by belonging to our homes, bring us towards our dreams. It is a value-centred home that serves as the starting point for all of our activities, but in particular, it mobilises us to overcome difficulties and to achieve our goals. Fire was what revealed and activated this concept, which at that point became the subject of individual contemplation by the audience.

Sometimes, the search for a home is accompanied by a lack, need, or fear. Once it is liberated from them, once it is purified, it becomes free: it drifts freely towards its goals, floating in an enigmatic cloud of dreams and aspirations.

The activities described above are related to the subjective and objective aspects of quality of life, such as: the feeling of happiness and safe

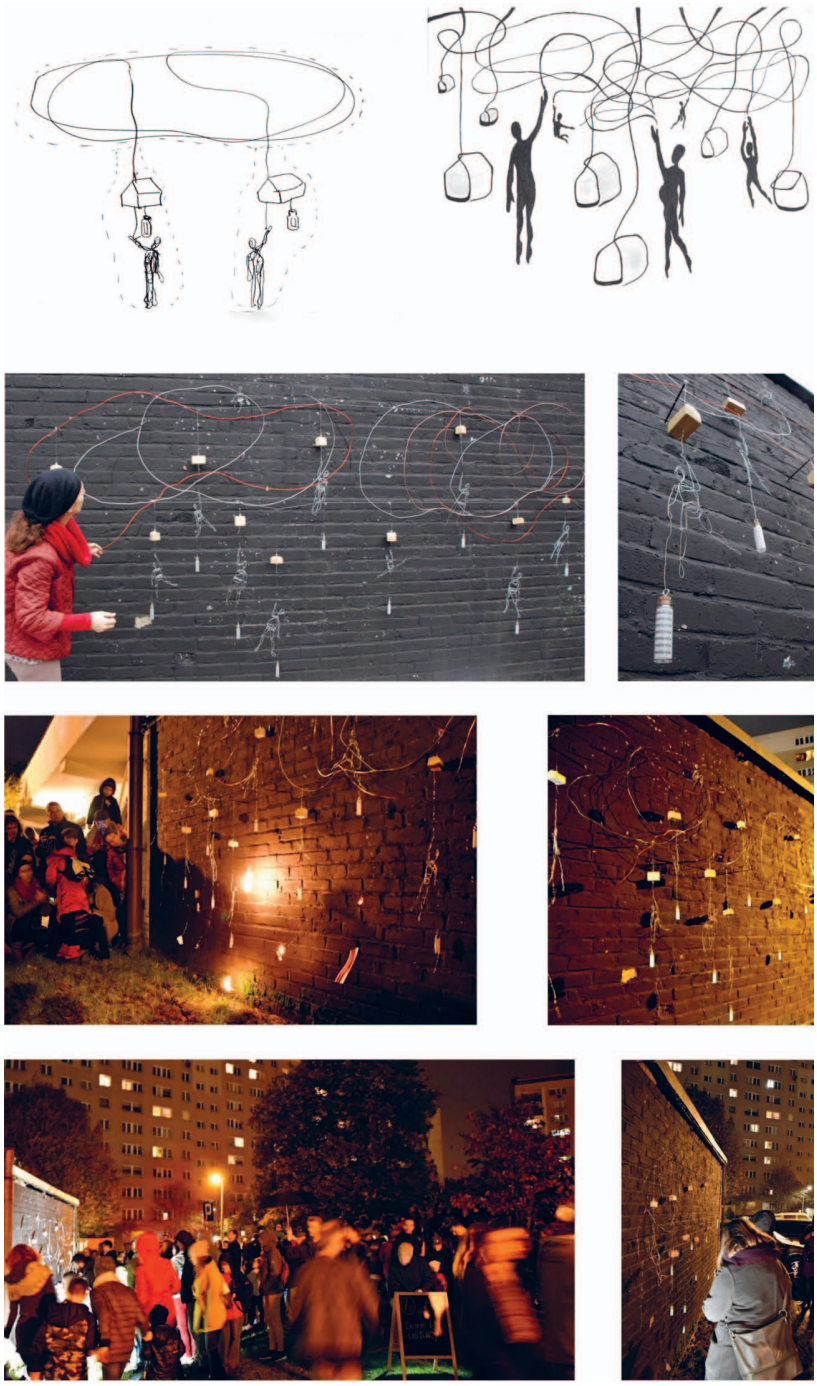


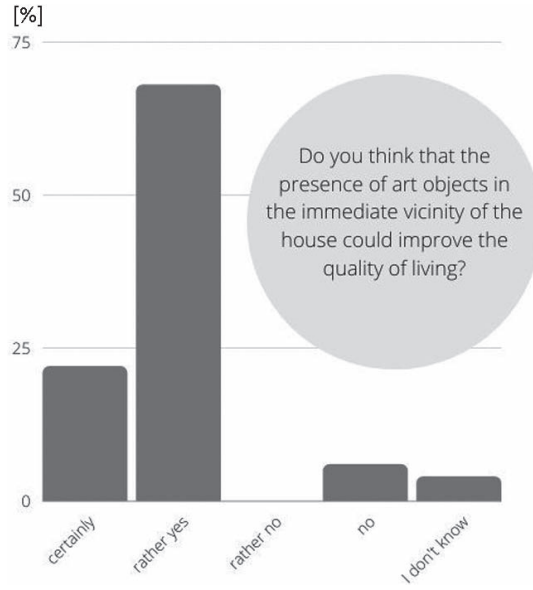
Photo 4
Home into Clouds

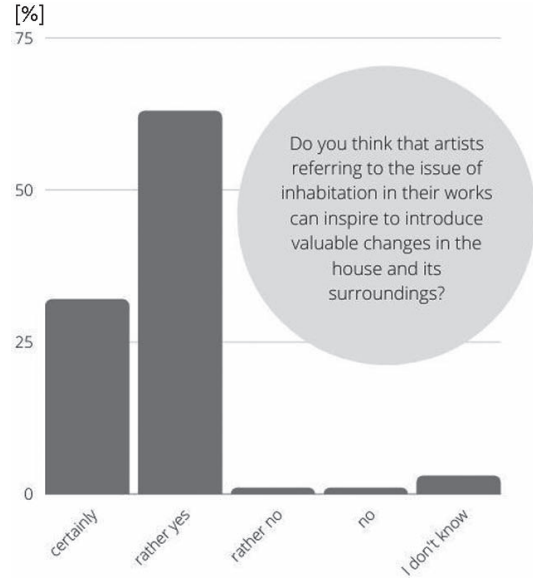
use of the bathroom – very broad topics that require a phenomenological approach and ergonomic issues with a clear usability algorithm. This quality, as a complex and ambiguous concept, requires an interdisciplinary approach. This means that the key aspects from the point of view of the research problem should be taken into account in individual cases. Here, a multidimensional and multi-faceted house is considered, which in its specific version serves as a living space, that is, a house in a housing estate built up on multifamily blocks. As noted above, both the house and the accompanying public space require revitalisation, which is the end result of the author's activities.

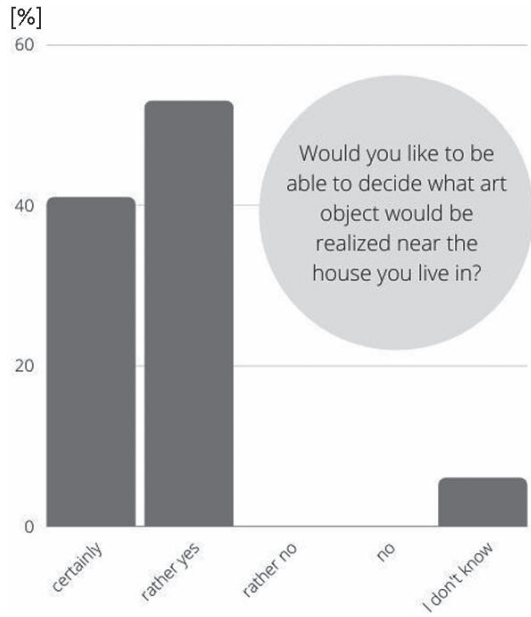
The author was surprised by the level of interest in the above-mentioned workshops, the inquisitiveness of the participants, and their commitment. The values symbolically located in the boxes and comments during the work indicated the major focus of the proposed action. The participants eagerly used the prepared hints and discussed the task. Face-to-face interviews showed that many people found this action valuable in the context of considering and reflecting on their home. The remaining activities, devoid of the participatory aspect, did not result in similar amount of feedback. However, the number of participants indicates interest in the subject matter. From her numerous post-event conversations, the author realised the audience's amazement at taking up architectural issues in the form of an artistic activity. Not all elements of the message proved clear and unambiguous, but all interlocutors confirmed that they had made a reflection on the condition of contemporary living. The local aspect of the Gdańsk block of flats, that is, the Kashubian region, was not clear in each case. The most important element pointed to by the recipients was an unconventional approach to action in the field of architecture, although some people would have preferred to receive information in the form of a text with illustrations, which they declared to have been possibly more readable. Since there were no negative opinions voiced by the recipients, barring those that suggested some improvements in terms of readability, it was concluded by the author that the presented current of artistic activities should be continued.

In 2018, a survey on homes, including the place itself and the need for art in a place of living, was conducted to study the quality of living and the place of art in it. The survey was carried out by asking questions aimed at eliciting important information on the living process from the respondents. The questions were also aimed at verifying their feelings in terms of the level of satisfaction with the inhabited house and their interest in the presence of art objects in the immediate vicinity. The group of only 46 people who took part in the survey consisted of women and men aged 19–65, living in the city of Gdańsk. Despite the small number of participants, the author decided to present the research results (diagrams 2–4) within the

scope of topics related to the issues analysed in the text. Most participants reported feeling the need for artwork in their neighborhood. Moreover, they admitted that the artist's role (referring to the issue of inhabitation) could be to inspire valuable changes in the houses and their surroundings.







Diagrams 2, 3, 4
Survey results, the survey part concerning the place and the need for art in a place of inhabitation, 2018

Furthermore, the majority of participants agreed that art-related events held near their places of residence could increase their satisfaction of living in a particular place. The majority of the interviewees also answered that they would like to be involved while decisions are made on the objects of art to be located near their homes. Due to the low number of participants, the author is unable to treat these results as proper research material, but these findings show a some positive inclination of people toward the analysed issues.

Conclusions

Taking action also in the seemingly ephemeral area of art can bring about important subjective and objective effects even during short-term public exposure. First of all, such activity aims to improve the living conditions of the inhabitants, and thus improve their quality of life. It also contributes to the created or recalled image of the house as a place that is friendly, attractive to life, and fosters identification with it. Moreover, art may provide an important aspect of the possible revalorisation of space on regional, but also national and international level.

In the examples described herein, the individual objects, including architectural symbols, which co-create the described project, aim at establishing communication with the audience of this temporary artistic event through their participation in the meeting space. Thus, a platform for communication emerges. It is worthwhile to quote here Marek Janik: "[…] architecture is a craft situated between science and art. In this context, abandoning systematicity, one has to make do with some open philosophy of architecture, which still poses fundamental questions" (Janik, 2004, trans. by the author). In the activities presented, the author is asking questions on the condition of our dwelling. This is a common theme for an entire series of intentional projects. As it can be seen, they are also the subject of research analyses, and this aspect is an important element of the author's professional work.

Following Świtek, one may ask: "Is there architecture without architectural realisation?" (Świtek, 2013, p. 441, trans. by the author). The author believes that the presented objects remain somewhat architectural in their conceptual form. Perhaps, devoid of a standard scale and precise function, they exert a less literal impact on the recipient. However, the effect is probably still observable.

The course of the projects presented above was followed by contemplation. The reflections resulting from the reception upon the completion of the project (until the official closure of the Festival, i.e. a few hours later) occurred in the space of ideas. And so did the assumed enrichment of recipients' knowledge. Impressions experienced at the moment of the project's completion and the reflections arising from them will be transferred to this space as an individual resource of memory and experiences of the participants. Whether and to what extent the participants will apply the experiences is difficult to assess. Yet, knowledge in the area of art perception and psychology is helpful in this case (i.e., Ingarden, 1958, 1970; Bańka, 1997). Scientific insight indicates that by referring to the analogous cases studied, a possible impact on the recipient should be assumed. Indeed, the extent of this impact is determined by numerous components, the vast majority of which are independent of the object being experienced. However, this aspect remains in accordance with the mission of general architectural education and the personal need to participate in the revaluation and other forms by which dwelling space may be appreciated. The values that the changed home brings to our everyday lives offer the feeling of being rooted, a sense of belonging to a group, to a region, and feeling of being a part of a local community. It happens both in the cultural sphere of a society and on an intimate individual scale of a single resident and their personal home.

For a reliable assessment of agency, specific questionnaire studies should be conducted. However, it is dificult to conduct such studies in a case of such short event, especially that its course is very dynamic. Viewers and participants partake in all events and watch all presentations (always over a dozen proposals) located at various points of the open space were rather unwilling to respond to the survey. Two such attempts were made (2017, 2018 with an increased number of volunteers to be interviewed).

Each time, they ended with too few interviews to be accepted as reliable analytical material. Certainly, aura of twilight on cold November afternoons and the outdoor nature of the event are not conducive to this method of research. Therefore, the conclusions are based only on field observation and a limited amount of research material. The verification study, planned for the upcoming edition of the festival (November 2021), would refer to the experiences from previous editions, where the above-mentioned projects were presented. The results will probably enrich the documentation of the actions taken, offering more precise conclusions.

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Some Remarks on Daily Life as a Concept, Context, and Content for New Quality Standard in Architectural Design and Urbanism

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Abstract

In this article, we point out the need to base the process of designing buildings and architectural and urban spaces on criteria that take into account the gender perspective. As a conceptual framework for developing such standards serves the methodology proposed by Bernard Tschumi,[1] referring to "theory" as a "practice" and the concept of care and corresponding values derived from feminist ethics of care. In his text "Event-Cities 3" (Tschumi, 2005), Tschumi claims that "theory is a practice of concepts." In the present text, this is particularly understood as a need and way to redefine/re-construct the content of the design theory, especially the concept of space, based on real practice and everyday life. The authors argue that "practice with concepts," when including daily life notions, could help redefine quality standards in architectural design and realise spaces more inclusive and just. As a case studies authors review a selection of projects that the authors have developed from 1998 to 2020. They are examples of how to implement the gender perspective and redefined theory into the design process.

Keywords

Daily life, theory, practice, quality standards, architecture, Bernard Tschumi

[1] Bernard Tschumi is a well know architect, writer and educator whose work is internationally renowned. One of his main theoretical works is "The Manhattan transcripts" (Tschumi & Walker, 2020), while another, less known, is "Event-Cities" (Tschumi, 2005), where he develops the notions of Concept vs Context vs Content in Architecture. Further information on him: http://www.tschumi.com/bernard-tschumi/.

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> The investigations […] suggest that conflicts, confrontations and contaminations between concept, context and content are part of the definition of contemporary urban culture, and therefore of architecture. The theory is a practice, a practice of concepts. Practice is a theory, a theory of contexts.
>
> (Tschumi, 2005, p. 15)

Introduction
Architecture as Medium, Concept of Space, Gender Perspective

According to Vienna's experience (Hunt, 2014), looking for gender equality in architecture and urbanism means putting people's daily lives at the centre of the particular project discussion (Damyanovic, Irscik, & Kail, 2013, p. 12). This goal requires to obtain *autonomy of being and acting in space* for all people, in particular, for women (Montaño, Benavente, Gherardi, Nations, & Caribbean, 2014, p. 11), even though it is a *dependent autonomy* because, as people, interaction among each other is needed during all life. Every person needs caring at some moment (Herrero, 2015, p. 5).

On the other hand, *architectural quality* is often defined in terms of formal, "objective," or "neutral," which means "abstract" features for buildings or spaces (Frampton, 1983, p. 132). Furthermore, this "abstract" value usually relates to the expectations concerning the market or prestige rates. It is the kind of connotation used as a basis to compare or measure architectural design quality criteria. This circumstance frequently excludes women architects' contributions (Laurino & Muxí Martínez, 2018, p. 132), whose values underlying design do not fit in these supposed general ones (Torre, 1977, p. 12).

In this scope, architects usually treat space as *an object to be designed*. Consequently, in the process of design, architects, in general, frequently ignore life-important variables, such as climate change mitigation, clean water consumption (Brundtland & World Commission on Environment and Development, 1987, p. 6), health problems or wellbeing of children and the elderly (Damyanovic et al., 2013, p. 19). Noting the consequences of such a definition of space, Roselee Golberg (Crippa & Vandeputte, 2011, p. 34) proposes to treat space as a *medium*[2] for peoples' everyday activities

[2] *Medium* is understood here as the physical space in which a specific phenomenon takes place, e.g.: "the speed of light depends on the refractive index of the medium" (see: https://dle.rae.es/medio, acessed on 30.10.2021). Instead of thinking in space as limited by walls, some authors and practitioners think in terms of space as the *medium* where they perform activities. This idea is clearly stated by Roselee Goldberg and

Bernard Tschumi, a practitioner and architectural theorist, emphasises that "there is no space without content" (Tschumi, 2005, p. 11). What it means is that it might be a mistake to design spaces or places without thinking about the programme or users' requirements list.[3]

Following the ideas described above, the authors argue to design gender-inclusive spaces or places after considering a requirements list that embraces everyday life situations, activities, and specific expectations. Knowing that a particular everyday requirements list ought to be the first step in thinking about gender-inclusive spaces or even gender-inclusive places.

In the further part of the article, to more fully show the meaning of the gender approach to design, let us briefly outline the current situation of architects in the world of practice. Next, it will describe examples from the authors' practice that illustrate activities to incorporate values from feminist ethics of caring into the design process. In the next part, it will be briefly described the cooperation with the Valencian authorities to implement the gender perspective in the design process. The last part contains conclusions from the analyses carried out in this article and the determinants of new criteria for designing gender-inclusive and fair spaces.

Women and Their Perspective in Architectural Design

In 2011, the exhibition entitled *On the Stage. Women and men in landscape architecture and planning in Lower Saxony and around the world*[4] was presented at the Chamber of Architects in Hannover (Germany). It showed the works of seven architects from Lower Saxony (Germany)[5] and seven

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Tschumi as indicated in *Space as Praxis*: "The architects and artists in the exhibition shared the ambition to move beyond *a practice of defining space that merely delineated its limits*" (Crippa & Vandeputte, 2011, p. 35).

[3] A *programme* for architects means the list of uses or activities that are expected to be developed inside or outside some particular building or open-air space, according to its main expected function/functions. In general, some part of these uses are clearly defined but some others not, and a kind of ambiguity in regards to space uses always emerges in discussions, e.g.: one expects to find spaces for reading or spaces for bookshelves in a library; some other kind of spaces for random meetings might be expected but not necessarily. Defining all of this, for a specific building or public space, in a particular location and in particular circumstances, normally ends up in a list of user's requirements or a programme.

[4] Further information: https://www.gender-archland.uni-hannover.de/1061.html.

[5] German women architects who took part in this exhibiotn were: Katja Ahad (AHAD Architekten); Barbara Maria Kirsch (kirsch architekten); Karin Kellner (KSW Architekten und Stadtplaner); Brigitte Nieße (plan zwei, Stadtplanung und Architek-

architects from different parts of the world.[6] The exhibition aimed to look at (women's) professional work from another point of view, reviewing not only that aspect of their lives but also their expectations and interests (Zibell, Damyanovic, & Álvarez, 2016, p. 9).

A group of students and teachers[7] reflected on the motives and criteria for selecting concrete works created by women architects for the exhibition. Was there anything in particular inherent in the works that set them apart? At one point, the issue of *time management* and the subjective feeling on the *importance of time* arose as a differentiating factor between women's work and men's work. To convey this idea of time, students and teachers decided to show each architect's professional work in a single panel,[8] incorporating into it the problem of personal interests and expectations. This set of individual panels was completed with a collective timeline where individual professional achievements were interspersed with personal milestones of each woman architect since the main idea to have been shown was *time as a limited "resource"* and sometimes, a scarce resource. Therefore, this exhibition illustrated that *lifespan* includes more than time dedicated to professional issues and that the whole time set has to be reviewed together, individually and collectively.

This exhibition was followed by three more. Each new show included the previous ones, but the number of presented women's works was systematically increased. In 2012, it was held at Valencia School of Architecture (Spain), featuring seven more architects – from Spain, Brazil, Argentina, and Poland.[9] At the time when the exhibition was on display

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tur); Johanna Spalink-Sievers (SPALINK-SIEVERS Landschaftsarchitekten); Karen Bukies (Stadtlandschaft); Sabine Rebe (wohnplan, architektur und berating).

[6] Eva M. Alvarez (gómez+alvarez arquitectes, Valencia, Spain); Lidewij Tummers (Tussen Ruimte, Rotterdam, Netherlands); Alison Brooks (Alison Brooks Architects, London, UK); Martina Voser and Maria Vine (vi.vo, Zurich, Switzerland); Jannina Cabal (Jannina Cabal Arquitectos, Guayaquil, Ecuador); Niloufar M. Aliha (Part Ham-Goruh Andish, Tehran, Iran); Sheila Sri Prakash (Shilpa Rchitects+Planner+Designers, Cheani, India).

[7] Eva Alvarez from UPV Universitat Politècnica de València and Barbara Zibell and Katja Stock from LUH Leibnitz Universität Hannover.

[8] Each panel was composed by three independent pieces of recycled timber that showed the information of each woman architect.

[9] Inés Moisset (CONICET, Buenos Aires, Argentina), Lizete Rubano (FAU Mackenzie, Sao Paulo, Brazil), Agata Dzianach (Pracownia ARD, Gdańsk, Poland) and Marilda Azulay (UPV, Valencia), Inés Novella (Cátedra UNESCO de género, UPM, Madrid), Cristina Alonso (Ajuntament de Meliana, Valencia) and Lola Domènech (Lola Domènech Architect, Barcelona) from Spain.

in Valencia, a seminar was held to reflect on time and daily life.[10] In 2014, during Vienna's third and fourth editions, an additional fourteen female profiles[11] from Austria were presented at the Universität für Bodenkultur Wien (BOKU)[12] and Technische Universität Wien (TU).[13]

Another example, examined by the authors of the article, regarding the women' perspective in architecture was established in 2014 by architect and researcher Inés Moisset[14] who organised a network of architects from different countries,[15] conducting and publishing research on a collaborative blog called *Un día | Una arquitecta* [One day | One female architect][16] (Moisset & Kesman, 2015). This project aimed to publish a profile of a female architect every day to make evident that women architects had been designing architectural and urban spaces since long ago, but their work has been overlooked (Muxí, 2021, p. 17). It was also important to stress that their interests had usually been ahead of their time (or, to use more adequate French phrase – *avant la lettre*) as it may be observed through, for instance, innovations in housing or memorial designs (Torre, 1977, p. 12).

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[10] On May 17–18, 2012 at ETS Arquitectura in UPV. It included lectures and debates by Doris Damyanovic (BOKU Universität für Bodenkultur Wien), Barbara Zibell (LUH Leibniz Universit¨t Hannover), Inés Novella (Cátedra UNESCO de género, UPM, Madrid), and a group of women architects from Valencia.

[11] Not only architects but also other different women profiles as politicians and administration public servants who were involved in city construction in Austria. Ulrike Böcker (politician, Green party, Linz), Christine Itzlinger (public servant, Salzburg), Martina Jauschneg (landscape architect, Vienna), Eva Kail (Vienna City Hall public administration, Vienna), Jutta Kleedorfer (public administration, Vienna), Bente Knoll (b-nk office, TU Wien, Vienna), Theresia Oedl-Wieser (researcher at BOKU, Vienna), Hanna Posch (landscape architect at PlanSinn office, Vienna), Gerda Schneider (landscape architect and professor at BOKU, Vienna), Susanne Staller (landscape architect at tilia büro, Vienna), Heide Studer (landscape architect at tilia büro, Vienna), Sibylla Zech (professor at Tu Wien, Vienna), Helga Lassy (lassy architecture+spatial planning, Linz/Vienna), Margarete Schütte-Lihotzky (from Vienna, first woman architect in Austria; she died in 2000).

[12] BOKU University of Naturla Resources and Life Sciences, Vienna. Further information: https://boku.ac.at/.

[13] TU Wien Technical University of Vienna. Further information: https://www.tuwien.at/.

[14] Inés Moisset is an Argentinian Architect and researcher at CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina). She is the coordinator of international collective Un día|Una arquitecta among many other activities. Further information: https://en.wikipedia.org/wiki/In%C3%A9s_Moisset.

[15] Coordinator: Inés Moisset (CONICET, Buenos Aires, Argentina). More information in https://undiaunaarquitecta.wordpress.com/quienes-somos/.

[16] *Un día | Una arquitecta* blog: https://undiaunaarquitecta.wordpress.com/.

In the first season, from March 2015 to March 2016, the blog published 366 profiles (2016 being a leap year) and over a thousand profiles in the following years. It goes without saying that each women architect had a particular contribution. To cite only two of the most renowned women architects, Zaha Hadid, Iranian-British architect (Alvarez Isidro & Gómez Alfonso, 2015); and Denise Scott Brown, Rhodesian-American architect (Alvarez Isidro & Gomez Alfonso, 2015; Alvarez Isidro & Gómez Alfonso, 2020).

The blog raises the issues of visibility and recognition of the achievements of women architects (Laurino & Muxí Martínez, 2018, p. 141). Many of these women architects have developed innovative solutions ahead of their time, such as a sustainable urban design for Canberra by Marion Mahony Griffin[17] and her partner Walter Griffin. After winning the competition in 1911, they created together the plans for Australia's new capital. Having been both "cataloguing horticulturists and botanicals and they each eventually specialised in native flora and fauna of Australia" (Torre, 1977, p. 79), their proposal envisioned that each person could live closer to nature

Figure 1

The start page of the website Women in Architecture (1975). This blog shows part of Women in Architecture research led by gomez+alvarez since 2010. © Image by gomez+alvarez arquitectes

[17] The authorship of Marion Mahony Griffin together with her husband and partner has been recently acknowledged (Muxí, 2021, p. 161). Marion Mahony was the second woman who graduated as architect from MIT in 1894. Further information: https://undiaunaarquitecta.wordpress.com/2015/03/25/marion-mahony-1871-1961/.

as they designed "the romantic, self-contained community of Castlecrag on the banks of Sydney Harbor. Both Griffins shared the ideal of civilisation in which everyone lived at home with nature and each other" (Torre, 1977, p. 79). On the other hand, Helena Syrkusowa, a Polish architect who was a deputy president of international CIAM congresses[18] from 1945 to 1954 and a designer, together with her partner and husband Szymon Syrkus, designed several social housing units in Warsaw. One of them was the Rakowiec housing complex built in 1931–1935 with communal laundry and kindergarten (Milvaques, Alvarez, & Gómez, 2019, p. 58) following Modern Movement ideals and gender perspective.

Massanassa Case Study: Health and Hospitality as Implemented Factors of Care Perspective

Since 1998, the Massanassa[19] City Hall has been dealing with the adaptation of the former public school building dating from 1931 to the needs of the New Town Hall. The school, especially its courtyard, evoked fond memories of childhood for many residents of the town. A group of impressive, almost 70-year-old pines grew there. The office's commissioners intended to have the trees felled (!). The designers (the text's authors) advocated strongly against this decision. The designers considered making these pines the centrepiece of the new square. This proposal sparked a heated debate. Finally, the pines remain intact, and the town's inhabitants could enjoy their shade and benefits for health. The old pine trees also retained the image of the schoolyard.

The square was opened to the public in 2000, and the refurbished building was inaugurated in 2003 as New Town Hall, entirely harmonised with the surrounding public space. Additionally, in 2009, the Massanassa administration commissioned the renovation and conversion of a small old farmhouse in the municipality's limits, very near the cropping lands, to host a Lifelong Learning School. The building required a necessary renovation to adapt it to new uses, and it needed to improve its sanitary conditions. The Lifelong Learning School served diverse users: young people outside the regular curriculum, elderly people learning new technologies, immigrants learning Spanish etc.

[18] CIAM (Congrès internationaux d'architecture modern) was an organisation founded in 1928 and dissolved in 1959. Its objectives were spreading Modern Movement principles and it is considered the motor of architectural changes during this time.

[19] Massanassa is a small town of 9,667 inhabitants, located south of Valencia (7 minutes by train). Its economic richness comes mainly from the traditional rice crops near L'Albufera lake and from third sector services.

The small farm was utterly refurbished and organised around a small court. The main elements were the entrance and the small court. Intermediate spaces became essential for this small building to allow people to mix and improve communication between them.[20]

In 2009, in order to avoid an economic crash, the Spanish government funded public building construction throughout Spain. Within this socio-economic framework, Massanassa political administration decided to build a new (small) auditorium in the town. The designers (the text's authors) thought it had to be a building with good conditions for regular concerts or theatre plays. Still, it had also to be suitable enough for any other kind of collective performance like schoolchildren's final year plays etc.[21] The task here was to open the building for even more diverse public and activities, not only the envisioned ones. In addition, easy and generalised access for people with disabilities was also addressed in this project; therefore, it granted different options of access (even to stage by a lateral corridor or aisle), stay, and use, which met the project's primary objective.[22]

The above-described contexts are the basis for making *hospitality* a constitutive element of architecture and an element of theory since this situation encourages theorising about how architecture and urban spaces welcome and open up to different and diverse people, times, nature, and cultures. The programmes introduced into the buildings and places described above were subordinated to the need to preserve both already existing and establishing the new "power of place" (Hayden, 1995, p. 9) as emotions and memories bring people closer to their space, attracting more attention for the places, users, and resources for their maintenance. The best way to such "theorising on the context" in Massanassa was to participate and collaborate with the people involved, having been close to daily life problems. "Small doses" of it, as proposed in the Oregon experiment[23] (Alexander, 1978, p. 12), made it possible to undo bad decisions and helped to conceptualise contexts, as well as making them practical for various purposes and values.

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[20] Further information: https://vitruvius.com.br/revistas/read/projetos/13.156/4996.

[21] The *pattern of activities* is a notion introduced by Denise Scott Brown in *Learning from Las Vegas* research (Venturi, Brown, & Izenour, 1972, p. 15) and in *Architecture as signs and systems: For a Mannerist time* (Venturi & Brown, 2004, p. 120).

[22] More information on the small auditorium: https://www.metalocus.es/en/news/massanassa-auditorium-g%C3%B3mez%C3%A1lvarez-arquitectes.

[23] The Oregon experiment was a theoretical proposal made by Christopher Alexander in order to explain the way a participatory process could be enabled using patterns and promoting an organic development. This development was expected to be more accurate and adequate to a given situation (Alexander, 1978, p. 10).

Figure 2

Massanassa Town Hall square built in 2003 by the text's authors. This project revitalises an old school courtyard and its pine trees as a public square in this small town © Photo by Carlos Gómez

Figure 3

Massanassa Auditorium completed in 2015 by the text's authors. This project operated looking for possibly most diverse spectrum of uses, from school plays to professional concerts. © Photography by Carlos Gómez

Care Perspective in Castello Case Study

Tschumi's idea that "there is no space without content" (Tschumi, 2005, p. 11) means for this text's authors that there may be no space without understanding the actions that occur within the area or the purpose of a building. That means that the space needs to be thought of not as *an object* but *as a medium* for those actions and purposes. Therefore, *caring for* specific content (in the sense of activities or goals in mediating them within the space) enables the development of methods for making the concept of *care* (based on feministic ethics of care)[24] (Gilligan et al., 1988; Larrabee, 1993; Levin, 2000; Noddings, 1984; Sevenhuijsen & Savage, 2003) materialised in the project. This text's authors argue that introducing *the care perspective* into design means to treat *space (and time) as a continuum*[25] and carefully study spatial transitions from entirely private areas to purely public ones. It is needed to go through all kinds of intermediate spaces such as shared spaces inside the building (public stairs, public corridors, and its connection with the public areas as it might be spaces between the building and the sidewalks). It is also essential to include the urban spaces of proximity, considering the uses and the city around us and, of course, the ecosystem in which we live. Interrelation is the main goal here.

The authors supervised the incorporation of a *care perspective* into Castelló's urban planning from 2016 to 2017 (Alvarez Isidro & Gómez Alfonso, 2017, p. 29); this perspective considers caring activities from a complex point of view (Durán, 2018, p. 186). During this time-lapse, cooperation has been developed between all stakeholders (planners, politicians, and supervisors) to introduce specific content-oriented towards a more inclusive and egalitarian city like the Vienna model. By approaching work and research through participation and collaboration, supervisors (the text's authors) supported planners to take into consideration activities of care, the proximity of the space, green infrastructure, and they made sure that the

[24] The ethics of care focuses on the quality of interpersonal relationships and people's mutual care for each other, based on the different levels of dependence of people on each other. This concern for relationships with others should be the source of moral duty: I treat the motivations of a person and actions as the supreme value, putting the practice of caring, in all its manifestations and areas of activity before the theory and acting to disseminate it. The ethics of care also considers and promotes values such as empathy, trust, autonomy and responsibility.

[25] Again, this text proposes the notion of *medium* (like air or water filling a glass) and its continuity against the natural discontinuity of architecture. Talking about the space as a *continuum* in architecture implies imagining and designing spaces of transition between generic spaces, with no specific use.

issues concerning autonomy and safety were treated as the main factors to be taken into consideration. This process ended in drawing up a new Structural General Plan[26] based on treating the problems of inclusion and equality among the inhabitants as the two fundamental principles for decision-making or project execution. The most important achievement was the involvement of the administration, in particular the area of urbanism, in the whole process.

Administrators and city planners frequently remain distant, and in this situation, it is not easy to understand a context that is not experimented with or shared by those who research it. To change such cases, participation and collaboration among designers, politicians and final users are essential tools. Multilateral and often multistage, participatory processes are necessary, as during these activities, critical but often ignored, data can be recovered (D'Ignazio & Klein, 2020, p. 97). Breaking out of traditionally separated roles and opening new spaces for collaboration and collective thinking improves the design process. Collaborative thinking has proven to be very effective in expanding design possibilities to incorporate varieties of views when defining quality standards in architecture and town planning. The authors' experience proves that allowing people to talk and walk places together is an excellent way to open spaces for knowledge-sharing. In addition, collaboration among sections within large entities, such as the town hall, universities, and public administration, seems needed.

Valencia Case Study: Implementing Gender Perspective in the Recommendation for Design

In 2020, the Valencian government commissioned a guide for integrating *care and gender perspective*[27] into urban action and planning in the Valencian community (Alvarez Isidro & Gómez Alfonso, 2021). Along with the overview of others' theories, practices, concepts, contexts, contents, and own experience and thought, this guide encompasses a list of non-mandatory recommendations to help achieve the said goal. Among others, they are:

[26] Valencian Land Law (LOTUP in Spanish) defines a Structural General Plan as a planning instrument to order the whole municipality. This instrument defines main uses, mobility structure, green infrastructure and where I tis possible building or not. Further information in Spanish: LOTUP (Ley 5/2014, de 25 de julio, de Ordenación del Territorio, Urbanismo y Paisaje, de la Comunitat Valenciana, 2014).

[27] Gender mainstreaming into planning has been studied in Europe since long ago. For more information, see the latest book by Gender, Diversity and Urban Sustainability work group (Zibell, Damyanovic, & Sturm, 2019). Further information: https://boku.ac.at/rali/ilap/netzwerke-und-arbeitskreise/gdus-network.

- Organising decision sequence as a global process to be delivered over time.
- Promoting equitable gender parity in designers' work teams.
- Proposing compact urban nucleus organised as a poly-nuclear structure or nucleus network.
- Observing the needed interconnection among different infrastructures.
- Providing spaces of adequate scale from home to services or work.
- Providing green infrastructure near home and connecting it as a global infrastructure.
- Providing an efficient mobility infrastructure for pedestrians and bikers.
- Considering domestic labour needs as a design condition.
- Promoting legible texts and using feminine names when possible.

The guide's authors explain the purposefulness and usefulness of equal access to space in every framework to make it graspable. In this context, the main problem was to make this knowledge accessible to administration staff or small planning teams in their day-to-day activities. Intending to accomplish this objective, the guide contains a series of tables and check-lists (Alvarez Isidro & Gómez Alfonso, 2021, p. 16) that systematise the recommended steps to be performed or the suggested items to be reviewed or conceived, to provide a common framework between different people or institutions working on the same topic.

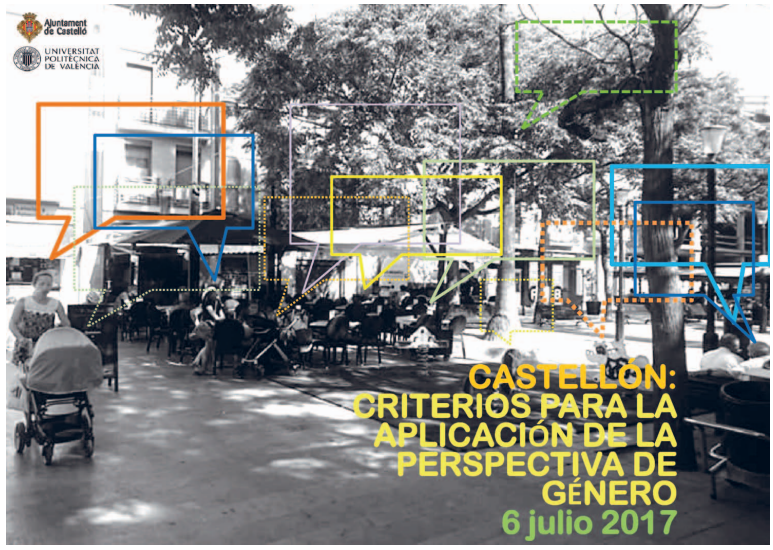

Figure 4

Poster advertising Castelló formative sessions addressed to administrative and technical personnel and elected politicians at Castelló City Hall © Image and design by gomez+alvarez arquitectes

Conclusions
Gender Perspective in Theory and New Quality Standard – Some Remarks

Designers, architects, or urban planners must organise decision processes for a long time as a fundamental part of their work. The designer makes various choices during the design process while looking for the best possible solution for a given problem in specific circumstances. This solution is neither universal nor neutral as it depends on possible yet differing solutions.

According to George L. S. Shackle,[28] when a designer makes choices, a compromise must be made.[29] This compromise obliges the designer to participate in all imaginable activities to make possible the expected result for the previous selection. However, these actions would change the original (and future) state or situation for which the choices were made, rendering previous options useless. Shackle claims, alternatives in the design process are, in fact, only possible in the domain of imagination (Shackle, 1977, p. 232).

Therefore, designers must always imagine themselves in the future.[30] If designers adopt this approach, an essential thing during the decision-making stage is to imagine a specific group of people and imagine a particular future for which they design. It does not seem easy to imagine what one does not know or experience, so participatory processes are needed. On the other hand, not considering as many people as possible during the design stage and not imagining their shared future may lead to injustice and exclusion. In this context, ignoring the ideas of women architects (Laurino & Muxí Martínez, 2018, p. 109) in a shared future is neglect because it is a way to reduce the field of expectative and imagination precisely the place where choices occur.

This situation produces a theory "as a practice of concepts" in which many women's concepts are missing. Furthermore, these concepts are especially relevant to women and women architects as they might be concepts of care, activity patterns, diversity, inclusiveness, and empathy or climate

[28] As cited in Tomas Maldonado (1990, p. 187). Shackle was a British economist working in UK after the Second World War and he challenged Keynes' economic theory (Earl, 2018, p. 19).

[29] Reflections taken from "Imagination, Formalism and Choice" lecture delivered in Torrente, Valencia in 1976 and published in Spanish one year later (Shackle, 1977).

[30] "The choice that the action engenders cannot be induced on the basis of the informed results of that action, but only by imagining its possible results" (Shackle, 1977, p. 233). Text published in Spanish, translation into English by the authors.

change mitigation (Chinchilla, 2020, p. 19). Another question for future research is why, generally, these topics are not so relevant to male architects.

The primary demand of female architects is that of professional (not only personal) respect for different interests and ways of understanding the profession with its context, content, and values, especially those derived from everyday life (Alvarez Isidro & Gómez Alfonso, 2018, p. 215; Perry Berkeley, 1972, p. 46). One of the most important in everyday life is *time* or *time management* for different activity patterns. It is crucial to consider the impact of time management of a particular person for fulfilling obligations resulting from their tripartite relationship "home situation – job – the situation of care services." This applies to all people, but it limits the autonomy of those caring for children, the elderly, or the disabled in the first place (Hayden, 1980, p. 176). Even more, the need of considering the continuity of time is like the continuity of space.

Architects' work is displayed in a territory, in a site or space, building a *place*.[31] A place that can resonate with people's diverse histories, making past *time* present and broader than it is usually stated. Dolores Hayden calls it *Power of Place* (Hayden, 1995, p. 10). Listening to and watching users' reality can open a place with diverse histories and diverse expectative to allow complexity, diversity, inclusion, and continuity.

There is a significant gap between scientific research and the needs and work of administration. Closing this gap or breach is possible by making both stakeholders and academics focus on the problems of everyday life needs since they are experientially attainable for everyone and, as seen, relevant for decision processes. Developing new exchange alternatives would be helpful altogether: planners could get more practical resources, and academics could experiment with collective experience and thinking. This situation could help redefine quality standards that addressed designing a more inclusive and equal architecture and urban planning.

Everyday life should become the central part of the architectural content, concept, and context to create a more inclusive design theory and result in new (kaleidoscopic) approaches (Shackle, 1977, p. 240). The authors of this text argue that it is necessary to redefine quality standards in architecture and urban planning, linking these new standards closely to the architectural

[31] In Spanish, the word *lugar* means 'place' but it is generally understood as a place with a particular meaning for someone or some group. It is not only a 'site' or a 'space': a place has some kind of meaning for someone. It is the contrary of "non-place" notion coined by Marc Augé (Augé, 2009, p. 34). Some architects do work with sites and spaces but aiming to produce a kind of place by recognising what is there before they arrive or whom they are addressing. And that idea is what Dolores Hayden mentions when she promotes acknowledging all previous histories in one place, so also women and other ethnicities histories (Hayden, 1995, p. 15).

programme or content in a broader and diverse sense than the one it has been regularly taught or assumed until now.

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Women's Embodied Experiences: Qualitative Tools for a Gender-Conscious Approach to the Territory

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Abstract

The way we experience our cities is not neutral: women and men experience it differently, depending on factors such as where they live, the social group which they belong to, the gender roles assigned, and intersectionality. Urbanismo Mujeres y Ciudad en Latinoamérica is a platform that works with qualitative methodologies with gender and feminist perspective.

This article presents a methodological proposal to answer the central question: How is the urban experience of women in two Latin American cities: Mexico City and Santiago de Chile. As a way of answering it, the following were developed: the Multidimensional Model of Gender-Conscious Urbanism, the My Walk Travel Log, the Immobility Log and the Neighbourhood Satisfaction Survey. These are the tools of the urban analysis methodology proposed in order to understand the experience of women in the above-mentioned territory, including quantitative and qualitative variables, making perception the central element of the analysis.

Keywords

women, territory, gender, body, perception, cares, qualitative methods

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Introduction

The way we experience our cities is not neutral: women and men have different experiences, depending on where they live, their social group or their occupation. However, gender roles and intersectionalities in general are the most prevalent factors in shaping the urban experience. As Leslie Kern (2020, p. 9) points out clearly, "gender is the difference that matters."

Division into the public and the private has a direct impact on day-to-day lives of women. These concerns led researchers to utilize the feminist analysis in order to reintegrate the public and the private spheres and consider another category that was neglected for years in the pursuit to understand the territory: our bodies. It is through the body and perception that we approach, understand, and appropriate the space we inhabit, and although there are different bodies, perceptions, knowledge, appropriations and practices, urban planning has not recognised them, turning cities into territories for a few. So the body is considered a new category of analysis, a new urban research site (Massey, 1993; Segovia, 1996, as cited in Soto, 2016, p. 51).

This lack of recognition and inclusion of diversity is the topic that has been widely discussed. In this context, *caring*[1] seems to be the concept that can shed some light on how to recognise and incorporate the different ways of living and perceiving cities. For instance, as a city would welcome the tasks of the reproduction of daily life, facilitate the care and promotion of the autonomy of dependent people, and allow the different spheres of private and public life of men and women to be reconciled. It has to answer the needs "to domesticate all the spaces that we use and live in" (Bofill, 2006, p. 211, as cited in Segovia & Nieves Rico, 2017a, p. 62). Maria Gabriela Navas (2019) refers to emotions as indicators to vindicate "well-being" as it is a relevant aspect for a fairer concept of the city and a fundamental analytical axis of the feminist critique of the right to the city.

In this sense, the needs of women's bodies have not been visibly reflected in our urban environment, the role of care has been delegated to the private, while the city, which does not consider this role, reproduces territories that exclude women from it. Given this role imposition, it becomes relevant to incorporate *caring* into projects to understand the experiences

[1] As *care* work is understood here the unpaid work performed by adults – traditionally women – for children or other dependents, including work related to maintaining the home (Zucchini, 2015, as cited in Jirón, 2017). Care from the perspective of the city has been studied mainly by Durán, who points out that care must be a pillar in the organisation of daily coexistence (Durán, 2017, p. 105, as cited in Segovia & Nieves Rico, 2017c).

and needs of women's appropriation of the city, and it is here where perception is essential to recognise these habitats.

Considering this we could ask then: Is the city the same for all women? What kind of care do they provide and what kind they need provided to them? Is the perception of security the same for all? Although the gender role determines the way of inhabiting the city by women in most of the world, it is crucial to analyse it using a situated knowledge of the particularity of a place to understand what other categories intersect with gender. Our interest is to understand what are the particular women's experiences and urban needs in Latin America.

As Ana Falú (2009) and Sylvia Chant (2003) pointed out, the high level of feminisation of poverty in Latin America is a fact. Resultantly, they remain exposed to various forms of urban exclusion (Ziccardi, 2008). For example, in Mexico women on average spend 67% of their time in the week doing unpaid work, compared to only 28% of time in case of men (ENUT, 2019). Moreover, women work mainly in the informal and service sector (ENOE, 2021). Other data show that 78% of homemakers that provide care are in the informal sector without any benefits by law (OIT, 2016) and that 77% of female-run households are in an economically vulnerable situation (ENIGH, 2018). Furthermore, 8 out of 10 women in Mexico feel unsafe in public spaces, and more than 60% of women feel unsafe on the way to and from the public transport stop and inside public transport vehicles (ENVIPE, 2019).

The quoted pieces of data lead us to ask the following questions: What do these realities mean in the daily lives of women? Are our cities forcing them to implement individual and adaptive care strategies? Are city planners considering the costs and time that women spend commuting daily? Do planners know that women spend a considerable amounts of their salaries travelling without safety and comfort? Are transportation systems considering the care needs of women in their planning and operation? What can we do so that women can fully "inhabit their territories" in the future?

We consider that the theoretical approaches of feminist geography and urbanism are necessary to find urban solutions that respond to those realities, therefore, we take them as our framework and put them into practice through our research strategies that include qualitative methodologies with active women participation, as many other researchers have already done it (Jirón, 2007; Rodó-de-Zárate, 2014; Col·lectiu Punt 6, 2019; Junqueira et al., 2019; Pumarino et al., 2018).

This article presents a methodological proposal to answer the central question: How is the urban experience of women in Latin American cities, particularly in Mexico City and Santiago de Chile? As a way of answering

it, the following were developed: the Multidimensional Model of Gender-Conscious Urbanism, the My Walk Travel Registry, the Immobility Registry and the Neighborhood Satisfaction Survey. These are the tools of the urban analysis methodology proposed to understand the experience of women in the territory, including quantitative and qualitative variables, making perception the central element of the analysis.

Theoretical Framework

Fair Cities and Neighbourhoods: Proposals from Feminist Geography and Urban Studies

Olga Segovia and Maria Nieves Rico (2017c) consider that the city as a construct, as a material and symbolic object, evidences the gender inequality of our society in different aspects such as the distribution of urban services, the demand for housing, mobility, security, and the availability of public spaces, to name just a few. Although many of these differences are documented in the research literature, most of them do not acknowledge women's experiences in everyday life. As Liliana Rainero (2009, p. 165) said, "the theoretical feminist approaches have provided subjects related to women's rights to land, housing, and legal services […], construction of human settlements; the use of time and the differential impact of territorial organisation on women's lives which is a product of the sexual division of labour that persists in our societies." All these approaches have turned into reliable tools to analyse our cities and to transform our realities.

The proposal to incorporate the needs of women into the urban environment has been put forward by feminist geography, its precursors having been Doreen Massey (1994) and Linda McDowell (1999). The contemporary feminist geographer Kern (2020, p. 13), in turn, point out that the geographical perspective on gender offers a way of understanding how sexism works on the ground, as "any settlement is an inscription in space of the social relations in the society that built our cities are patriarchy written in stone, brick, glass and concrete" (Darke, as cited in Kern, 2020, p. 13).

Latin American feminist geographer Francesca Gargallo (2014) helps us understand the spatial character of the inequalities that women in Latin American cities experience, by pointing out that colonisation, race and class categories, apart from gender roles, are crucial for understanding the daily lives of women. Falú (2009, p. 20) argues that many women in Latin American cities live in unequal territories with high levels of feminisation of poverty and experience urban exclusion regarding the lack and poor quality of housing and public services in low-income neighbourhoods.

Therefore, the non-urban woman – the indigenous racialised woman – faces a city model that excludes her, so her needs are invisible. To better understand how the feminisation of poverty and urban exclusion impact women's lives and to go beyond the occidental definition of feminism, the concept of intersectionality will be helpful since it points out that different power structures run across us as individuals at the same time and in different directions, resulting in specific nodes of oppression (Rodó-de-Zárate, 2014, p. 3).

Intersectionality, a concept introduced by Kimberlé Crenshaw in the late 1980s (a term coined in 1989), helps to consider the interconnection between race and gender. Maria Rodó-de-Zárate praises it as a concept that has been one of the most important contributions of non-white feminism, given that it allows theorising oppressions understood as multiple and mutually constituted. The Crenshaw allows us to address gender, race, sexuality, age, and social class as categories that intersect and become oppressions or privileges as a result of this simultaneous experience. Moreover, Rodó-de-Zárate develops the methodology called Relief Maps of Experience as a step forward in the conceptualisation and empirical research on intersectionality, which is based on understanding the dynamics of power and inequalities as something experienced and spatial (Rodó-de-Zárate, 2014, p. 18).

Analyzing the urban environment in Latin America through gender and intersectional feminism approaches seems crucial due to their ultimate goal of achieving spatial justice,[2] the just city, as understood by Susan S. Fainstein (2013) and Nancy Fraser. Fraser, in her theory of gender justice,[3] points out that the dimensions of cultural recognition and redistribution are necessary to achieve the just city: "[…] gender is a bivalent community, which has an economic-political aspect, so a spatial and economic redistribution is required, and a cultural aspect that requires recognition" (Fraser, 1997, p. 14). The just city for women is one that gives them the freedom to choose complete access, and to have recognition of the diversity of experiences, age, employment, culture, socioeconomic class, place of residence, etc.

Nowadays, two approaches to using gender as a category of analysis are recognised in urban studies: gender perspective and feminist urbanism. The

[2] Spatial (in)justice refers to an intentional and focused emphasis on the spatial or geographical aspects of justice and injustice. As a starting point, this involves the fair and equitable distribution in space of socially valued resources and the opportunities to use them. Spatial justice is a way of looking at justice from a critical spatial perspective (Soja, 2009).

[3] Gender justice is the equitable redistribution of opportunities as well as the equal recognition of differences; it requires (economic) redistribution and (cultural) recognition of women and their rights (Fraser, 2013, as cited in De Simone, 2018, p. 242).

former is defined as an analytical approach that has gone through various stages. These stages constitute a process that considers the implications, concerns, and women's and men's experiences that become an integral dimension of the design, implementation, monitoring, and evaluation of policies in all political, economic, and social spheres, so that women and men benefit equally, and inequality is not perpetuated (Allen, 2018, p. 5). Meanwhile, Adriana Ciocoletto, Roser Casanovas, Marta Fonseca, Sara Ortiz Escalante and Blanca Valdivi from Col·lectiu Punt 6 (2019, p. 20) points out that urbanism with a gender perspective analyses differences, while feminist urbanism[4] seeks to eradicate inequalities.

Housing and mobility are essential elements for any just city, that is, the city which promotes special fairness. Alejandra Massolo (1994, p. 44, as cited in Soto, 2016, p. 44) argues that from a gender perspective, housing reveals aspects such as deficit, financing typology and characteristics of housing (size, state of housing, habitability, security, and physical and social environment, among others), which significantly affect women. These dimensions, which we could call structural, must be qualified with the meanings, practices, and experiences that are built into housing in urbanisation processes, under the assumption that "in addition to being a fundamental affective environment, the house is the space where the individual learns a way to conceive and give meaning" (Esquivel, 2004, p. 44, as cited in Soto, 2016, p. 44).

The mobility turn (Sheller & Urry, 2006, 2014) is recognized today as a theoretical approach paving the way to understand the complexity involved in mobility in the sense of who is moving, where, and what objects are involved in mobility. Although the commitment to incorporate gender and feminist analysis in architecture, urbanism, and mobility is not as vast as in geography, nowadays numerous research go beyond "the universal subject," and indicate that examining the mobility of women and men allows us to understand the complexity of mobility decisions, such as the way care determines these. In this respect, the term Mobility of Care was coined by Sanchéz de Madariaga (2020, p. 91), which is defined as the need to assess and identify daily trips related to caring activities. Furthermore, according to Paola Jirón et al., "interdependence and care are crucial aspects of gendered mobility" (2020, p. 205).

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[4] It is essential to say that feminism is a social and political movement that formally began at the end of the 18th century, although without adopting this denomination yet. It implies women's awareness, as a group or human collective, of the oppression, dominance, and exploitation that they have been and still are subjected to within the patriarchal structures throughout its different historical phases of production models. Such awareness moves them to action for the liberation of their sex with all the transformations of society that it requires (*Mujeres en Red*, 2008, https://www.mujeresenred.net/).

We consider it necessary to address housing and mobility as central dimensions of daily life in Latin American territories as mutually related elements. Women's experience cannot be understood by only studying their needs in public spaces, but their housing needs and how they commute and move around the urban environment. We propose that mobility and housing should be understood from a care viewpoint for they function as an element of care infrastructure. "The care" category has been extensively investigated by María Ángeles Duran (2017), who points out that nowadays, there is a debate on an appropriate definition of care in urban areas. Laura Pautassi indicates the temporality of definitions: care as work has been made visible by feminism (Borderías & Carrasco, 1994; Tronto, 1996, as cited in Pautassi 2017, p. 434). Feminist economics identifies care as an activity that generates economic value (Razavi, 2007; Rodríguez, 2012, as cited in Pautassi, 2017, p. 434), that allowed to differentiate between productive work and reproductive work (Marco & Rico, 2013, as cited in Pautassi, 2017, p. 434), and this allowed the recognition of care as a right (Pautassi, p. 434, as cited in Segovia & Nieves Rico, 2017c, p. 434).

Also, some elements that characterise the caring cities have been pointed out: 1) care practices, 2) care places, 3) care materialities, and 4) care subjects. Care practices are those activities that are required to reproduce life, raise, communicate, feed, clean, and maintain the city, provide emotional and affective stability. The places of care are the spaces where care work takes place, nurseries, the home, health centres, feeding places, parks, libraries, and museums. The materialities of care are objects, bodies, buildings, or materials, such as pavements, baby carriages, automobiles, homes, buildings. Subjects of care are not only recipients of care, but also active caregivers, that is, these relationships are always interdependent. These possible subjects can include the homeless, undocumented migrants, relatives, children, older adults, youth, the environment and food cooperatives, among many others (Power & Williams, 2020, p. 20, as cited in Jirón, 2020, p. 80).

Fraser points out that care – which encompasses both the affective and material spheres – is essential for sustaining life and society:

> Without them there could be no culture, no economy, no political organisation. No society that systematically weakens its social reproduction can last long. Today, however, a new form of capitalist society is doing exactly that. The result is an enormous crisis, not only of care, but also of social reproduction in its broadest sense (Fraser, 2015, p. 111, as cited in Segovia & Nieves Rico, 2017c, p. 26).

Thus, we propose a gender approach that places care at the centre of public policy to reduce inequity in the distribution of space and assure the quality of life of women; it means to make care as a transversal logic.

What Role Do Women's Perception and Experience Have in the Construction of Cities?

The Women's Experience and Perception as Key Elements

As Paula Soto (2016, p. 51) points out, the city is a physical space with multiple identities, so its construction depends on the different views that converge there giving the territory a cultural and perceptual load of subjectivity. To do this, it is essential to diversify the scopes and places of analysis regarding the production of urban habitat, starting from the body as a new urban research site, and to rethink domestic spaces, neighbourhoods, places of recreation, and the community, since all of them can be analysed as material and symbolic places where geographic variations of gender are constructed.

Rebuilding territory according to women's experience and perception of the environment in physical space (in line with their needs and communities they belong to) becomes critical, since care is established as a central element in urban planning. The care/caring category acquires more relevance when we understand that, historically speaking, women have been in charge of caring while inhabiting territories that do not recognise their bodies in public and even private spaces traditionally assigned to women, which as a whole has been making their urban experience inefficient. For this reason Liliana De Simone (2018, p. 244) said that daily life and emotions are decisive in urban planning, considering that they can be quantified. Nevertheless, how can we define and rank those basic dimensions to develop an equitable planning of the city?

As Mateo Aguado and Jorge Riechmann (2013) point out, the wellbeing of inhabitants begins with the satisfaction of their most basic and fundamental needs. Therefore, meeting the said needs is of utmost importance for human wellbeing. Following this logic, Artur Manfred Max-Neff (1986) developed the idea of satisfiers for the needs based on Maslow's pyramid of needs (Maslow, 1943, 1954, 1962). In his model, Max-Neff identified a series of dimensions of human needs and their corresponding satisfiers with which human wellbeing would be achieved. Even though Maslow's initial theory is deficient in terms of empirical evidence for ordering needs, its logic is consistent with recent experiences at the local level as to what is needed and desired for comprehensive social development.

Understanding the territory by individuals and their communities would allow us to understand cities from the point of view of complexity of life

and recognise the problems that affect the inhabitants in a more specific way, translating this exercise into more accurate urban planning tools. In this sense, Max-Neff proposes a matrix of needs and satisfiers[5] divided into two categories: needs according to axial categories and needs according to axiological categories that propose satisfiers at their intersections.

In the development of the Multidimensional Model of Gender-Conscious Urbanism, the materialisation of the satisfiers of these two categories is assumed in new dimensions, now territorialised and with the recognition of women's experience in inhabiting space, its application reveals concrete satisfiers that will be defined in the following section: Dwelling, Mobility and Infrastructure, Security, Public Space, Sustainability in the urban environment and Urban Facilities.

In this way, to understand the role of care in the daily life of Latin American women, it is necessary to understand the needs of these specific bodies in the territory, as Gallardo (2014) points out, to go beyond the conceptions of the isolated body of any territorial reality and understand it from their different meanings, depending on the place and time. It becomes urgent, then, to problematise and understand what are the needs of Latin American women employed in public cleaning, for example, or those of an urban white woman who perform waged jobs, and then work on the satisfiers attentive to these needs.

Proposal's Methodology: The Multidimensional Model of Gender-Conscious Urbanism

Based on the already mentioned approaches, the epistemological tool is proposed called the Multidimensional Model of Gender-Conscious Urbanism, which aims to systematise the notion of Just City through two main concepts: Gender-Conscious Urbanism developed by De Simone (2018), influenced by the theory of Gender Justice by Fraser (1997). Gender-Conscious Urbanism redefines the concept of citizenship and its relationship with existing institutions and seeks to overcome binary categories to integrate the multiplicity of interactions between bodies and space.

Gender-Conscious Urbanism recognises that there is not only one way to grow as a woman; labour, race, identity, and symbolic differences determine the different bodies in space. The translation of experience in international gender-conscious design is vital. Cultural requests should not remain unattended, and for the same reason, the design must be born from local

[5] Max-Neef's matrix of needs and satisfiers develops two axes of needs. The axis of existential categories (Being, Having, Doing and Interacting) and the axis of axiological categories (Subsistence, Protection, Affection, Understanding, Participation, Leisure (or Idleness), Creation, Identity, and Freedom). http://www.daghammarskjold.se/wp-content/uploads/1989/05/89_1.pdf

requests. Local translation and acculturation of formulas for constructing and managing cities with a gender perspective are required. The approach to achieve inclusion must be from justice and law, and it must advocate for "gender justice" (Fraser, 1997, 2015, 2020) that ensures the processes of redistribution and recognition of women and their rights.

The model is our guiding axis for any project, which is an instrument of evaluation of the urban environment from the perspective of perception and qualitative analysis. It seeks that women evaluate the effects that urban planning and built environment have in their daily lives and if it is responsive to their needs. From the results, urban proposals can be articulated that guarantee their inclusion and representation.

The model (see Figure 1) positions the care at the centre of urban decisions and as a condition to reach fairer cities. As Jirón (2020) describes it, care tasks are territorialised, carried out in specific environments and territories, so the model develops itself from this ideal. We propose that the following three considerations must be taken into account when rating the urban environment: 1) the axes of intersectionality that are age, socioeconomic class, ethnicity or culture, employment, physical condition; 2) daily life dimensions regarding both redistribution (care, time use, economy and security) and recognition: inclusion, autonomy, participation and representation, and 3) the evaluation of the urban space through six indicators: Dwelling, Mobility and Infrastructure, Public Spaces, Urban Facilities, Security and Sustainability of the urban environment. These six indicators are established according to what an urban environment must include to meet women's needs and reflect their experiences in daily life.

We will now present some case studies using our methodological and epistemological tools. The model considerations are disaggregated into practical formats to analyse particular problems in the daily lives of women and different urban scales, for example, the problems that women face in their everyday mobility. In that sense, we propose a city walk as a method of urban analysis, based on the tool My Walk Travel Log (Bitácora de viaje: Mi Caminata) and The Immobility Log (Bitácora de la Inmovilidad), a recently proposed tool which we developed in the face of the COVID-19 emergency. Besides, we create the Urban Habitability and Neighbourhood Satisfaction Survey to analyse the relationship of the built environment at the neighbourhood level, and, as a work in progress, we propose the Urban Habitability Index, which incorporates the tools mentioned above, to develop through indicators an index of analysis of the quality of the neighbourhood concerning different territorial scopes.

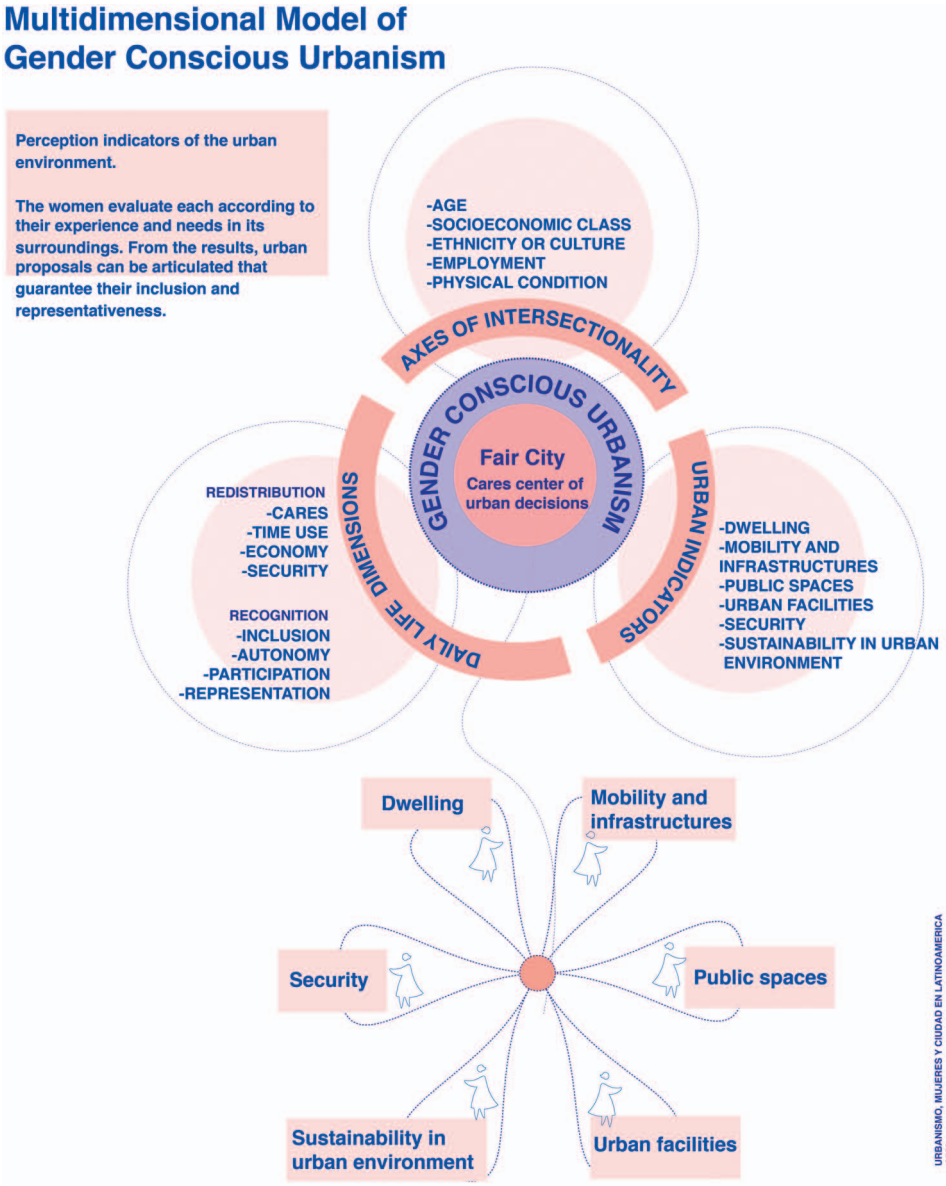

Figure 1

Multidimensional Model of Gender-Conscious Urbanism

Source: Authors

My Walk Travel Log

In Latin American cities, women's mobility depends on walking and public transport, but most urban environments do not recognize it. Women have a more profound knowledge of the public space and the proper location of services. Women are caregivers both in private and public space due to the gender role imposed on them. Cities are not designed for them, so women face territories that fragment their daily lives. Moreover, women compose the collective that has lived the most unfair consequences of the capitalist urban model. Our territories (Mexico City, Santiago de Chile) have not guaranteed our right to a dignified and fair life, and this is clear with the feminisation of poverty in some of Latin America cities, as Falú (2009) points out, where women have access only to low wage jobs, forcing them to live in the periphery without proper services. Furthermore, the current transport system is gender blind, taking a generalised individual as a model of persons who move across the city.

With these concerns in mind, was developed a qualitative research tool called *My Walk Travel Log*, which has been applied in Santiago de Chile and in the outskirts of Mexico City. This tool aims to characterize and compare the pedestrian mobility experiences of women dwelling in a particular territory. The tool in question elicits to characterize a full day in the mobility of women based on the following information:

- Characteristics of the participants, such as: age, occupation, neighbourhood of residence, frequency of walking, mobility restrictions, time to reach their activities, and cost of their journeys. The journeys they made are collected, indicating the origin, destination, mode, the reasons for commuting, combination of modes, if they carry objects, and if they commute accompanied and by whom.
- Evaluation of the walking experience. In this part, women indicate which city elements allow them to have a comfortable and enjoyable experience and those that generate an uncomfortable and unsafe experience. That includes a table to evaluate each route with four indicators: security, comfort, accessibility, and inclusion.
  - Security. It refers to the presence of elements in the environment, such as the public space infrastructure that makes it a safe place to walk and stay, regardless of the time of day. And to the perception of personal safety, specifically gender-based violence such as sexual harassment.
  - Comfort.[6] It is concerned with evaluating if the urban environment's characteristics and the infrastructure's quality and maintenance are

[6] Proper width for sidewalks (without obstacles also), urban furniture to rest, trees, street lights, for example.

suitable for women's mobility needs. If the way they are designed invites to stay or just to walk through it. The exemplary elements evaluated in this indicator are: sidewalks in regard to their continuity and quality, comfort in public transport: possibility for sitting that is not very crowded, being able to get on without having to run to reach it, if the state of the bus stops are pleasant, with lighting, located at walking distances, public spaces with furniture for waiting and rest.

- Accessibility. It refers to evaluating the possibility of access and moving in a space without one's disability and/or age being a limitation/constraint.[7]
- Inclusion. It refers to evaluating whether the environment invites women to commute, walk, stay, without socioeconomic class, age, origin, ethnicity, culture, sexual orientation, and occupation being a limitation. In addition, it refers to the various needs for use and mobility considered: the time and cost invested in each trip (whether these fit different budgets), care tasks (good offer of public transportation that satisfies the mobility of care, which includes picking someone up, making purchases, running errands, going to the doctor, and so on); the availability of urban facilities, and services that can be reached on foot or by public transport.

- Proposals to improve women's experience of walking in the city. Based on their everyday life experiences, women have the opportunity to suggest transformation on their territories freely.

In the case of studied women in the outskirts of Mexico City, they mainly moved across the city on foot, which was sometimes complemented by using public transport and/or individual motorized transport. Regarding their reasons for commuting, more than a half of them had to do with: accompanying relatives, picking up children, visiting shops and supply centres – all grouped in the category of care trips by Inés Sánchez de Madariaga (2020, p. 91). Concerning their travel experience, their perception of security in public space is negative when there are factors such as poor lighting, a large gathering of men, poor maintenance of green areas, lack of mixed spaces, dealing with drugs (illicit substances), and robbery. In terms of accessibility, women mentioned the importance of setting speed limits, extending the time when pedestrian is able to cross a street (the "green" light), less distance between individual pedestrian crossings, the

[7] Here it is evaluated if the surroundings and the streets are designed in a network, continuous, if they have legible signage, lighting, sidewalks of sufficient width to walk pass several people at once, also with a stroller, with ramps for people with disabilities, with safe pedestrian crossings in each intersection, pedestrian traffic lights, tactile guides for people with reduced vision, public transport with ramp.

importance of proper street signposting, and keeping the sidewalks free of obstacles. Likewise, to have a comfortable commuting experience: street furniture to sit on and rest, adequate bathrooms, well-maintained green areas, playgrounds and equipment for outdoor exercise. Finally, among the proposals to improve public spaces, they emphasised the need for better lighting, continuous surveillance – especially at night – including security/CCTV cameras and panic buttons, clear sidewalks free of debris and parked vehicles, wider variety of public transport available, and safer crosswalks.

The data on how women travel within their neighbourhoods and cities, and what are their particular needs, problems, and perceptions. These insights are to be then translated into a neighbourhood project by and with women.

Immobility Log

The web log in question is a digital tool to record the voices of women through their mobility experience during the COVID-19 pandemic (i.e. from May 2020 onwards). It collects their perceptions of the city following their daily commutes and mobility experience, with the aim to design a new normal with and for women. We propose to answer by employing the concepts of mobility and immobility. This last concept involves quantifying the trips made and those that a social group recognized, those they consider possible to do, and those they actually do. In this sense, immobility is a helpful approach to understand the dissatisfaction, desires, and perception of trips (Gutiérrez, 2009; Hernández & Witter, 2011; Gutiérrez, 2012, p. 85, as cited in Migleriana & Pereyra, 2017, p. 85).

We want to contribute to a better understanding of the mobility of care performed by women in their daily practices at the neighbourhood level. The COVID-19 pandemic made the city's inability to meet women's needs more evident, and it forced them to deploy individual strategies to adapt to the built environment. In Latin America, women work primarily in informal labour, in hospitals, in public cleaning services, to name a few, while facing empty streets and cities, increasing their perception of insecurity.

The questions included in the *Immobility Log* are: Could you stay at home all the time? If you had to go out, what was the reason? What transport did you use? How did you feel during the trip? What do you miss most about the trips you did before the lockdown? What is the main mode you used to move before the lockdown? In this "new normal", what would you propose for your city so that you could feel more comfortable and happier?

The *Immobility Log* has been answered[8] by 30 women from 12 different cities of Mexico, with ages between 22 to 58, and most of them have jobs that do not allow them to stay at home all the times. They usually move across city on foot or by sharing taxis, and the main purposes of their commuting are to buy food, care for elderly relatives, paid work, medical consultation, visiting a bank, formalities?) and payments for services. Among their proposals, they mention the improvement of sidewalks quality, (Belem, 32 years old), the need for activities and spaces that do not depend only on consumerism (Ana, 31 years old). A better understanding of the insecurity that is felt in different territories, for example, that outskirts of cities have infrastructures designed in a way that is hostile to women (Sonia, 42 years old).

Urban Habitability and Neighbourhood Satisfaction Survey

It is a cross-cutting aspect of Mexico and Chile that public and neighbourhood housing policies mainly address the issue pertaining to the number of available apartments leaving aside the problems of caregivers by making them invisible. It is no longer a question of ensuring access to housing but of guaranteeing a good quality thereof and an urban environment providing conditions and attributes that allow human development and a good quality of life through a distribution of more equitable space. This is why it is necessary to measure the satisfaction of women with their homes and neighbourhoods. The Concept of Habitability has been approached by several authors (e.g. Alcalá Pallini, 2007) from the point of view of the physical and material conditions of the house that together provide well-being to the residents. According to Laura Alcalá Pallini (2007, p. 42) a home has adequate standards of habitability not only because of its own characteristics, but also because it is or is not integrated into the city with access to services and facilities and an adequate surrounding public space. In this sense, Ana Elena Espinoza López and Gabriel Gómez Azpeitía (2010, p. 61) indicate that habitability is the interaction of some aspects of the built object (housing) and the architectural subject in an area (neighbourhood). In this way, to measure satisfaction with homes and the neighbourhood, architecture as a built object is not the only relevant element, but so are the environment and the conditions of interaction between the two, since this dialogic relationship can generate two possible results: one harmonious and enriching, the other chaotic and degrading.

Drawing on the above, and considering the theoretical approaches to human needs, perception, and experience from a gender perspective, a working definition of Urban Habitability is proposed: it is a set of physi-

[8] From May 2020 till July 2021.

cal, spatial, and psychosocial attributes of the built environment that, on different relational and territorial scales, promotes wellbeing and satisfaction of needs as a basis for the development of the inhabitants. These characteristics and territorial dynamics are understood as a constitutive dimensions of the quality of daily life.

Thus, a satisfaction survey of the neighbourhood is proposed as a tool suitable to understand and make women's specific problems and needs visible from the perception of space. In terms of structure, this survey is based on the methodology developed by Emilio Moyano Díaz (1994) called "Satisfaction with housing in cooperative housing estates and its relationship with variables of the mesosystem" (originally: *Satisfacción con la vivienda en conjuntos residenciales de cooperativas y su relación con variables del mesosistema*). The surveyed dimensions arise from the Multidimensional Model of Gender-Conscious Urbanism and the application methodology of *My Walk Travel Log*, although it focuses on analysing a larger scale of mobility and how different women move around the city, while the Neighbourhood Satisfaction Survey portrays what happens on a medium and micro scale, the neighbourhood and living place.

This survey is designed to be applied in social housing neighbourhoods of different cities. Initially designed for social housing condominiums in Santiago de Chile. Inhabitants and heads of household, primarily women,[9] were consulted about what they think and feel about the different variables that make up the neighbourhood.

The specific dimensions chosen are based on the subject literature studied by Doris Tarchópulos and Olga Lucía Ceballos (2005, p. 143) and Edwin Haramoto Nishikimoto (1984) that will be answered and complemented by the Multidimensional Model of Gender-Conscious Urbanism on a territorial and concrete level.

In this way, the dimensions in question are defined as:

Territorial dimension. It refers to the relationship of women with urban space at a certain time, understanding that they move extensively through the territory. This dimension analyzes accessibility and insertion in the city and the provision of infrastructure and transport necessary for mobility in public space. For example, *How do you consider the provision of public transportation in your neighbourhood? How satisfied are you with the public transportation that helps you get between your home and your destinations?*

Environmental dimension. For Claude Bertrand and George Bertrand (2007), the space-time relationship and the urban scale from a territorial

[9] This is relevant because while in 1990 female heads of household amounted to 20.2% of all households nationwide (Chile), in 2017 this number increased to 42.4%, where half of them are single-parent families (CASEN, 2017).

point of view, give specificity to the environmental issue since this relationship influences and affects natural environments in terms of degradation or sustainability. Based on this understanding, the environmental dimension is defined as the attributes that correlate with the environmental impacts of exposure to, for example, risk zones or industrial areas. For example, *How satisfied are you with the environmental conditions in your neighbourhood? Do you consider the natural environment of your neighbourhood sufficient?*

Social dimension. It refers to the social effects resulting from the feeling that a subject belongs to its environment (qualitative indicators) and to the socio-spatial characteristics of the neighbourhood such as homogeneity, poverty indicators, etc. This dimension works as prevention from generating a deviation in the evaluation by simplifying the problem. For example, the indicator of constructive housing standards can present positive values, however, the constitution of the neighbourhoods that are generated without considering the pre-existing social networks, generate a lack of social cohesion, which are perceived by residents as not having support networks between neighbours. Exemplary questions regarding the qualitative indicators would be: Do you know the neighbours who live in your building? How satisfied are you with the relationship with your community?

Economic and opportunity dimension. It aims to recognise the logic of the market context and of public policies regarding urban planning in order to incorporate indicators referring mainly to labour markets and interests and opportunities presented by the environment (urban equipment aimed at delivering services, commercial centres, etc.) For example: How difficult is it to find work close to where you live?

Dimension of the house built (constructive aspects). It is related to the already defined, intermediate scale of the urban network in terms of the material state and the conditions of the services in the housing environment. The exemplary questions in this case would be: How satisfied are you with the material conditions of your home? What would you add to / change at your home? How satisfied are you with the surroundings?

The Neighbourhood Satisfaction Survey was first prepared as a pilot input for the subsequent application of the urban indicators that made up the Urban Habitability Index (UHI, 2018). Applied in two neighbourhoods of social housing departments of Santiago de Chile that concentrate 43.2% of the national total (MINVU, 2014) of residential complexes of this type, the survey had a scope of 12 female heads of household.

Although the studied sample is small, it is sufficient to shed some light from a comparative perspective. In the first stage, the UHI was prepared with a quantitative methodology that indicates the lack or sufficiency of access to different services and urban facilities. From this point of view, the results are not far from the information available and known in of-

ficial sources. However, when incorporating the results of the residential survey as an indicator, the result of the territorial analysis varies, indicating essential issues. For example, within the indicator called "Access to public parks," social housing condominiums report difficulty accessing these spaces in approximately 90% of the cases. However, concerning those who have access to these places, the survey reveals that these parks are not correctly enclosed or that there are no sufficient park lighting or conspicuously marked entrances that could invite the residents to enter them and spend their leisure time there. Therefore, do they really have access to this amenity? Are public policies for neighbourhood recovery and urban improvement targeting the correct items? Which ones do we need to consider? In what hierarchy?

Urban Habitability Index (UHI)

According to the previously described tools, the Urban Habitability Index (UHI) is being at the stage of development, and its aim is to measure the quality of social housing and neighbourhoods in general. It seeks to identify the areas in which the neighbourhood compromises the quality standards. For this, qualitative and quantitative indicators are developed, the former being more important. In this way, the perception indicators affect the entire construction process of the final tool.

Discussion and Conclusions

Regarding what we developed in this article, the methodological proposal of the Multidimensional Model of Gender-Conscious Urbanism and its particular tools (the web logs, the Neighbourhood Satisfaction Survey, and the Urban Habitability Index), we can indicate some conclusions:

1. By implementing our methodology we confirmed the following: there are inequalities that women face when inhabiting the space, which clearly result from the structural failures of cities to recognise the daily body of women and their displacement. Moreover, subjectivities linked to territorial perception are not usually measured by urban planning instruments, even though they are relevant since, through these, the real impact of the environment on its inhabitants can be measured because they (subjectivities) show which dimension has not been considered to improve cities and involve their inhabitants in the construction of it.

2. By deploying a qualitative and perception-based methodology, we demonstrate the importance of incorporating elements which are vital for women when they walk in the streets, or crucial for the way they inhabit

their neighbourhoods, while noting which kind of urban environment can improve their activity in the city and better recognise their needs.

3. The approach to setting care at the centre of the discussion reveals the importance of the perception of Latin American women in urban planning: they are the ones that take care of the city. Therefore, it is relevant to understand Latin American women's urban experience concerning two key dimensions for a dignified life: dwelling and mobility.

4. These dimensions must be reviewed with a situated gender perspective, that is, from the viewpoint of particular experiences of the different places and neighbourhoods where women live, and with an approach that allows their active participation.

Thus, a gender-conscious urban territory must be construed not in terms of universal design,[10] since this only benefits one type of body, requiring women – who have been excluded – to devise various strategies to inhabit and develop in the city since many continue to have restrictive opportunities. Therefore, the experiences of women in the city continue to be marked by unequality, the need for adaptation, and restrictedness. They adapt to what the space offers by exercising particular strategies, as seen through some answers in My Walk Travel Log, such as avoiding places, schedules, and jobs. They also have to adapt to the conditions of their homes and neighbourhoods, which are generally deficient and unsatisfactory, and limit their daily life and their development. Many of the surveyed women live at the periphery, witnessing how many processes to improve the environment remain blind to their needs. Such processes only seek to improve the environment through universal recipes that do not recognise from the beginning of planning practices and local necessities, so that those "improvements" only perpetuate urban inequity.

Some concluding remarks about these instruments involve a perception that cities can achieve spatial and mobility justice if they incorporate women needs, practices and experience on a neighbourhood scale: a new understanding of mobility infrastructure from the viewpoint of women's needs, from accessibility to proximity, from neutral infrastructure towards urban care services.

Regarding the Survey of Urban Habitability and Neighbourhood Satisfaction designed in Santiago de Chile, we can point out that the levels of dissatisfaction with the neighbourhood in terms of the daily practices of

[10] Feminist theorists criticize universal design for being the design that allowed an androcentric and patriarchal urbanism, a functionalist city; that took into account the Anglo-Saxon man as a design subject. Universal design does not address the diversity of women and men, but rather takes "universal" criteria that only serve a typical man defined in Le Corbusier's *The Athens Charter* [*La Charte d'Athène*] (Col·lectiu Punt 6, 2020, p. 99).

women indicate that they are not recognised in the planning of neighbourhoods of social housing. Although we know that, in Chile, most of the households are managed by women, the location of social housing, the conditions of the house, and the neighbourhood, among other conditions, are not perceived as adequate, which is a problem when they inhabit these spaces, because they force women to make a more significant effort in their daily lives. In this way, being responsible for domestic affairs by incorporating the needs of women into urban planning in this new context not only generates benefits for them, but also contributes to building better cities for all, as soon as the territory recognises the particularities of this dwelling as Segovia and Nieves Rico (2017a) indicate.

In light of the specific results and in terms of future research, we need to continue increasing our study sample of mobility and immobility logs, since currently we only have testimonies of women living in similar conditions such as socioeconomic class, occupation, to name a few, so we want to explore and work with women who face other conditions in the city due to their occupations, such as domestic workers, public cleaners, street vendors. In addition to the sample, we consider that it is necessary to explore other important times of day to analyse urban issues, such as night and early morning, when women, mainly informal workers, do their jobs. Regarding the Neighbourhood Satisfaction Survey, the limitations also determine a sound sample universe of respondents that can be deemed representative. Besides, it may be necessary to make variations in the questions regarding specific dimensions, considering the different types of social housing neighbourhoods.

In future research, we need to ensure that the obtained evidence are reflected in urban projects. In this sense, we need to share the main results with urban designers, planners, and the governments to let them recognise that the knowledge obtained through qualitative methodologies are valid inputs, necessary and complementary for the instruments formulated by public institutions, such as urban development plans, housing policies, land management instruments, urban mobility plans etc.

The challenges that emerge from the initial approach to understanding women's experiences in Latin America are that the logic of care must be recognised and incorporated as critical in the functioning of a territory. It needs to be integrated in spatial terms, in affordable, dense mixed land use neighbourhoods, with management and redistribution of care, that will make women's daily lives more comfortable and enable them to face their current needs of double and triple hours of paid and unpaid work. At the same time, a type of social management of territory is required that would be responsive to women's needs to reduce the feminisation of poverty and urban exclusion.

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Miscellanea

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Obituary
Eugeniusz Jaworski, PhD
(31 October 1933 – 30 December 2020)

Zdzisława Mokranowska

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Eugeniusz Jaworski, PhD, worked at the University of Silesia since 1975. An ethnographer, ethnologist, and anthropologist, he taught and pursued his research at the Institute of Cultural Sciences, Department of Theory and History of Culture. It is safe to say that he was the co-creator of culturological school at the University of Silesia; he was present at its birth and contributed extensively to its coming of age and development. He started working for the University as an already experienced cultural researcher. Previously, for nearly twenty years, he had worked at the Upper Silesian Museum in Bytom. He resigned from the position in favour of the University believing that it was the very space where he would successfully enhance the acquired knowledge, research experience, and numerous competences to the higher level of critical and theoretical awareness, and pass it all on to the young generation through teaching. This idea was his driving force at all times, never to be cast aside. He was born in Poznań to a family of teachers. He was characterised by responsibility, virtuous persistence, and respect for work and the fruits of human labour. He commenced his degree in 1951, and once the Department of Ethnography at Adam Mickiewicz University was dissolved in 1954, he continued to study at the University of Warsaw. He was an alumnus of prominent ethnographers such as Professor Eugeniusz Frankowski and Professor Witold Dynowski. Throughout his academic career, he remained loyal to his role models' messages and often referred to

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their works; he also recommended to his students to have learned about their accomplishments.

Born in Greater Poland, he found his place on Earth in Upper Silesia, which he started exploring already back during his student research camps. From 1956 on, he lived in Bytom. Long years of numerous encounters with residents of Silesia and his professional predisposition made Doctor Eugeniusz Jaworski a prominent expert in the local culture. He took it upon himself to conduct extensive independent studies on the specificity of Silesia analysed in the context of the past and the present, while his ability to observe human behaviour and choices made his knowledge about the region truly exceptional and enviable.

Having completed his degree in ethnography in Poznań and Warsaw, he pursued his devotion at the Upper Silesian Museum, thanks to which he was granted the chance to work with Doctor Józef Ligęza and Professor Mieczysław Gładysz. It was also a period of intense field research, which allowed him to collect valuable materials including data on the traditional culture of Upper Silesia. During his endeavour to establish an open-air museum in Chorzów he decided to focus his research interests on the topic of wooden constructions. While working at the museum in Bytom, he remained in touch with academic centres from across Poland; he participated in seminars by Professor Maria Ossowska and Professor Witold Dynowski, in meetings of the Silesian Science Institute; he acted as an active member of the Polish Ethnological Society.

He had great respect for people living in Silesia. He would often remark that he had learnt a lot from them. After all, he was fighting to overcome the negative stereotype of people from Upper Silesia, in particular of a Silesian man; he was able to view the region in the perspective of European civilisational values that arrived there early, transforming the common culture of inhabitants long before similar changes occurred in other parts of Poland. He was interested in the ethos of work in the industry, but also analysed causes and degrees of changes that had turned former agrarian communities into those composed of miners, steel workers, and foundry workers aware of their professional value. He earned their trust with ease and ensured never to abuse it. In his descriptions of transformations occurring in the culture, he would always attempt at protecting privacy of individuals for whom these transformations entailed important personal experiences, were sources of pride but also fear of the unknown future. He could communicate proficiently with everyone; adroit at holding a conversation, respectful of his interlocutors, open to listening – it all made each conversation with him last in memory long after it took place.

He was a historian of tangible culture both because of his passion and education. His knowledge in this regard was outstanding. He was

an expert in outfits, furniture, tableware; he could identify the source of fabrics, cutlery, and porcelain. To him, each item served as a source of information on those who likely had designed, manufactured or used it in the past. He was fascinated by the human ability to make things with utmost precision and by how precision and aesthetics are related. He could conduct extensive disputes on the values of objects of everyday use, but he also was skilled at finding people who would help him complement his knowledge about objects that were no longer in use. He appreciated even seemingly small pieces of information which, once consolidated, formed the foundation of empirical knowledge in ethnography requiring theoretical, scientific analysis. He had a distinctive feature that was important when it comes to academic teaching, namely, he was generous with his time – each time someone asked him for information, and explanation, a solution to a problem, he would always eagerly offer his help.

He was an incredibly well-read man; having superb memory, he surprised and amazed others with his deep understanding of research areas that are a rare object of interest for a present-day humanist. He could discuss mathematics and economics, modern military and history, politics and global-scale social issues, but also culinary arts, literature, painting, and medicine. Doing so, he would never make banal remarks; his extensive knowledge was astoundingly deep at the same time. If he did not surprise one with his accurate views and knowledge that made him an interesting interlocutor in a conversation on nearly any topic, he would ask an accurate question, sometimes a surprising one, though it always made a dispute more lively. Although he did not flaunt his artistic talents, his taste combined with his inclination to order and aesthetics in every area of life made him stand out from others on daily basis and, once someone got to know him more closely, brought him great respect. Moreover, he had a rare gift – a scientific intuition. Sensitive to inconsistency and incoherence of thinking, he was wise in a courageous and responsible way; he did not fear ramifications of his choices often made in opposition to the externally imposed standards and recommendations.

Elegance was his hallmark, while his ability to compliment his interlocutor was a magnificent start for every conversation. He was at his best in private conversations, as he liked neither conference disputes nor gossiping. A direct conversation was his natural environment. However, there was another side to this – although he would passionately engage in discussions and note-making, he rarely published, following the old rule stating that the only works worth publishing were those completed and marked by originality. Nonetheless, during his work at the University of Silesia, he was successfully talked into becoming a co-author of a few books and numerous article that continue to command respect to this day

due to their scientific merit. Preparation of the study he considered most important to have been printed, namely, a reviewed version of his doctoral dissertation, was highly time-consuming. He dedicated it to Upper Silesian wooden constructions. We hope that it will soon be published by Śląsk Publishing House. This publication might tell us more about its Author than any recollections by his family, friends, and colleagues. Perhaps it will say a lot more about the feature of the local landscape that was present until fifty years ago, namely, the now forgotten rural house. The Author considered it to be not only an autonomous object of his multi-aspect studies but also a source of knowledge about past methods of construction and high professional skills of "simple craftsmen".

He paid little attention to accolades. He had but a few decorations, all of them fairly earned: a Gold Distinction for Care of Historical Monuments, a first-grade gold Award of Honour "Merited for the Union" awarded by the General Committee of the Polish Cultural and Educational Union in Český Těšín, Marian Mikuta Award "Merited for the Theatrical Culture", and, lastly, the Medal of the Commission of National Education. This meant that he cared equally for historical monuments of tangible and intangible cultural heritage; that for many years, he maintained scientific, institutional, and personal contacts with Poles in Zaolzie; that the Society for Theatrical Culture owed him a lot and, lastly, that he was not only a wise well-educated man but also a valued university lecturer. For many of us, friends and colleagues alike, he was also a master and a guide in the mysterious field of culture from around the globe.

A cigarette and a cup of coffee in his hands as inseparable elements of his image, his legs crossed; he became an icon of style related to the model of conduct of past intellectual and artistic elites. He was an individualist, a man of impeccable manners; he had class. Faithful to rules he considered right, he deeply believed that a person should continuously work on one-self, overcome one's powerlessness, obstacles, shape one's own personality. As a rationalist and an aesthete, he linked scientific truth to methodology, beauty, and order. He was sensitive yet highly disciplined intellectually and well-organised. He used to keep his weaknesses hidden deep inside, as he complained very rarely. For this reason, none of us really considered the possibility of his sudden passing.

His everyday presence, his vast knowledge, his effective advice, and his kind smile will be long missed by us all. The void after the passing of Doctor Eugeniusz Jaworski will be long felt and devastating for everyone who knew and valued him.

This is an extended and altered version of the obituary entitled "Kulturoznawca powinien interesować się wszystkim" published in *Gazeta Uniwersytecka. Miesięcznik Uniwersytetu Śląskiego w Katowicach*, April 2021, issue no. 7 (287).

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