PERCEPTION in Architecture

HERE and NOW

Edited by

Claudia Perren
Miriam Mlecek

PERCEPTION in Architecture

This book is published in conjunction with the symposium "PERCEPTION in Architecture. HERE and NOW," AEDES Network Campus Berlin (ANCB), Christinenstr. 18–19, 10119 Berlin, Germany. 27th – 28th June 2014

Convened and organised by Claudia Perren (University of Sydney) and Miriam Mlecek (ANCB)

Thank you to the Aedes Network Campus (ANCB) and The University of Sydney for supporting the symposium and publication on "PERCEPTION in Architecture. HERE and NOW."

Definitions of space are as diverse as the disciplines in which it plays a fundamental role; from science and philosophy to art and architecture, each field's perception of space is often simplified or reduced. This consequently denies us access to "new spaces," whose definitions and perspectives, strategies and impacts on human perception are rarely considered in any cohesive manner. The symposium "PERCEPTION in Architecture. HERE and NOW" invited critical and comprehensive contributions by academics, artists, architects, designers, urban activists and curators to reflect upon new spatial concepts and thus access new spaces of definitions and perspectives, strategies and processes of perception in architecture.

ANCB THE AEDES METROPOLITAN LABORATORY

THE UNIVERSITY OF SYDNEY

PERCEPTION in Architecture

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Cambridge
Scholars
Publishing

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This book first published 2015

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-4438-7256-3
ISBN (13): 978-1-4438-7256-0

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INTRODUCTION TO NEW SPACES IN ARCHITECTURE

CLAUDIA PERREN AND MIRIAM MLECEK

"… one was to experiment in the here and now: thus life was a perceptual experience."
— Dan Graham, 1999

The implicit nature of our daily surroundings often impedes individual perception. The shortage of learnt parameters, units of value and knowledge around spatial relationships and form making creates the basis for uncertainty in times of change and in urban decision-making processes. The creeping privatisation of public space, the loss of common ground, issues of territory and privacy as well as the question of who determines and designs the physical and virtual realms increasingly escape the individual as well as the collective consciousness.

The definitions of space are as diverse as the disciplines in which it plays a fundamental role. In science, space is the "container" in which all physical occurrences play out. From human experience, one has always "known" what space is, for example its determination by dimensions. In philosophy and sociology, it has been possible for some time to observe a renewed interest in spatial questions. In contrast, the responses of the art world to the "spatial turn" of related disciplines have been comparatively restrained. Especially with sculpture — which during the second modernism experienced an incomparable spatial expansion with the creation of whole environments, installations, land art and art in urban contexts — there arose the opportunity to conceive of the production of space as a particular kind of aesthetic meaning. The consideration of spatial compositions could at this point open the way to as yet unexplored layers of meaning and examine the fundamental conditions of artistic creation — how an artwork relates to space and time, categories that are simultaneously the basis of human perception. The arts are intensively and broadly concerned with spatial problems, but if one looks for a further

extraction or connection to a new platform, one is met with unsatisfying research.

Space is on one hand the defining organisational model that places all things in relation to each other but which, on a completely different level, can also appear "empty." This paradox highlights the differing perspectives at play. In architecture, three-dimensional Euclidean space is the primary medium. The definition, dimensioning, organisation, construction and formal design of space are the most important tasks of architecture. Increasingly however, fluid spaces and transitions are being purposely created.

We aimed to apply such a "flow" to interdisciplinary approaches to space, countering the fact that assessments of space are often simplified or reduced to one dimension within an individual discipline. With such an approach, we refuse ourselves access to "new spaces," whose definitions and perspectives, strategies and processes of perception from all fields of human activity are too rarely considered in a cohesive manner. The economic efficiency that is strived for through job specialisation impedes a social view of the big picture, which is essential in an increasingly international, technical and communication-reliant world in order to flexibly confront the challenges of the future.

Together with our partners, the Aedes Network Campus (ANCB) and the University of Sydney (USYD), the symposium "PERCEPTION in Architecture. HERE and NOW" invited critical and comprehensive contributions by academics, artists, architects, designers, urban activists and curators to reflect upon new spatial concepts and thus access "new spaces" of definitions and perspectives, strategies and processes of perception in architecture.

The symposium was part of the ANCB programme "No Space Without Traits," which is looking at artistic approaches, to open doors into spatial worlds that until now have remained closed, and enabling investigations that apply alternative methodologies, practices and objectives from within art and science based on creative, behavioural and cultural positions. The aim of the symposium was to stimulate a discourse on themes such as space as a collective entity, multiplicity of experience, notions of spatial truth, individual perception and the "Other" as well as physical, visual, acoustic and virtual manifestations of space in relation to social, cultural, historical and political forces.

We received 46 abstracts from 24 countries. All proposed abstracts and full papers were assessed through a double-blind peer-review process, which led to a shortlist of 29 speakers. The selected 18 speakers were arranged into six panels, with three presenters each. The topics were structured according to the following keywords:

SPACES turned

beyond PERCEPTION

DIALOGUES proposed

urban ACTION

Sensual IMMERSION

experimental LENSES

Each panel created a dialogue among the three presenters as well as with the audience and identified various topics to extract and to further examine through synergies that developed in the course of the discussions. Every presentation illustrated new thematic areas to generate fresh questions and fields of action.

This publication documents the many different paths undertaken by the symposiums' participants, opening a great variety of new spaces for architecture on spatial turns and doppelgänger spaces; constructing experiences and manipulating imagined spaces, atmospheric perception and public action; and furthering discussion on an architecture of intensities, an architecture below perception, an architecture of performance, the spatiality of organisms, perceptual apparatuses and experimental lenses in architecture.

> "Everything is, I believe situated within a process — everything is in motion, with a faster or slower speed … it is … applicable when we are dealing with something personal such as how we perceive a given space, right here and now, or how we will be interacting with another person tomorrow."
> — Olafur Eliasson, *Vibrations*?, 2006

CHAPTER ONE:

SPACES TURNED

DEREALISATION, PERCEPTION AND SITE: SOME NOTES ON THE DOPPELGÄNGER SPACE

THEA BREJZEK AND LAWRENCE WALLEN

On the topography of the double

The brothers Grimm, in their *German Dictionary* from 1838, offer the intriguing definition of the term *Doppelgänger* as someone who "is thought to be able to show himself at the same time in two different places." This definition is interesting as it defies the popular notion of the doppelgänger as someone who looks exactly like another person, that is, someone's twin or double. Rather than focus on the physiognomic aspects of the doppelgänger, Jacob and Wilhelm Grimm's dictionary entry proposes a topological definition that speaks of a person who is present and is seen in two different ways simultaneously.

This paper follows Grimm's initial orientation but turns it on its head by considering the doppelgänger phenomenon from the perspective of site, thus discussing *buildings that show themselves in two different places* and expanding the field of observation to include *buildings that show themselves in two different places at different times*. The phenomenon of the architectural double is investigated here in relation to "what it does" rather than "what it is," taking a cue, again, from the word itself. The German "doppelt gehen" is the equivalent of the English "double walking." Rather than "doppelt sein" ("to be double"), the doppelgänger implies the action of walking, thus suggesting that a performative element is bound to the very existence of the double. The perception of the architectural double, with perception understood here as an active and cognitive process of our *sense-making* of the world, merges into the pronounced experience of a split presence where the architectural doppelgängers are neither identical twins nor complete reconstructions, defined by difference and, possibly, constructed across several sites and temporalities.

Always "self" and "other," the architectural double provokes and enables new and complex relationships between subject, site and sight, interrogated here through a reading of an incidental and largely overlooked Freudian text from 1936 and a reading that aims to understand built form through a performance paradigm.

An understanding of the architectural doppelgänger through Freud's concept of derealisation or autoscopy,[1] where the subject splits into self and other and observes itself in the act of observation, reveals complex interconnections between *site* and *sight* in the perception of both double and self as refracted and destabilised. Standing on the Acropolis in 1904 for the first time, Freud, rather than finding himself overwhelmed by the beauty of the iconic building, experienced feelings of estrangement and depersonalisation: "Also existiert das alles wirklich so, wie wir es auf der Schule gelernt haben?" / "So does this all really exist like we have learned it at school?"[2]

Freud observed himself looking at himself while both selves were at the same time looking at the Acropolis. In the case of the architectural doppelgänger, however, the Freudian autoscopic constellation is inverted — not two selves observing one building (and each other), but one self observing two buildings that in turn look at each other. This inversion, concerning the direction of the gaze between observer and building(s) continues when focussing on the question of the stability of the self (identity). While Freud, as "self" and "other," has temporarily, for the duration of the Acropolis episode, transcended a stable identity, the Acropolis, as first seen by the young Freud in 1904, certainly had a single, stable identity (presence).

[1] S. Freud, "Eine Erinnerungsstoerung auf der Akropolis," first published in *Almanach der Psychoanalyse, 1937* (Vienna, 1936), 9–21; also in *Gesammelte Werke*, vol. 16 (Frankfurt am Main: Suhrkamp Verlag, 1987), 250–57; N. Lukianowicz, "Autoscopic phenomena," *Arch Neurol Psychiatry* 80 (1958): 201.
[2] Freud, "Eine Erinnerungsstoerung auf der Akropolis." See also, Le Corbusier's description of the Parthenon as "a machine for stirring emotions" in *Vers une architecture* (1923).

Fig. 1-1. The Parthenon [courtesy Lawrence Wallen]

On the dislocation and translocation of site

Bernard Tschumi's *New Acropolis Museum* (2009) extends Freud's uncanny autoscopic episode from the singular experiencing subject to that of the visitor looking at two buildings that in turn look at each other. Located opposite each other, with the Theatre of Dionysus at the centre, the Acropolis (Parthenon) and the New Museum are locked in a constant gaze that destabilises the (visitor's perception of the) Acropolis' previous singular identity of site.

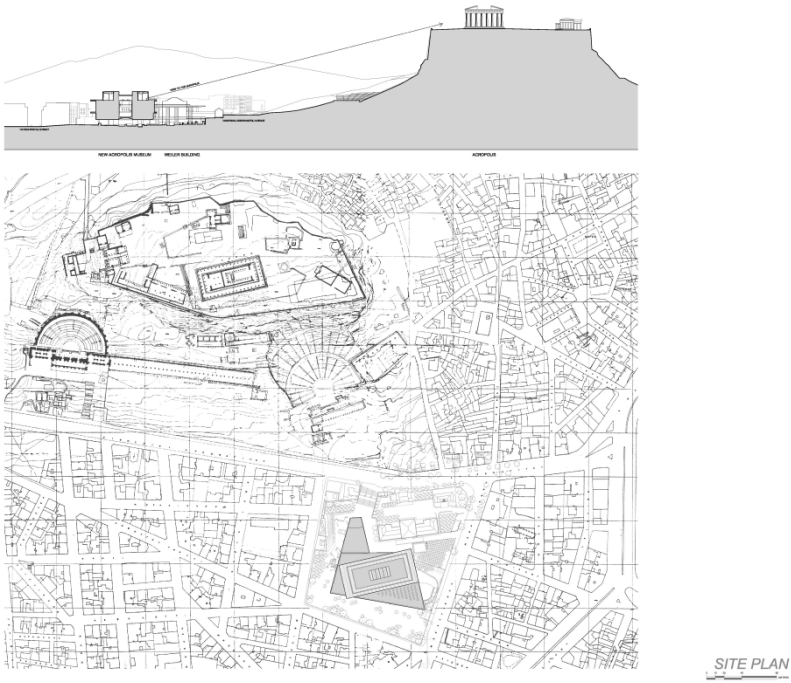


Fig. 1-2. Master plan [courtesy Bernard Tschumi Architects, New York]

This master plan shows the theatre's central position between the Parthenon and its double, the New Acropolis Museum. Situated on the Acropolis' southern slopes, the amphitheatre — the former Theatre of Dionysus and, later, political meeting place — was a space dedicated to fulfilling the theatrical contract of the "double act of looking," between stage and auditorium, that enables a live performance to take place. On Tschumi's master plan, the gaze is, surprisingly, shown as one-directional: from the top floor of the New Museum towards, but not quite reaching, the Parthenon. Theatre's central paradigm, however — that of the two-directional gaze — is already embodied in the relationship between the Athenian architectural doppelgänger constellation. As the subject views the buildings, they look at each other, opening up the scene to a performative event between building site and viewer. The site orientation of the Dionysus theatre supports a "theatrical" reading in which the New

Museum comes to be understood as a conceptual continuation of its *skene* (stage area) and the Parthenon as an extension of its *theatron* (seating area). In equating the museum (skene) with the stage, the space of action, and the Parthenon (theatron) with the auditorium, the space of reception, the basic viewing scheme of classical theatre emerges where, simultaneously, the actors are looked at as they themselves look at each other and at the audience. A complex fabric of visual, aural and environmental communication emerges in the interaction between audiences, performer and place that is mirrored in Tschumi's highly resolved spatial and temporal relationship between visitor and artefact, immediate site and site context.

Fig. 1-3. View from the Dionysus Theatre to the New Museum [courtesy Lawrence Wallen]

Tschumi's scheme identifies three layers: the base, which houses the archaeological excavations; the middle, where the main gallery is located; and the top, the location of the Parthenon hall and frieze (see Fig. 1.4). The glass box of the Parthenon hall, along with the other components of the building, reinforces the spatio-temporal duplication manifested throughout the museum (or stage) itself, whereby the interior and the exhibited

artefacts are constructed to be active participants in the creation of the architectural doppelgänger.[3]

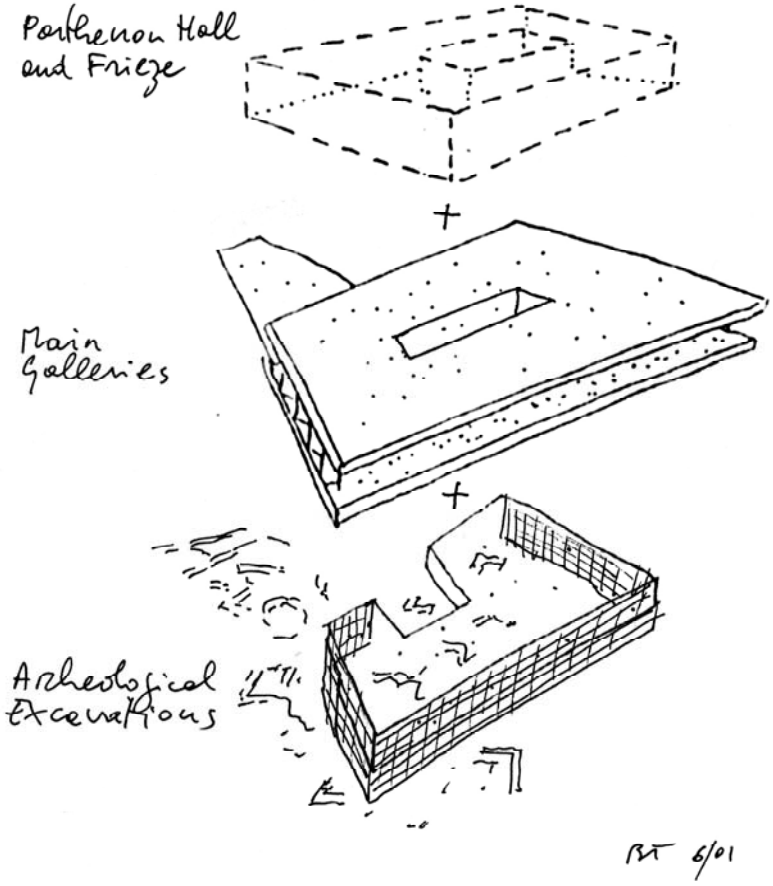


Fig. 1-4. Conceptual sketch [courtesy Bernard Tschumi Architects, New York]

[3] See also the AA research cluster "Architectural Doppelganger," mainly concerned with the nature of the copy and issues of copyright: *pr2013.aaschool.ac.uk/RESEARCH.../Architectural-Doppelgangers (accessed 2 June 2014).*

At the entrance level, visitors are immediately made aware that although they are experiencing the museum in the "here and now," the entire building in fact floats over archaeological excavations dating back to the fourth through the seventh centuries BCE. The orientation of the entrance level is defined by the location and positioning of the ancient buildings and the urban fabric that the museum has come to replace, articulated in the built form through the use of viewing platforms and glass floors that stage the excavations as an integrated part of the architecture.

The museum's top floor contains the most direct visual and material reference to the Parthenon and sets up the provocative architectural doubling or mirroring. On this layer, Tschumi's scheme sees the transposition of the spatial, conceptual and compositional dimensions of the Parthenon through the translocation and reconstruction of the famed Parthenon frieze. The frieze has been reinstalled on a concrete core with the exact dimension (1 metre high and 160 metres long) and orientation of that of the cella of the original Parthenon, located some 300 metres to the northwest of the museum. The frieze's original narrative of the Panathenaic procession is reconstructed here with original fragments and plaster replications of those blocks (marbles) now scattered among the collections of museums across Europe, after Lord Elgin violently removed large parts of the frieze between 1801 and 1805 and shipped and sold these to the British Museum. The large glass windows at this level allow uninterrupted views to the Parthenon, and the visitor finds himself immersed in a fragmented simulation of the original, itself composed partially of the original's spolia, while the ruined original is constantly present, calmly gazing down at its contemporary double.

The New Museum itself emerges as a dual architectural double, with the original foundations exerting direct influence on the composition and orientation of Tschumi's design. This spatial operation, which is highly sensitive to its temporal context, would initially appear to have the effect of stabilising rather than destabilising the identity of that particular space and its history. In the museum, however, the ancient ground plan is not repeated. On the contrary, the whole building twists from the localised orientation expressed at entry level to that of the Parthenon hall and its duplication of the Parthenon's measurements. The aim of Tschumi's strategies of layering/floating and twisting are to reinforce the relationship between the two sites within the one structure such that circulation through the building operates as a three-dimensional loop that moves visitors through the three floors in a singular flow.

Fig. 1-5. The Parthenon hall [courtesy Bernard Tschumi Architects, New York]

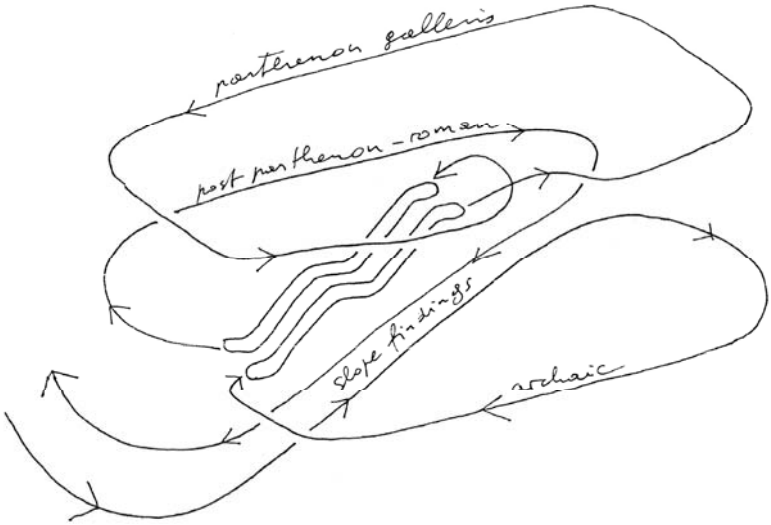


Fig. 1-6. Concept sketch — Circulation [courtesy Bernard Tschumi Architects, New York]

The circulation path starts at the existing excavations, continues upwards to the Parthenon hall and then back down to the main gallery. This clearly articulated spatial narrative transports the visitor "in and through time," from an entrance that makes the previous site visible, into a volume that duplicates an existing original and then to the Roman collection, of a much later date.

In Tschumi's bold scheme, and unusual for a museum, the controlled artificial light installed throughout the building is far less important than the expanse of natural light that penetrates the structure through the large glass windows. The glass surfaces, major feature of the museum's exterior, replicate the light experienced when standing at the Parthenon itself, and they direct the visitor's gaze outwards, strengthening the visual relationship between the interior and its collection of artefacts and connecting them to the archaeological excavations that the museum floats above, across to the Acropolis and the expansive city of Athens. The intentional locationing of the artefacts as both exposed to the outside and oriented toward their place of origin, the Parthenon, representing a spatial affirmation of its historical context, speaks to the frieze's absence (on the Parthenon) and presence (in the Parthenon hall) at the same time in a direct viewing axis. Not only is the museum a stage (the other), looked at from across the auditorium (the self), but Tschumi's design — playing with the doubling of the building's orientation and dimension in relation to its ancient foundations directly underneath — operates with strategies of the double within the single architectural structure.

On the performative site of difference

The Grimm brothers' topographic definition of the doppelgänger set the scene for this observation of a dual-site architectural double. The additional consideration of Freud's self-analysis of the splitting of self at the iconic site of the Acropolis revealed the potentiality of the architectural doppelgänger to not necessarily visually correspond with another building but to embody and be actively perceived as a performative site defined by both relatedness and difference. In this reading, both subject and buildings, locked together through the double-act of looking, are active agents in the temporary construction of a particular scene that oscillates between the material absence and presence of the frieze, a performative event subtly scripted between the "now" of Bernard Tschumi's contemporary architecture and the "then" of the Parthenon's archaeological artefacts.

SPATIAL TURN – PERCEPTION IN ARCHITECTURE

ANNETT ZINSMEISTER

New technologies, the consolidation of a global market, political impositions and the continuous and massive acceleration of data and information flow are changing our way of living, working, communicating and perceiving. Virtual work spaces and virtual social networks determine and control our social life in parallel worlds, change our relation to the real world and to real distances, and change our perception of space. The boundaries between private and public, interior and exterior, real and virtual space are becoming blurred.

The history of science is a history of stepping beyond our biological limits of perception, which exist due to the physical abilities of our five senses. The processing of sensual impressions constitutes a unique experience of space that is supported, expanded and also manipulated by cultural techniques. Technologies for the development of perceiver equipment that may, for example, expand our experience of space (e.g. the microscope and telescope) play the same role as technologies for accelerating movement through space as well as analogue and digital techniques for spatial representation and simulation.

Culturally shaped perception models change our understanding of space, our relationship to space and our use of space. According to Jonathan Crary, human perception is based on a culturally significant range of expertise that is changing over time and has become controlled since the invention of optical devices in the nineteenth century.[1] Also representation techniques exert a direct influence on our views and our understanding of space. In the wake of the discovery of central perspective, it become possible for the first time to depict space in correct proportions, and as a result, the city turned into an object of art that could

[1] Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, MA: MIT Press, 1990).

be planned. Instead of symbols and pictorial formulas, a picture's subject matter, its surface and the point of view become the basic element of a new construction of image and space. Perspective transforms the comprehension of the world into a rational, mathematical construction. Erwin Panofsky describes the construction of perspective as a cultural convention. The linear perspective turns into a symbolic form reflecting a historically conditioned worldview.[2]

Cultural techniques such as techniques of observation and representation influence and direct our perception of space. I try to get to the bottom of this causal relationship in my artistic research. Here I will provide brief insight into my work and my approach to architecture in and through the medium of photography that raise the question of the relationship between artistic (re)production and the visual appearance of architecture as well as the importance of media and technological breakthroughs in the design process.

Space production as perception machine

Medial space productions are technical constructions of perceptibility in which the boundaries between reality and simulation, between readability and interpretation, between affects and effects of technical images become blurred. The staging of local, global and virtual spaces could also be described as real fictions or ideal realities. What kind of physiological skills are call upon in perceptual processes? What are our unconscious habits of perceiving? How and why are automatisms released? How do we distinguish real and virtual spaces? What are the roles of memory and imagination in these processes?

[2] Erwin Panofsky, *Perspective as Symbolic Form*, trans. Christopher S. Wood (New York: Zone Books), 29: "For the structure of an infinite, unchangeable and homogenous space — is short, a purely mathematical space — is quite unlike the structure of psychophysiological space: Perception does not know the concept of infinity; from the very outset it is confirmed within certain spatial limits imposed by our faculty of perception." Samuel Edgerton understands the discovery of central perspective not only as an objectification of a physically explorable environment, but also as a mediator between two worldviews, a mathematical and mystical space and world order: "perspectival constructions […] originally had the duty not only to objectify the sensual experience environment, but also to emphasize the allegorical, moral and mystical message of the holy Scripture." Samuel Edgerton, *The Renaissance Rediscovery of Linear Perspective* (New York: Basic Books, 1975).

I am interested in the possibilities and limits of imaging construction in relation to our visual perception. Photography is a central tool in my search for answers. Initially it was a documentary research tool and then it became an artistic medium of representation and expression. Photography is the most important medium for the visual representation of the living world and facilitates imaging the existing and the imagined.

Fig. 1-7. Annett Zinsmeister (1992), Plattenbau housing in Marzahn, Berlin [© Annett Zinsmeister, VG Bildkunst]

The best way to describe my artistic approach in dealing with perception in architecture is to introduce a few, select experimental projects in which in facades play a central role. Facades define spatial and visual boundaries and are the most memorable elements of architecture in public spaces. In modern times, the facade lost its importance as an independent, artistic building component and became an equivalent or subordinate part of the functional whole. Concise structural evidence of this can be seen in the concrete slab buildings, so-called Plattenbau, a mass socialist architecture in different forms in the former Eastern bloc countries. These buildings frame the urban space in large residential areas not as a result of design considerations, but industrial production technology. The Plattenbau facade is constructive and decorative at the same time. The calculus of

efficiency becomes evident in its endless repetition, oscillating between deterrence and fascination.

Scientific research and studies of the environment, such as mapping, photography and recording, mark the first step of my artistic investigations of space. I try to discover and unsheathe structures and patterns, understanding them as spatial codes. Like Roland Barthes' definition of structural practice,[3] I disassemble these detected urban codes and spatial elements and rebuild or sample them in different, creative ways to learn about the relevance of the spatial system, the composition model and the complexity of the complete texture and structure of the investigated architecture.

Fig. 1-8. Annett Zinsmeister (2005), *Outside-in*, installation, Schloss Solitude, Stuttgart [© Annett Zinsmeister, VG Bildkunst]

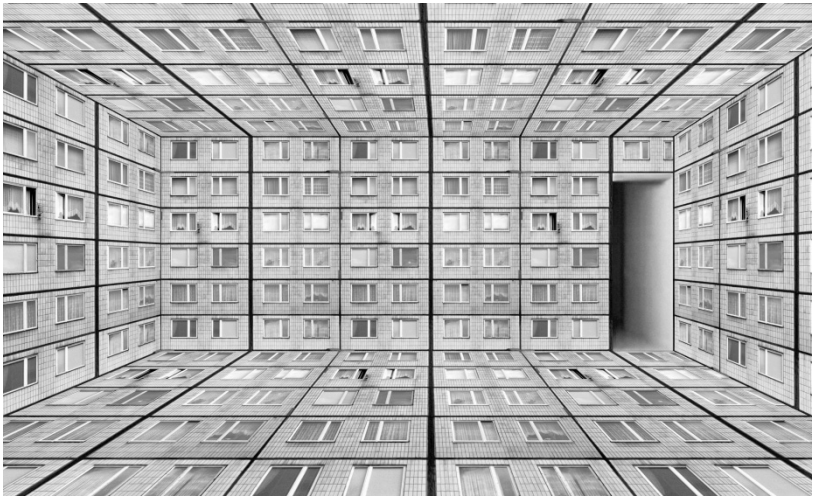
[3] Roland Barthes, "Die strukturalistische Tätigkeit," *Kursbuch,* 5 May 1966, 190–96.

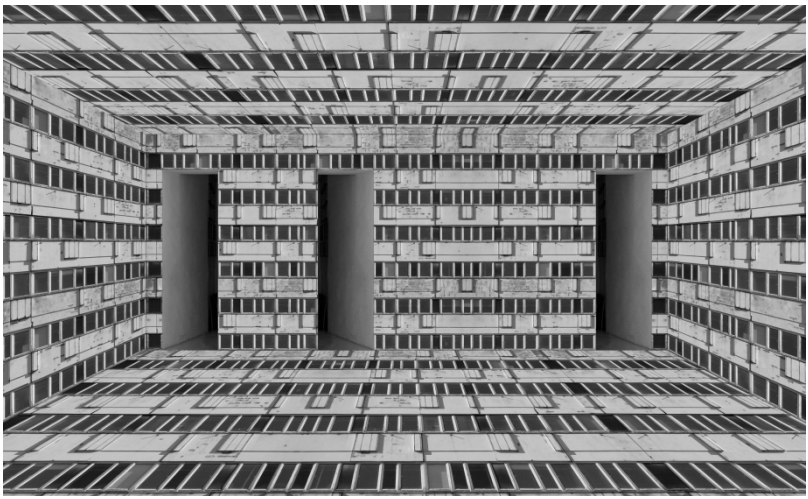
Figs. 1-9 and 1-10. Annett Zinsmeister (2005), *Virtual Interior*, installation, Gallery Oberwelt , Stuttgart [© Annett Zinsmeister, VG Bildkunst]

In a second step I interpret, in the spirit of the modular mass architecture itself, documentary photographs of Plattenbau as "medial modules" and assemble them into large, facade images and wallpaper to cover existing interiors. The strong spatial effects of these experimental installations, *Outside-in,* lead to a borderline experience for visitors through the confrontation of two extreme effects: the brutality of endless repetition and the fascinating aesthetics of structural and serial patterns. These architectural invaginations of facades into interior spaces are contradictory to our use and knowledge of architecture and offer new spaces of perceptual experience.

In the installations *Virtual Interior,* the prefabricated facade becomes a descriptive space element of an absolute space, in which top and bottom, interior and exterior can no longer be distinguished. The result is a double intersection of outside and inside — a rolled back inside of the outer space without interior. Interestingly, this is less a spatial installation than a visual construction. From the opposite side of the street, the central perspective illusion is perfect. As a (re)construction of facade elements, the simulated

hybrid of interior and exterior become part of the building facade as well as a temporary event in urban space.





Figs. 1-11 and 1-12. Annett Zinsmeister (2007), *Virtual Interior,* installation, Gallery Ulrich Müller Berlin [© Annett Zinsmeister, VG Bildkunst]

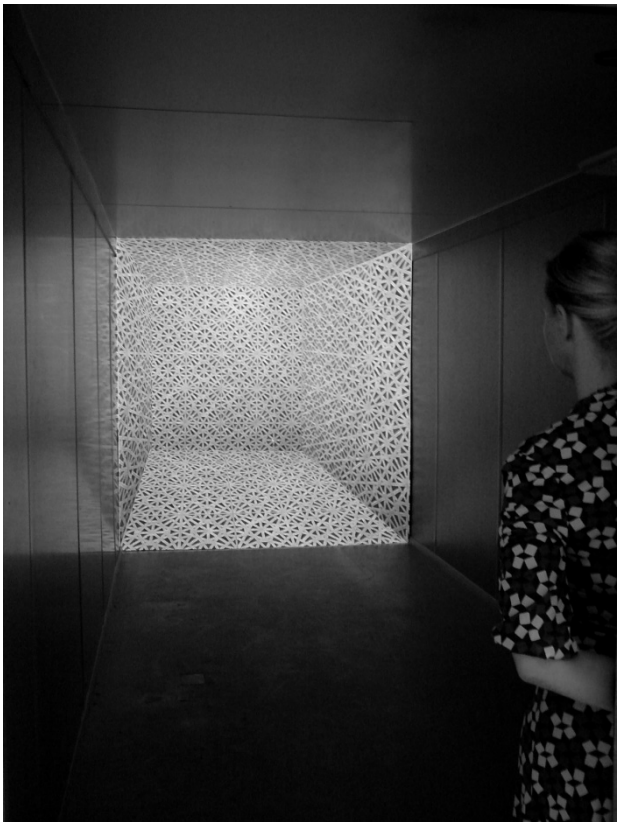
Through these invaginations of exteriors in interiors, specific effects of mass architecture are scaled, condensed and pushed to extremes. New perspectives, surreal spatial impressions and spatial irritations emerge and blur the boundary between outside and inside, between private and public. The installations oscillate between photographic document and artistic artefact, between authenticity and deception. Architecture here occurs ambiguously as real and virtual at the same time.

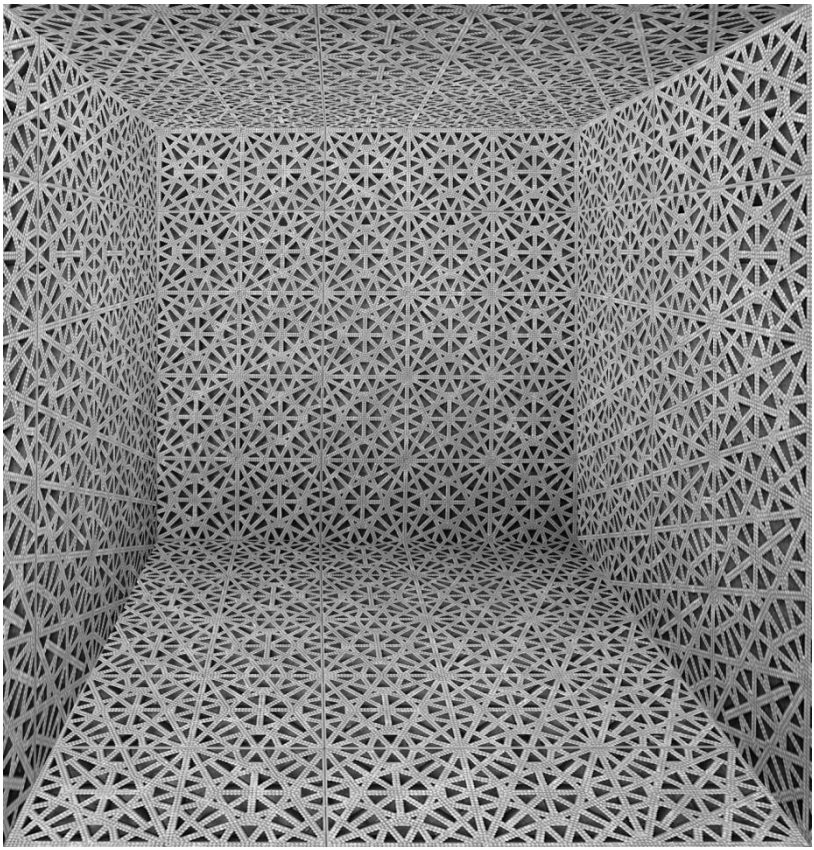
Fig. 1-13. Annett Zinsmeister (2010), *Outside-in,* installation, private garden, Hansaviertel, Berlin, 2010 [© Annett Zinsmeister, VG Bildkunst]

(No) Space without traits

The *Urban Hacking / Container Project* examines the meaning of localization and ou-topos of architecture as well as its traits. What do spatial identification and home mean in a globalized world characterized by a high degree of flexibility and exchangeability? What are the features and specifications of an architecture that works without spatial association? My photographic research in different places around the world is an attempt to better grasp the particular, the treasure, the identity of spaces, places, cities, especially of those that seem to be inhospitable or nonspecific at first sight.

The work *Urban Hacking* consists of photographs of urban facade elements taken in different cities, countries and continents that I then used as modular elements for the construction of a virtual space in the interior of a container. The container is a serial architecture that has no specific place and temporarily holds a place in different places around the world. It is used for the international flow and exchange of goods and culture.





Figs. 1-14 and 1-15. Annett Zinsmeister (2009), *Urban Hacking / Container Project,* installation exhibition, paraflows, Vienna [© Annett Zinsmeister, VG Bildkunst]

The visitor enters a darkened container and perceives a protuberance of constantly changing interiors. Floor, ceiling, walls cannot be distinguished materially or visually in their specific properties. The changing surfaces seem to develop a life of their own, beyond cultural boundaries: Ornamental structures appear and seem reminiscent of Arab culture, but then change their physical appearance into concrete elements via glass bricks to wood siding, in which the observer believes he or she recognizes alpine building materials. These associations send viewers on an imaginary journey around the globe, led by their own memories. It

corresponds to the human need to look for the familiar in strange or unknown places. Thus, memories of real, seen places superimpose with memories of photographs, since both are saved by our memories as image information and are not distinguished in real, experienced or pictured spaces. The installation of *Urban Hacking / Container Project* is thus passive and interactive simultaneously because the viewer embarks on an individual journey that reveals a lot about his or her saved personal images of architecture. Many of the facades and surfaces cannot be found in the country where one would expect them based on elements of their culture.[4] It is solely the consideration that develops a life of its own and refers to one's own perception. The installation is a test case and mirror of individual memory and imagination.

The visualization of distant, real and fictitious events by means of representation technique in the medium of photography hinder our mapping of images and leaves the viewer uncertain concerning the boundaries between documentation, simulation and fiction.

New technologies broach the issue of how urban space constitutes virtual space and how virtual spatial elements transform real spaces. Installations such as *Outside-in*, *Virtual Interior*, and the *Container Project* serve as machines of perception by turning exteriors inward virtually, as they trigger a strong impact on our way of seeing and understanding space. With architecture, we establish structures more or less consciously. With art, I may track them down, ask about their origins, their significance, their influence. The pieces and installations reveal unexpected contexts, intersections and parallels in the perception, depiction and experience of space. They point to the presence of unusual, overlooked details and contradictions and unappreciated beauty, whether in the random, the serial, the ornamental or the cliché.

[4] The Arabesque-looking ornament is not from Marrakech, but a tourist boat on Lake Zurich. The blackened wood facade cannot be found on an alpine chalet in the Austrian mountains, but in Tokyo's city centre as a representation of an old, traditional Japanese wood-finishing technology.

MAKING SENSE OF INTENSITIES

ARNAUD HENDRICKX

A first step towards an architecture of intensities

Architecture is often approached as an art and science of *extension.* Architecture may be considered as an art of extension in the sense that it focusses on shaping and constructing material artefacts that, as it were, extend from their inner core to their visible surface, where they appear as tangible physical objects. In this context, architecture as science focusses on the diversity in shape and dimensionality of material artefacts. Architecture may also be considered as an art of extension in the sense that it focusses on the skilled dividing of immaterial space that subsequently extends from wall to wall and floor to floor. In this context, architecture as science focusses on the diversity in shape and dimensionality of immaterial space. In this paper, I want to take a first small step towards an *architecture of intensities* by grinding an alternative lens to explore architecture. By zooming in on the intensive rather than the extensive, this lens might reveal some of the processes behind and underneath the diversity in shape and dimensionality of material artefacts and immaterial space.

Insensitive and extensive differences

In the natural sciences, it is quite common to distinguish between extensive properties, which depend upon the size or extent of a system or object, and intensive properties, which are independent from it. Extensive properties, such as length, area or volume, are intrinsically divisible. They can be *measured* as an extensive quantity that can be *expressed* in parts (e.g. metres, acres, cubic metres) that are external to each other and hence are divisible, symmetric and commutative. A wooden beam of two metres divided into two equal halves results in two beams, each with a length of one metre, exactly half the extensive quantity of the original beam.

Intensive properties, by contrast, refer to properties such as temperature or pressure that cannot be divided in the same way. Measures of an

intensive quantity are expressed in parts that are relational to each other and to points of reference, hence they are indivisible, asymmetrical and not commutative. If we were to divide a wooden beam with a certain density into two halves, the density of both parts would not be affected. If we were able in some way to divide the density in half, the nature of the wood would be affected. While subdividing an extensive property results in a more *local* difference in degree, subdividing intensive properties results in a more *global* difference in kind. While an extensive expression refers to an absolute amount, an intensive expression refers to a position in relation to qualitative change (e.g. Mader 2008)

In Deleuze's philosophy, intensities have a privileged place as fuel for all morphogenetic processes. Intensities — potentialities constituted by differences in pressure, temperature, acidity and so on — have the capacity to drive material flows and to link dissimilar elements into a relational system structured by tendencies. These real, but not yet actualised, tendencies constitute the *virtual* phase space that allows dynamic processes to temporally stratify into *actual* physical shapes (extensities). Also, less stable extensive actual phenomena, for example, a tornado, appear because of interactions between intensities. The weather system is characterised by a complex virtual phase space of raw intensities, structured by attractors, phase transitions and symmetry braking. It can be seen as a "body without organs" that has the capacity to grow *organs*. When the system arrives at a specific point, a singularity, within the virtual structure of the phase space, it might produce an actual tornado. Following Deleuze, intensity constitutes the genetic condition of extensive space in which the properties and qualities of extensities are the residues or manifestations of intensities.

Due to their indivisible, asymmetric and non-commutative nature, intensities are more resistant to scientific modelling and functions than divisible, symmetric and commutative extensities. That is why we see, in the intellectual tradition of the West, a tendency to neutralise intensities by converting them into extensive expressions (e.g. Mader 2008). We are acquainted with presenting such intensities as temperature, pressure and so on in an extensive expression as the sum of equal degrees, bars and so on, but what actually defines the pressure or temperature is not the sum of equal parts. The intensity has become easier to measure by treating it as if it were an extensity, but its quality is somehow lost in this conversion. While this cancelling out of less controllable or measurable intensities is obviously desirable in how we learn to approach exact sciences, it might be less desirable in other fields. In *What Is Philosophy?*, Deleuze and

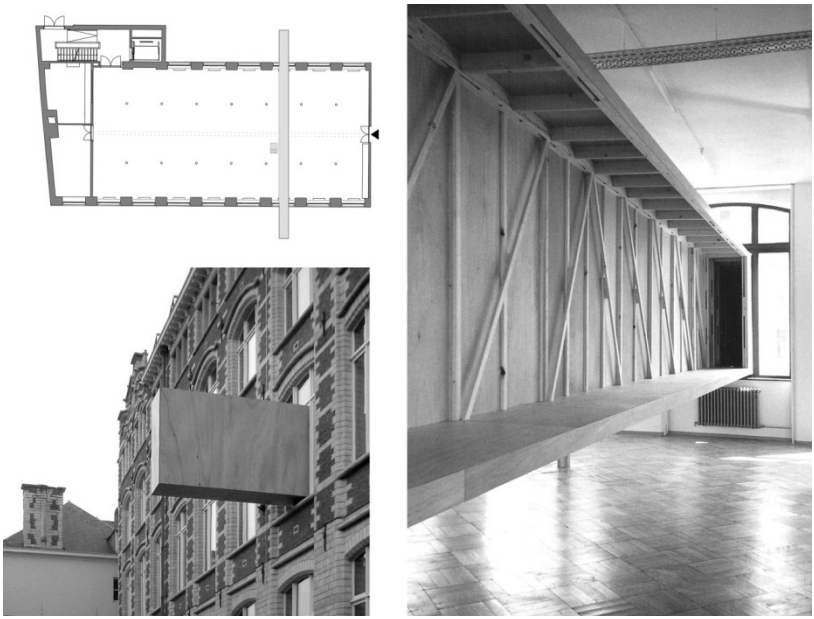


Fig. 1-16. Michaël Van den Abeele and Arnaud Hendrickx (2003), *El Mucho Macho,* installation, STUK Leuven, Belgium [Michaël Van den Abeele and Arnaud Hendrickx]

Guattari (1994) are concerned with the issue of the neutralisation of intensities as a feature that distinguishes science from philosophy, where philosophy also addresses intensities directly. In this approach, there is no need for intensities to be converted into extensities or extensive expressions; it looks for ways to directly engage with intensities. Architecture deals with many technical and infrastructural issues that are better served by a scientific approach of thinking in quantities and extensities, but it also deals with experiences that are better approached by thinking in affects and percepts entailing intensities. By making the spatial experience a central issue, the architecture can be seen as a practice concerned with making space distinct by creating *intensive differences.* Since we do not inhabit absolute Euclidian space, the spatial context in which the spatial artistic practice acts is never generic. In fact, we place artefacts in a relative space, where space is already defined by intensities. This means that experiencing intensities emanating from these artefacts occurs relative to existing intensities and hence is *intrinsically site specific.* So what a spatial artistic practice does is nesting (new)

differences inside other (already existing) differences or, in short, *nesting intensities.*

For example in *El Mucho Macho,* the length of a material object, an extensive property, is considered as an indivisible site-specific poetic quality, an intensity. The extensive amount of length defines the work and its functioning. The extensive property cannot be divided without involving a change in kind. Were we to divide the length by two, the work would not make sense; it would lose its potential. The extensity is now endowed with properties that one finds in an intensity. By interpolation, we could state that the wooden beam, an extensity, manifests itself as an intensity.

Just as Deleuze characterises science rather coarsely by a tendency to cancel out intensities and qualities in extensive expressions, one might do the same rough generalisation for architecture and recognise in architecture the opposite tendency; it aims at turning extensive properties into intensities. Abstracted notions of space, like volume, length, height and width, are considered in a relative way. By structuring matter into a constellation concerned with proportions and other compositional spatial relations, an extensity is turned into an intensity. In that sense, we could summarise the following: an artistic spatial practice is about *intensifying extensities.*

According to Deleuze, the processes that characterise human experience are simply the extension of processes similar to the intensities and material forces in, for example, magnetic fields or sound and heat waves. They are from the same order and hardly differ. Vibrations affect our physical body and extend into the nerves and cortex, ultimately diminishing or heightening our capacity to act. By habit or routine, we structure this ever-changing field of raw intensities that affects us. We form cognitive structures that filter the continuous stream of Herakleitos in order to stabilise ourselves within the destabilising chaos of a field of raw intensities. These cognitive structures assist us in aligning our faculties, aligning experience with memory, reason, intuition. Here Deleuze sees an important role for the potential of art to create sensory aggregates that enable encounters to occur. An encounter with a “block of sensation” might destabilise our faculties and beckon our sensibility to grasp intensities, an event that opens us up for new experiences (or thoughts), not passively assimilating or recognizing what we already know, but actively accommodating our conceptual structures.

In *Difference and Repetition,* Deleuze (1994) looks for an encounter that triggers a sensation that cannot find the empirical category under which an object can be recognised and that consequently forces our sensibility to grasp the pure difference in intensity as the "sentiendum," that which can only be sensed. This suggests an experience that resembles Kant's disruption of the faculties by an encounter with the sublime that blows our identity to pieces and forces it to rebuild itself in a new way. An encounter initiates a process Jean Piaget (1968) would call "accommodation" of an unbalance between internal mental schemata and unanticipated and novel experiences.

The continuity of intensities in and around us blurs the separation between the inner and outer processes of human experience. Immanent properties of our body might interact with immanent properties from elements in our environment in a way that the newly formed temporal whole or "assemblage" has properties that are irreducible to its parts. For example, in swimming our body forms an assemblage with water. The interaction of immanent properties of water with immanent properties of our body that might seem irrelevant outside of water allows us to swim. Relative to the intensity of our movements in water, the same volume of water might become more or less resistant, harder or softer. We become a part of an experiential whole that surpasses the limits of our individual body. This example illustrates that entering an assemblage not only alters our capacity to be affected, but also alters our capacity to affect.

What an encounter with an environment affords us are capacities to affect the environment coupled with capacities to be affected by it. This pre-personal, real but virtual potential is often addressed as "affect" (e.g. Delanda 2002) in Deleuzian philosophy, which shares many similarities with the concept of "affordance" in Gibson's (1977) psychology of perception. Perception can be interpreted as a process of actualisation of this pre-personal potential. Paradoxically, our senses simultaneously *reduce and expand* perception. Our senses reduce the virtual potential of intensities by actualising them in a specific way, while at the same time they expand perception by inscribing the experienced into our cognitive structures, allowing the occurrence of new perceptions.

This reduction and expansion seems related to the concept of *Umwelt* (e.g. Sagan 2010), formulated by the evolutionary biologist Jakob von Uexküll. Every specific organism exists within his specific Umwelt, its proper perceptual reality, shaped by how the organism differentiates fields of intensity as being relevant and irrelevant. As a result of the system of

relevancies, the configuration of the carriers of significance embodied in a specific organism, two different organisms that coexist within the same spatial region of the world might construct and perceive their Umwelts differently, affording different capacities to affect and to be affected. In that sense, for a spatial artistic practitioner, the production of the Umwelt is itself akin to his work of differentiating space in the sense that it also differentiates fields of intensity within the world as being relevant and irrelevant.

Encountering is related to a poetic experience where the sensory experience of, let us say, a poem as a physical artefact (sensuousness of rhythm, sound wave pattern, *Wortbild,* white space) is irreversibly fused with the conceptual experience of the poem as a conceptual artefact (significance, signification, associations, conceptual blending) into a singular poetic experience of a hybrid artefact that is essentially both material and conceptual at the same time. A poetic work unites matter and time with thinking into a singular whole that connects the poetic experience directly with a process of sense making.

As a first step towards an architecture of intensities, I have established the encounter and the sense-making process it initiates as an essential operator to blend mind and matter, the two intrinsic operands of architecture, into one experiential whole. Sense making involves both the making of sense as the attribution of significance and the activating of the senses. This way, the sense-making process can be considered as an appropriation by which the observer constructs a *transitional space* (Winnicott 1953) that bridges the gap between mind and matter.

Bibliography

DeLanda, Manuel. 2002. *Intensive Science and Virtual Philosophy.* London: Continuum.

Deleuze, Gilles. 1994. *Difference and Repetition.* Translated by Paul Patton. New York: Columbia University Press.

Deleuze, Gilles, and Félix Guattari. 1994. *What Is Philosophy?* Translated by Hugh Tomlinson and Graham Burchell. European Perspectives. New York: Columbia University Press.Gibson, James Jerome. 1977. “The Theory of Affordances.” In *Perceiving, Acting, and Knowing: Toward an Ecological Psychology,* edited by Robert Shaw and John Bransford, 67–82. Hillsdale, New Jersey: Lawrence Erlbaum.

Mader, Mary-Beth. 2008. “The Difference of Intensity: Deleuze and Nicolas Oresme.” In *Society for Phenomenology and Existential Philosophy: Annual Meeting.* Society for the Study of Difference, Pittsburgh.

Piaget, Jean. 1968. *Genetic Epistemology: A Series of Lectures Delivered by Piaget at Columbia University.* Translated by Eleanor Duckworth. New York: Columbia University Press.

Sagan, Dorion. 2010. “Introduction: Umwelt after Uexküll.” In Jakob von Uexküll and Marina von Uexküll*, A Foray into the Worlds of Animals and Humans, with a Theory of Meaning,* translated by Joseph D. O’Neil, 1–34. Minneapolis: University of Minnesota Press.

Winnicott, Donald. 1953. “Transitional Objects and Transitional Phenomena: A Study of the First Not-Me Possession.” *International Journal of Psychoanalysis* 34: 89–97.

CHAPTER TWO

BEYOND PERCEPTION

AN ARCHITECTURE BELOW PERCEPTION

CHRIS SMITH

It is to the question of the imperceptible that this paper turns, to that which we can't perceive because it sits out of sight and to that which we don't perceive because of the silence and transparency through which it operates. The key question here is the intensity of the force of the imperceptible and the ways in which this force might be courted in architecture. In order to explore this question, I first turn to all that remains adrift and imperceptible and that which is afforded us via the work of the philosopher and writer Michel Serres. I then turn to the manner of the pragmatics by which we negotiate that which is not perceived. I will focus on one architectural moment where we are struck hard by the imperceptible: Georges-Henri Pingusson's *Mémorial des Martyrs de la Deportation* (1962), located at the edge of an island of order, the Île de la Cité. Paris.

Serres

In his text *The Five Senses: A Philosophy of Mingled Bodies* (1985), Serres suggests that much of the manner by which we build boundaries between selves and worlds, or what he terms "softening," occurs in and through the organs associated with the senses and the languages in which we circulate.[1] For Serres, our ears are a "labyrinth" for the negotiation of sound, and the entire body is implicated in hearing.[2] Serres version of the labyrinth is much like that which Jorge Luis Borges described: a complex architecture that is open and allows access but which, despite its openness, also excludes.[3] For Serres, the image of the boundary between selves and

[1] Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies,* trans. Margaret Sankey and Peter Cowley (London and New York: Continuum, 2008), 111–17; French edition, *Les cinq sens* (Paris: Editions Grasset et Fasquelle, 1985).
[2] Ibid., 141–43.
[3] Jorge Luis Borges, "The House of Asterion," in *Labyrinths: Selected Stories and Other Writings*, ed. Donald A. Yates and James E. Irby (London: Penguin, 1964),

worlds also becomes more stridently architectural: A box. Boxes within boxes:

> Every possible kind of audible finds sites of hearing and regulation.
> It is as though the body were constructed like a box, a series of boxes, through which these cycles pass. As though the collective forms itself into a box or boxes through which these flows circulate. And as though knowledge, a world crying out for more attentive hearing, constructs the largest white box of all.[4]

Boxes are our possibilities for action, in this place at this time. What is inside or outside such boxes affords us possibilities in action and simultaneously conditions us. The boundary traditionally associated with the self is comprised of a depth of boundaries that at once configures and extends us, that is simultaneously within and without. It is not possible to speak of what we hear as purely external. The North American composer John Cage's *Imaginary Landscape* rocks and raises me gently before throwing me down with a clamour. In the throbbing beat of a rave, we find ourselves, our bodies, pulsing like a siren or banged like the taut skin of a drum. "Sensation has the same status as music," says Serres.[5] In silence too we note the depths of boxes. Cage once went into an anechoic chamber at Harvard University. He asked an engineer why "if the room was so silent, … [he] had heard two sounds one high and one low." The engineer told him, "The high one was your nervous system in operation. The low one was your blood in circulation."[6] We find a *ritournelle* deep in the intensity of silence. A labyrinth in a box in a labyrinth in a box.

I'm unconvinced by Serres' assertion that "[e]very possible kind of audible finds sites of hearing and regulation." I like to imagine an escape for sound itself: a reservoir of the unheard and unhearable. If sound is a mechanical wave, a wavelength and an oscillation of pressure, then the linear possibilities of that wavelength and the possible range of frequencies of oscillation are immense. Immense, but not infinite. For even sound has a boundary — a sound barrier. Yet from the immensity of possible sound, our ears allow us to access, to hear, only a fragment of all that could be heard. A tiny fragment of the wavelengths and frequencies

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170–72. Translated from "La casa de Asterión," *Los Anales de Buenos Aires*, May 1947.

[4] Serres, *The Five Senses*, 111.

[5] Ibid., 129.

[6] John Cage, "How to Pass, Kick, Fall, and Run," in *A Year from Monday: Lectures and Writings* (New York: Calder and Boyars, 1968), 134.

that exist and that are possible. Our voices too can only produce a minute fraction of all the sound that might be produced, of all the sounds that could be sung. There is much song above the lyric *coloratura soprano* and below the *basso profondo*. Above, below and beyond the world of human perception is a rich immensity of the imperceptible. If we are to imagine the immensity of all sound, and then the subset of that which animals might hear, and then the subset of that which the human ear hears, and then the subset of that which you hear at this moment in time, we may appreciate what Nietzsche meant when he spoke of "the wretched glass capsule of the human individual."[7]

Beyond what we can or cannot perceive, there remains something arbitrary about what is in or out of our box. What is in or out of the glass capsule. What we hear and what we miss (if the opposite of "to hear" is "to miss"). The arbitrary nature of the transparent and imperceptible box can be felt if we consider that which we access, that which we have and that which we feel we don't. When I turn to my desk, computer, empty coffee glass and the precariously high piles of books, I can no longer see the window seat to my left. I can no longer see the landscape, the old trees with new leaves, fragments of other houses and the street with the occasional car. Yet I imagine that they are still there. Even though I can't see them. Yet the music that I currently hear, I imagine has gone when I no longer hear it. Much of this constructing of presence and absence is just that: construction. It is a matter of odd equations relating *with and without* to *inside and out* to *hearing and missing*. There's no adequate phenomenology or empiricism to account for the imperceptible. It is a matter of normalised inclusions and exclusions, near arbitrary formulations, political biases and cultural fabulations. Intertwinings and chiasms. The composer Cage was to write, "The Native Americans long ago knew that music was going on permanently, and that hearing it was like looking out of a window at a landscape which didn't stop when one turned away."[8] I like to imagine that at this very moment in time, there is a radio in a tent in a forest tuned in to an obscure frequency in Finland banging out the piano

[7] Friedrich Nietzsche, *The Birth of Tragedy,* trans. Walter Kaufman (New York: Vintage Books, 1967),translation of *Die Geburt der Tragödie* (1872).

[8] John Cage, "Rhythm Etc.," in *A Year from Monday*, 122. "Native American" has been modernized from "Indian" in the original. "Rhythm Etc." was written in 1961–62 for a publication by Gyorgy Kepes, professor of visual design at the Massachusetts Institute of Technology, *Module, Proportion, Symmetry, Rhythm* (1966), as part of a series of books exploring problems of form in architecture.

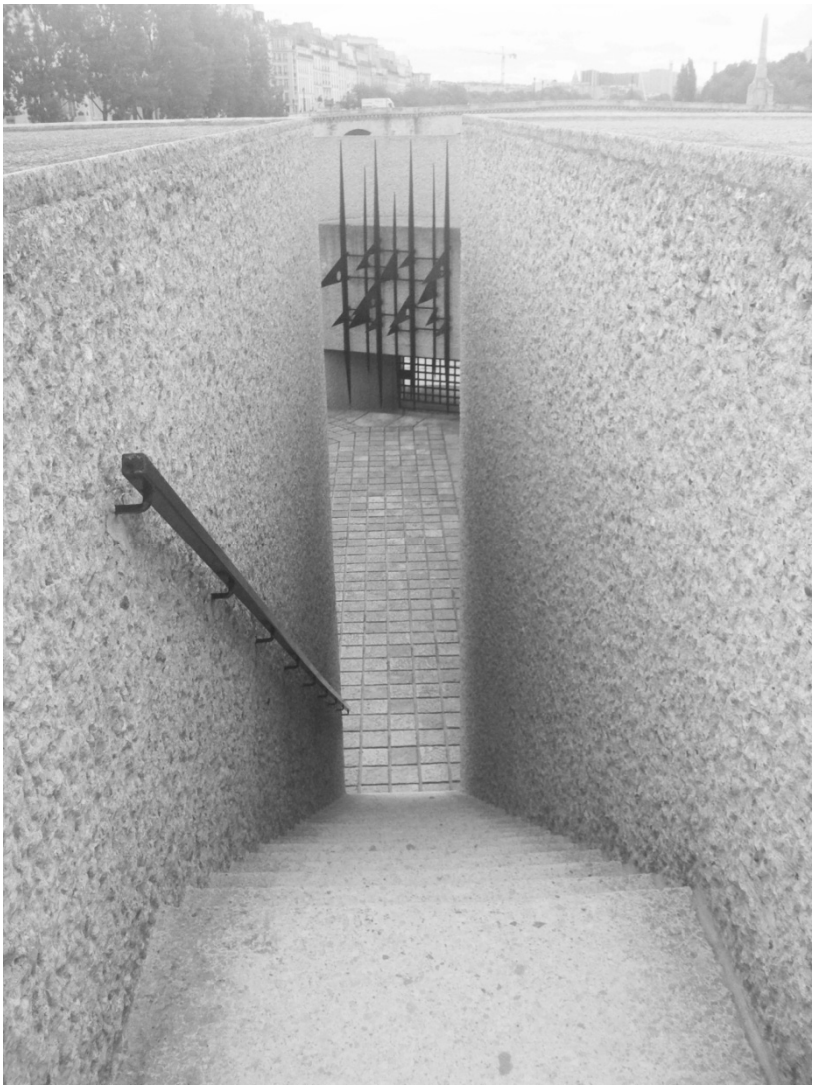

Fig. 2-1. Georges-Henri Pingusson, *Mémorial des Martyrs de la Deportation,* Paris, 2011

notes of Cage's lost work "Lidice" (1943). The tent and the song is out there. Real and intense. I just don't have access to them at the moment. They are not in my box. Instead I'm at my desk listening to the wind and the squawk of a solitary bird.

I would argue that the most forceful of architecture is not that which generates perceptions but rather that which flees them. In this respect, this architecture is not a "softening." That is, it is not the production of music from sound or the softening of an already tender flesh that these architectures activate. Rather, these architectures are a hardening. A hardening of the world. Making it harder against the body. Not in the sense that they break bodies, but in the sense that they cut and bang and silence them in the world. Or, at the very least, cut and bang and silence sensibilities, often in order to activate sensations.

The *Mémorial des Martyrs de la Deportation* by the architect, urban planner, writer and educator Pingusson is an early example of this architectural hardening. An early forceful courting of the imperceptible and one particular making-imperceptible. The memorial sits deep in the eastern nose of the Île de la Cité, an island of governance and religion, of state and church. An island of defensive Roman walls populated by police, clerics and clerks, lawyers, doctors and tourists. The island is home to the most regulated of institutions and apparatus of the state: Cathédrale Notre Dame de Paris, the Palais de Justice, the Prefecture de Police, Hôtel-Dieu Hospital and the Tribunal de Commerce. The island is home to the most regulating of sounds: horns, bells, sirens and whistles; the ping of machines telling you to cross roads and monitoring the beat of hearts; instructions read aloud to flocks of tourists; the bang of gavels and assault of hymns. Serres was to suggest, "Noise is what defines the social."[9] The memorial sits to the rear of, below and behind the ornate buttressing of Notre Dame and the genteel formalities of Square Jean XXIII. This site formerly housed the silent. It was once a morgue. The site is cut off from the rest of the island by the busy road Quai de l'Archevêché. The road runs south to the bridge bearing the same name. The clamour of the street and the surface here becomes a dense and indecipherable din.

The memorial is cut from the island not only horizontally by the road and vertically by its depth but also in its sound. You pass through the gate and descend into the silent depth of the memorial. The stair under your feet and the adjacent walls are solid and of the same rough concrete as the

[9] Serres, *The Five Senses*, 107.

exterior wall [Fig. 2-1]. It is as if the stairway had been carved from the stone of the island. The stair is about one metre wide and there's a solitary, square-section black metal handrail on your left. It's a utilitarian balustrade, not human, not warm, but banal and cold and functional. It helps you descend. It makes you think. Colder thoughts. Lonelier and less lyrical thoughts. The clouds that pass above, between the walls on either side of this stair, make those that descend more still. More deep. More alone and harder.

In Merleau-Ponty's unfinished text *The Visible and the Invisible* (1964), he would turn to the idea of the texture of experience and the "reversibility" of touching and being touched. He would remind us of the moment at which "the 'touching subject' passes over to the rank of the touched, descends into the things, such that the touch is formed in the midst of the world and as it were in the things."[10] Merleau-Ponty moves from an idea of perception as being a completion of the body-world toward an idea of the "sensible sentient" and thus the body's "double belongingness to the order of the 'object' and to the order of the 'subject'" and to what he refers to as the "quite unexpected relations between the two orders."[11] I imagine that part of this unexpected relation is the inhumanity of selves and the odd life of that which we had formerly come to think of as external, inorganic and lifeless. The stark handrail generates stark thoughts. It is a handrail that fails to record the passing of bodies. The handrail is silent, and the bodies imperceptible. And yet in such absence you cannot help but hear a collective cry more powerful for its silence.

From the stair, you step into a space less tight and more open to the sky. Clouds pass over and the very occasional bird. You are standing in a massive below-grade bunker, a crypt of a kind, a bare triangular space with a rounded point at the upstream end of the island At the base of this rounded point, there is a small, barred opening to the Seine. You can see the water and its passing. Silently. The opening is like a grate of a prison. There's a sharp, black metal sculpture above. The sculpture is elongated vertically with a series of flat and sharp spikes, like two-dimensional arrows pointing up or thrusting beyond the walls. The floor of the space is as if cut from the same concrete as the walls. The architectural historian Adrian Forty would describe "a kind of sensory deprivation" that this

[10] Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. Alphonso Lingis (Evanston, IL: Northwestern University Press, 1968), 133–34, translation of *Le visible et l'invisible* (Paris: Gallimard, 1964).
[11] Merleau-Ponty, *The Visible and Invisible*, 136.

monolithic, yet carved, concrete memorial achieves.[12] The floor is inscribed with a square pattern oriented in such a manner that it looks as though any rainwater or other liquid residue would trickle along the grooves and splash into the Seine beyond. The space makes you particularly aware of the inorganic life that seethes, vibrates, that runs like clouds between still walls, and the river that surges and sweeps about this contained space.

There is a strong sense of having left Paris and the clamour and grit at the street level, its formal architectures and institutions and regulating sounds for this place of passage. There is an odd ecstasy to this place. It is the sense of having left something of yourself at the street level too. You have left the articulate chatter that occupied your ears and the measured voice that occupied your mouth. Just as you cannot see and hear, smell, touch and taste the street, the street cannot access you down here. You are less perceptible. The affect is a type of mournful *ekstasis*. There is a deep sense of despair down here and a powerful sense of inhumanity or a humanity lost, left elsewhere and swept away by fluid forces. Tears pass like the clouds and the river above and about this island. The space achieves a sense of what Deleuze and Guattari might describe as "the incorporeal power of that intense matter, the material power of that language. A matter more immediate, more fluid, more ardent, than bodies or words."[13]

No one speaks in this space, though every now and again you catch a sigh. A tone. A gesture. An asignifying sound in a shallow breath. The architecture of the *Mémorial des Martyrs de la Deportation* reminds us of life beyond that which we are afforded. When I descended into the earth here, when I let go of that cold utilitarian handrail at the base of the stair, I let go of some minor vestige of humanity. There is a sense of being cut adrift in a world that threatens to carry us away. Our architecture perpetually confronts the space "in the midst of the world" in both fixing oneself to a point and then in casting us adrift. It's not always about making ourselves softer and more receptive but may be about allowing the organic the hardness of the inorganic. Allowing ourselves to die a little in

[12] Adrian Forty, "Concrete and Memory," in *Urban Memory: History and Amnesia in the Modern City,* ed. Mark Crinson (London: Routledge, 2005), 93.
[13] Gilles Deleuze and Félix Guattari, *A Thousand Plateaus,* trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 109; translation of *Mille plateaux*, vol. 2 of *Capitalisme et schizophrénie* (Paris: Les Editions de Minuit, 1980).

order to amplify the forces of life that flow well beyond the human and the organic. Allowing ourselves to be more intense for being imperceptible.

NATURALISING SPACE

TIM IRELAND

Introduction

Space is a consequence of social cohesion, effected through constraints and processes of enaction that are (fundamentally) semiotic. The argument put forward in this paper is that space is a sign because it is a reciprocal condition of unfolding engagement in the world that once produced affects in the manner of another sign: i.e. that space is constituted as created and creative. On the one side space is a determination (it is produced), while on the other, it is a representation that is perceived and thereby affects the observer (it is productive) [see Figure 2-2]. This argument is predicated on the theoretical biology of Jakob von Uexküll, the bio-cybernetic thinking of Gregory Bateson and the semiotic logic of Charles Peirce and Henri Lefebvre's notion of the social production of space. A biological definition of space and organisation is presented on the basis that the spatiality of an organism is generated through its capacity to sense and that this offers a new definition for "architectural-space" tying people, society and environment together on the basis that "biological-space" underpins architectural-space.

The problem: The typical "perception" of space in architectural practice

Spatial problems are complex. A key obstruction in current architectural practice is the general reliance on traditional methods that tend to flatten spatial problems into something quantifiable so they can be managed and planned. Everyday life and the world around us are not determinable, reducible or linear. Approaching the configuration of space in the standard way raises the question of whether any richness is lost. There is often a qualitative disconnect between the articulation of spatiality in the built environment and the spatiality of being. The world has become mathematized; hence spatial properties of the environment can be depicted patently through practical measurements such as dimension,

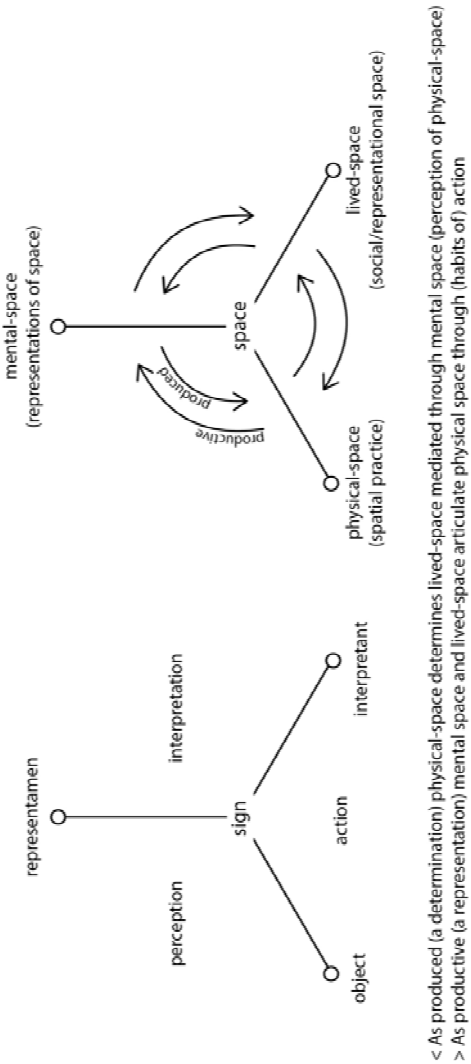

Fig. 2-2. The triad on the left is a development of the semiotic triad of Charles Peirce (Määttänen 2007), which is coupled with the tri-dialectic spatial code of Henri Lefebvre (1995) on the right to illustrate how, as a consequence of being-in-the-world, space is a phenomenon which is both produced and productive — i.e. space is a sign.

distance, angle, area, shape and so on. These can be considered in terms of symmetry (reflection, rotation, subtraction and addition, offsetting and so forth) and asymmetrical relations, providing the capacity to communicate and manipulate our mental and physical environment. These simple operands, their adaptation and manipulation, can be utilised in solving spatial problems without questioning the issue of space. This is because they provide a cognitive basis for ordering and manipulating the environment, allowing us to manage everyday spatial tasks. More importantly, they allow us to communicate past, current and future spatial scenarios. Spatial problems are inherently situated in the world, which we manage and solve within the confines of geometry. This is the strength of geometry: it states general laws about geometrical objects and scenarios that we can then apply to the real world. In a sequence of lectures titled "The Relation of Space and Geometry to Experience," Norbert Wiener (1976: 95) claimed, "[G]eometry is the science of a 'form' into which we cast our spatial experiences." Space, he argued, is experiential, and geometry is an abstraction of that experience, being a set of rules by which experience may be replicated.

Biological roots

The spatiality of an organism is generated through its capacity to sense, and this, when extrapolated, has implications for the manner in which space is perceived and experienced. By engaging with the spatiality of an organism in its environment, the divide between mental, physical and lived-space may be transcended. Space as lived must be tallied with the traditional conceptualisation of mathematized space because although space has geometrical and topological characteristics, it is actualised through behaviour. There is a binding connection and reciprocal influence between the environment of an organism and its behaviour, which affects an organism's being and the activities it performs. As such, there is a structural coupling between intention and the environment, in much the same way that space as lived and mathematized space are two sides of the same coin. Architectural-space may thus be derived from the properties of unity between an organism and its environment. The premise is therefore that some characteristics of space comply with those of a complex adaptive system that produces its own organisation in response to differences in its environment.

Deemed to be a primitive condition created through interaction, space emerges and fluctuates as a result of a perceiving entity's interpretation

(which is conditional on the entity's state) of its surroundings and the effect of this impression on the environment: a cyclical process of feedback between internal and external factors that coalesce to effect action (Uexküll 1926). A morphological process characterised by "intentionality" space has organisational and experiential properties. It is organisational in the sense that it orients and affects future action: a form of telos. The experiential aspect of space is phenomenological, affected by the state of the observer and the context in which the observation is made, leading to action. Phenomenological concern for the experiential effect of space revolves around mental space whilst the structuralist focus on the configurational aspect of space is concerned with the physicality of space. Henri Lefebvre recognised the mental and physical aspects of space as intertwined and mediated through what he called spatial-practice, referring to habitual tendencies cast into the artefacts and structures we inhabit. In other words, lived-space is the assimilation of physical and mental space. His "code" expresses a tri-dialectic process whereby space is created and creative effected through the relations between subjects, their space and surroundings, meaning space is social because it unfolds through interaction. A view informed by the notion that the world is self-organising and emergent, or as Lefebvre would say, consisting of rhythms and patterns. Frustrated with binary theories, Lefebvre shunned the semiotics of his milieu as "promoting the basic sophistry whereby the philosophico-epistemological notion of space is fetishized and the mental realm comes to envelop the social and physical ones" (Lefebvre 1995: 5). Resulting in space reduced to a mental concept, he protests the body is abstracted to "a simple mediation between subject and object," as opposed to a practical, fleshy body "conceived of as a totality complete with spatial qualities." As a social product, "[s]pace is neither a 'subject' nor an 'object' but rather a social reality — that is to say, a set of relations and forms" (ibid: 116). Emphasising the social dimension of being in the world, Lefebvre stresses that interaction is both mental and physical. "Space is social morphology: it is to lived experience what form itself is to the living organism, and just as intimately bound up with function and structure" (ibid: 94).

Space as an enabling constraint

Everything in the physical everyday world is spatial, and through constraints is creative. The presence of something is productive because it affects something else. The organisational aspect of space is classified here as having low-dimensional properties, referring to constraints that are

rudimentary, effecting direction and distance in a relational sense. The phenomenological aspect is perceived as high dimensional, because being experiential, the factors are poly-dimensional. Conversely, these dimensions may be equated to Peirce's categories of Firstness and Secondness. In this sense, the high-dimensional properties of space relate to Firstness and the low dimensional to Secondness. "The mode of being of Firstness, is the embryo of being" (Peirce 1998: 269), relating to "possibility" and the basic manner in which some quality is sensed, such as the effect of light falling through an opening at a certain time of the day. Being rudimentary, the low-dimensional properties are brute facts, whereby actual existences and effects arise out of their relation to other things. The mediation of Firstness/high-dimensional properties of space and Secondness/low-dimensional properties result in space as lived, or in Peirce's terms, "Thirdness," the regularities and habits of the organism in its environment. Habitual tendencies are cast into the artefacts and structures organisms create, what Lefebvre called "spatial practice." "The spatial practice of a society secretes that society's space; it propounds and presupposes it, in a dialectical interaction; it produces it slowly and surely as it masters and appropriates it" (Lefebvre 1995: 38), resulting in what may be referred to as niches of habitation. Organised by purposeful activity, an organism's niche is a habitual condition effected at one scale by differences across boundaries and scales of composition (Hoffmeyer 1998) and at another by differences to which the organism reacts and has intention towards (Uexküll 1926, Bateson 2000). From a (computer) modelling perspective, we can think of an agent that has the capacity to affect and be affected. This agent is spatial, and if constituting a part of a system, composed of multiple agents (such as a swarm), then its spatiality affects and is affected by the other elements that constitute the system and with which the system interacts. The difference is that the behaviour of the system is collective; as we step up in scale from the individual to the collective, the entities behaviour becomes aggregative. The individual entity is itself a system, having input(s) and output(s), so we are simply referring to how the spatiality of something is affected across scales of composition. An organism's intentionality transcends meaning to define organisation, creating a pattern encompassing bodily structure and behaviour. Conceived to be the embodiment of intellect, this purposive space is a pattern, or form of inhabitation, and articulates what may be termed the organism's "spatial intelligence" (van Schaik 2008).

The semiotics of space

The Finnish philosopher Pentti Määttänen (2007) coupled the spatial code of Lefebvre with the semiotics of Charles Peirce to establish a method of analysing the concrete interaction of a living organism with its environment. When space is understood to be a sign, this coupling defines a framework for explicating the nature of space and analysing how, in a process of interpretation, we perceive the environment and act in it in order to achieve our goals. As a product of semiosis, space is both a determination (created) and a representation (creative) [see Figure 2-2]. At the level of an organism that does not create artefacts, physical-space refers to a pattern of inhabitation, which in Lefebvre's terms, being spatial practice, "is produced and over time is mastered and appropriated." In Peirce's terms, spatial practice expresses "the tendency of things to act as they did on a former occasion than otherwise," forming the organism's habits of action. At the level of an organism that creates artefacts, these habits of action are cast into the structures produced by the organism that thus embody the spatial intelligence of the organism. An ant's nest embodies the spatial intelligence of the colony, the web that of a spider and the dam that of a beaver. Having progressed from congregating around fire, humankind constructs buildings serving purposes beyond basic physiological needs, such as cultural, personal, artistic expression and (most lately) sustainability. The absolute existence of space is its physicality, which when considered in retrospect is an expression of spatial intelligence, which for humans culminates as architectural-space.

The interpretant feature of the Peircean triad is intrinsic to this reciprocity because, as a second sign, it leads to a progression whereby steep changes may occur, thereby extrapolating the generative aspect of space. The actuality of space escalates from its primal state to its physical according to the three Peircean categories of phenomena. By accepting space to be a sign, ingrained distinctions between mind-body, organism-environment, human-other organisms are transcended. In other words, space is naturalised and established to be a fundamental condition of being — i.e. space is a condition of the living because the "spatiality" of an inert object may be explained through physical properties alone. As a sign, space is a social construct, because it is a consequence of cohesion, meaning effects don't arise between something and itself. The manner in which something holds significance to some other, such as to affect a force, is intrinsic to sociality. That there is some *effect* between one thing and another means that these things enter into a relationship and thus have some form of commonality. We might consider that this effect has some

value or that it is self-reinforcing such that it causes habit. "Social" thus infers some effect, creating cohesion between two or more things, and that this effect is reinforcing. This may be construed as the coupling between an organism and its environment or those things which the organism shares its environment with. At base, we may consider the self-maintaining capacity of a living cell, which maintains itself by producing its own components, because the components constituting the system (cell) constitute a closed domain of relations specified only with respect to the autopoietic organisation that these relations constitute (Maturana and Varela 1980). In other words, the system is a unity by and through its capacity to self-maintain, distinguishing itself from non-self, and so defining its identity, which is "a space whose dimensions are the relations of production of the components that realize it" (Maturana and Varela 1980: 88).

A cell-centric notion of space

Taking the basic unit of existence to be the organism in its environment (the living cell being the nascent form), which is coupled to the world through its capacity to sense and thus interpret its surroundings, "human-space" may be comprehended (from an evolutionary perspective) by extending the issue downwards to the pattern recognition and control processes of simpler organisms, on the premise that the mechanisms we see at play in single-celled organisms lead to higher and higher degrees of sign processing in humans. The spatiality of an organism is affected through its capacity to sense, which underpins perception and capacity to engage with the world. This ability (stemming from our cells) is ambient and distributed, and from this perspective space is "lived." Effected through the ability to feel or perceive and affect the environment, space is a (habitual) state of fluidity and perpetual readjustment articulated through an organism's activity and interaction. A living cell is, fundamentally, a semiotic niche, meaning it must master a set of signs by which it can control, or maintain, itself (Hoffmeyer 1998), and like all living things, acts according to physiological and social needs. Having the capacity to distinguish self- from *non*self, a cell is thus a model of the ontology of "self" (Weber 2009). The spatiality of an organism and its engagement with its surroundings may thus be extrapolated on the basis of cell/niche (inter)action. After all, an organism is, at base, an ecosystem of cohabitating cell formations (Hoffmeyer 1996).

Conclusion

We may conclude that space (as a sign) is a condition pertinent to an organism's semiotic freedom, which is articulated by the organism as a consequence of its capacity to manipulate the world in the course of its unfolding interaction with its environment. On the basis that it is the habitual tendencies of an organism that are cast into the artefacts and built structures they create, we may extrapolate these structures as embodying patterns, of patterns of patterns, of meta-patterns, and so forth, of inhabitation that pertain to the capacities of the organism — i.e. increasing semiotic freedom leads to greater spatial intelligence, which leads to more complex patterns of inhabitation, and thus the formation of artefacts pertinent to the organism's being. Recognising space as a sign is an ontological view of the spatiality of being and enables designerly thought with the freedom to think about the configuration of concrete space in relation to the practice of everyday life.

Bibliography

Bateson, Gregory. 2000. "Form, Substance and Difference." In *Steps to an Ecology of Mind*, 454–71. Chicago: University of Chicago Press.

Hoffmeyer, Jesper. 1998. "Surfaces inside Surfaces: On the Origin of Agency and Life." *Cybernetics and Human Knowing* 5(1):33–42.

—. 1996. "The Swarming Body." In *Semiotics Around the World: Synthesis in Diversity. Proceedings of the Fifth Congress of the International Association for Semiotic Studies, Berkeley, 1994 (Approaches to Semiotics)*, edited by Irmengard Rauch and Gerald F. Carr, 2:937–94. Berlin: Mouton de Gruyter.

Lefebvre, Henri. 1995. *The Production of Space*. Translated by Donald Nicholson-Smith. Oxford: Blackwell Publishers.

Määttänen, Pentti. 2007. "Semiotics of Space: Peirce and Lefebvre." *Semiotica* 166: 453–61.

Maturana, Humberto R. and Francisco Varela. 1980. *Autopoiesis and Cognition: The Realization of the Living.* Dordrecht: D. Reidel.

Peirce, Charles Sanders. 1998. "Sundry Logical Conceptions." In *The Essential Peirce: Selected Philosophical Writings,* vol. 2*, 1893–1913*, edited by the Peirce Edition Project, 267–88. Bloomington: Indiana University Press.

Uexküll, Jakob von. 1926. *Theoretical Biology*. London: Kegan Paul, Trench, Trubner and Co.; New York: Harcourt, Brace & Company Inc.

van Schaik, Leon. 2008. *Spatial Intelligence: New Futures for Architecture*. Chichester: John Wiley and Sons.

Weber, Bruce. 2009. "On the Emergence of Living Systems." *Biosemiotics* 2: 343–59.

Wiener, Norbert. *Collected Works with Commentaries*. Vol. 1. Edited by P. Masani. Cambridge, MA: MIT Press, 1976.

UNNOTICED – THE IMPACT OF SPATIAL LANGUAGES THROUGH IMPLICIT VISUAL PERCEPTION

MATTHIAS BALLESTREM

Recent findings on the nature of implicit visual perception shed light on a level of interaction between the human nervous system and architecture that goes largely unnoticed but has considerable influence on us. Much of our perceptual knowledge and abilities that help us understand the world and interact with it depend on low-level, implicit individual experience modulated by the form and structure of the spaces we are surrounded by. This paper tries to carve out the significance of these "spatial languages" for the individual visual appropriation of spaces by introducing the concepts of indicated spaces, transient volumes and fluid objects.

Expertise in space perception

Professional badminton players can predict the depth of an opponent's stroke better than non-expert players. Bruce Abernethy and his colleagues would show that this not really surprising. Expertise is amongst others attributable to the fact that professionals focus on points of the opponent's body that non-expert players do not.[1] This study stands as exemplary for a multitude of current research results from psychology and neuroscience that are making obvious how the interaction between us humans and our environment not only implicitly affects perceptional abilities, but is moreover the basis of their development in the first place. As early as 1986, Wolf Singer wrote in this respect:, "In the meantime, it has proven valid that the brain of higher animals and in particular humans can develop its various performances only in the interplay with the environment."[2] In

[1] B. Abernethy, K. Zawi, and R. C. Jackson, "Expertise and Attunement to Kinematic Constraints," *Perception* 37, no. 6 (2008): 931–48.

[2] W. Singer, "Hirnentwicklung und Umwelt," in *Wahrnehmung und visuelles System*, ed. M. Ritter (Heidelberg: Spektrum der Wissenschaft, 1987), 186

support of this thesis, Speisman and colleagues have recently shown in an experiment on rats that an enriched environment leads to more neurogenesis in rats' brains in comparison to a less-enriched environment.[3] For more and more people, the "sufficiently differentiated" environment that is basal to the development of the brain's performance is mostly limited to those architectural spaces in which they spend most of their time, often without consciously perceiving or being able to remember them.[4] If the interaction with our environment affects our cognitive abilities, this must especially apply to the architecturally designed environment. To examine the interrelationship between the nervous system and architecture, we must review the basic mechanisms of space perception and their effects. Due to the limited scope of this paper, the focus is reduced to visual perception.

Gestalt laws in space

From a psychological point of view, space perception is the process of recognizing the objects in our environment and evaluating their position in relation to us and each other, their trajectory and speed. Most of this process is happening implicitly. Only the result of the process, if that, will reach our consciousness and attention. Most of our perceptions remain unnoticed, but still affect our mental and bodily actions.[5] The visual mechanisms responsible for the process of recognizing objects are known in their main features from the Berlin School of Gestalt psychologists around Max Wertheimer and Kurt Koffka.[6] The Gestalt laws for the first time systematically described the process of grouping, completing and

(translation by the author). Original quote in German: "Inzwischen gilt es als gesichert, daß das Gehirn höherer Tiere und insbesondere des Menschen seine vielfältigen Leistungen nur im Wechselspiel mit der Umwelt voll entwickeln und entfalten kann."

[3] R. B. Speisman et al., "Environmental Enrichment Restores Neurogenesis and Rapid Acquisition in Aged Rats," *Neurobiology of Aging* 34, no. 1 (2013): 263–74.

[4] Singer, "Hirnentwicklung und Umwelt," 199 (translation by the author). Original quote in German: "hinreichend differenziert."

[5] See J. F. Kihlstrom, T. M. Barnhardt, and D. J. Tataryn, *Implicit Perception,* 1992, http://ist-socrates.berkeley.edu/~kihlstrm/Bornstein92.htm; H. A. Berlin, "The Neural Basis of the Dynamic Unconscious," *Neuropsychoanalysis* 13, no. 1 (2011): 5–31.

[6] See M. Wertheimer, "Untersuchungen zur Lehre von der Gestalt II," *Psychologische Forschung: Zeitschrift für Psychologie und ihre Grenzwissenschaften* 4 (1923): 301–350; K. Koffka, *Principles of Gestalt Psychology* (New York: Harcourt, Brace and Co., 1935).

interpreting through which the visual system autonomously builds hypotheses of what we see. What the Gestalt laws specified for two-dimensional depictions can be applied to the perception of three-dimensional architectural spaces in a similar way: By interpreting the forms and structures in the surroundings, the visual system aims to create and thus perceive the Gestalten — i.e. spatial volumes — that enclose the observer. Before the release of the Gestalt laws, but already under the influence of the young scientific discipline of psychology, August Schmarsow described this phenomenon on the movement through space: "Only the movement in the third dimension will bring us to an immediate experience of the expansiveness of the place. I can perambulate and scan the distance, the space before me I can put back piece by piece. After my forward looking eyes have been overlooking it, now only while promenading, the details will arrange themselves in their real distance in relation to each other, proving after its mere appearance only now their full reality as a corpus in space like myself."[7] In this process of overlooking and arranging, the perceptional system reverts to familiar categories. A new object will be compared to familiar, remembered objects and categorized accordingly. Simultaneously, the perceptional system builds a prediction of the object's complete three-dimensional condition. Edmund Husserl, who had described this phenomenon in the 1920s as *Mitbewußthaben*,[8] is again and again confirmed by the latest literature from neuroscience: "In my brain, perception depends much on a prior belief. It is not a linear process like that which produces an image on a photograph or on a TV screen. For my brain, perception is a loop."[9]

[7] A. Schmarsow, *Unser Verhältnis zu den bildenden Künsten: sechs Vorträge über Kunst und Erziehung* (Leipzig: B. G. Teubner, 1903), 104 (translation by the author). Original quote in German: "Die Ortsbewegung in der dritten Dimension erst bringt uns die Ausdehnung zum unmittelbaren Erleben. Die Entfernung kann ich abschreiten und abtasten, den Raum vor mir kann ich Stück für Stück zurücklegen. Nachdem ihn meine vorwärts blickenden Augen schon im Voraus überschaut haben, ordnen sich nun erst beim Durchwandeln die Einzelheiten in ihrem tatsächlichen Abstand zueinander, bewähren nach dem bloßen Augenschein nun erst ihre volle Realität, eben als Körper im Raum wie ich selber."

[8] E. Husserl and M. Fleischer, *Analysen zur passiven Synthesis: Aus Vorlesungs- und Forschungsmanuskripten, 1918–1926* (The Hague: M. Nijhoff, 1966), 4.

[9] C. D. Frith, *Making Up the Mind: How the Brain Creates Our Mental World* (Malden: Blackwell, 2007), 126.

Thus, perception is a cycle fed by the available stimuli. We find ourselves in a constant process of prediction and updating. The spaces that we remember will influence the way we perceive a new environment. At the same time, our spatial concepts and experiences will be expanded by the interaction with the new space. Like the frequent training of professional athletea serves to provide experience and prepare them for as many potential tournament situations as possible, every new space enlarges our concepts of space. Using examples of characteristic spatial languages, I will try to show in the following how architecture can modulate these concepts.

Examples

Fig. 2-3. SANAA (2006), interior view of the Toledo Museum of Art's Glass Pavilion photograph, courtesy Toledo Museum of Art © Hampus Berndtson]

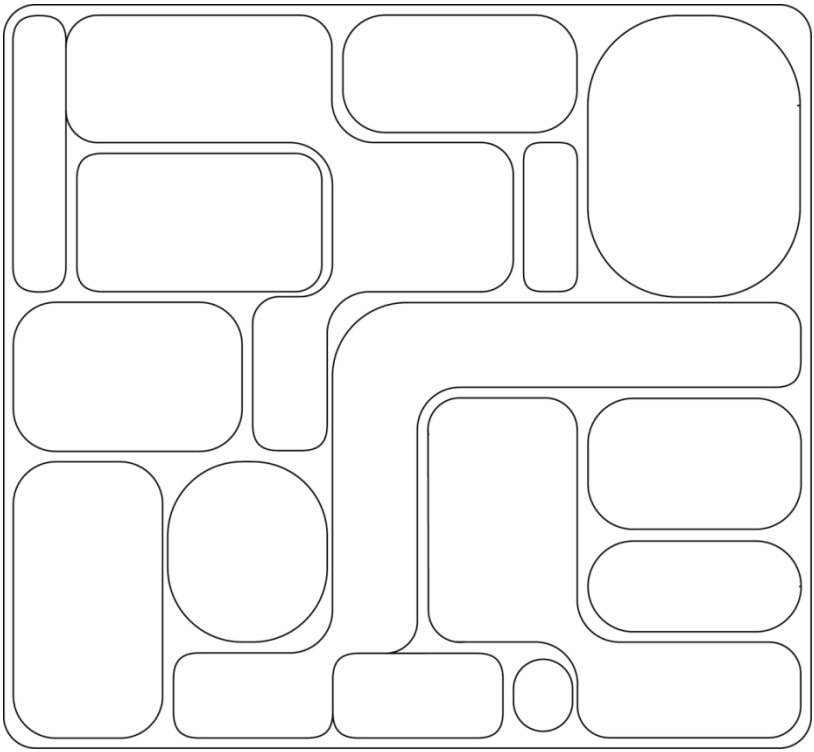

Fig. 2-4. SANAA (2006), plan diagram of the Glass Pavilion [drawing by the author]

The spatial language of SANAA's Glass Pavilion at the Toledo Museum of Art consists of a variation of glass volumes. The corners of the spaces arising from rectangular volumes are rounded by a limited number of recurring radiuses. These reappear throughout the space. When our eyes wander about the multi-layered reflections of the surrounding parks in the depth of the pavilion, we will quite possibly recognize these familiar elements in new volumes that are but a variation of the previous one not having quite left the conscious stage. Through the use of similar forms in similar spatial structures, the spaces become related to each other in our

perceptional system. While perambulating the building, the glass spaces fluidify in our perception, predicting and updating flow together.[10]

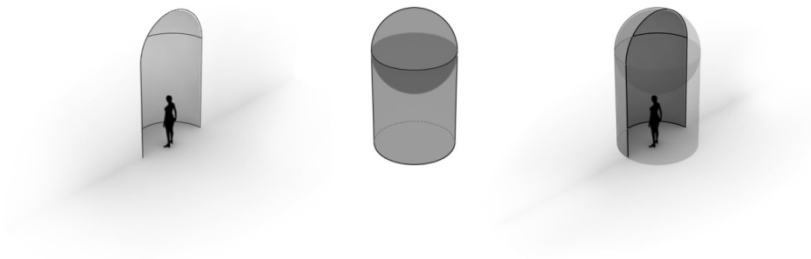

Fig. 2-5. Indicated space and perceived virtual volume [drawing by the author]

San Carlo of Borromini in Rome is constructed in a far more complex geometry. The church is not big, but high. As a consequence, the observer can never step back far enough to position himself opposite a space, but is always in and surrounded by it. The building consists of a multitude of blended geometries, of which the remaining partial volumes indicate their missing parts. In observing the space, our perceptional system will involuntarily add these missing parts to virtual volumes to complete the indicated space.

[10] For the concept of fluid objects, see J. W. Brown, "On Aesthetic Perception," *Journal of Consciousness Studies* 6, no. 6 (1999): 150: "The commonality of objects and sounds is seen in the resemblance of music to a visual hallucination or dream in fluid transformation."

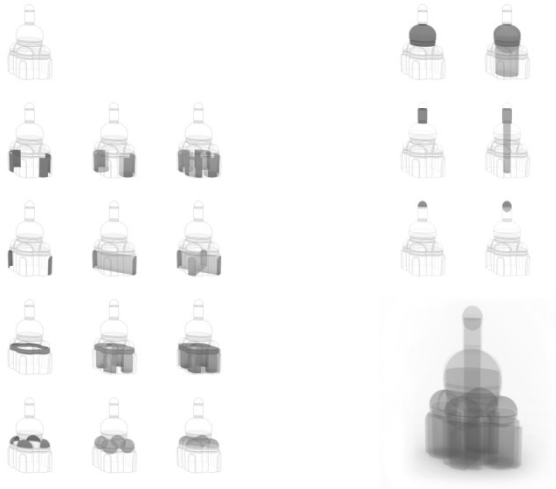

Fig. 2-6. Virtual volumes in Borromini's San Carlo [drawing by the author]

The niches of the altar and the entrance vis-à-vis appear as half cylinders. Protracting their contours results in full cylinders that extend into the central space of the church. In a similar way, the halves of the oval cylinders that frame the side altars complete themselves in the space. In these side altars, arcade-shaped niches establish a relationship to each other across the central space. The swinging, circumferential architrave emphasizes the contours of the basic geometries by offsetting and repeating them to the inside and upwards several times. Above, the calottes indicate those globes and ovaloids of which they are blended remains and finally, the cupola and lantern repeat the theme of the ovaloid and oval cylinder as the upper conclusion of the space. The becoming and disappearance of these virtual volumes depend on the location and viewing direction of the observer. The spaces are ephemeral, transient. San Carlo therefore can be read as a multitude of indicated spaces in which every observer can construct his own dynamic and transient spatial experience.

Spatial language

The term *spatial language* describes the way in which the structure of the space is built through a specific syntax and thereby what mechanisms of interpretation in the visual system are activated. The spatial language defines a spatial field that can be individually modulated to produce spatial experiences. At the same time it is a language that finds its counterpart not in the human consciousness, but in the automatism of implicit processing mechanisms. It causes an unconscious communication between space and observer. The studies described above show that this dimension of perception affects our abilities: The differentiation of our environment enriches our spatial experience and thereby enlarges our perceptional abilities.[11]

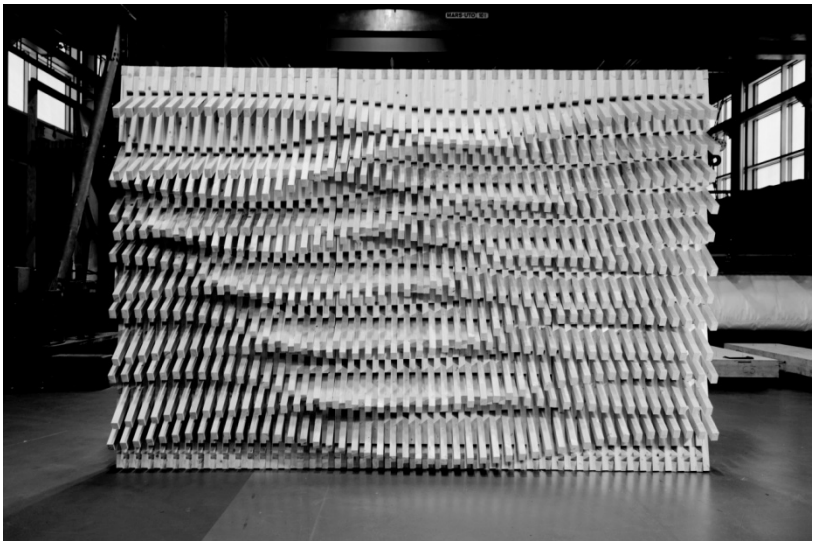

Fig. 2-7. Sequential Wall (2008), (students) Michael Bühler, David Dalsass, Simon Filler, Roman Kallweit, Jonathan Roider [© Fabio Gramazio and Matthias Kohler, ETH Zürich]

[11] See also Lakoff and Johnson's argumentation for physical experience as the basis of mental concepts in G. Lakoff and M. Johnson, *Leben in Metaphern: Konstruktion und Gebrauch von Sprachbilder* (Heidelberg: Carl-Auer-Systeme, 1998).

This dimension of implicit perception can now be addressed because new research methods in neuroscience allow deeper insight into the unconscious processing of the human brain. In regard to contemporary architecture, there is a need to find a new way to address and evaluate form and structure in architecture. Although computer-based design and production methods have resulted in a return of an architectural language accentuating form and structure, the resulting spaces and objects are not connected to any recognizable meaning.

That the experimental walls the Swiss architects Fabio Gramazio and Matthias Kohler are producing at ETH Zürich have their background in a systematic examination of the potential of industry robots in architectural production cannot be recognized by merely observing the resulting wall structures. The observer is left without an interpretational departure point. In this situation, the examination of immediate, implicit interaction between architecture and the observer is a logical consequence. In a certain way, it is also a return to the time when architecture psychology originated and theoreticians like Vischer, Wölfflin, Schmarsow and Lipps developed a body-centered understanding of space that focused precisely on this immediate effect of architecture through the interaction between body and space. While the theory of modern architecture turned to other topics, Rudolf Arnheim, one of the few heirs of this era, developed the basic approaches of Gestalt psychology to a Gestalt driven art and later also architectural psychology. In a consequent and systematic way, he examined architecture merely by the dynamic interplay between perceptional forces and architectural composition. He evaluated the virtuosity of the composition through its potential to trigger a struggle for a subtle equilibrium of forces in our perception. Tying Arnheim's theories today with new insights from the cognitive sciences offers the possibility of addressing a basic and forgotten dimension of perception in architecture and better understanding its significance.

CHAPTER THREE

DIALOGUES PROPOSED

IMMEDIACIES OF EXPERIENCE: TEXTILE SPACES — SPACES OF COMMUNICATION IN THE WORK OF LYGIA CLARK AND LYGIA PAPE

GABI SCHILLIG

> Architectural space develops its full power when created in our imagination. Through movement of the body and consciousness of inside and outside, multidimensional spaces are created in the imagination (...). Architecture tends to create boundaries where boundaries should not arise; architecture often works unintentionally against the imagination, as its forms and materials are limited and movement can only be suggested.
> — Franz Erhard Walther[1]
>
> Perception Requires Involvement.
> — Antoni Muntadas[2]

This paper investigates the unique multisensory and multidimensional understanding of spatiality evident in the work of the Brazilian artists Lygia Clark and Lygia Pape as early as the 1960s. Continually searching for new inventions and investigating sensory experimentation, the artists opened new ground, in particular by re-thinking the artistic object and its relation to the viewer, whom they conceived as an active participant of

[1] Franz Erhard Walter, *Architektur: Vernichtung des Raums* (Vienna: Ritter Verlag Klagenfurt, 2003), 14 (translated by the author): "Der Architekturraum entfaltet seine stärkste Kraft, wenn er in der Vorstellung erzeugt wird. In der Imagination (...), durch die Bewegung des Körpers, mit dem Bewusstsein eins Innen und Außen entstehen plastische Räume, (...). Architektur steht dem prinzipiell da entgegen wo sie konstruiert. Sie muss Grenzen festlegen, auch dort, wo es aus künstlerischen Gründen unterbleiben sollte, und sie arbeitet unfreiwillig gegen die Imagination, weil ihrer Materialien und Formen begrenzt sind und eine Bewegung letztlich nur behauptet werden kann."

[2] Rudolf Frieling et al., *The Art of Participation: 1950 to Now* (New York: Thames & Hudson, 2008), 51.

their art. Their conceptual work liberated artistic concepts from the hegemony of visual qualities and transformed materials, structures and spaces into environments and situations of communication.

My focus will be on selected works that specifically address textile materiality, its immanent creation processes, behavioural aspects and sensorial properties in relation to the production of space and the involved body, mind and its surroundings. Referring to projects by Clark and Pape, the potentials of textile and ephemeral spaces will be connected in relation to materiality, interaction, experience and a new appreciation of spatial perception, moving away from spatial concepts based on the hegemony of sight. Space is considered a continuous experience in contrast to space as form. The textile acts as a medium through which one can relate to the world, a second skin able to mediate realities within relational spaces.

In comparison to what we apprehend as immutable materials, textiles are soft, fluent, highly flexible and transitory, yet based on an orthogonal structure. More than any other material, textiles can be visually altered through manipulations or changes to their structural densities, such as folding and motion. The body is essential to these changes. Through its contact with the textile, the latter is transformed; it records the body's impact in terms of folds and other distortions and acts as a mediator between body and environment. For this reason, textiles per se require an active dialogue; vitality is incorporated in their underlying structure. Perceptibility occurs not only through the visual, but through the tactile and the olfactory. It negotiates between inside and outside, private and public, and allows an originally passive observer to become an active participator in the perception and generation of space.

On threads and textile meshes: Lygia Clark — Constructing experiences

Lygia Clark (1920–1988) was a Brazilian painter, sculptor, conceptual artist and researcher interested in the concept of relational spaces. In her works, spatiality is constituted through an intertwining of body, time and material. Some aspects were continually present throughout her work: the changeability of the object through the inclusion of the observer as active participant, the temporariness of her work and an open-ended process of experimentation. Clark's multifaceted participatory work went through an inventive and evolutionary process of almost three decades, as she developed her work from abstract paintings to three-dimensional,

geometrically transformable objects by afterwards dissolving the artistic object into dialogical systems and relational bodily processes, in which the aesthetic object progressively disappeared.

Fig. 3-1. Lygia Clark, *Rede de Élastico* (*Elastic Net*), 1974 (ref. no. 20479) [photographer unknown; courtesy the World of Lygia Clark Cultural Association]

Lygia Clark, *Rede de Élastico* (*Elastic Net*), 1974: Five people sitting in a circle, constructing an elastic net out of rubber bands, each in its slackest state. Connecting, interlinking, knotting. Growing from a small nuclear unit into a large network of knots and relational linear elements: a textile field negotiating between participants and their surroundings. The body used as stabilizing unit but also as moving entity to create an in-between space. A malleable formation of living bodies creating spatial formations that arise from bodily gestures. Stretching, compressing, expanding, shrinking, living structures, dialogical spaces. Bodies on, in or underneath the net, inside and out. Forming a relational space and a "Collective Body"[3] from the fundamental action of knotting the net and through interaction with the built structure.

[3] Lygia Clark, " 'Collective Body,' " in *Lygia Clark*, ed. Fundaciò Tápies (Barcelona, 1999), 306.

The fundamental unit of which textiles are constructed — the **thread** — is an unstable linear element. Although material, it is thin, soft, and as such, unstable and permeable: it needs bodies and spaces to be articulated. It participates in the creation of space, always defying its immanent instability; it is malleable through its geometrical and material character.

When threads are used as "construction" material through weaving or knitting, the thread "gets in touch" with the body, making the body perceptible and sensible. By repeating the smallest unit — the knot — a grid-like structure becomes a common space in which the solid, permanent and confining is dissolved, and the fluid, open and transparent emerges, expanding boundaries. Grid-like structures anticipate open zones rather than rigid borders or closed spaces, offering options for spatial operations and change.

The process of weaving, knotting or knitting, or the ordering of the thread in space, constructing, building up this open, fluid system, makes us aware of our living and physical presence in the world, measuring the space, but also sensing the texture through which the reality of space and its intertwining with the body is made perceptible.

Bazon Brock states in a conversation with Ulrich Heinen in "The Cultural Anthropology of the Textile,"

> Structures ultimately refer to the inner logic of the world's order, as reflected in the neural network. (...) At the fundamental level, the world does not consist of pre-existing and distinct entities but of relationships. The triumph of rationality proceeds from textile as an archetype for establishing relational structures. The world's regime evolves through textile craft, namely the world's context or its determinability. It is not coincidental that our concept of a neural network as a relational texture of nodes echoes the form of a textile mesh. And just as I begin constructing a world fabric from the smallest unit of knotting two threads together in my textile work, so the context of the world needs to begin from the smallest unit. That which exists at the large scale must first be realised at the small.[4]

[4] Bazon Brock in conversation with Ulrich Heinen, "Kulturanthropologie des Textilen" in *Kunst und Textil*, ed. Markus Brüderlin (Ostfildern: Hatje Cantz Verlag, 2013), 71 (translated by the author): "(...) Strukturen verweisen letztlich immer auf die innere Logik der Ordnung der Welt, die im neuronalen Netzwerk mitgegeben ist. (...) Die Welt besteht grundsätzlich nicht aus der Einzelheit des Gegebenen sondern nur aus Relationen. Der Triumph der Vernunft nimmt vom Textilen aus als Urform des Herstellens von Relationsgefügen seinen Ausgang.

Relational spaces

> We reject representative spaces and the work that solely serves passive contemplation. We reject any myth outside the human being. We reject the work of art as such and emphasize the act of realization of a proposal.
> — Lygia Clark[5]

Lygia Clark's (textile) meshes, such as *Living Structures* (1969) and *Elastic Net* (1974), which belong to the constructs she called Propositions,[6] were supposed to generate an experience that unfolds in real time and real space through the active participation of the viewer. These works consist of nothing but the active involvement of the participants according to the procedures and materials "proposed" by the artist. These propositions were easily reproduced, composed and "lived" by their participants. Through direct bodily involvement, immediate experience is lived during the creation process itself while, through this bodily interaction, a collective space emerges. The process of construction is as important as the usage. Through its repetitive mesh structure, the net is evocative of a well-defined system, an open structure that is never fixed or finished and that, due to its geometrical and material character, is able to adapt, to change. Umberto Eco describes those open systems as being able to assume unexpected, physically not-yet-realised structures through movement.[7] *Living Structures* and *Elastic Net*, through immanent unstable behaviour and as interfaces, constitute a structure of contact to the human body, an undefined situation, generating an **open multisensorial environment** for its creators and users. They serve as an interface for getting in touch with bodies and the world, an elastic space emerging for *Collective Bodies*, in which bodies affect other bodies, the work being both dialogical and contextual. It is precisely their textile materiality that achieves a particular corporeality and therefore a multisensorial perception of space. It is a symbiosis: Through breathing new life into the inanimate

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Vom textilen Gestalten aus entwickelt sich das Weltregime, nämlich der Sinnzusammenhang, die Bestimmbarkeit der Welt. Die Vorstellung vom neuronalen Netzwerk also ein solche Beziehungsgefüge von Knoten folgt nicht zufällig der Form des textilen Gewebes. Und wie ich in der textilen Arbeit aus der kleinsten Einheit der Verknüpfung zwei Fäden ein Gewebe der Welt herstellen beginne, muss der Sinnzusammenhang von Welt beim kleinsten anfangen. Was im Großen gegeben ist, muss erst im Kleinen realisiert werden."

[5] Lygia Clark, in *vivências / Lebenserfahrung / Life Experience*, ed. Sabine Breitwieser (Vienna: Verlag der Buchhandlung Walther König, 2000), 132.

[6] Lygia Clark, "We Are the Proposers," in Fundaciò Tápies*, Lygia Clark,* 233.

[7] Umberto Eco, *Das offene Kunstwerk* (Suhrkamp, Frankfurt am Main, 1973).

Fig. 3-2. Lygia Clark, *Rede de Élastico* (*Elastic Net*), 1974 (ref. no. 20484) [photographer unknown; courtesy of the World of Lygia Clark Cultural Association]

"object" by touch and movement, the user realises his own bodily presence and vitality. The property of changeability is inherent in the smallest element of textile systems, the thread.

In *Ästhethik des Fadens*, Gunnar Schmidt asserts that textile, relational constructs convey meaning: "thread works in art turn out to make a statement towards communication, the body, perception, space and action."[8] He states,

> Thread as dimension *and* as installation ensures not only the phenomenological emergence of space, but demonstrates that space correlates with anthropomorphic dimensions. Revealing the attributes of manageability, comprehensibility and immediate perceptibility of space is a fundamental characteristic of all installations.[9]

In relation to the body, he continues,

> Thread that is brought into contact with the body not only draws a line as a symbolic-graphical gesture, its materiality also makes the body ("*Leib*") perceptible by producing evidence of its solidity.[10]

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[8] Gunnar Schmidt, *Ästhethik des Fadens: Zur Medialisierung eines Materials in der Avantgardekunst* (Bielefeld: Transcript, 2007), 10–11 (translated by the author): "Es wird sich erweisen, dass die Fadenkunst Aussagen zu Tatbeständen der Kommunikation, des Körpers, der Wahrnehmung, des Raums sowie des Handelns formuliert."

[9] Schmidt, *Ästhethik des Fadens*, 143–45 (translated by the author): "Der Faden als Maß *und* als Installation sorgt nicht nur für die phänomenologische Hervorbringung von Raum, er bezeugt, dass Raum auf die anthropomorphe Dimension bezogen wird. Es ist nämlich ein Grundmerkmal aller Installationen, dass sie die Merkmale der Überschaubarkeit, der Fasslichkeit und der unmittelbaren Erlebbarkeit von Raum zeigen. " (...) Der Faden der mit dem Körper in Kontakt gebracht wird, zieht sich nicht nur eine Linie als symbolisch-zeichnerische Geste, er ist in seiner Materialität vielmehr etwas, das den Leib spürbar macht, einen Beweis für seine Solidität erbringt. (...) Die Semantik des Begriffs *Körper* ist im deutschen durch biologisch-physikalische Konnotationen geprägt. Der Körper ist das was handhabbar, was messbar ist. Der eher altertümliche Terminus *Leib* trägt darüberhinaus die Konnotation von Beseelung und Lebendigkeit. (...) Indem der Faden über den Leib die Seelenkräfte aktiviert, bringt er sich ein zweites Mal als Gegenmedium zu den Fernmedien ins Spiel. Als eng mit der Leibpräsenz verknüpft erweisen sich Empfindungen als nicht transportierbar, als nicht ablösbar aus dem Hier und Jetzt einer Erfahrung."

[10] Ibid.

Furthermore, he states, the term *Leib* emphasises the notion of the body as containing "a soul and spirited liveliness." Multisensorial encounters are closely related to the body's presence in the world, therefore perception is hard to communicate, as it only exists in the very moment of experience.

Especially when we think about the notion of the **mesh and networks** today, we imagine it in terms of electronic systems and its accompanying loss of material space. Paradoxically enough, it is particularly in the conception of the textile (based on the structure of an orthogonal grid) and its relation to the body (and thus to the world) where an antithesis to the actual tendency of spatial dematerialisation can be clearly seen.[11]

On skins, membranes and folds: Lygia Pape — Magnetized space[12]

> As you can see, all is connected.
> The artwork does not exist as a finished and resolved object,
> but as something that is always present,
> permanent within people.
> — Lygia Pape[13]

Lygia Pape, *Divisor* (*Divider*), 1968: A huge white textile surface, made from woven material, spreading 30 x 30 metres. A street in Rio de Janeiro, 1968. A surface of light. Immaterial and yet material. A geometric plane. Constructed of several horizontal layers, sewn onto each other. Along those seams various openings. Many heads emerging from the openings of the surface. First one, then two and in the end many that transform the former static surface into a gigantic living membrane moving through the city. Women, men, children. Everyone moving

[11] See Ingrid Bachmann, "Material and the Immaterial," in *Material Matters: The Art and Culture of Contemporary Textiles*, ed. Ingrid Bachmann and Ruth Scheuing (Toronto: YYZ Books, 1998), 23–34.

[12] Lygia Pape "Magnetized Spaces," *Lygia Pape: Magnetized Space*, ed. María Luisa Blanco (Madrid: Museo Nacional Centro de Arte Reina Sofìa, 2011), 285; see also the film *Lygia Pape, Divisor, 1968–2011: Performance en el Museo Reina Sofía, Madrid, 24-05-2011*, http://www.youtube.com/watch?v=L9XsL_GvSa8 (accessed 6 June 2014).

[13] Lygia Pape, quoted in *Lygia Pape: Intrinsecamente Anarquista,* ed. Denise Mattar, Perfis do Rio (Rio de Janeiro: Relume Dumará, 2003), 86: "Como você vê, está tudo ligado. / Não existe obra como um objeto acabado e resolvido, mas alguma coisa sempre presente, / permanente no interior das pessoas."

simultaneously, yet individually, their own freedom of movement dependent on the behaviour of the companion (or is he a counterpart?). The head visually separated from the body below, the white surface acting as a soft boundary between the top and the bottom, the sky and the earth. The textile soft and malleable, folding and enfolding. A permeable membrane both individually and socially constructed, stable and instable. Dividing and uniting.

Fig. 3-3. Lygia Pape, *Divisor* (*Divider*), 1968 [courtesy of Projeto Lygia Pape]

In Brazil, Lygia Pape (1929–2004) was part of the Neo-Concrete Movement in the 1950s, like Lygia Clark and Hélio Oiticica. Oiticica referred to Pape as a "permanently open seed" for her receptiveness to new ideas and creation of constantly evolving forms.[14] Lygia Pape's work stands out due to its playfulness and freedom in multifaceted artistic formats: paintings, reliefs, weavers, drawings, ballet, poems, books, sensorial experiences and spaces, installations and cinema. Many works were subject to change and alteration incorporating movement and the flux

[14] Hélio Oiticica, quoted by Guy Brett, "The Logic of the Web," in *Lygia Pape: Gávea de Tocaia*, ed. Lygia Pape (São Paolo: Cosac & Naify, 2000), 305.

of time. The divergence of her artistic approaches are seemingly endless; her method of transforming the geometrical, rational work into experiences and opening artistic processes to the active participation of the spectator is something that she shares with her companions Oiticica and Clark. When looking at her art, it becomes clear that Pape considered her work to be a continuous search for invention and an investigation of sensory experiments.

Divisor (1968), the work described above (originally organised for children in the favelas), appears as a large permeable membrane, a textile skin mediating between its users. The work allows a direct relationship between the space and other participants, like an architectural structure or interface, making us aware of how other people appear, negotiating the same environment; a membrane between inside and outside, top and bottom, proximity and distance, breaking down barriers in art and life. Through direct bodily contact, the textile skin of *Divisor* results in an immediacy of experience, where one's action affects the "other." The space that is generated is connecting and inclusive, yet dividing, hovering between individuality and collectivity. It is an ambiguous structure that, due to its rigorous rectangular geometry, in combination with its soft, woven textile materiality, is both rational and sensuous, connecting body and mind, art and life. These ephemeral situations engage imagination and intellect, challenging a static concept of space.

The **folds** that are created through movement amplify the undetermined, undefined, blurred and unstable spatial condition. Strangely enough, the textile structure accruing from an ordered, orthogonal, woven grid creates vitality, spatial diversity and plurality. Through the blurring space of folds and their ephemeral character, perpetual change of space directly related to the movement of human bodies is incorporated. Actions, movements and their immediate consequences are linked to each other, whereby thought is directly expressed through the creation of spatial situations. In this context, Pape called the ephemeral situations temporarily activated through her work "magnetized space,"[15] which attracts people for a certain moment and then, having been activated and used, disappears. She compared it to an urban seller who unfolds his mobile market stand to attract customers but then the space dissolves after closure.

[15] Pape, "Magnetized Spaces, 285; *Lygia Pape, Divisor, 1968–2011.*

Guy Brett calls *Divisor* a "social membrane"[16] and speaks about the claim made by Lygia Pape's work: "the sensorial as a form of knowledge and consciousness."[17]

> Oiticica pointed to an extremely fertile paradox in the fact that, although the drift of Lygia Pape's work was away from the "art object" to the idea, to the "live act of having an idea," as he put it, the notion of the "idea" did not abandon the sensual for the cerebral. On the contrary, it constituted a "search for the direct sensorial consciousness for the act of seeing, or feeling by touch — intellect defying itself."[18] In this paradox is perhaps encapsulated the entire adventure of the avant-garde in Brazil from the fifties onwards: the desire to reconfigure that relationship — impossible to finally capture and explain because we can never be outside it — between our brain and our body, the intellectual and the sensual, a relationship that has long been subject, in the traditions of western culture, to a resolute dualism. (...) Despite what is loosely called the "conceptual" character of her work such as Lygia Pape's she [*sic*] herself described it, speaking specifically of her 1975 installation, *Eat Me: Gluttony or Lust*, as "not a discourse or a thesis. I developed the project at the level of an 'epidermizaçao' of any idea: *the sensorial as a form of knowledge and consciousness*."[19]

Paulo Herkenhoff uses the term *plurisensoriality* to describe the impact of Lygia Pape's work and its affinity with Maurice Merleau-Ponty's philosophy revealed by the plurality of senses:[20]

> Divisor moves. It is a living place. It emerges as the locus of an art that could not be fixed in a canon or in the market. Divisor is the body. It is skin, pores, and porosity. However it does not exist without Merleau-Ponty´s "corps vécu" (lived-body). So where does the body begin in Divisor? Hard to answer, since each subject may have its own sensation in the relational experience of the work. In Divisor, the social and collective body is sculpted in double allusion to Joseph Beuys and Lygia Clark

[16] Guy Brett, "The Logic of the Web," in *Lygia Pape: Gávea de Tocaia*, ed. Lygia Pape (São Paulo: Cosac & Naify, 2000), 309.
[17] Lygia Pape, "Depoimento," in Lygia Pape, *Obras 1976* (Rio de Janeiro: Galería Arte Global, 1976), catalogue of the exhibition *Eat Me: A Gula ou a Luxúria,* quoted by Brett, "Logic of the Web."
[18] Hélio Oiticica, "Tropicalia Time Series 2 / Lygia Pape," London–Paris, May 1969, quoted by Guy Brett, "Logic of the Web."
[19] Brett, "Logic of the Web," in Pape, *Lygia Pape: Gávea de Tocaia*, 305.
[20] Paulo Herkenhoff, "The Art of Passage," in Blanco, *Lygia Pape: Magnetized Space*, 19–53.

respectively. (...) In Pape´s proposition, every individual subjectively exercises the right to equality.[21]

Yet, *Divisor* celebrates diversity.

Resumée: Notes on the social dimension of textiles as a link between body, mind and world

This paper discussed the impact of textile materiality and its related notion of multisensory spatiality along selected works by Brazilian artists Lygia Clark and Lygia Pape. When looking at their sensuous works and written manifestos, it becomes clear that their artistic activities possess both a social and political dimension. The emergence of a Collective Body as stated by Lygia Clark and later referred to by Lygia Pape also entails the emergence of **collective spaces** as a participatory act. Through *Divisor* as an experimental formation, people are appreciated as individually and socially constituted by constantly redefining relationships between the self and the other.

What role does the textile (or its materiality) play in this context?

The textile juxtaposes the progressive dematerialisation of space (and thus the disappearance of physical interactions) that arises due to the particular technology. The textile constructs a physical bridge between body, space and matter. Through its multisensorial properties, textile matter contributes to overcome the Western idea of disconnectedness between mind and body, art and science, or art and life. Textile structures — as a medium of touch — construct a bridge through which one can relate from the self to the other and to the external world as they require body and mind to first be constructed and then to be in the world. They demand action and enable change, maintaining a vision of a space as alive and open-ended. Based on an embodied awareness, they empower via an artistic activity that includes the relationship we have with these structures. As a second skin, the textile mediates realities and can be used as a powerful instrument to restructure our relation to the world. Lygia Clark and Lygia Pape's work vividly demonstrate that it is all connected.

[21] Herkenhoff, "The Art of Passage."

THE SPACE OF THE BOOK

MARIAN MACKEN

Architectural drawings, that is, orthographic projections such as plan, section and elevation, have interiority embedded within them due to their subject matter. The plan locates planes that form an interior. Our eyes travel over the surface of the drawing, conjuring up the interior that it represents. We infer our inhabitation of the space through two-dimensional means. Due to issues of scale, architects and architecture students do not spend the bulk of their time working on the object of their thoughts. In contrast to artists, they labour through some intervening medium, never with the final form of the thing that they are proposing.[1] As documentation of an existing space, we may use the plan as a mnemonic device, revisiting our steps through the space in order to conjure it. Hence, the space of the plan may be seen as a surface over which we travel, and the perception of space is produced by its representations,[2] and therefore interiority is assumed.

Artists' books — that is, books made as original works of art, with an artist or architect as author — and some commercially published books, offer a different mode of presenting interior space due to their objecthood, structure and component pages. The page itself has a dimensionality to it, beyond that of a two-dimensional surface for an image, and the form of the book creates an interior. The "inside" of the book refers to both the literal space of the pages, and its content, which refers to that which is "outside" the book. By binding the artist's book with the content of architectural documentation, a space of representation is created, different from three-dimensional models. The book offers another way that interiority can be present within the representation of architecture; that is, representation itself that has interiority. This, then, is a combination of representation both presenting an interior's spatiality *and* possessing its own interiority.

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[1] Robin Evans, *Translations from Drawing to Building and Other Essays* (London: Architectural Associations Publications, 1997), 156.

[2] Beatriz Colomina, cited in Charles Rice, *The Emergence of the Interior: Architecture, Modernity, Domesticity* (London: Routledge, 2007), 99.

Using examples of books that employ volume in their structure, the book's interiority, or the space of the book, may be aligned with the space of architecture, and hence the implications for the perception of interiority is discussed.

The volume of the book

In her essay on scale within architectural drawings, Susan Hedges refers to Susan Stewart's description of the book as offering metaphors of containment, of exteriority and interiority, of surface and depth, and of covering and exposure.[3] "The book sits below me closed and unread; it is an object, a set of surfaces. But opened, it seems revealed; its physical aspects give way to abstraction and a nexus of new temporalities."[4] The book as object is both a volume in space and possesses the ability to be opened. The book's interiority may be accessed by merely paging through a work: lifting the cover of a book "opens" it. The book as object may be made up of discrete elements, that is, pages. The "inside" of the book refers to both its internal pages and the literal space of their surface, and its content, which refers to that which is "outside" the book. Each spread of pages is a separate space, so the book is made up of the accretion of these sites. The book as object may have a further openable quality due to particular structures and techniques of making. Volume and spatiality may be included through various techniques, such as the inclusion of moveable pieces – flaps and revolving or sliding parts – and pop-up structures, made by cutting and folding within the book.

The artist's book *Vessels* (2004), by Adele Outteridge, is made of clear perspex pages, sewn with twine; the "pages" do not fully open but are held together with heavy-duty cotton [Figs. 3-4 and 3-5]. Many of Outteridge's books contain no text or imagery, and hence, there is little or no distinction between the contents and the container; the structure of the book itself imparts information.[5] The book's transparent media of clear perspex

[3] Susan Hedges, "Scale as the Representation of an Idea, the Dream of Architecture and the Unravelling of a Surface," *Interstices: A Journal of Architecture and Related Arts: The Traction of Drawing*, no. 11 (2010): 75.
[4] Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Durham, NC: Duke University Press, 1993), 37, quoted in Hedges, "Scale as the Representation of an Idea," 75.
[5] State Library of Queensland catalogue, 2014, *http://onesearch.slq.qld.gov.au/primo_library/libweb/action/dlDisplay.do?vid=SLQ&docId=slq_voyager644869* (accessed 20 May 2014).

allows all the pages to be visible at once, even when it is closed; the inner cotton threads holding the pages together appear to be suspended in space.[6] These threads and perspex sheets are media with little volume, but Outteridge has created spaces between adjacent pages and hence, three-dimensional volume within the book.

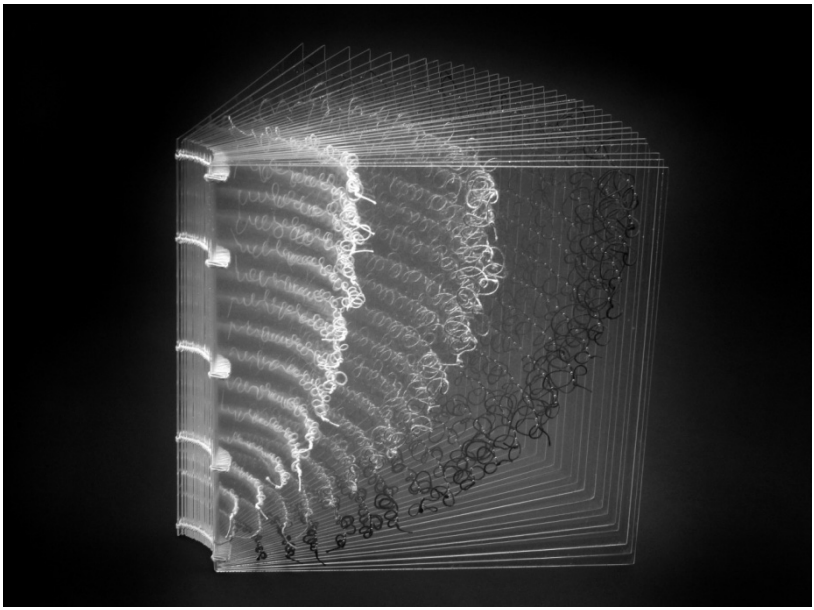

Fig. 3-4 (Adele Outteridge (2004), *Vessels* [image courtesy the Australian Library of Art, State Library of Queensland]

[6] State Library of Queensland catalogue, 2014, *http://onesearch.slq.qld.gov.au/primo_library/libweb/action/dlDisplay.do?vid=SLQ&docId=slq_voyager644869* (accessed 20 May 2014).

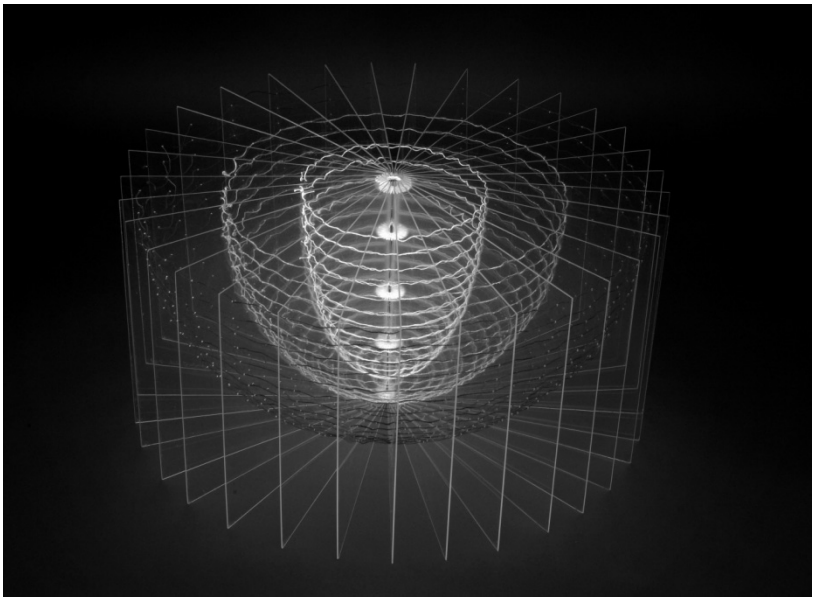

Fig. 3-5. Adele Outteridge (2004), *Vessels* [image courtesy the Australian Library of Art, State Library of Queensland]

A book that employs a different technique to assert its three-dimensionality through its individual pages is Jonathon Saftran Foer's *Tree of Codes* (London: Visual Editions, 2010) [Fig. 3-6]. Using a different die-cut technique on every page, various parts of the text and page are removed. Through this technique of removal, the gaps in-between words resonate, alerting the reader to the page's physical relationship to each other page. According to Olafur Eliasson, this book "welds narrative, materiality, and our reading experience into a book that remembers that it actually has a body."[7] The strength of *Tree of Codes* is the perception of depth of the object of the book, achieved through the cumulation of pages.

[7] Olafur Eliasson, in Foer, *Tree of Codes*, back cover.

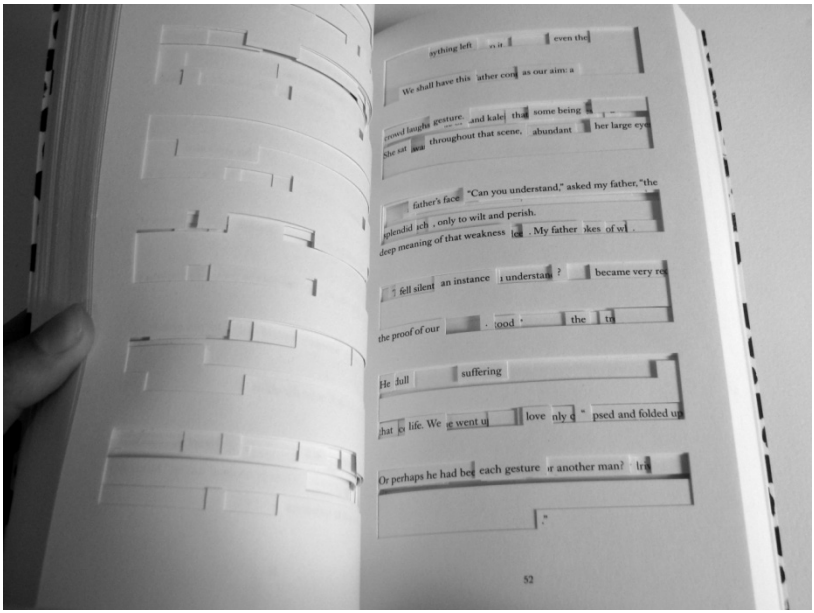

Fig. 3-6. Jonathon Safran Foer (2010), *Tree of Codes* [Visual Editions, London]

There is another type of interiority possible within the book, one which is made by the inclusion of volume within the structure of the book. *Beauty and the Beast: A Peepshow Book* is an example of this type of book, which employs three-dimensionality, through a technique of a circular, "carousel" format, sometimes referred to as a "merry-go-round" book [Fig. 3-7].[8] *Beauty and the Beast* creates six theatrical scenes in the valley folds through the use of a book-like proscenium and three tiers of window cut-outs, with text below. When the cover cords are tied, the book stands up to form a pentahedron.

[8] Roland Pym, *Beauty and the Beast: A Peepshow Book* (Amsterdam: L. van Leer and Company, n.d.).

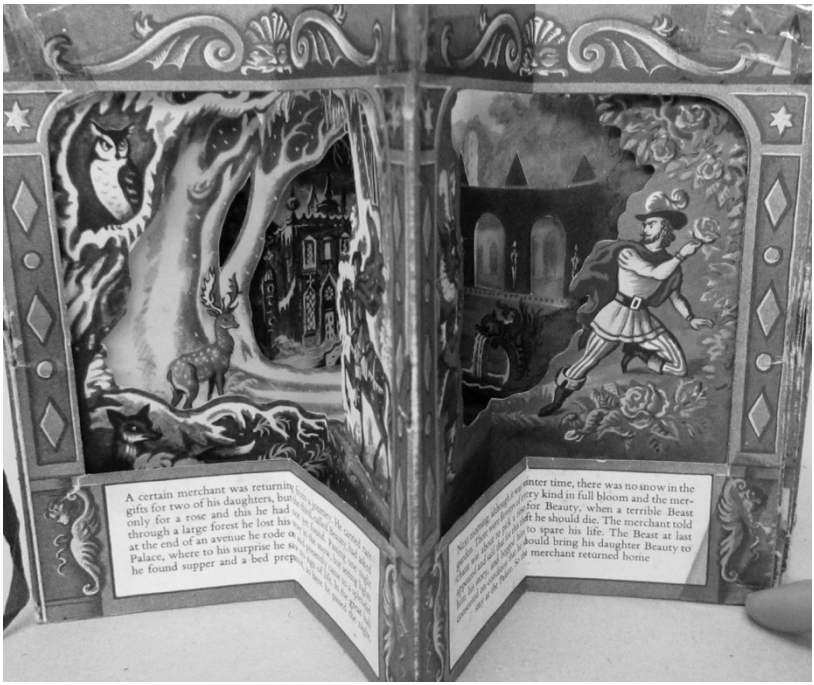

Fig. 3-7. Roland Pym (no date), *Beauty and the Beast: A Peepshow Book* [L. van Leer and Company, Amsterdam]

In this book, narrative is achieved through a strong use of "scene-setting": the dominant locations of the story are used as the sequential structuring device. There is a definite rendering of foreground, middle ground and background, allowing for both architectural framing devices, such as fenestration, and the inclusion of distant landscape. Hence, there is a dominant sense of interiority to each scene: The castle's turrets can be glimpsed through the snowy forest.

Reading space

Interiority in architecture is discussed and worked over, as represented space; drawings and models act as referents for a 1:1 space. The book, due to its objecthood, asks one to make and handle the work, rather than view a smaller representation of it. Within the book, there is the represented

space and the literal space of the openings of the book.[9] Hence, books both refer to something else through their content and speak for themselves: They are both subject and object. Therefore we are working with both referent and the 1:1 scale, which is different from the usual graphical testing of ideas.

The objecthood of the model seemingly offers a vehicle for a similar combination of the strong presence of the representation at a 1:1 scale and the content of the work when related to interiority. Models, merely by existing in a three-dimensional state, may be seen as objects in their own right, which display the interior. However, the model also encompasses the miniature, the diminutive, and hence a fascination of this concentrated self-enclosed world. Christian Hubert refers to the extent of the model's objecthood: "The space of the model lies on the border between representation and actuality … neither pure representation nor transcendent object. It claims a certain autonomous objecthood, yet this condition is always incomplete. The model is always a model *of*."[10] According to Hubert, although the model achieves some objecthood, its desire is to act as a simulacrum, and therefore, the model as representation is always present. The model struggles to truly separate itself from the miniature in the way the book exists at a 1:1 scale. The model as an object rarely overrides its reading as a miniature depiction.

Alternatively, Johanna Drucker writes in her comprehensive commentary of artists' books:

> We enter the space of the book in the openings which position us in relation to a double spread of pages. Here the manipulated scale of page elements becomes spatialized: we are in a physical relation to the book. The scale of the opening stretches to embrace us, sometimes expanding beyond the comfortable parameters of our field of vision, or at the other extreme narrows our focus to a minute point of intimate inquiry.[11]

The structure of the book and its inherent possibilities for containing unfolding volumes and spatialities allow another perception of interiority to be explored. The examples shown do not present continuous spatial arrangements that are aligned with a plan as a model does. Instead, there is

[9] Johanna Drucker, *The Century of Artists' Books* (New York City: Granary Books, 2004), 283.
[10] Christian Hubert, "The Ruins of Representation," in *Idea as Model*, ed. Kenneth Frampton and Silvia Kolbowski (New York: Rizzoli, 1981), 17.
[11] Drucker, *The Century of Artists' Books*, 360.

a presentation of codex-oriented spatiality that cannot be viewed all at once, but in slivers. This fracturing of space and discontinuity is advantageous as it offers the potential for a different perception of space. Rather than examining each interior in relation to how it is connected to its adjacency, instead its containment is emphasised, allowing a different narrative structure to connect the spaces as they appear as spreads within the book.

In *The Emergence of the Interior: Architecture, Modernity, Domesticity,* Charles Rice writes that the architect and client are future inhabitants of the drawings and model.[12] The reading of these drawings allows the viewer to travel within the imagined space. Hedges writes that as the imagined miniature self inhabits a drawing, "the miniscule body of the architect is the measure, walking across the surface of the drawing."[13] Therefore, the architectural representation seems to proclaim *this will be*.

Books offer a different temporal condition because it is the book as object that is the dominant reading. Within artists' books, the page becomes a site, and the book "a sequence of spaces"[14] whose turning pages offers interiority. Space is perceived through reading rather than viewing. There is movement and change inherent within the book, that is, opening the book and the turning of pages, as a performance — "the book is something that one participates in"[15] — places the book in time. Rather than saying *what has been* or *what will be*, the book instead says this is the most *present version* of interiority.

Rice describes interiority as a "space of immersion" in which architecture is enfolded and interiorised.[16] The book itself, as operating within space and time, opens up the possibility for change and performance to be admitted to the representation of interiority and offers new strategies for perceiving interiority and new territories for architectural practice.

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[12] Rice, *The Emergence of the Interior*, 57.
[13] Hedges, "Scale as the Representation of an Idea," 73.
[14] Ulises Carrión, "The New Art of Making Books ," in *Artists' Books: A Critical Anthology and Sourcebook* ed. Joan Lyons (Rochester, NY: Visual Studies Workshop, 1985), 27.
[15] Alexandra Anderson-Spivy, in *Books as Art* (Boca Raton, Florida: Boca Raton Museum of Art, 1993), viii.
[16] Rice, *The Emergence of the Interior*, 33 and 34.

MANIPULATIONS IN IMAGINED SPACE

HOLGER SCHURK

The architectural design as imagined space

An architectural design does not describe a confrontation with a present, but with a future architecture. It is in the stage of being developed, and as it is not fully known even to the designing architect, it must at the same time be researched. Hence every physical architectural structure is preceded by a virtual architectural design project. The question arises of whether the production of this virtual project is a purely virtual affair.

In his investigations concerning a science of architecture, the French theoretician Philippe Boudon differentiates between the "real space of architecture" and the "imagined space of the architect."[1] He uses the former to designate built, physical space that can only be fathomed with the senses and the mind and the latter for describing a space of the imagination, in which the designing architect mentally and graphically deals with a future architecture. In this imagined space, though, architects do not work directly on their target object — the building — but at first in an intermediate area — geometry.[2] Here the architectural forms are developed in the form of graphic representations — as projections of the real form — before they are later transformed into concrete reality, as buildings. Thus real artefacts exist already in the imagined space of the architect, because in contrast to thinking and the future architecture, the geometrical drawings and models are physically available. As manifestations of the design process they represent the project with different topical emphases and in different stages of the development.

[1] Philippe Boudon, *Der architektonische Raum: Über das Verhältnis von Bauen und Erkennen* (Basel: Birkhäuser, 1991).
[2] Robin Evans, "*Translations from Drawing to Building*," *AA Files* 12 (1986): 3–18.

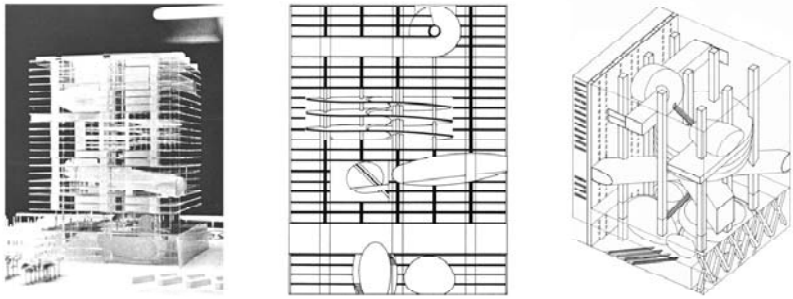

Fig. 3-8. OMA/Rem Koolhaas (1989), representations of the Bibliothèque de France, Paris [© OMA]

Retrospectively the design drawings reflect the later realised building in many aspects in the same way as they also resemble later photographic or graphic reproductions of the structure. This similarity of the media, however, is only a snapshot and actually misleading. If one perceives design as a process in time, the specific role of the design drawing reveals itself in its capacity for transformation. The design drawing incrementally defines the form, yet only to the degree that there remains scope for optimisation. To a certain degree it always remains abstract and serves the designer as a dynamic tool to aid him in his equally dynamic thinking. Opposed to the building, which provides options for real utilisations, and reproduction drawings, which perform a final definition of the form, the actual essence of a design drawing lies in transformation.

It is typical for work in the imagined space of the architect that both the fields of knowledge involved — the theory — and the projected forms — the drawings — are in principle modifiable. The "imagined space of the architect" is characterised by the intention to harmonise the mental process and the form of the design project to the degree of full accordance. It is a process described by the philosopher Vilém Flusser in his examination of the gesture of making: "When you examine, you are on the inside, you are entangled with the object of examination. ... Examining means to attempt to create a congruence between the theory on the inside of the object and practice."[3] Only in this manner can the involved figures of thought and

[3] Vilém Flusser, "Die Geste des Machens," In *Gesten: Versuch einer Phänomenologie*, ed. Vilém Flusser (Bensheim and Düsseldorf: Bollmann, 1991), 74.

space — theory and drawing — be aligned in uncounted attempts and, step by step, be defined.

At the same time an architectural design refuses categorisation, either as a technical or artistic or a scientific production. It needs to be perceived on a broader scale, as "cultural engineering,"[4] taking into account practices, concepts and media, or even better, as Otl Aicher puts it, as a "creation of world."[5]

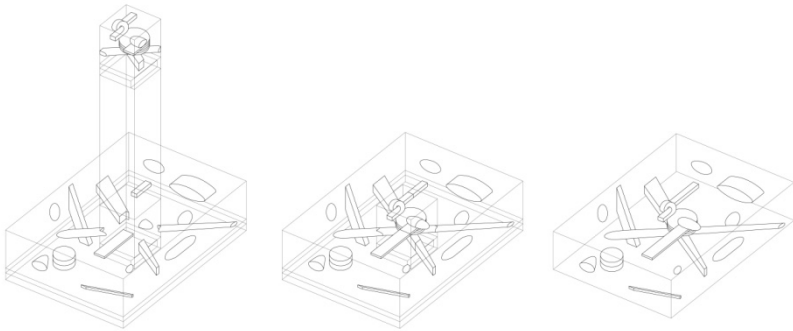

Fig. 3-9. Holger Schurk (2013), contexts from the series *Graphic Manipulations,* based on drawings of the Bibliothèque de France by OMA/Rem Koolhaas [© Holger Schurk]

In this sense, the theory also effective in designing cannot be delimited in any meaningful way and must thus be determined anew and specifically within every individual design project. This direct connection between theory and practice in the project is, according to architectural theoretician Jörg H. Gleiter, rooted in the conditions of modernism. "Here it is the accelerated development dynamic that continuously rebuilds, reorganises and redefines everything in such a manner that modernism no longer can easily borrow its standards from models of another epoch, and is forced to establish its own normativity."[6] The architectural production of an

[4] Daniel Gethmann and Susanne Hauser, *Kulturtechnik Entwerfen: Praktiken, Konzepte und Medien in Architektur und Design Science* (Bielefeld: Transcript, 2009).
[5] Otl Aicher, "Die Welt als Entwurf," in *Die Welt als Entwurf*, ed. Otl Aicher (Berlin: Ernst & Sohn, 1991), 196.
[6] Introduction in Jörg. H. Gleiter, *Architekturtheorie heute* (Bielefeld: Transcript, 2008), 9.

"adequate living environment" at all times depends on the "theoretical-practical determination of meaning" and vice versa.[7] The imagined space of the architect describes no less and no more than the place of this concurrence of theory and form as well as the subsequent negotiation, applying the design drawing as its medium.

The double role of abstraction at OMA/Rem Koolhaas

The addressed interrelations between theory and form, however, were put to a serious test with the end of modernism. In this regard, David Harvey's observations are ground-breaking, describing fundamental changes in the interplay among the real economy, venture capital and cultural economy taking place during the transition from modernism to post-modernism. According to his theory, this led to a complete dissolution of the relation between content and form and thus finally to a "crisis of representation."[8] The determination of form as well as the assignments of meaning are of a purely speculative nature from this moment on. Architecture and urbanism become "symbolic assets that can be distributed and reproduced arbitrarily."[9]

A remarkable reaction to exactly this situation is to be observed in the design projects of OMA/Rem Koolhaas towards the end of the 1980s. OMA/Rem Koolhaas attempted to escape randomness by completely repressing the question regarding representation in future architecture. In this process, they avoid the usual incremental retraction of abstraction when developing their drawings, but sustain an equal level of abstraction throughout the complete process. The drawings presented at the end of these processes — many of these projects won competitions, yet they were eventually not realised — thus reveal forms, but equally reflect appropriate alternative options. By this refusal of formal determination, OMA/Rem Koolhaas also escape the assignment of meaning; they apply abstraction in order to replace representation. The project representations dated between 1989 and 1992 in particular reveal such a superimposition of process and result, or variability and determination.

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[7] Ibid.

[8] David Harvey, "Time–Space Compression and the Postmodern Condition," in *The Condition of Postmodernity*, ed. by David Harvey (Malden: Blackwell Publishing, 1990), 298.

[9] Nikolaus Kuhnert et al., "*Die Krise der Repräsentation*," *Archplus* 204 (2011): 6–7.

In this procedure, numerous contemporary commentators recognised a transition from drawings to diagrams as the central tool of design, a new instrument, so to speak, capable of combining formal and theoretical aspects. Hence Robert Somol writes in his contribution to Peter Eisenman's *Diagram Diaries*,

> Working diagrammatically — not to be confused with simply working with diagrams — implies a particular orientation, one which displays at once both a social *and* a disciplinary project. And it enacts this possibility not by representing a particular condition, but by subverting dominant oppositions and hierarchies currently constitutive of the discourse. Diagrammatic work then (and this includes the projects of Eisenman and Koolhaas) cannot be accounted for by reapplying the conventional categories of formal or functional, critical or complicit.[10]

Antony Vidler perceives abstraction as a central quality of diagrams: "[I]t is precisely abstraction that allows the diagram to be, so to speak, productive, so that through permutation and transformation, the characters of one diagram may appear in another. In this sense the diagram is both the instrument of thought and its mirror."[11] In the interplay between the known and the unknown in such design graphics, he also recognises what he calls the "architectural uncanny":[12]

> The anxiety of the subject confronted with the "soft" space of Koolhaas's surfaces is then the manifestation of an uncanny based on the newly formulated conditions of interiority and exteriority, where the "ghosting" of the functionalist "interior" on the exterior mirrors not the outward appearance of the subject but its own, now transparent biological interior. Paranoiac space is transformed then into panic space, where all limits become blurred in a thick, almost palpable substance that has substituted itself, almost imperceptibly, for traditional architecture.[13]

In the manifestations of the designs of OMA/Rem Koolhaas from this period, the ambiguity is revealed that already lies at the core of the method (design) and the central tool (the drawing). The layouts of the Centre of

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[10] Robert E. Somol, "Dummy Text, or the Diagrammatic Basis of Contemporary Architecture." in *Diagram Diaries*, ed. Peter Eisenman (New York: Universe Publishing, 1999), 23.
[11] Antony Vidler, "What Is a Diagram Anyway?," *Feints*, ed. Peter Eisenman (Milan: Skira Editore, 2006), 20.
[12] Anthony Vidler, *The Architectural Uncanny: Essays in the Modern Unhomely* (Cambridge, MA: MIT Press, 1992).
[13] Anthony Vidler, "Transparency," in Vidler, *The Architectural Uncanny,* 225.

Art and Media Technology in Karlsruhe, the hotel and convention centre in Agadir, the Bibliothèque de France and the Deux Bibliothèques Jussieu in Paris depict but a few clearly defined room assignments and path relations. The sectional drawings of the projects do not actually differentiate between top and bottom and could thus just as well be understood upside down. Even the axonometrical drawings, usually the medium for the unambiguous representation of segments in space, contain a great scope of options, for instance with regard to the relation between the interior and the exterior spaces and main and ancilliary programs.

The graphic construction of an epistemic space

In connection with this examination of the imagined space of architecture, these abstract project representations offer possibilities for a graphic study. The design drawings by OMA/Rem Koolhaas serve as raw material for a series of graphic manipulations with the aim of illustrating the initially described mental and formal variations within the architectural design.

Concretely existing lines in the drawings are either omitted or new ones added, yet nothing is changed that is required for comprehending the individual measures. In their sum the individual operations yield new drawings that also inspire interpretations compared to the original drawings, which have no direct connection to the form of the respective future building. The representations leave the condition of being projections (of possible buildings) and transmute to the condition of notations (of mental models) eventually to rebound. By this back-and-forth motion of the perspective, the transition from theory to form inherent in the architectural design process becomes perceivable as an oscillating exchange process. At the same time, it becomes clear that the architectural form is not determined in the design process, in contrast to the form in the design result, but exists in an infinite space of possibilities — as does thinking — and is thus intrinsically dynamic.

This series of drawings stake out a space stepwise, which both mentally and formally appears as a space of unlimited possibilities. While this space may be quite similar to the imagined space of the architect, it serves different purposes. Gaining knowledge replaces the design project. The space created in this manner is itself not an architectural design space, but a space for examining it. In this sense, the study does not aim at the

actual course of events leading to the creation of the drawings in the years between 1989 and 1992. This research does not deal with the historic reconstruction of specific projects, but with the graphic construction of an epistemic space using these projects as a basis. The drawings of OMA/Rem Koolhaas are solely used as raw materials. Depending on the focus of the examination, the series of drawings assume a different guise.

Hence the graphic manipulations must be assigned to a class of architectural research that is carried out in direct confrontation with the media of design and in direct analogy to the analytical and creative processes of the design. They apply the mechanisms of the design in order to reflectively explore it.

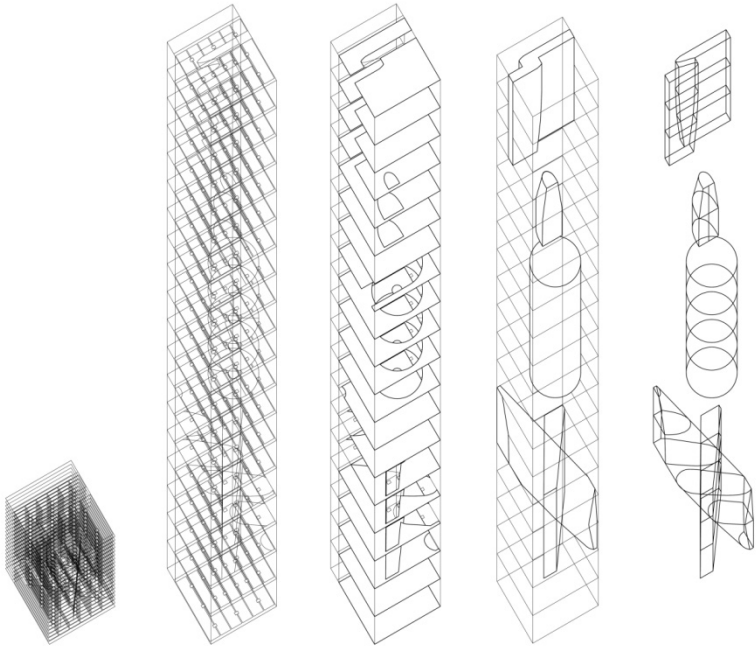

Fig. 3-10. Holger Schurk (2013), axonometries from the series *Graphic Manipulations,* based on drawings of the Bibliothèque de France by OMA/Rem Koolhaas [© Holger Schurk]

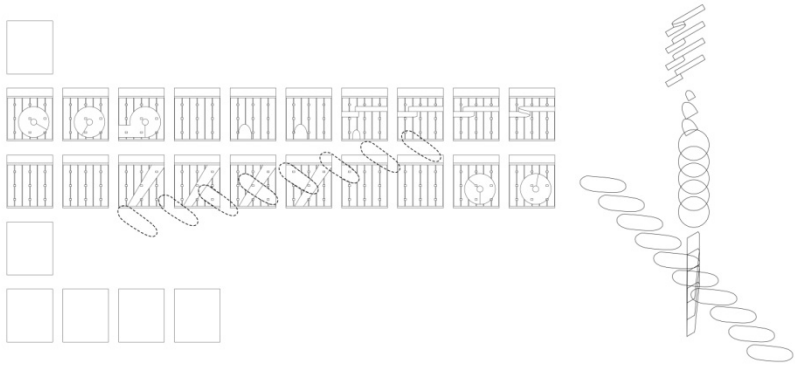

Fig. 3-11. Holger Schurk (2013), layouts from the series *Graphic Manipulations,* based on drawings of the Bibliothèque de France by OMA/Rem Koolhaas [© Holger Schurk]

CHAPTER FOUR

URBAN ACTION

PUBLICACTS: ENQUIRIES AND SPECULATIONS INTO JOHANNESBURG'S EMERGENT PUBLIC REALM

KATHARINA ROHDE
AND THIRESHEN GOVENDER

PublicActs: Enquiries and speculations into Johannesburg's emergent public realm

Post-apartheid Johannesburg is a city that most explicitly shows the coming of something else as it attempts to recalibrate itself to new pressures of urban change, such as economic imbalance, poverty and continuous immigration. These changes are reflected in physical space and range from the catastrophic and unjust to innovative and simply sublime. The majority of these new imaginaries play themselves out in the public realm. Public space plays an important role in recalibrations in new democracies. First, it is the site where the collective drama is played out. Second, it is the site largely constructed and defined through the agendas of the state and its political agenda of the time.

Arguing Henri Lefebvre's notion of everybody's right to the city, public space is not only a social space, but ought to be a democratic space. PublicActs, an interdisciplinary urban initiative, investigates the spatial conditions of post-apartheid Johannesburg, focussing on the public realm as a space of collective and democratic — that is, inclusive and multilayered — expression.[1] It aims to engage the public fractures, differences and diversities of Johannesburg today. Through small, tangible and provocative interactions, PublicActs engages various urban actors and suggests innovative ways of co-creation, using dialogue and allowing the validity of different visions, perspectives and claims over space.

[1] See PublicActs, www.publicacts.org.

South Africa's divisive history has resulted in a segregated society that manifests in a fractured city. Johannesburg's central business district (CBD) today is a cauldron of diverse peoples and agendas, and no longer fulfills the role of a city centre. Most informal settlements and townships remain and move [grow?] farther south, while new jobs are being located north of Johannesburg, to Tshwane, which means that spatial exclusion continues. Urban dwellers remain apart in the ordinary terms of where they live, work and play.

Through the diverse geographies and economic markets, there is no singular public, but a diverse and complex set of publics that act out spatially in equally diverse and complex patterns. Its configuration would need to strategically engage with these fractures, differences and diversities in a manner that is innovative. In the current practices of politics and space, this is not the case. "What is needed is mediation and dialogue among different experiences, claims and perspectives, a politics — and urban development — of becoming."[2]

> In the long decades of grand apartheid, there was a single Johannesburg. Its white population understood it to be theirs and the black population could neither escape nor significantly change the city´s role in their lives.[3]

With the Urban Areas Act (1924), which allowed for the evacuation of blacks from the municipal area to the south of the city, followed by the Native Urban Areas Act (1929), which made it illegal for blacks to rent or purchase property in white-designated areas, the entire city of Johannesburg was proclaimed white by 1933. By 1936 Johannesburg was recognized as "the largest and most densely populated European city in Africa."[4] By 1938 much of the black population had been moved south to what is known today as Soweto. From 1948 vast, sprawling suburbs for people of color grew to the south, while the inner city, the CBD and the north belonged to the whites.

By the 1970s, the city's image began to blur. Growing resistance to apartheid revealed the city's racial segregation and political divisions. The inner city slowly began to slip from whites' grasp in the beginning of the 1980s. As a result, more and more businesses relocated to the northern

[2] Graeme Gotz and AbdouMaliq Simone, 2003. On Belonging and Becoming in African Cities.
[3] Richard Tomlinson et al. 2003. Emerging Johannesburg.
[4] Clive Chipkin, 1993. Johannesburg Style Architecture and Society.

suburbs, further removing private investment from the CBD. From 1995 an influx of immigrants, mainly from Nigeria, Senegal, Zimbabwe, Mozambique and the Democratic Republic of Congo led to enduring xenophobia, assaults and conflict over space.

To illustrate the diversity of users and spaces in Johannesburg today, PublicActs is surveying approximately 100 spaces that embody an aspect of publicness. This is to also show what public spaces exist and the various manifestations of them throughout the different geographies in Johannesburg. Assuming that it is public space where different communities have the potential to meet and to overcome social, cultural, economic and physical borders, it is critical to understand the multiplicity of expectations and perspectives to be able to reconfigure public space in a manner that is inclusive and democratic. Five key public space typologies are identified that are particularly relevant for city making: the Ephemeral, the Grand and Spectacular, the Everyday, the New Imaginaries and Power and Politics and Protest.

An area of interaction is identified from the research. This focus allows for a greater depth with regards to its reading and engagement with local actors. The area is Jeppestown, a neighborhood at the edge of the CBD that represents the city's diverse interests in terms of space and the need for negotiation. Jeppestown is traditionally a working class neighborhood. It is a relatively poor area, including blacks and whites, and hosts a huge men's hostel for immigrant workers. It has one of the highest violent crime rates in the city. The *muti* (traditional medicine) market, the Kwa Mai Mai, is also located in Jeppestown, providing business opportunities and a spiritual space primarily to Zulu culture. Due to its proximity to the CBD and good connections to local infrastructure, Jeppestown has become attractive to developers and investors in recent years. The highly controversial development of Maboneng (Place of Light) is stimulating economic activity in an underutilized part of the city and has created a relatively safe public island for middle- and upper-class citizens to visit and to feel part of the inner city. At the same time, its ongoing gentrification excludes and displaces the not-so-well-off and clearly reflects the city's class differences and today's motives for segregation.

Moving between research and engagement, PublicActs invites creative provocateurs to playfully explore, test and act upon existing emergent spatial conditions with site-specific interactions, installations and performances.

Act #1 From Compound to City

Fig. 4-1. Akona Kenqu (2014), Act #1 Performance [PublicActs, Johannesburg]

Euridice Kala's performance series reflects on the monotonous and isolated routine of daily arrivals and aims to appropriate and co-create space through common experiences. Her exploration revolves around the emerging situations that the continuous influx of people to Johannesburg creates, i.e. informal transport systems that need to be integrated into the city's agenda as it starts filling gaps that the formal systems cannot fill.

Act #2 Five by Five: Obstructions / Markers

Fig. 4-2. Eugene Arries (2014), Act #2 Installation [PublicActs, Johannesburg]

Zen Marie's installations are for the commemoration of the Unknown Dead — people who have died in the streets of Johannesburg due to violent crime. Marie's work comments on the emergence of areas of violent crime because of the neglect of public infrastructure, such as streetlights, and lack of economic opportunities.

Act #3 Hollow Scene Overflow

Francis Burger's Field-Note-Book and Guided-Walks are exploring natural life in Jeppestown, demonstrating the existence of indigenous plants in the city that have resisted attempts to introduce a foreign landscape. Burger's Guided-Walks reclaim the city's public spaces in the communal act of walking.

Act #4 For Love of the Other

Joao Orecchia's sound installations create unlikely spaces of kindness and vulnerability. The installations reflect on the harshness of public spaces in Johannesburg where encounter is seldom possible. Innovative design approaches need to be geared for multiple user groups and aimed at connecting the many others in the city.

Act #5 Gathering: The Basic Unit of Public Space

Fig. 4-3. Jhono Bennett (2014), Act #5 Seating exercise [PublicActs, Johannesburg]

Jhono Bennett's interactive seating exercises test and trace gathering arrangements at the Kwa Mai Mai market. This powerful exercise reflects the need to host multiple desires in public spaces.

Act #6 Story-Planting

Linzi Lewis is interested in the emergence of sacred spaces of spirituality and tradition. Lewis points out the relevance of heritage in order to understand cultural-specific appropriations of spaces and suggests preserving traditional sites in the city.

The creative strategies bring to view the dramaturgy of public spaces in Johannesburg: the disconnection of people to space due to unresponsive planning and the disconnection of communities as a result of segregated and exclusive spaces, both of which lead to a lack of cohesion. Further, underdevelopment and mismanagement of public infrastructures often allow violent crime to enter public spaces. The disregard for traditions and

rituals that were removed from the urban context under apartheid continue to be replaced by Western visions of publicness, but they urgently need to be reintegrated into the city's urban realm in its becoming of a world class *African* city.

Through the festive moments accomplished by various creative outcomes, a diverse public is invited to a final act in which communities can meet and engage with one another. With the intention of finding ways to translate these innovative experiments into something tangible in city-making — whereby democracy, innovation and the emergent intersect — a range of urban actors across various disciplines critically reflect and rethink individual and communal perceptions, spatial conditions and the future production of public space in Johannesburg.

Engaging various urban actors in a dialogue of city-making has demonstrated an incredible output of ideas. It is the beginning of a mediation process among those involved, i.e. architects, urban planners, local stakeholders, decision makers and ordinary citizens. PublicActs takes people out of their comfort zones and allows them to experience aspects of the city they think they know and that are not quite as visible as they should be.

Fig. 4-4. Thireshen Govender (2014), Act #6 Public discussion [PublicActs, Johannesburg]

PublicActs points out the relevance of bringing a focus to everyday events. It is about bringing the ordinary and the emergent into the forefront of city-making agendas. We are at a point in the city's growth where we

can integrate the innovations and spatial logic between different classes. This could generate a more resilient and authentic city experience consistent with Johannesburg.

It is not only in Johannesburg where citizens are too often unaware of what is going on in their city or even a few kilometres away. It is through dialogue and engagement that synergies can be unraveled that form the basis of democratic co-creation and co-habitation. "Collaboration is key to this city's sustainable growth and these kinds of platforms are where such collaborations are born."[5]

Acknowledgment of a variety of definitions, interpretations and usages of public spaces in Johannesburg is the starting point for establishing everybody's right to the city, no matter their race or class. It is the public where citizens have the opportunity to meet and where the city can grow together in a social, cultural and spatial sense.

PublicActs' creative provocations have showcased current conditions and issues in Johannesburg. The complexity of these conditions and issues reveal that there is no quick fix, but rather emphasize the role of the architect and urban planner today. "They need to work carefully and in an immersed way with the community. They have to become strong listeners."[6]

[5] Emily Taylor, 2014. Urban Conservationist about PublicActs.
[6] Alex Opper, 2013. The "Liveworlds" of Marlboro South.

SQUATTED SPACE: FROM THE OTHER TO THE SUBJECT OF UTTERED SPEECH

RENA TAVERNARAKI

This paper takes an approach towards squatted buildings as a subject of speech utterance. Considering occupied space as a spatial derivative stemming from a collectivity, and in an effort to approach occupied space and its user, not fragmentarily but as a cohesive organism as this coexistence occurs, an aspect of the squat as the Other and by extension a possible subjectivity will be explored. Our guidance will be Lacan's teaching on the structure of the subject. We will confine ourselves to the development of three dimensions through which Lacan approaches the structure of the subject — the *name and the singularity*, the *management of body image* and the *relationship with the Other*. The examples are mainly squats in metropolitan Athens with the main example of Villa Amalias, which at the moment has been evacuated.

Body image: squatted shell

The occupied space is a body that acts declaratively in the urban web. It is a priority of the occupiers, to mark space, separating it from the surrounding environment, thus making it readable and recognizable. Graffiti, banners, posters are their tools. The facade of the squat underlies the place of fermentations. It is the *There* that mediates in order to produce common and powerful statement and the loads generated from the use to meet the ideological loads of the external surface, of the cover. The shell indicates the use, the ownership. It bears ideological, political, aesthetical loads, positions that the users placed on the surface, converting it to a transmitter of uttered speech.

Fig. 4-5. rue de Rivoli 59, Paris

Fig. 4-6. Liebig 14, Berlin

In the case of squatted houses, the users' intervention is mostly epidermal. They dress the occupied shell with points, stigmas that identify the action. A shell that already carries strong ideological and morphological loads, design imperatives.[1]

Fig. 4-7. Villa Amalias, basement, Athens

[1] The buildings that are squatted in Greek territory are mostly neoclassical buildings. Serving as an emblem of the bourgeois class of the era it belongs to, the neoclassical building is not a shell that characterizes sovereign the public intention. One could argue that a motive for squatting them, besides the position these buildings occupy in the urban web — they usually serve as landmarks — is for the group of squatters a diversion of the ideological loads borne by the shell.

Fig. 4-8. Villa Amalias, Athens

The body is dressed, the intention is mediated. An empowerment of speech, through image management, through the ideological loads it carries. Squat is structured on a powerful carrier, aiming at the statement,

the diversion of the shell's ideology through an insertion of classes of images applied as layers. It is about a body on a body, an intention expressed through image management, a declarative action.

We speak therefore for double structure, a palimpsest that is constantly committed through a system of narration, through a system of writings, stigmas on the surface of squatted shells. An allegorical construction.

Allegory is the art by which one thing is related and the other becomes understandable. Allegory is a structure, a set of relations. It attempts to bring into contact two classes of images that attempt to give reason to two classes of spatiotemporal conditions. For Fletcher, the establishment of reference, the comparability between them, makes the one the meaning field of the other. The meaning we receive from the narration comes from a coordinated construction, so as to not allow misunderstandings.

In occupied space, layers of materials, information, aesthetic and morphological loads are combined to transform the initial facade, to provide the new image. Essentially with the mask, this epidermis is that which man is called to converse with, making himself a subset, a part of the new organism that will consequently communicate with the environment. Two conversations, successive and parallel. A *prosopeion*, mediator and receiver of reality. Through the allegorical mode, squatted space is suggested as the result of a fusion similar to that of the relationship characterizing the face and the mask. A reference to the squat is a reference to a cohesive organism. An organism that is constituted aiming to the declaration, the address, the **differentiation**.

The name

Every occupation has loads attributed to it by its users. The occupied building is the field of their requests, the roof of their visions. As a result, the particularity of each group, the vision presented as dominant in each case, acts as a differentiating factor that separates a squat from another. Visibly, functionally, ideologically, even nominally. The occupied building constitutes an autonomous organism and is treated as such by its occupants. Although it communicates with "allied" buildings, the squat is governed by its own distinct codes and rules, something testified by the

fact that each occupation is assigned a name, usually from locality, the position of the building in the urban web.[2]

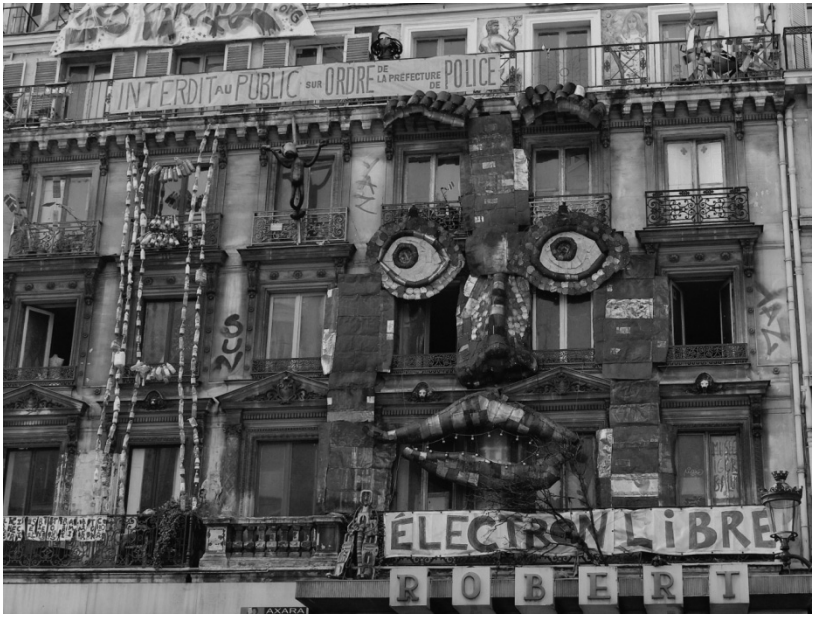

Fig. 4-9. rue de Rivoli 59, Paris

Villa Amalias. Users name to imply identity, to claim the establishment of a new organism that will function under the statehood of occupation. The building is cut off from the previous use and identified as a squat. It is not only the state of ownership that is declared but also the intention of the occupation functioning not just as a roof — referring to the use of the shell to accommodate the housing needs of the users — but as a cohesive organism, a distinguish entity in the already structured city environment. A transmitter of speech — political, social, cultural.

Building and users operate under the respective signifier — the name. Through the name attribution, singularity is established. Differentiation is asserted as a factor of attribution and consequently structure of identity.

[2] Lelas Karagianni (1988), Kerameikou (1989), Villa Amalias (1990), Mitropoleos (1990), Fullis and Ferron (1991), Villa Varvara (1994), Neigi, Ktimatos Prapopoulou (2006), Skaramanga (2009), etc.

Villa Amalias is converted into a reference point, being "subjectified" in a way. The actions, the group that owns the building, the building itself, respond to the name of the squat. Villa Amalias is now acting, declaring, accepting, being threatened, resisting. The reference to each squat is a reference to the imperatives of its history, to the actions that it hosts.

Fig. 4-10. Flyers collected during a demonstration against the impending evacuation of Villa Amalias

Lacan, analyzing the status of the subject, refers to the proper name: "*The relationship of the Subject with the signifier respondent by its name is nothing more than a relationship of identification. The subject is called to the extent that it is identified with the pure signifier, the proper name, meaning something that is of the singular characteristic order."*[3] In an attempt to approach the role of the proper name attributed to occupied space, we proceed on a perspective of the squat under this prism. In the case under study, it is the group, the use, everything that occurs under the stable signifier of the name that is called to be identified with what it stands for, with what Villa Amalias is referring to. The events that take place inside, the actions of the users, relate and answer to a collectivity. They are addressed and ascribed to the squat, to its history, its imperatives.

Villa Amalias is located at the crossroad of Heiden and Acharnon Streets. It is interesting that the name in Villa Amalias' case was given by the initial squat, the one of the lodge at Street Amalias 56. The group moved, occupying another building, but the name remained, bringing memories of the first event, referring to the original biddings. The organism created after the act of occupation is not reconstituted from scratch. The name signifies the preservation of identity.

Following the reasoning of Lacan, squatted space, as an organism and as a prospective (as we will see below) "subjectivity," the actions and the users collaborating under the proper name, are what are called to correspond to a field of expectations that the proper name, Villa Amalias, represents. The sound of it also invokes events, memories. It refers to the scheme of the squat, to occupiers' visions and the testimony of the original event, forming a thread from the past while intent outlines the future. According to de Certeau, we recognize that the functions of proper nouns, besides making habitable or reliable the place they clothe with a name, also "remind or recall ghosts budging still, nestled on gestures and body as they walk."[4] Villa Amalias is called to cope with the imperatives that drafted it, with the event that "gave birth" to it, while being identified with what the proper name professes — the very act of the occupation of space and the conversion of it to a body of declaration.

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[3] J. Dor, *Introduction to the Reading of Lacan: TheStructure of the Subject* (Athens: Plethron Press, 1996), 109.
[4] M. de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984), 268.

The squats, keeping an autonomous status, conclude among themselves, to a lesser or greater degree, relationships, forming a network in the urban web. A network of actions, statements, names, singular "subjects." A web that connects squatted spaces in the city. Names are unseen connections, diodes. The naming functions as a catalyst for unification. A feature that, although it differentiates, is also a common feature, an attribute that indicates the practice of the occupation, the intention of diversification, the creation of a potential "subjectivity."

The constitution of the Other: the subject of uttered speech

The statement, the ideology, seeks an expression field, and this is the city itself, the buildings, the blocks, the streets. This intention, expressed in the form of graffiti, political poster or slogan on the wall, leaves traces of what is hosted "under the shadow" of the squatted shell. The meeting with these traces is a meeting with the occupation itself. The villa is the one that leaves marks on the city, claiming extra vital space in an urban environment governed by rules. Through this claiming, it interacts inevitably with the public. Public intention obtains hypostasis when the look of the passer-by comes into contact with these elements.

Actions, declarations, are imprinted on the shell, rendered as messages, converting the body of the occupation to a memorandum of use. The commonly recognizable symbols used for this purpose constitute the semantics of the occupation. A dialect is established, a recognizable speaking. A social event is performed. Declaration is continuous. Villa Amalias functions as a transmitter looking for recipients.

By recognizing the establishment of speech, the condition of dialogue or the transmitting of statements by the occupation, the question arises of what this entails for the spatial derivative of the squat. As a product of a special condition, perceived in direct relation with the use it is hosting, as identified through this, what role does it play as a factor of the dialogue that it causes?

In an attempt to approach the relationship between transmitter and receiver, the two factors of this "conversation," we will borrow Lacan's reasoning, positioning speech and language as an element of mediation, as a term between the Subject and its mirror image, as the prism of our perspective.

"In the place of the Other we introduced ourselves as Subjects of speech," Lacan says.

When a Subject communicates with another one, the communication (the "common language") is always mediated by the imaginary axis. In other words, when a subject addresses another real subject, it occurs due to the division imposed by language, to be an I [Moi] communicating with one another and yet similar to it I [Moi].[5]

> *"Indeed we address to A1, A2 which are the ones that we do not know, actual Others, true subjects. They are located on the other side of the wall of language, where by principle I never reach them. Basically, it is them that I'm aiming to whenever a true word is uttered. But, by reflection, it is always that I come across. I target always the true subjects, to be content with the shadows. The subject is separated from the others, the true ones, by the wall of language."*[6]

The dialectic of intersubjectivity assumes a true Other, whose existence we establish to finally accept that the speech of the subject results in an imaginary exchange of an ego [moi] to another:

> *"If the speech is founded on the existence of the Other, the real one, the language is made to invoke us to the objectified other, the one with which we can do whatever we want, including to consider him an object (...) when we use the language, our relationship with the other plays constantly within this ambiguity. In other words, language is made to entrench us irrevocably through the Other and to prevent us irrevocably from understanding him."*[7]

For Lacan, the distinction between speech and language phenomenon corresponds to the distinction between the whole and what is very specific. When talking to others, we assume that we are talking to subjects. Instead, language function has objectivity. It allows you to name things and those similar to us. Thus, to the Symbolic, I meet the Other on two levels: as a pragmatic reference of language and as a supposed subject to whom I address.

The set of signifiers of the Other represents the subject. Lacan would define the point as that "that represents something for someone." On the

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[5] J. Dor, *Introduction to the Reading of Lacan: The Unconscious Structured Like a language* (Athens: Plethron Press, 1996), 170.
[6] Ibid., 171.
[7] Ibid., 171.

contrary, the signifier is that "that represents the subject for another signifier." Since the total of signifiers is located in the Other, Lacan would also name him *treasure of the signifiers*. Indeed, in the Other, and first of all in the mother, are placed the elements that allow the subject to speak. Also the Other is the one that the Subject addresses with his speech.

At the level of the symbolic field, we are placed and recognize the environment by identifying ourselves as part of it through symbols, signs. Common signs that are derived and identified in the field of the *Other*. Sideris, through Lacanian language, defines the Symbolic Other, "*a set of otherness. i.e., orders of symbols and rules governing regulating our lives (and the building's life too), being internalized (in the soul or the construction, respectively). Some other otherness yet, correspond to representational systems, bringing collective fictions and attitudes, setting up the public imaginary — where are also included patterns of outlook and experience of the architectural space."*[8] The meeting with the Other is a meeting with the various versions of the Other, i.e. the "implicated otherness."

It would not therefore be a contradiction in approach that would make Villa Amalias (and by extension the squatted space) as a version of the Other, the implicated otherness according to Sideris. Villa Amalias, seen as a supposed subject that we address through our meeting with "her."

According to the reasoning developed in this research, the occupied space is constituted as a transmitter of declaration, of speech, through the constitution of the textual surface of the facade, the conversion of a squat's body to a system of continuously written intentions. When meeting the squat, a dialogue with a cohesive organism is structured, where users and building, actions and uttering, operate under the same signifier, the squat's name. An organism emitted by a "fusion," equivalent to the treaty that governs the relationship face mask. It could therefore be argued that it is not just a supposed subject to which we refer to, but a "subject of speech utterance." As Lacan defines it, "The speaker, to the extent that it is considered to be a subjective entity, being the place and the factor of creation of its uttering."[9]

[8] N. Sideris, *Architecture and Psychoanalysis: Fantasy and Construction* (Athens: Futura, 2006), 142.
[9] Dor, , 159.

To diverse it, squats are defined, perceived, set up as "subjects of uttered speech" on the multifaceted complex of the urban landscape, focusing on the statement. A statement addressed and composed to the Other — the passer-by, the viewer, the political power, the urban continuum itself. A declaration that is targeted, recognizable, identifying the existence of the occupation and distinguishing it from the whole, setting it as the unit called to communicate with the environment to support the purpose of its constitution. Anthropogenic or not, the environment is composed for the occupation by "subjects" to which it is addressed to. It is a field of speech utterance, a meeting place.

Bibliography

Adilkno. *Cracking the Movement: Squatting beyond the Media.* New York: Autonomedia, 1994.

Bachelard, G. Lescure J., *L'Intuition de l'Instant*. Paris: Stock Press, 1994.

—. *The Poetics of Space.* Boston: Beacon Press, 1994.

Bourdieu, P. *The Logic of Practice*. Translated by R. Nice. New York: Polity Press, 2009.

Krumel, C. *Among a Refracted Arrow and Straight Line*. Athens: Primitive Press, 2005.

de Certeau, M. *The Practice of Everyday Life.* Berkeley: University of California Press, 1984.

Dor, J. *Introduction to the Reading of Lacan: The structure of the Subject.* Athens: Plethron Press, 1996.

—. *Introduction to the Reading of Lacan: The Unconscious Structured Like a Language.* Athens: Plethron Press, 1996.

Fletcher, A. Allegory: *The Theory of a Symbolic Mode.* London: Cornell University Press, 1964.

Heidegger, M. *Poetically Man Dwells*. Translated by G. Ksiropaidis. Athens: Plethron Publications, 2008.

Jung, C. *Man and His Symbols.* New York: Doubleday Press, 1964.

Lefebvre, H. *The Production of Space.* Oxford: Blackwell Publications, 2007.

Levi-Strauss, C. *The Way of the Masks.* Translated by S. Modelski. Seattle: University of Washington Press, 1982.

Massey D. *For Space.* London: Sage Publications, 2005.

Tavernaraki, Rena. "Squatted Space: From the Allegorical Mode to the Subject of Uttered Speech." Master's thesis, National Technical University of Athens, 2013.

Sideris, N. *Architecture and Psychoanalysis: Fantasy and Construction.* Athens: Futura, 2006.

Stauridis, S. *Memory and Experience of Space.* Athens: Alexandreia., 2006.

BEYOND DUALITIES: GENDER AND THE POSSIBILITIES OF "OTHER" SPACES

ANNA PAPADOPOULOU

Abstract

Through investigating some of the most prominent perceptions of dualities that relate to the built environment, this essay aims to identify alternative systems of negotiating urban space through a temporal understanding of "other" spaces. While binary opposites (social and built) are examined in order to uncover paradoxes and encourage the possibilities of other distributions, the consequent dismantling of the spatial binaries is key in enabling awareness to their intersecting boundaries, which then allows for the recognition of diversity.[1] The essay establishes spatial relationships of gender in the home, transferring them to the urban setting of the twentieth-century post-industrial metropolis, where enabling conditions of urban equality have been an illusive target by cross-disciplinary theoreticians and practitioners alike. Thus locating gender through this process of inquiry can be pivotal to the pursuit of creating egalitarian cities. Research focuses on contemporary urban discourse of the complex layers and connections between spatial and social dualities and mediates between theoretical space and practical applications.

The underpinning of the essay is the exploration of "other" spaces beyond the permanency of binary relationships, using gender as a means of reading three-dimensional space. Operating under the widely accepted assumption that gender is a social construct and by identifying how the permanency of this construct can be traced in the built environment, "other" spaces can then be assumed to acquire a temporal character, thus establishing a relationship between the permanency of the binary manifested in constructed space and the temporality of "other" spaces and conditions. The dualities examined focus on the public and the private

[1] Helen Jarvis, Jonathan Cloke, and Paula Kantor, *Cities and Gender*, Routledge Critical Introductions to Urbanism and the City (New York: Routledge, 2009), 10.

sphere and the production and consumption of architecture. "Other" spaces are considered as entities expressed through complex social engagement poised to have a dynamic and unpredictable interaction with the built environment. Perceptions of "other" spaces are considered through the work of scholars of gendered space, such as Mary McLeod and Daphne Spain. As dualities are evaluated for their exclusionary consequences, the possibility of "other" spaces can act as an advocate of spatial democracy.

Dualities: from the modern house to the post-industrial city

Since the modern house is an artefact produced by the creative mind that has been subjected to generations of constructed identities, it crystallizes the interplay of relationships between the two constructed genders. Spatial elements such as the "master bedroom," the "kitchen" or the "study" imply a home intended for a married couple, discretely eliminating other possibilities, where the woman will perform her duties as a cook and the man will require quiet spaces for study.[2] It is by no means implied that these settings are valid in contemporary, post-modern residential design, but their prevalence undoubtedly had a lasting effect on the cultural development of gender. On the surface, allocating spaces within the home not only to a particular use, but to a particular user may not seem particularly significant. However, when this relationship is recreated in the workplace, the impact reaches further. With the parallel advent of the city's post-industrial transition and women's entry in the labour market, the physical and symbolic barriers between men and women set in place by the typical office layout were a clear extension of the conditions set at home. Women working in the early and mid-twentieth century traditional office space were seated in more public, easily monitored locations signifying less control and discouraging information exchange between women's supportive office role and male managerial personnel. Ultimately, women had less access to information, diminishing their esteem and their potential even further.[3]

[2] Hilde Heynen "Modernity and Domesticity," in *Negotiating Domesticity, Spatial Productions of Gender in Modern Architecture*, ed. by Hilde Heyne and Gulsum Baydar (London and New York: Routledge, 2005), 1–29.
[3] Daphne Spain, *Gendered Space* (Chapel Hill and London: University of North Carolina Press, 1992), 206.

As the industrial city continued to grow and became more populated, polluted and unlivable, the notion of separating functions and urban uses developed as a means of regulating the ever-growing insalubrities. The modernist movement furthered this method of zoning to promote order, rationality and separation as key spatial priorities. With the appearance of the automobile and the intention of reducing inner city density, suburbanization began to take shape, applying physical distance between women and access to the labour market. By separating residential and commercial activities, gender division becomes inevitable, thus furthering the perception that women's realm is limited to domestic space and men's domain is the public, commercial and corporate one.

Two spheres: perceptions

The perception of the two spheres where each gender is perceived to come to its own, is profoundly limiting not only on an ideological level but on an executable level, first because it excludes the possibility of diversity and the acknowledgment of multiple truths, and second because the complexity of the urban system cannot possibly conform to such a reductive typology. Why, then, is this binary separation so pervasive throughout theory and culture, even though it does not respond to conditions on the ground?

Although the possible agenda behind the insistence of this polarity is beyond the scope of this paper, it becomes interesting to note that the perceived connection between domesticity and privacy is strongly maintained in (mostly Western) nations in means that are obvious, such as zoning laws and in other perhaps less so, such as the illegal nature of what are largely perceived to be domestic activities, such as sleeping in metro stations or living on the street. Nevertheless, it is important to acknowledge that this binary system remains in fact a conceptual gray area where social perception intersects the principles of urban design.

"Other" spaces: physical space and social behaviour

Thirdspace, also "otherness," alternative or "other" space, describes a spatial situation where not only one is rid of perceived dualities and binary systems, but a situation that allows and enables the possibility of redefining social constructs towards a more egalitarian built environment. In "Everyday and 'Other' Spaces," Mary McLeod proposes two types of

"other" spaces: spaces of others and other kinds of spaces.[4] McLead questions the possibility of architecture's focus on "otherness," "disruption" and "break" and wonders how this condition is limited by political and social vision. She discusses two categories of scholars who advocate in favour of "different" and "otherness" and proposes them as an improvement over the status quo. The first category is that of the deconstructionists, who subscribe to unpredictability and controlled chaos and who identify themselves with the writings of Derrida. The deconstructionists see "otherness" as an inversion or a disruption of the formal status quo of architecture.[5] The second category refers to the subscribers of Foucault's "heterotopias," who consider "otherness" as a social "other." Foucault's "other" places are places that are unusual, out of the ordinary, and it is at places such as these where disorder, multiplicity, perfection or imperfection can be observed. These observations are crucial and pertinent to the existing social order and grant an insight into the banality of our everyday existence.[6] McLead's position on "other" spaces is deeply rooted in patterns of social behavior, addressing the otherness of spaces both conceptually and in terms of physical space.

Similar to the physicality of McLeod's "other" spaces, Doina Petrescu considers the possibility of "otherness" found in interstitial spaces.[7] She calls them "leftover" spaces, which are sometimes created from what is overlooked by the real estate market and by authorities.[8] These "other" spaces function as an alternative to more conventional forms of public space that have become subject to surveillance and control, with their rules and codes subject to constant redefinition. They are heterogeneous, fragmented and multiple.[9] Although rooted in social issues, McLeod and Petrescu's approach is distinctly architectural, skillfully avoiding the dubiousness of the conceptual perspective. In contrast, Soja and Hooper use the term *thirdspace* to describe an alternative concept to the binary

[4] Mary McLeod, "Everyday and 'Other' Spaces," in *Architecture and Feminism*, ed. Debra Coleman, Elizabeth Danze, and Carol Henderson (New York: Princeton Architectural Press, 1996), 1–37.
[5] Ibid.
[6] Ibid.
[7] Doina Petrescu, "Losing Control, Keeping Desire," in *Architecture and Participation*, ed. Peter Blundell Jones, Doina Petrescu, and Jeremy Till (London and New York: Spon Press, 2005), 42–71.
[8] Ibid.
[9] Ibid.

ordering.[10] While their concern is not limited to gender democracy, Soja and Hooper posit that this alternative spatial condition must eliminate the need of the binary components to assert one over the other.[11] They describe it as a condition of political choice that allows for radical openness, flexibility, multiplicity and the recognition and occupation of alternative geographies. It must be different, but not entirely detached by the conditions defined by the original binary system, and it must function between and within objectivism and subjectivism.[12]

"Other" spaces: temporal expressions

The conditions created by the Mothers of Plaza de Mayo is an example of how "other" spaces are temporally transcended when confronted with physical and perceptual constants. It becomes fascinating to observe how a formal public space, whose presence and materiality was intended to signify classical order and political prestige was appropriated by a group of heroic and persistent women who quietly pled husbands and children had been secretly kidnapped by the Argentinean military dictatorship. The women whose white kerchiefs became an international symbol of human rights, gathered every Thursday at the end of the workday trying to call attention to their cause and to project support towards other women in similar circumstance. They moved in pairs, as though in a dance, because any gathering of three or more people was considered a demonstration, changing their partner as often as necessary in order to maintain the flow of information. The women's spatial and urban appropriation is testimony that public space in a physical sense is not defined by buildings and built space, but instead engaged by social action by overcoming perceptual boundaries confining them to the domestic, private realm.[13]

Important to the argument of temporality is the mothers' presence every week on the same day. Although the significance of the choice of day is not known, the repetitive nature of it alludes to other temporal

[10] Soja and Hooper, "The Space That Difference Makes," cited in Jos Boys, "Beyond Maps and Metaphores? Re-thinking the Relationships between Architecture and Gender," in *New Frontiers of Space, Bodies and Gender*, ed. Rosa Ainley (London and New York: Routledge, 1998), 202–216.
[11] Ibid.
[12] Ibid.
[13] Susana Torre, "Claiming the Public Space: The Mothers of Plaza de Mayo," in *Gender, Space, Architecture: An Interdisciplinary Introduction,* ed. Jane Rendell, Barbara Penner, and Iain Borden (New York: Routledge, 2000), 140–45.

theories, such as Judith Butler's treatise on performativity, in which she argues that gender is not assigned at birth, but is constructed through a system of authoritative, repetitive discursive or performative forces.[14] Performative conditions, by virtue of their repetitive nature, refer to temporal relationships and conditions, not unlike the notion of everyday life as it is examined by Lefebvre and de Certeau. In fact, several theorists and researches have been approaching urban design by suggesting progressive infrastructure that prioritizes everyday life as a means of creating conditions of gender equality.[15]

"Other" spaces: the porosity of boundaries

Puncturing the boundary of the public realm with injections of privacy can be encountered in spatial institutions such as museums. Employing the perception that everyday life refers to everyday domestic activities, one becomes aware of how the viewer and, consequently, the public has become intrigued by women's domestic realm. Originally considered a repository of artifacts of high cultural and historical value, museums[16] gradually began collecting everyday objects of popular culture.[17]Although the origins of this fascination are layered and difficult to trace, the mere state of exposure supports the position of a number of theorists who believe different preoccupations and occupations between the sexes ought to be explored, embraced, celebrated and exploited.[18] Similarly, other spatial institutions where a paradox between the public and private is encountered are hospitals, which are an undisputable part of the public sphere and yet are host to such distinctly private acts such as birth and death.[19]

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[14] Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* (New York: Routledge, 1990).
[15] Jarvis, Cloke, and Kantor, *Cities and Gender*, 132.
[16] Two examples are the National Museum of Women in the Arts in Washington, DC, and the Musée des Arts Populaires in Paris.
[17] Lynn Breslin, "Confessions in Public Space," in *The Sex of Architecture*, ed. Diana Agrest, Patricia Conway, and Leslie Kanes Weisman (New York: Harry N. Abrams, 1996), 263–72.
[18] Brenda Vale, "Gender and an Architecture of Environmental Responsibility," in *Desiring Practices: Architecture, Gender and the Interdisciplinary*, ed. Duncan McCorquodale, Sarah Wigglesworth, and Katerina Ruedi (London: Black Dog Publishing, 1996), 264–72; Susan Kingsley Kent, *Gender and History* (New York: Palgrave Macmillan, 2012), 44.
[19] Breslin, "Confessions in Public Space."

Proposals on disrupting perceptual barriers of the public and the private that have been broadly discussed and in some cases implanted have also focused on collectivizing housing design thus enabling women to share everyday tasks, such as cooking, laundry, day-care, etc., so that women may have more time away from domestic chores. In this scenario, "other" space is regarded as a reconfiguration of the private space. Some theorists considered that use-assigned rooms be eliminated or renamed something more innocuous to encourage less limiting uses. Some even suggested the notion of kitchenless houses that do not create the anticipation of women's association with household chores.[20]

As dualities are a product of physicality and perception, they must be negotiated and addressed in terms of access and proximity of the traditional labour market and corresponding residential areas, but also in terms of access to knowledge and information so that culturally inflicted limitations can be overcome. In the process of designing egalitarian urban spaces that mitigate social and spatial isolation, designers of the built environment operate within an enigmatic state where they are called to *design* — to apply intension — in an otherwise un-designable condition. In spite of theorists' and practitioners' constant ambition of re-creating the ideal, orderly city, true urbanism implies flexibly, fragility, resilience and disorder. Fortunately this constant context of somewhat organized chaos affords designers plenty of space to manoeuvre.

[20] Spain, *Gendered Space*, 236.

CHAPTER FIVE

SENSUAL IMMERSION

PERCEIVING ATMOSPHERES: A PHENOMENOLOGICAL EXPLORATION

MALTE WAGENFELD

> Air envelopes us in sensual effect. It can warm or chill us, it carries smell and sound; breezes stimulate the skin, and wind can literally move us; sometimes we can even taste the air.

Perceiving Atmospheres describes a six-year investigation into atmospheric phenomena and perceptual atmospheric encounters, and our relationship to air — social, cultural, philosophical and physiological — with the intent of proposing a new design typology of air with which to shape interior atmospheres.

English design theorist Helen Mallinson raises the question, "Do we forget air when we think about architecture as 'space', and if so, what are the ethical consequences of this forgetting?" [1] She raises this in relation to the prevailing paradigm of the air-conditioned interior climate. This logic of tightly controlled, standardised air on the inside, hermetically sealed off from the outside — beside being exceedingly energy intensive[2] — separates interior spaces from their atmospheric geography and related phenomena, largely neutralizing them in terms of complex perceptual experiences, rendering such interiors "experience-proof."[3]

The open window

This practice is global and highly pervasive, but it is a relatively recent development, having little real traction until just before the mid-twentieth century, when it spread like wildfire. Before then, an entirely different

[1] Helen Mallinson, "Metaphors of Experience: The Voice of Air," *Philosophical Forum* 35, no. 2 (2004): 161.
[2] The paradox is that increasingly variable and unpredictable weather patterns and global warming are driven by, at least in part, a desire for highly homogenised global interior climates.
[3] Mallinson, "Metaphors of Experience," 173.

paradigm was at play, one that celebrated the variances of "natural" outside air. This is perhaps best captured by nineteenth-century Romantic art. In his acclaimed essay, "The Open Window and the Storm Tossed Boat," Lorenz Eitner reveals the open window as a potent symbol of nineteenth-century art that concisely captures the "romantic attitude towards nature."[4] Eitner explains that the "pure window is a romantic invention — neither landscape, nor interior, but a curious combination of both."[5] Inspired by Eitner's essay, the New York Metropolitan Museum of Art held an extensive exhibition featuring over 40 artists focusing on the iconography of the open window,[6] including Adolph Menzel's painting *The Balcony Room* (1845). This is a particularly compelling example as it does not actually offer a view of the outside, but instead reveals the poetic play of phenomena. As Eitner describes it, "the sunlight and the air from the outside enters a quiet room, quite tangibly, in the luminous folds of the curtain."[7] According to Eitner the image of the open-window was so pervasive, across "whole schools and movements … [that it expressed] … collective rather than purely subjective attitudes."[8] In the early twentieth-century United States, the open window remained a potent recurring symbol, especially in the paintings of Edward Hopper. These paintings are so evocative in their allegory, that we can literally feel the air, light and elements upon our skin.[9]

This connection of being with "nature" and immersed in "natural" phenomena was not limited to visual artists. Philosophers (from Hume to Heidegger), writers, physiologists, medical practitioners, progressive educators — the international open air school movement[10] and the Open Air Crusaders[11] — and public health campaigners, as well as designers, all highlighted the physiological, health-giving and beguiling aesthetic qualities of being in an emergent atmosphere of fresh air (exterior or interior). The presence of changing stimuli and variance was considered

[4] Lorenz Eitner, "The Open Window and the Storm-Tossed Boat: An Essay in the Iconography of Romanticism," *Art Bulletin* 37, no. 4 (1955): 286.
[5] Ibid., 285.
[6] Sabine Rewald, *Rooms with a View: The Open Window in the 19th Century* (New Haven and London: Yale University Press, 2011), 3.
[7] Eitner, "The Open Window and the Storm-Tossed Boat," 286.
[8] Ibid., 282.
[9] For example, see Hopper's *Morning Sun* (1952) and *Night Windows* (1928).
[10] Sarah Mirams, "Situated among the Gum Trees: The Blackburn Open Air School," *Provenance: The Journal of Public Record Office Victoria* 10 (2011).
[11] Sherman C. Kingsley, ed. *Open Air Crusaders: A Story of The Elizabeth McCormick Open Air School* (Chicago: Lakeside Press, 1911).

both beneficial and something to be celebrated. The sanatorium, as a concept, succinctly captures the theories and sentiments of these diverse groups, with its focus on our connection to nature, promoting not only the aesthetic pleasures of sunshine, fresh air and diet while shunning oppressive and restrictive clothing, but also presenting this lifestyle as a medical practice and cure and scientifically analysing and documenting the health benefits. Alvar Aalto's Paimio sanatorium (1932) seamlessly and elegantly embodies these ideals, integrating design, medical theory and philosophy.

Nailing the window shut: the hermetically sealed interior

So why was it decided to "nail" the window shut, rendering it inoperable? And how did air, as a spatial design element, come to be so categorically forgotten? The development of the hermetically sealed, air-conditioned interior, along with the construct of a standardised comfort zone — a singular set of "optimal" interior climatic conditions or "cool, still, air"[12] — was, as historian Gail Cooper persuasively illustrates, not the result of the reasoned and inevitable course of human and technological evolution, as it is sometimes presented, but the consequence of "a series of contested choices."[13] These choices were based upon a rationale seeking to optimise climatic conditions for quality control during the manufacture of commodities, especially for hydroscopic materials, and not for human comfort. This required a resolute logic to be established and adhered to: first, the particular conditions constituting an optimised climate, for the purpose of manufacturing, needed to be determined and the method for delivering these engineered; second, critically, to ensure that this manufactured climate could be stringently controlled required the factory to be sealed off from the variable external atmosphere. Later, when the desire to optimise climates for human comfort arose, the established logic was simply reapplied, drawing on a mechanistic model of human physiology that relied on a "quantification of human comfort"[14] derived through laboratory tests in which humans, like the materials used for

[12] Richard de Dear and Gail Schiller Brager, "The Adaptive Model of Thermal Comfort and Energy Conservation in the Built Environment," *International Journal for Biometeorology* 45, no. 2 (2001): 100–108.
[13] Gail Cooper, *Air-Conditioning America: Engineers and the Controlled Environment, 1900–1960* (Baltimore: Johns Hopkins University Press, 1998), 4.
[14] Ibid.

manufacture, were deemed "passive recipients of thermal stimuli."[15] The physiological parameters analysed were strategically limited to those that could be easily measured and successfully serviced by the new air-conditioning systems and necessitated, as in the previous case, the interior atmosphere sealed off from the outside.

Although this approach was contrary to the practice of the time and contradicted the then latest physiological research into what constituted healthy interior environments, and despite the many opposing voices, especially from the medical lobby, the engineers promoting their "man-made weather" proved a formidable force. Their tactic was to emphasise their newly developed quantified definition of comfort over health and aesthetic pleasure. By advocating their concept of standardisation, the very antithesis to natural climatic conditions, and by convincing regulatory bodies to adopt this model, largely through a process of "rhetorical persuasion,"[16] the HVAC (heating, ventilation and air-conditioning) engineers were slowly able to chip away at the oppositional argument. The "professional conceits"[17] of the burgeoning profession of HVAC engineers dovetailed with the largely stylistically driven architectural vision of the new glass curtain–walled tower, which due to the heat build up from the massive solar gain associated with such a design, necessitated the introduction of chilled air to be habitable,[18] neatly aligning with the economic-rationalist desire for a deep floor plate design freed from the need to be serviced by natural light and air. These imperatives worked hand-in-hand to set a new prototype for the universal standardisation of air, light, design and construction. Finally by setting strict building standards based on the concept of the "comfort zone," stipulating the excessively narrow parameters of a steady-state interior climate, all opposing voices were effectively silenced.[19]

The underlying theory of hermetically sealed interior climates deems perceptual encounters as an unwanted disturbance that "clouds" the Platonic perfection of unmitigated spatial volumes. The paradigm seeks a replicable "ideal" in which the interior atmosphere is evacuated of

[15] De Dear and Schiller Brager, "The Adaptive Model of Thermal Comfort and Energy Conservation in the Built Environment."
[16] Cooper, *Air-Conditioning America,* 186.
[17] Ibid.
[18] Ibid., 162.
[19] De Dear and Schiller Brager, "The Adaptive Model of Thermal Comfort and Energy Conservation in the Built Environment."

atmospheric phenomena and mechanically scrubbed of all perceptual encounters, leaving "perceptually empty" volumes that can be productively inhabited, unhindered by the capricious weather outside. Here, air is not conceived as matter to be perceived, explored and designed with, but as an invisible substance that in its ideal, "pure" form is imperceptible — spatial volumes entirely empty of all "perceivable" atmospheric matter. As an ideal state, this is rarely, if ever, realised, but it has engendered a way of conceptualising interior atmosphere, not only by the engineers responsible for advancing this paradigm, but also the architects and designers of the buildings that contain it and those who work and live in them. The current model has effectively become a tradition, and as Robyn Barnacle writes, "the danger — common to all traditions — is that the more the tradition is adopted the harder it can be to think beyond that tradition — or even notice that one is thinking within a particular tradition at all."[20]

Re-conceptualizing interior atmosphere

To reinstate air as a medium for design exploration, one needs to abandon the current ingrained paradigm and conceptualize a different relationship to air. To make air "visible to feeling"[21] — an aesthetic medium carrying perceptual effect, an aesthetics of atmosphere — requires an entirely different conceptual position and method of investigation. This opens up an entirely new set of possibilities, but also challenges. As Gernot Böhme states, an

> aesthetics of atmosphere shifts attention from the "what" something represents, to the "how" something is present. In this way, sensory perception as opposed to judgment is rehabilitated in aesthetics and the term "aesthetic" is restored to its original meaning, namely the theory of perception.[22]

Attention to "how something is present" raises a dilemma for the designer of aesthetic atmospheres, namely, how is such an atmosphere — consisting of emergent, intangible, invisible and a virtually immaterial materiality — grasped and manipulated? How can air be explored as a

[20] Robyn Barnacle, "Phenomenology and Wonder," in *Phenomenology*, ed. Robyn Barnacle (Melbourne: RMIT University Press, 2001): 12–13.
[21] Mallinson, "Metaphors of Experience," 163.
[22] Gernot Böhme, "Atmosphere as an Aesthetic Concept," *Daidalos* 68: *Constructing Atmospheres* (1998): 114.

design medium? How is it even conceived of "in the mind's eye"? The challenge is that atmosphere, air, presents a particularly confounding problem when it comes to describing and conceptualising it in any meaningful detail. In the case of other temporal phenomena, such as sound (and in particular music), a sophisticated system of notation has been developed to both describe the temporal arrangement of sounds and to conceive of new and original ones. With practise, they can be memorised, internalised and reproduced either with the body (voice) or through the use of instruments, and they can be recorded, stored and later played back. Being immersed in atmosphere, however, is an experiential encounter like no other. As designers, we struggle to draw atmosphere; we have no real way of notating the atmosphere, very limited means to describe its qualities through values such as temperature and humidity, and because it is so difficult to fully grasp its complexity and dimensional multiplicity, which is in constant flux, we have tremendous difficulty to fully articulate the experiential effect of atmosphere let alone envisage a new perceptual arrangement.

My investigation sought to devise a method of unravelling this dilemma: How, as designers, can we conceptualise an aesthetics of atmosphere? Typical meteorological instruments are useful for collecting quantifiable data, but largely unhelpful as tools to analyse the perceptual qualities of an aesthetic atmosphere or to inform its design. For example, how would one quantify the experience of Walt Whitman's "mystical moist night-air"?[23] This phrase speaks to a qualitative phenomenological encounter whose perceptual qualities lie beyond the narrow dataset yielded by such instruments. The perceptual qualities of atmosphere are in constant flux and, moreover, they are relational and subjective. An investigation into the aesthetic qualities of atmosphere calls for a different approach, one that explores the very phenomena that constitute the atmospheric encounter, using our senses as the perceptual instrument.

Six projects were undertaken to explore atmospheric phenomena through different methods, each revealing particular insights. By devising different ways of "observing" atmospheric phenomena, not always with the eyes, allowed me to not only reveal the vast breadth of phenomena present in the atmosphere, but also to study discreet phenomenon through different lenses.

[23] Walt Whitman, "When I Heard the Learn'd Astronomer," in *Leaves of Grass: The First (1855) Edition* (London: Secker & Warburg, 1960).

Project 1: Natural atmospheric phenomena

The first set of investigations involved the direct observation of phenomena evidenced by rustling leaves and swaying fields of grass. These evidenced the casual breezes that are perhaps the most common phenomenon associated with "natural" air: aperiodic fluctuations of air currents, emergent and chaotic in their nature and highly amenable perceptually. These breezes hold an important poetic, psychological, instant that belies our experience either consciously or subconsciously. Our recognition of the phenomenon (gentle billow of a curtain) and what it signals (refreshing breeze) creates an expectation that the moment signalled will arrive, but the syncopated rhythm is never entirely predictable and always of the moment.

This study also revealed an unexpected phenomenon that these fluctuations occurred within a very defined spatial context; one leaf flutters whilst an adjacent leaf is still, before the relationship changes, each leaf being subject to a slightly different microclimate. This shifts the conception of how air moves, from a large homogenous body, to highly localised phenomena. Capillary waves on the surface of a lake witnessed this as a two-dimensional cross-section. These waves often formed small pools of atmospheric activity with tightly defined boundaries, which were observed to move slowly across the lake's surface much slower then the air velocity required to generate them. The billows of steam escaping from the vast network of pipes running beneath the streets and through the buildings of Manhattan formed the basis for a subsequent set of observations. Here I observed adjacent jets of steam emanating from along the gutter of a street each following its own trajectory, evidencing the manifold directionality of air currents. Clouds of steam drifting in the city air regularly spawned almost identical and highly distinctive pattern formations. Atmospheric phenomena were shown to have a distinct temporal and spatial context and were characterised by aperiodic fluctuations, often within highly defined spatial zones.

Fig. 5-1. (*top*) These two strikingly similar vortex formations, which appear within approximately 1½ minutes of each other, reveal the propensity of a self-organising system to generate aperiodic patterns.

(*bottom*) Clouds of steam emerging from beneath the city of New York produce a beguiling ambience, which has become closely associated with this city and an ideal medium for observing atmospheric phenomena.

Project 2: Exploring air using scanning lasers

Specially built scanning lasers producing a wafer-thin sheet of light into which vapour was introduced, rendering the air visible, were used to analyse air in interior environments. The visualised air was characterised by an extraordinary complexity of pattern formations, reminiscent of fine lace, which moved in a multi-directional manner, each pattern seemingly independent to the next. The atmosphere was observed as exceedingly transient and random as well as highly sensitive, responding to the slightest stimuli. The gentle opening of a door or a person walking through the space resulted in grandiose gestures of air movement. Human breath could be observed travelling over a six-metre distance and even the convection from the top of a finger resulted in clearly visible patterns. The intimate connection between human presence and actions, and their impact on the air, came to be an important theme of these and subsequent investigations. These observations resulted in the realisation that we, as occupants of a space, are contributors to the connected and emergent system of atmospheric phenomena, through our actions and the effect of our bodies. This changes how we perceive our relationship to the atmosphere: We are not separate, but a dynamic part of it.

Fig. 5-2. Laser-light and fog used to observe a woman's breath as it travels over six metres through the warehouse space.

Project 3: Exploring air using ultrafine water vapour

Piezoelectric transducers placed in tanks of water were used for the next set of projects. The ultrasonic oscillation of the transducers causes water to form into an extremely fine, dense fog that does not rise (like steam) but sits still until disturbed by an air current; it does this with extraordinary sensitivity. Sited in a gallery, the slightest action in one part of the gallery would, with a significant time delay, cause the fog to respond, underlining how air within spaces is connected. As people walked past the fog it appeared to follow them, revealing a complex

pressure system. The force of walking, or any such action, creates a low-pressure zone into which the surrounding air, including the fog, is drawn, typically in a swirling pattern.

The next exploration observed how air moves through windows, doors and connected internal spaces. A series of "fog" devices were placed near windows and in the internal spaces of a number of different houses and apartments. I observed a complex atmospheric relationship, with the building seemingly breathing — inhaling and exhaling air in an altogether unpredictable manner. Whenever a window or door was opened or closed, the nature and pattern of air currents changed; each house revealed its own unique pattern. The air within internal spaces was surprisingly connected; opening or shutting a window or door in one part of a house would alter the flow of air, sometimes almost instantaneously, in another part of the house, evidencing complex pressure systems.

A much larger version of the fog device was designed for an exhibition at RMIT Gallery to allow gallery visitors to observe and interact with atmospheric phenomena, and for me to observe them interacting.[24] A further set of phenomena was observed as well. The fog resting on a long shelf would manifest in different formations at different times of the day and from one day to the next. This was most apparent when the weather outside the gallery changed or was about to change. Even though the air-conditioned gallery is closed off from the outside, the internal microclimate apparently remained connected.

[24] *Aesthetics of Air: Atmospheric Sensitivity*, RMIT Gallery, Melbourne, 14 April–28 May 2011.

Fig. 5-3. Visitors observing and interacting with the fine fog produced by the installation *Atmospheric Sensitivity. Aesthetics of Air*, RMIT Gallery, April–May 2011.

Project 4: Generating toroidal vortices: vortex rings

Vortex rings with their internal spinning motion are not only extremely robust, but also able to propel themselves through space, making them a particularly fascinating phenomenon. A sophisticated, automated device that produced identical vortex rings was installed in a gallery space with the surrounding air carefully controlled. Nevertheless, each ring would take on a different trajectory and evolve into a different form — some compact rings moving quickly followed by larger rings proceeding lethargically — as the atmospheric system at play within the gallery impacted differently on each ring. Even though the apparatus was precisely tuned, on occasions the vortex rings would dissipate immediately. The connection between external weather patterns and those inside the conditioned gallery space were yet again clearly evidenced.

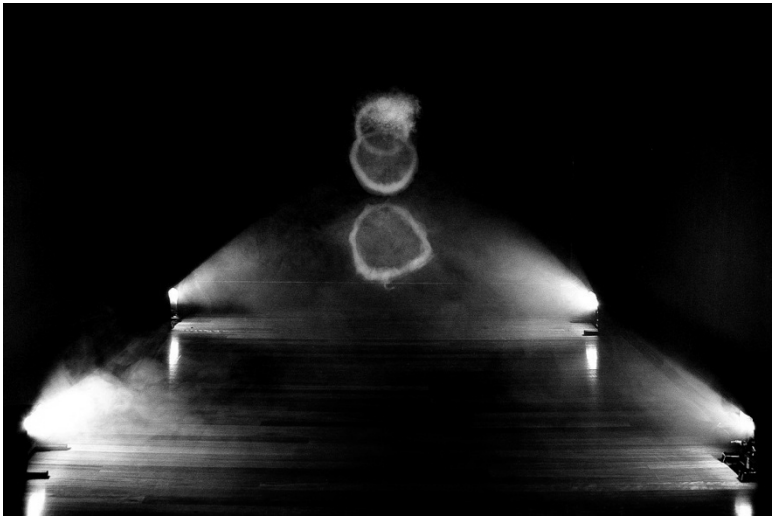

Fig. 5-4. Once a vortex exited the device, emergent atmospheric phenomena would cause it to assume a unique form and trajectory each time. Here we see a well-formed vortex tending downward towards the centre of the gallery space. *Atmospheric Structure*, *Aesthetics of Air*, RMIT Gallery, April–May 2011.

Project 5: Amorphous peripheries — scent, space and atmosphere

Fig. 5-5. Visitors exploring the sent-scape of the installation *Making Scents of High Tea*. High tea, Bundoora Homestead Art Centre, 2010.

Investigations into smell generated some of the most fascinating and complex insights. Scent, present in an interior atmosphere — the smell of a room — can effect our perception of that space; scent can even define a space. The materiality from which a space is constructed, the things housed within it, and the people and activities present there, each contribute their own unique smell to the space and enact a phenomenological effect upon us, which is deeply intertwined with our physiology and psyche, influenced by personal experiences, associations and memories. Smell combines with other perceptual phenomena to build internalised phenomenological images of a space, often generating deep spatial connections within us. The limits of our ability to describe phenomena such as smell, and the scant vocabulary that exists with which to do this, hint at the complex, ambiguous and intangible way that smell effects us at both a conscious and subconscious level. A number of projects explored how smell could be used to reawaken or evoke

experiential encounters, sometimes from a previous era or context, highlighting the connection between smell and our experience of space and time and the role smell can play in the construction of dynamic interior atmospheres.

Project 6: *Night Window*

The final project combined a number of phenomenological explorations. Sited in an old homestead that had recently been renovated and transformed into a gallery, the installation *Night Window* was intended to prompt discussions amongst visitors about how a room's perceptual properties are affected by removing the ability to open and close its windows: By "adding" a controlled atmosphere, what is it that has been removed? A number of perceptual "tricks" generated the impression of an open window on a summer's night, with a gentle rainstorm brewing outside — fragrant moist cool air, sound and rhythmically billowing curtains activated by gentle aperiodic air currents. Although the intent was to provoke discussion rather than point towards a possible design intention, I was struck by the success of the overall perceptual effect. This led me to deliberate about how a number of atmospheric phenomena when combined can generate rich immersive perceptual qualities and experiences, engendering an aesthetics of air.

Fig. 5-6. The installation *Night Window. Cloudy Sensoria.* Bundoora Homestead Art Centre, 2011.

Catalogue of Atmospheric Phenomena

A reconceptualization of interior atmosphere begins with an exploration of its phenomena. Even within the paradigm of the "ideal" interior atmosphere, in this virtually imperceptible "empty" state, my phenomenological explorations revealed an atmosphere laden with emergent phenomena. Critically, the concept of interior atmosphere as "empty space," from a design perspective, is a lost opportunity; not only is this empty space in fact brimming with "something," but this something — air and atmospheric phenomena — offers an extraordinarily fertile design frontier once the phenomena and their effect on us is revealed and intellectually grasped.

My six projects exploring atmospheric phenomena were charged with this objective. Initially the investigations, although deeply compelling, often revealed an amalgam of complex, indecipherable phenomena, but through careful study, further exploration and contemplation, these became increasingly intelligible, leading to the realisation that interior atmosphere was a dynamic synthesis of phenomena, and that these phenomena were the key to formulating a method of designing interior atmospheres.

By distilling the observations and insights gained during the projects, I assembled a series of key phenomena into a Catalogue of Atmospheric Phenomena. This catalogue forms the basis of a designer's toolkit with which to envision and shape a reconceptualised interior atmosphere — a rich design palette, which offers a tangible approach for designers engaging with air to generate an interplay of phenomena, as a dynamic emergent system, characterised by transience and dynamics, aperiodic fluctuations and anisothermal environments, which are delicate, ambient and poetic; interior atmospheres individually tailored to the purpose and desires of the occupants, which can adapt and evolve as the use of the space changes, in tune with diurnal and seasonal rhythms and the syncopated beat of daily life; where occupants are afforded participation in modulating their environment as active shapers of their interior atmosphere; interior atmospheres engendering an aesthetics of air.

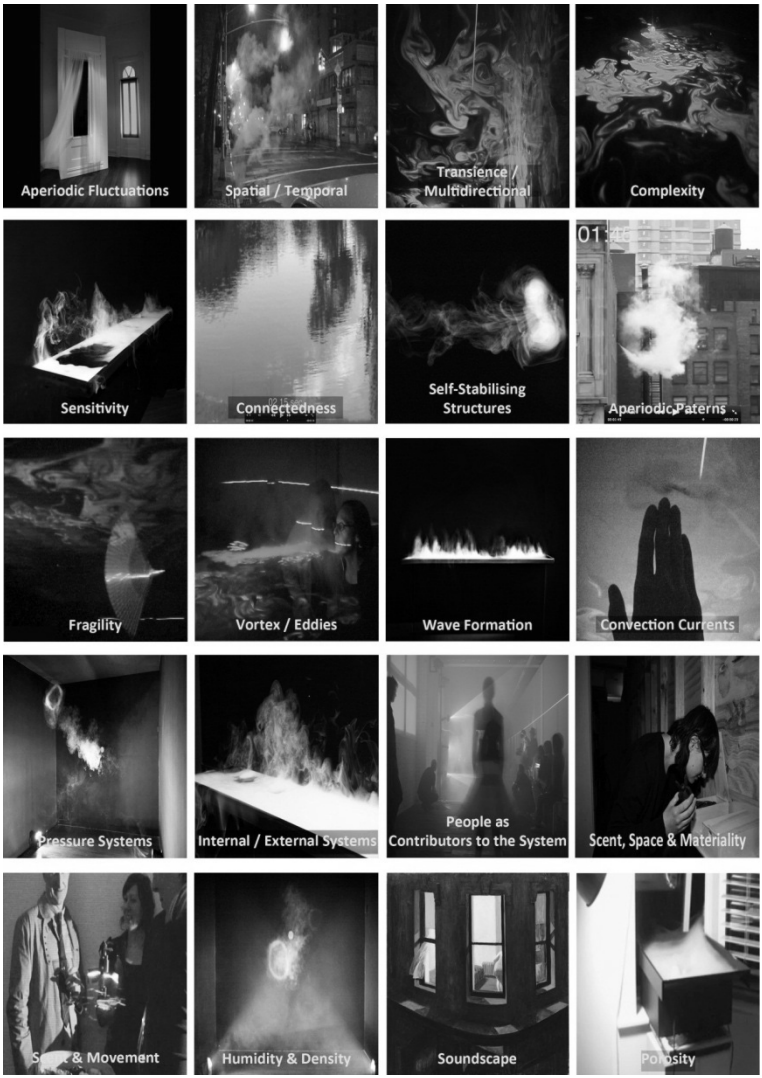

Fig. 5-7. Catalogue of Atmospheric Phenomena. Phenomenological investigations were undertaken to explore air as a design medium and the possibilities this offers for designing interior atmospheres. Shown here are key phenomena, which form the basis of the designer's toolkit, with which to envision and shape interior atmosphere.

SENSORY MODULATION: "SNOEZELEN" IN ARCHITECTURE

LINDSAY WEBB

Snoezelen rooms, also called multi-sensory environments and sensory modulation rooms, are deliberate installations that provoke and provide olfactory, auditory, haptic, vestibular, proprioceptive and visual input and response, creating immersive sensorial, interactive environments. They are installed in hospitals, special education schools and aged care and rehabilitation facilities for the benefit of adults and children with a broad range of intellectual disabilities and behavioural dysfunction, including those on the autism spectrum. The design aim is to provide

> sensory stimulation that is produced in sufficient frequency, intensity and duration [that it] increases brain arousal leading to improved organisation of the brain that permits increased learning and functional activity.[1]

The technique draws from ideas outlined in neuroscience and in traditions of praxis in the occupational therapies from the 1950s and 1960s.[2] In the contemporary "society of the spectacle," in which people's social, environmental and sensory relations are mediated — drugged, says Debord — by commoditised saturation in representative visual images,[3] the snoezelen is an unpretentious model of embodied (re)awakening, warranting an investigation of its possible theoretical and perceptual intervention in many aspects of architecture and spatial design.

"Snoezelen" is a contraction of two (apparently contradictory) Dutch verbs: "snuffelen" (to seek out/explore), an activity that requires engaged motivation, and "doezelen" (to doze/snooze). The term was developed by therapists Ad Verheul and Jan Hulsegge at the Hartenberg Center in the

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[1] J. Hulsegge and A. Verheul, *Snoezelen: Another World* (Chesterfield: ROMPA, 1987).
[2] Grey Walter, *The Living Brain* (London: Duckworth, 1953);
[3] G. Debord, *The Society of the Spectacle,* trans. K. Knabb (Canberra: Treason Press, [1967] 2002).

Netherlands in the late 1970s and refined over a number of years until publication of their book *Snoezelen: Another World,* in 1987. According to their guidelines, the paradoxical concept of dozing stimulation has, by and large, immediate positive behavioural impacts. This is allegedly because

> [t]he level of function achieved by an individual is a reflection of the stimulation and opportunities afforded the individual by his or her environment.[4]

Earlier behavioural experiments with sensory deprivation had shown conclusively that apparently normal subjects, rapidly (within an hour) developed disturbances of thinking, imagery and time perception when occupying specially constructed, suspended and acoustically isolated chambers of perceptual isolation.[5] It is probably safe to assume that adequate sensory stimulation is critical for all humans, not just for those experiencing some kind of dysfunction.

Fig. 5-8. A typical Snoezelen room, cf. J. Hulsegge and A. Verheul, *Snoezelen: Another World* (Chesterfield: ROMPA, 1987)

[4]J. Hulsegge and A. Verheul, *Snoezelen.*
[5] S. Smith, "Effects of Sensory Deprivation," *Proceedings of the Royal Society of Medicine* 55 (1962), http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1897523/.

Snoezelen rooms are set up in a variety of ways with many levels of sophistication. They typically employ simple lighting effects: mirror balls, bundles of reactive fibre optics, floors that respond to pressure. Lighting effects can be driven by sound (e.g. voice) and by touch. Aromatic diffusers, illuminated, interactive water bubble columns, furniture and objects that vibrate and move, calming or ambient music, naturalistic sound effects (recordings of rainforests and the like) and waterbeds that massage with sound waves are variously employed. Many of these technologies are familiar enough in the contemporary world through their application in the entertainment industries, in bars, nightclubs, etc.. In Snoezelen rooms, they have yet to be architecturally refined and often might appear to be crudely implemented in terms of aesthetic integration.

Key to Snoezelen techniques is that users are able to voluntarily seek out different stimuli and also that there is provision of some kind of perceptual feedback path. Importantly, sensory "rewards" are offered through kinetic interaction. Users, then, perform in a space that adapts unexpectedly to certain events or impulses, suggesting the possibility of synaesthetic engagement, where a user might, for instance, sense and thus "enjoy being cocooned or enveloped in light."[6] Precedents of the techniques can be traced back to the Musicolour machine, an electromechanical device conceived and built in 1952 by Gordon Pask that collaborates with a performer to generate a synaesthetic light show. If one traces forward the cybernetic developments set in train by Pask and others,[7] one can identify in Snoezelen an intrinsic human desire to adapt to and modify the sensory environment. This desire or drive can be readily observed in a Snoezelen room.

Snoezelen facilities and their equivalents have broad acceptance and increasing uptake in psychiatric and dementia care facilities, even though critical research continues to cast doubt on their restorative capabilities. Positive anecdotal and field opinion is strong, but some clinical trials surmise that while there are observable benefits in positive behavioural change during immersion in the multi-sensory environment, there is little, if any, observable carry-on effect into daily life or contribution towards a

[6] J. Ball and B. Haight, "Creating a Multi Sensory Environment for Dementia," *Journal of Gerontological Nursing* 31 (2005): 4–12.
[7] A. Pickering, *The Cybernetic Brain* (Chicago: University of Chicago Press, 2010).

therapeutic development.[8] Meta-analysis suggests that the limited number of research projects and various weaknesses in these experiments' methodological designs prevent determination at this time as to whether the Snoezelen method is a valid therapeutic intervention.[9] This makes the task of facility production immensely difficult for policy and decision makers, in that capital and recurrent expenditure is inevitably tied to performance criteria that must be evidenced through empirical data. I have observed this dilemma first-hand, as experienced by Mental Health ACT (Australia) during the design of a new psychiatric facility by PTW Architects in 2008.

The Adult Acute Mental Health Unit (AAIU) opened at Canberra Hospital, Australia, on 23 March 2012. A lengthy consultation and design period began in early 2008, driven by a working group of clinicians, social workers, administrators, therapists, consumer representatives (ex-patients) and project architects (including myself and led by Diane Jones). The consultation sought to develop a radically new architectural brief, based on first principles, that would enable a facility that could reinforce best practice psychiatric care.[10]

Emergent within the working group was a high level of ambivalence to the use of (architectural) representational imagery. By contrast, discussions focussing on environmental perception and lived experience were always received positively and aided process. Over many months, some generally agreed upon principles were developed that we found to be

[8] A. J. Cuvo, "Effects of Living Room, Snoezelen Room and Outdoor Activities on Stereotypic Behaviour and Engagement by Adults with Profound Mental Retardation," *Research in Developmental Disabilities* 22 (2001): 183–204; L. Fava and K. Strauss, "Multi-Sensory Rooms," *Research in Developmental Disabilities* 31 (2010): 160–71. H. Kaplan, "Snoezelen Multi-Sensory Environments," *Research in Developmental Disabilities* 27 (2006): 443–55.

[9] M. Lotan, and C. Gold, Meta-Analysis of the Effectiveness of Individual Intervention in the Controlled Multi-Sensory Environment (Snoezelen 1) for Individuals with Intellectual Disability," *Journal of Intellectual and Developmental Disability* 34 (2009): 207–15.

[10] Further, a whole new model of care was developed by this project's intersecting teams — a collaborative methodology employed in the health services domain that enables evolutionary development of standards covering all aspects of health service delivery.

essentially echoing recommendations from environmental human benefits research:[11]

- Ideas that engender respect, empowerment, freedom, openness, refuge, socialisation, nature, autonomy and choice should be prioritised.
- The overall impression of the interior or the exterior should not be "institutional" (hospital/prison like).
- The space should contain opportunities to connect to nature, engage in meaningful behavioural choices (with control), experience sensory change/variability, and access social support.

Many of the most potent images were generated by discussions around non-visual phenomena: temperature, haptic appreciation of vegetation, sounds and odours, direct sunlight, spatial variability (the acoustic body), breeze, warmth.

Design ideas were tested with relational diagrams, material studies and precedent analysis. Our entire design for the facility extrapolated the idea of Snoezelen, i.e. a multiplex of sensory stimulation that could be sought out in a relaxed and voluntary way, but is also always already present in some way. Its primary architectural organisation was around multiple passive and active courtyards, densely layered, with undulating forms creating vegetal furniture whereon consumers could lie amidst a variety of aromatic plants. We designed built-in benches under which one's feet rested on wet stones; water constantly, gently trickled over the rough pavement providing auditory and visual variation. For sensory impact, the floors would be heated with hydronic systems rather than relying on the ubiquitous air-conditioning system. Modulated lighting effects, extreme variation in volumetric opportunities, large skylights for high contrasts between light and shade, contrasting floor densities and diverse use of colour were some characteristics of the proposal. Even a large hearth was planned to become the focus of the "socialisation spine," the warming heart of the building. It could be understood not only as a symbolic and sensory heart as suggested in many works by Frank Lloyd Wright,[12] but

[11] J. Heerwagen and G. Orians, "Humans, Habitats and Aesthetics," in *The Biophilia Hypothesis*, ed. S. Kellert and E. Wilson (Washington, DC: Island Press, 1993), 39–57.

[12] A. O'Connor, "More Than Just a Fireplace: The Hearth, the Kitchen, and Frank Lloyd Wright," paper presented at the annual meeting of the American Historical Association, Atlanta, 16 December 2013,

also at the neurological level.[13] Remarkably, in today’s risk-averse public culture, the hearth gained broad support across the group, becoming a unifying totem of the healing the building can hopefully foster.

Fig. 5-9. Final arrangement and landscape plan, Adult Acute Mental Health Unit, Canberra Hospital [image courtesy PTW Architects]

http://citation.allacademic.com/meta/p121058_index.html.
[13] Walter, *The Living Brain.*

Fig. 5-10. The "socialisation spine," main recreational space, Adult Acute Mental Health Unit, Canberra Hospital [image courtesy PTW Architects]

Eventually we asked ourselves, what are the lessons from this design process flowing from Snoezelen? Is thinking about architecture in this way useful? The building provides choice, and users can seek out perceptual difference, but there is little opportunity for the facility to adapt to human performance in any immediate way, and this is where we fall short of the Snoezelen idea. Is this a natural limit of architecture? Is architecture limited to providing passive vessels that mediate our phenomenological perception and experience, or can our experience and action mediate *it* (in any sense other than wearing it down, co-existing in friction over time)? Can we presuppose or co-create, co-curate an architectural consciousness?

There are a couple of ways to interpret the Snoezelen experience within broader architectural discourse. The first agrees with research that rejects or doubts therapeutic benefit even whilst acknowledging the temporary well-being observed during immersion. The other reads the implementation as generating a transformative, positive outcome for humans: architecture operating free of symbolic dogma. In this paradigm, architecture could indeed be an instrument of societal change; one thinks of the goals of the counter-culture movement activated through the self-

conscious use of LSD as promoted by Timothy Leary,[14] or of the Dream Machine created by Brion Gysin.[15]

Fig. 5-11. Galleria department store facade design, South Korea, UNStudio [Photo by Young Do Moon]

The popular reception of public art events, such as *Luminale* (Frankfurt), *Vivid* (Sydney), and the ongoing efforts of the Ars Electronica organization, have helped spawn a proliferation of architectures with performative elements that often resemble sophisticated versions of Snoezelen rooms. The Dutch firm UNStudio describes their desire to instrumentalise architectural *effects*, these being

> an agitated, undefined mass in the territory of the unconscious. Effects are manifestations of the phenom, which includes sensory experiences of the external world, experiences of the inner world, … experiences of emotion or affect.[16]

[14] T. Leary, R. Metzner, and R. Alpert, *The Psychedelic Experience: A Manual Based on* The Tibetan Book of the Dead (New York: Citadel, 2000).
[15] J. Geiger, *The Chapel of the Extreme: A Short History of Stroboscopic Light and the Dream Machine* (New York: Soft Skull Press, 2003).
[16] C. Bos and B. Van Berkel, *Move* (Amsterdam: Goose Press, 1999).

Their work often employs (usually visual) effects, using natural (moiré and refraction phenomena) and synthetic (digitally scripted lighting effects) techniques to this end. Yet amidst such sensorial amplification, we still need to ask whether we are satisfying some(one else's) innate sensorial urge or creating a distraction that resists inhabitation, which, in situationist terms, becomes "an immense accumulation of spectacles" wherein "[e]verything that was directly lived is now merely represented at a distance."[17] This would be a controlling architecture, enforcing passivity.[18] In this view, the implications of Snoezelen resemble a harmless, drugless sedation sans any genuine transformative value.

A more positive reading of Snoezelen phenomena needs to rework ideas of inhabitation, participation and feedback through immersion. This reading should experiment directly with perceptual experience, rather than representations of experience, and attempt to design and construct spaces that might authentically contain, serve and stimulate "all senses and all bodies."[19] This work introduces sensory stimulation and analysis as a core area of architectural research. It embraces the visceral appeal of, for instance, Peter Zumthor's phenomenological *Atmospheres* just as it does the generative "intelligent" interaction formulated by Pask and embodied in Cedric Price's *Generator* project.[20] It has the potential to absorb the gamut of engineering, art and science to develop a comprehensive sensorial gestalt theory aimed at extending the value and usefulness of architecture for living beings.

[17] Debord, *The Society of the Spectacle.*
[18] Di Carlo, G. *Architectures Public* (Oxford: Butterworth, 1992).
[19] H. Lefebvre, *The Production of Space*, trans. D. Nicholson-Smith (Oxford: Blackwell, 1991).
[20] P. Zumthor, *Atmospheres* (Basel: Birkhaüser, 2006); J. Frazer, *An Evolutionary Architecture* (London: Architectural Association, 1995).

FIELDS OF SENSATION: HUMAN ACTION AND INTERACTION IN SENSORY SPATIAL DESIGN

GABRIELE FOWLER

In this paper three case studies from art and spatial design are used as examples to discuss how new spaces emerge by means of shifting visual, auditory, material and social relationships of site within an architectural context. Such spaces are not directly reliant on built architectural form, but are temporal, dynamic and relational. Human occupation becomes an active part of their design. They are realised through responsive analog (material) or digital technologies or a combination of both.

Architect and theorist Mirko Zardini sees new potential in a recently increased interest in the senses in different areas to act as a catalyst for new methods and tools to designing within the built environment:

> In recent years, the human and social sciences, from anthropology to geography, have undergone a "sensorial revolution" in which the "senses" constitute not so much a new field of study as a fundamental shift in the mode and media we employ to observe and define our own fields of study.[1]

In spatial design practices that use multisensory approaches, these modes and media include new practical design tools, such as innovative technologies or materials, as well as theoretical concepts that shape the way in which the designer considers relationships between the built environment and human occupation. Within this context, it is my incentive in this paper to establish a position on how to think about sensory relationships within spatial environments and to examine the potential of new tools and methods in multisensory approaches to spatial design. Philosophical concepts by Brian Massumi and insights from neurological research conducted by Richard E. Cytowic serve as the theoretical ground

[1] Mirko Zardini, *Sense of the City* (Montréal: Canadian Centre for Architecture, 2006), 22.

to examine interrelations between spatial design and human occupation mediated by the senses.

In this discussion, I am specifically interested in qualitative and non-measurable relationships within sensory spatial design, which are capable of opening up new spaces for human occupation and interaction. Therefore I will be focusing on the term "sensation" as opposed to "perception" in this paper. The distinction between these terms is based on Massumi's definition of perception as enabling "quantification," "segmenting and capable of precision" and sensation as "only ever qualitative," "unfolding and constitutively vague."[2] This differentiation allows me to move away from determinate, static and calculable dimensions of spatial design towards explorative, dynamic and open design approaches. Movement and time are integral parts of such multisensory and activity-based spatial design practices. As Massumi states, there is an "intrinsic connection between movement and sensation."[3] Furthermore, the concept of sensation involves an underlying merging of the human senses. According to Massumi, the senses co-function in a synaesthetic interconnection, which means that no sense modality can be entirely separated from the others:

> [A]ll the sense modalities are active in even the most apparently monosensual activity. Vision may ostensibly predominate, but it never occurs alone. Every attentive activity occurs in a synesthetic field of sensation that implicates all the sense modalities in incipient perception.[4]

Synaesthesia refers to a merging of different sensations into one; it means "feeling together."[5] In the field of neurology, it describes a physiological condition of there being no walls between the senses, just like there are no walls between rooms in an open plan house. The rooms flow into each other and "so too taste, touch, movement, and color [are] meshed together seamlessly" in the brain, as the neurologist Cytowic explains.[6] While synaesthesia is regarded as quite rare from a neurological perspective, the concept of sensation is based on an underlying synaesthetic fusion of the senses in the human body.

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[2] Brian Massumi, *Parables for the Virtual* (Durham, NC: Duke University Press, 2002), 259.
[3] Ibid., 1.
[4] Ibid., 140.
[5] Richard E. Cytowic, *The Man Who Tasted Shapes* (New York: Warner Books, 1995), 5.
[6] Ibid., 4.

The key issue in multisensory designs of spatial environments therefore shifts from that of a "visual dominance" in and "suppression of the other senses,"[7] as claimed by architects such as Juhani Pallasmaa, Mirko Zardini, Peter Eisenman and others, to the question of what kinds of sense qualities are conveyed through the spatial design, even if transported on a visual level and how they shape human action and interaction.

The following projects — by the multimedia installation artist Susan Hiller, the architecture studio NOX/Lars Spuybroek and myself — serve as examples of spatial practices that have produced new ephemeral spaces by purposefully relating a range of sense qualities and human activities.

Responsive Spatial Design Practices

Fig. 5-12. Susan Hiller (2000), *Witness,* audio-sculpture, Sydney, Australia [© S. Hiller]

In an installation by Hiller titled *Witness* [Fig. 5-12] visitors walked through 70 to 80 small, suspended loudspeakers that played back voices speaking in different languages. In this work, Hiller was interested in the

[7] Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (London: Academy Editions, 1996), 9–10.

tension between "an overall kind of fable effect of all the voices talking at once" and "a close relationship with all the people telling their stories,"[8] depending on the listener's position in the space. She describes her installation as "an audio work about seeing; In *Witness* relationships between the visionary and the visualized are mediated by sound."[9] The digital audio content of multiple voices transmitted through loudspeakers was the key material of this installation. On a physical, visual level, the larger architectural space was divided up by numerous cables suspending the loudspeakers from the ceiling, resulting in a kind of inverted forest that visitors negotiated through their body's movement. The physical and visual density of the installation was consistent with its auditory density, which mingled together as one undifferentiated sound cloud from a distant position and changed to opening up new auditory spaces between the narrated stories up close through movement and shifting proximities. These new auditory spaces produced "external" though potentially very personal connections to people who were not physically present in the space. Within the installation, human encounters between visitors occurred primarily through their simultaneous physical presence and related visual appearance, while visitors' encounters of the people telling their stories were mediated through auditory means. Thus multiple, ever-fluctuating spaces occurred within the auditory, visual and physical relationships of human occupation. Although people's stories were transported exclusively through sound, there were multiple sensory qualities being carried within the changing audio texture, the spaces within the narratives as well as the tactile material environment.

The interactive exhibition in the interior of the HtwoOexpo water pavilion by NOX/Lars Spuybroek [Fig. 5-13] was one of the first spatial designs using multisensory digital technologies. This was achieved "through a series of interactive systems controlled by sensors distributed throughout the pavilion. Visitors can manipulate the sensors to transform their environment through light, colour, projection and sound."[10]

[8] J. Copeland, interview with Susan Hiller, edited transcript of Radio National's *Sunday Morning* program, originally broadcast on 26 May 2002), www.abc.net.au/arts/visual/stories/s597706.htm (accessed 04 May 2008).
[9] Susan Hiller, www.susanhiller.org/installations/witness.html (accessed 10 July 2014).
[10] Connie Van Cleef, "Water Worlds (Design and Construction of an Exhibition Pavilion in Neeltje Jans, The Netherlands)," *Architectural Review*, 1998.

Fig. 5-13. NOX/Lars Spuybroek (1997), HtwoOexpo, water pavilion, Neeltje Jans Islands, Netherlands [© L. Spuybroek]

Even in the photographs of the architectural interior, there is a strong sense of movement and unsteadiness due to the flowing transitions between floors, walls and ceilings. This sensation is heightened by the lighting conditions, surface reflections and projections of patterns in the space. Human movement activates the installation, and the emerging sensory spaces continue to change in their interrelations and intensities. Unlike Hiller's installation *Witness,* there are strong interdependencies between the architectural design, the interactive installation and human occupation. The sensory layers of the installation continuously transform the interior of the architectural envelope according to human activities. Spatial water features, such as "the freezing of a wall, the spraying of mist, artificial rainfall, jumping jets of water and … real-time electronic interactions,"[11] inspire movement and shape visitors' actions and interactions through multiple changes of qualitative relationships. These

[11] NOX/Lars Spuybroek, www.nox-art-architecture.com (accessed 25 June 2014).

changing relationships continually redefine the spatial environment and produce dynamic sensory spaces.

Fig. 5-14. Gabriele Fowler (2007), *Kontakte,* installation, Melbourne, Australia [© G. Fowler]

In one of my own project works, *Kontakte* (2007), I installed an interconnected kinetic aluminium screen at a public site in Melbourne's inner city [Fig. 5-14] that responded to strong air movement with undulating movements across the whole screen, resulting in an intense chime sound. In those moments, this soundscape dominated the auditory environment and rendered any conversation within proximity of the screen impossible. The design of this screen was generated in response to site investigations I had undertaken within the spatial environment. These investigations had revealed specific predilections of the site context in relation to sensory conditions and human activities. Based on the site investigations, I developed a design response that aimed to reveal, amplify and produce connections between the spatiotemporal environment and human occupation by means of shifting the multifaceted sensory dynamics of the site. The project installation sought to shift these conditions and instigate altered modes of occupation in the space. The main tools used to realise my design concept were sound, air movement, changing lighting conditions and light reflection, the flow of traffic past the site as well as human activities. The sensory qualities, and in some cases the sound qualities, affected how people acted or interacted within the space. Furthermore, *Kontakte* introduced dynamic sensory zones, which became a visual or aural landmark to some visitors. These zones were not defined through physical (built) interior and exterior conditions, but through the fluid movement of light, sound and air in and out of the site. These ever-changing sensory qualities continuously produced new spatial, temporal and social interconnections within the site context.[12]

Conclusion

The spatial installations explored here have served to exemplify how a careful consideration and composition of temporal sensory qualities and relationships generate new ephemeral multisensory spaces for human occupation and interaction — in the case of Hiller's installation, between auditory, visual and physical relationships, movement, proximity and distance; in NOX's water pavilion, between projections of light and sound, textures, thermal qualities, geometries, movement, action and interaction; and in my own work between sound, air flows, light reflections and

[12] Gabriele Knueppel, "Interspace: Spatial and Temporary Formation of Sensory Communities within Interior Environments," in *Interior Tools Interior Tactics: Debates in Interiors Theory and Practice,* ed. J. Fleming et al. (Oxfordshire: Libri Publishing, 2011), S. 81–92.

movement, drawing together a variety of sense qualities from the immediate spatial environment. Each of the project works discussed have thus enabled new spaces to emerge by way of shifting visual, auditory, material and social relationships of a site within its larger architectural context. The projects have furthermore demonstrated how specific interactive and responsive tools are used as key enablers for augmented multisensory approaches in spatial design, thus shaping human behaviours and interactions. I have sought then to highlight how human occupation is integral in relation to such temporary formations of spatiality and becomes an active part in the spatial design.

The concept of sensation has served to signify a spatial design approach that emphasizes qualitative sense relationships and human occupation within an environment over measurable design requirements. Notions of site and spatiality have emerged as fluctuating and continually changing territories, rather than fixed physical boundaries. As such, they are not quantifiable and defy traditional means of architectural representation. These new sites and spaces are produced by a variety of qualitative relationships and intensities of material and non-material conditions and human occupation. Spatial design practices are hence not confined to built structures, but occur as a diversity of tangible and intangible conditions of sensory spatial relationships.

FROM PERCEPTUAL APPARATUS TO IMMERSIVE FIELD OF EXPERIENCE: NOTES ON ATMOSPHERIC PERCEPTION

IZABELA WIECZOREK

Affective environments and fields of engagement

The discipline of aesthetics — understood broadly as a study of perception — has been the subject of constant re-contextualisation. In the past decades, it has been moving in the direction of what Arnold Berleant terms "aesthetic engagement," focusing on situational conditions of experience and affective ties with surroundings.[1] Traditional notions of aesthetics have, since the eighteenth century, been reduced to questions of beauty, elevating the cognitive over the sensible. Contemporary aesthetics is critical for these traditional notions, replacing contemplative disinterestedness with active perceptual involvement, a change that enhances human-environmental interaction and expands the aesthetic field to all regions of experience.

In this spirit, Peter Sloterdijk prompts considerations of the affective qualities of architecture and goes as far as ascribing to it the "design of immersions." The core aspect of immersion technology is the "production of embedding situations," encapsulated environments and perceptual worlds, and hence the creation of atmosphere, which, as devised by Gernot Böhme, becomes a fundamental concept of a new aesthetics.[2]

Despite the apparent familiarity with "atmosphere," its notion, like the term *perception,* seems to raise some questions. It has been distorted by

[1] Arnold Berleant, *Re-thinking Aesthetics: Rouge Essays on Aesthetics and Arts* (England: Ashgate, 2004).
[2] Peter Sloterdijk, "Architecture as an Art of Immersion," in *Interstices: Journal of Architecture and Related Arts — Unsettled Containers: Aspects of Interiority* 12 (2011): 108–109; Gernot Böhme "Atmosphere as the Fundamental Concept of a New Aesthetics," *Thesis Eleven* 33 (1993): 123.

ambiguities and dichotomies and is often approached reductively. Similarly to perception — which has been commonly related to a single-sense modality of sight — in the context of atmosphere, architectural discourse seems to simplistically inherit two main sets of associations. First, there is one of the poetics, epitomised by the idea of beautiful appearances, a somewhat aural correlative if we refer to Walter Benjamin's term.[3] The second association might, with its clear meteorological connotations, be defined as a certain "glamour of the fogs and mists," to borrow Steven Connor's words. That is, it designates the dissolution of the corporeal into the aerial — haziness, a vaporous sensibility.[4]

Indeed, haziness becomes a necessary condition of atmospheric perception. Atmosphere as a gaseous milieu — following the etymology of the term (from Greek, ἀτμός "vapour" + σφαῖρα "sphere") — not only encompasses the replacement of static conceptions of space with the conceptions of dynamic processes, but also requires one to overcome the subject-object dichotomy, since it is not perceived as an object placed in front of the beholder, but as the "common reality of the perceiver and the perceived."[5] Neither is atmosphere a constellation of isolated elements. It is a dynamic unity – that is, a field in constant becoming, in which the constitutive entities are no longer inert or absolute. It is from the interplay of these entities that atmosphere emerges. Atmosphere activates a set of traits related to *character* or *impression.* Hence, it tends to be approached as associational. Terms such as *serene*, *homely* or *sublime* belong to a wide spectrum of pre-coded atmospheric qualities. Nevertheless, the disclosure of atmosphere is situational. In fact, atmosphere is experienced before it is analysed and conceptualised, and it entails sensory involvement. It is the sensorium that defines its perceptual depth, since "[t]he senses lie at the heart of perceptual experience."[6] Atmosphere emanates, permeates and envelops, and yet implies affective immersion. It, consequently, calls for shifting attention away from expression towards effects and intensities,

[3] Peter Zumthor talks about "such a beautiful, natural presence" in his seminal book. See Peter Zumthor, *Atmosphere: Architectural Environments. Surrounding Objects* (Basilea: Birkhäuser Verlag, 2006), 11.
[4] Steven Connor, *The Matter of Air: Science and Art of the Ethereal* (London: Reaktion Books, 2010), 180.
[5] Böhme, "Atmosphere as the Fundamental Concept," 122.
[6] Arnold Berleant, "On Getting Along Beautifully: Ideas for a Social Aesthetics," in *Aesthetics in the Human Environment,* ed. Pauline von Bonsdorff and Arto Haapala (Lahti: International Institute of Applied Aesthetics Series, 1999), 6:16.

opening up for differential perceptual states with cognitive, emotional and somatic dimensions.

The intention is thus, briefly, to articulate the notion of atmosphere in terms of its affective qualities in order to expand its understanding and subsequently to suggest that if atmosphere emanates from space, space itself might be approached as a contingent and mediating device capable of engendering these embedding situations, as Sloterdijk remarks.

Exploring a heterogeneous genealogy of perceptual apparatuses will help frame this discussion, providing a basis for delineating the conceptual contours of atmospheric perception as well as for discerning how space is produced when understood as an immersive field of experience.

Contingency and experiential solicitation

Jonathan Crary explores the vast field in which perception and its understanding were transformed, tracing a particular taxonomy of visual apparatuses in which immersive experiences — anticipated already in the nineteenth century — relocate the vision within a "carnal density," regaining all sensory modalities.[7] By understanding the subject as an integral and active part of visual machinery, the passive spectator is replaced by an observing body that becomes both a receptor and producer, a body involved in a dynamic and kinaesthetic relationship with other bodies and surroundings. In this regard, Crary suggests that the late nineteenth -century investigations of perception focused on "restoring to it some of its original Latin resonances — the sense of perception as 'catching' or 'taking captive.'"[8]

Various perceptual apparatuses that defined a larger disciplinary expansion in the field of architecture and design in the latter half of the 1960s also aimed at dragging the subject into expanded perceptual worlds. Devices such as those of Haus-Rucker-Co, Coop Himmelblau, Ugo la Pietra, Walter Pichler and Enzo Mari were conceived as sensorial activators, intensifiers of phenomena or orchestrators of emotions. Many of them designed as a "mini-environment to be worn on the body" served as a medium for raising physical and psychological awareness and

[7] Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, MA: MIT Press, 1992), 150.
[8] Jonathan Crary, *Suspension of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, MA: MIT Press 2001), 3.

sensitivity, conquering the realm of inferiority and merging it with the surroundings.[9]

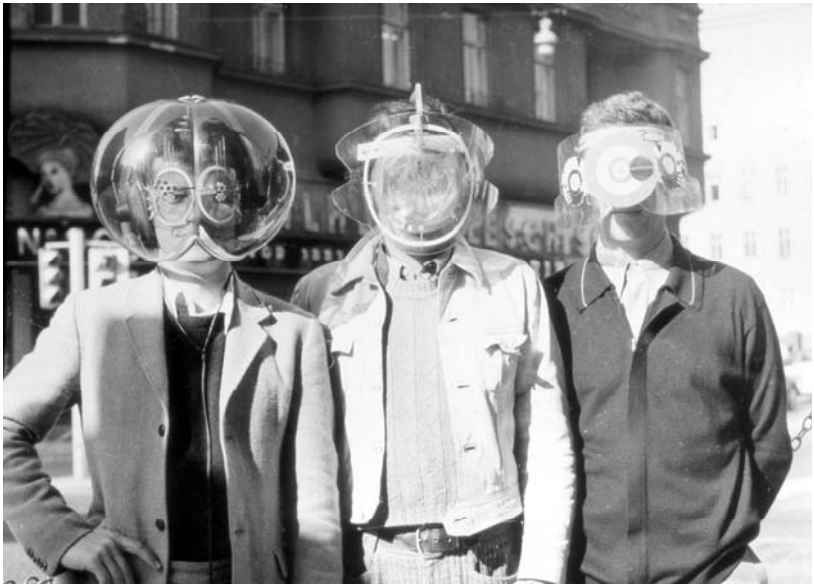

Fig. 5-15. Haus-Rucker-Co (1968), *Environment Transformer – Flyhead, Viewatomizer, Drizzler* [photo © Haus-Rucker-Co, courtesy of Haus-Rucker-Co]

Others, such as, for instance, *Environment Transformers* by Haus-Rucker-Co [Fig. 5-15], were meant to alter sensory impressions, which are very often taken for granted, leading to the automatisation of perception and, consequently, to loss of the "real contact with the world."[10] Operating with immersion not as a means of alienation but rather of de-familiarisation, these apparatuses were meant to be relational elements. In opposition to the dimness of habit they aimed, by means of somatic alterations — i.e. dislocation of perception — at replacing passiveness and inattentiveness with active engagement, triggering sensations and inciting patterns of behaviour.

[9] Haus-Rucker-Co in *Austrian Phenomenon: Architekturavantgarde Österreich, 1956–1973,* ed. Johannes Porch (Vienna: Architekturzentrum Wien, Birkhäuser, 2009), 23.
[10] Ibid., 22.

The engagement with the environment and the question of agency are central to the ecological theory of perception of James Jerome Gibson, who presents surroundings as an ambient that entails manifold action possibilities, termed *affordances*.[11] Similarly, as devised by Jean-Paul Thibaud, ambiance — i.e. atmosphere — might be approached as "a sensory background that specifies the condition under which phenomena emerge and appear" and as "a *motor stimulation* in the sense that it activates sensorimotor processes through which we engage with the world."[12] In regard of the latter, "perception … involves *moving in a certain way*."[13]

Towards an immersive field of experience

Movement and the re-enactment of somatic experience also dominated the thinking of Hugo Kükelhaus. Known as the originator of a series of experiential devices called *The Field of Sensory Experience,* Kükelhaus considered embodiment to be a powerful tool for both assessing and creating synergies with the surroundings.[14] He saw it as an agency that revealed unexpected dimensions of reason, an "embodied reason," and as a catalyst in the search for an affective and conductive environment that was "brought into effect through sensory and bodily activity."[15] Following that line of argument and claiming that it was necessary to "surround oneself with all kinds of phenomena," Kükelhaus developed apparatuses that would stimulate bodily engagement and action, expanding the perceptual world into "differential states of experience."[16] [Fig. 5-16]

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[11] James Jerome Gibson, *The Ecological Approach to Visual Perception* (Hillsdale: Lawrence Erlbaum Associates, 1986), 127–46.
[12] Jean-Paul Thibaud, "The Sensory Fabric of Urban Ambiances," *Senses and Society* 6, no. 2 (2011): 213.
[13] Ibid., 209.
[14] *The Field of Sensory Experience* or *The Field for the Development of the Senses* was originally conceived as *Experience Playground for Physical Laws* and was a part of the German Pavilion for the Expo '67 in Montreal. Later, it went on tour as a traveling exhibition and was also a part of the Exempla '75 exhibition in Munich.
[15] Hugo Kükelhaus, *Inhuman Architecture: From Animal Battery to Information Factory*, trans. Elmar Schenkel (Auroville: Studio Naqshbandi, [1972] 2007)*,* 10 and 37. To explore this condition even further, one might also take a detour through what Böhme terms the "mindful physical presence." See Gernot Böhme, "Atmosphere as Mindful Physical Presence in Space," *Building Atmosphere: Oase* 91 (2013): 21–31.
[16] Kükelhaus, *Inhuman Architecture,* 15.

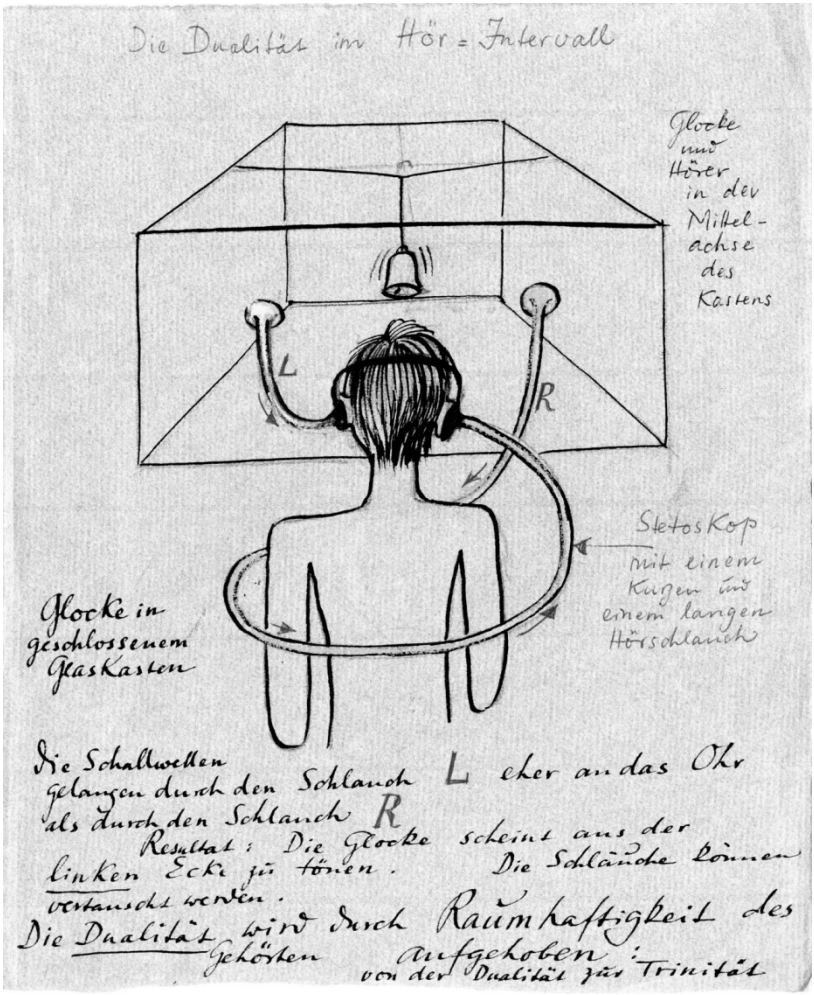

Fig. 5-16. Hugo Kükelhaus (n.d.), *Der Tatort — der tonende Kosmos*. Collage, Signature P 56.61 [© Stadtarchiv Soest, courtesy of Stadtarchiv Soes]

These were precisely the tenets Kükelhaus shared with Werner Ruhnau. It was also Hugo Kükelhaus who would later collaborate with Ruhnau, as one of several "aesthetic experts," on the design of the offices for Herta KG in Herten (1968–1972).[17]

Fig. 5-17. Werner Ruhnau and Adolf Luther (1982–1985), Flachglas AG interior, Gelsenkirchen, Germany [photo © Izabela Wieczorek, 2014]

For Ruhnau, architecture entails "scenic qualities," that is, dynamic constellations of occurrences — a playful evolvement of space in which movement and action are orchestrated by variable spatial configurations and material strategies, for which the visual is just a pretext for re-enacting the synaesthetic experience.[18] One might draw a certain parallel between

[17] Ruhnau, whose work has been broadly situated within the field of trans-disciplinary collaborations, engaged numerous artists in a development of many projects "on an equal footing with technical experts." In the development of Herta, Günter Weseler, Rupprecht Geiger, Norbert Kricke and Adolf Luther collaborated, among others. See Werner Ruhnau, *Der Raum: Das Spiel und Die Künste,* ed. Dorothee Lehmann-Kopp (Essen: Jovis, 2007), 149.

[18] Ibid., 150 and 169. The term is applied in a broad sense, not only in relation to Ruhnau's innovative theatre designs that have brought him international recognition.

Ruhnau's ways of conceptualising space and operating with space and the epitome of the stage setting, which is also derived from the realm of performance and which Böhme used to illustrate the production of atmospheres.[19] What both associations bring to the fore is the creation of an apparatus that activates an immersive condition, engaging the sensorium in an expansive way.

The reception area of the Flachglass AG in Gelsenkirchen (1982–1985) [Fig. 5-17] was conceived as such an apparatus. The project was developed in collaboration with the artist Adolf Luther, who throughout his carer experimented with lenses and mirrors in an attempt to dissolve "[t]he inertia and weight of architectural constructions … into an atmospheric movement of light."[20] Once inside the Flachglass offices, the visitor is immersed in a fluid-like space, where mysterious effects imbue the interior with an extreme lightness and, at the same time, with a viscous density that changes in resonance with the environment and makes one move around, beckoned by transparencies and reflections.

To return to the association of atmosphere with a gaseous milieu, the project *Air Architecture* (1957–62) [Fig. 5-18], on which Ruhnau initially worked together with Yves Klein, might be taken as a paradigm of atmospheric engineering in both its utopic form and social dimension. It aimed at constructing "a new atmosphere of human intimacy" charged with certain climatological erotics, in which the *immaterialities*, "[a]ir, gas, fire, sound, odors, magnetic forces, electricity, electronics are materials" and detonators of a new sensibility.[21]

[19] Böhme, "Atmosphere as Mindful," 29.
[20] Magdalena Broska, *Adolf Luther: The Fascination of Light* (Athens: Museum Herakleidon, 2007), "Architecture and Integration," para. 4.
[21] Yves Klein and Werner Ruhnau "Project of Air Architecture," in *Yves Klein Air Architecture,* ed. Peter Noever and François Perrin (Ostfildern: Hatje Cantz, 2004), 77.

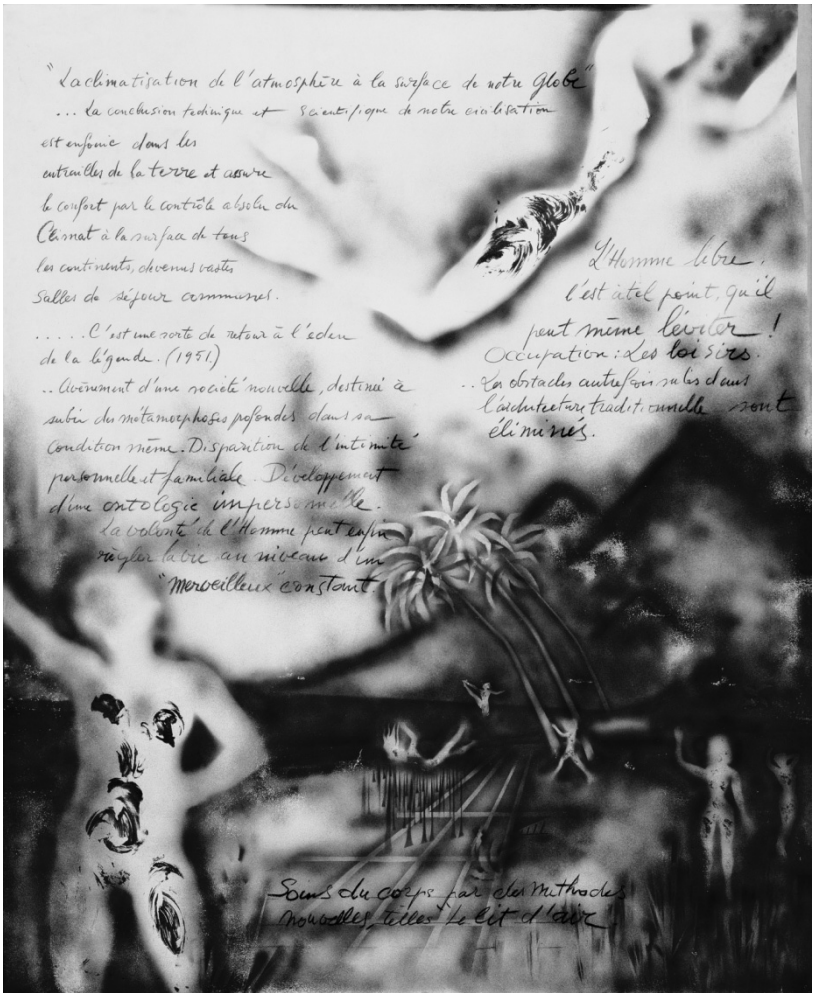

Fig. 5-18. Yves Klein (1961), *Architecture de l'air* (ANT 102). Dry pigment and synthetic resin on paper mounted on canvas, 261 x 213 cm [© Yves Klein, ADAGP, Paris, 2014; courtesy of Yves Klein Archive]

Fig. 5-19. Yves Klein and Werner Ruhnau (1958) testing a "Fire Wall," Küppersbusch, Gelsenkirchen, Germany [photo © Charles Wilp; courtesy of Yves Klein Archive]

For Klein, this sensibility was "a matter of direct and immediate perception-assimilation without any more effect or trick beyond the five senses."[22] Believing that "painting is not a function of the eye," the "affective presence," or the impregnation of space with "the pictorial atmosphere," would become his focus of attention.[23] This is what happened at the foyer of the Gelsenkirchen Theatre (1955–1959) — another joint project with Ruhnau — where Klein's giant spongy murals envelope space and the visitor in a blue haze [Fig. 5-19].

Even though Ruhnau did not continue working on "air architecture," concerns for climate and atmosphere have remained vividly impressed in his design protocols and were unfolded, for instance, in the visual manifesto *Climate and Arts (Klima und Künsten)* (1977), and embodied in

[22] Yves Klein, "The Evolution of Art towards the Immaterial," in Noever and Perrin, *Yves Klein Air Architecture,* 39.
[23] Ibid.

projects such as the previously mentioned Herta KG in Herten.[24] In its interior, conceived as an open landscape generated by the assemblage of heterogeneous objects and materials, the constituting elements are not seen as mere spatial accessories. They are rather intra-spatial components that coalesce into an atmosphere. They define an immersive field of experience in the sense meant by Kükelhaus, whose experiential devices were part of this unfamiliar landscape. In this context, space itself becomes a function of the specificities of these objects and materials, whose effects are simultaneously visual, haptic and acoustic and which construct a whole host of situations. They establish a new system of meaning and encourage action.

What these projects point to is a shift from exploring atmosphere as an inherent property of space or objects towards approaching it rather as a medium of perception — i.e. an agency that not only transports the subject to the realm of interiority, evoking feelings and emotions, but that solicits somatic responses, action and interaction. Consequently, atmosphere as a spatial phenomenon requires us to understand space as a contingent construction — a conductive environment and field of engagement that appears to us as a result of continuous and complex interferences revealed through our perception — that is, as an immersive field of experience.

[24] Yves Klein continued developing the project in collaboration with Claude Parent. For *Klima und Künsten,* see Lehmann-Kopp, *Werner Ruhnau,* 92.

CHAPTER SIX

EXPERIMENTAL LENSES

INFLECTION

SUZIE ATTIWILL

Introduction

Perception and the implication of a centred knowing subject has been the focus of a series of research projects involving exhibition design, curation and teaching. Situated in a practice of interior design, the problematic posed with each of these projects has been the question of interior in relation to both subject and space.

This paper connects this question of interior, in relation to subject and space, to concerns of perception and "here and now." Through posing interior this practice produces a pause that enables an opening up of potentials in the making of exhibitions and interiors other than ones that rely upon, assert or assume the centrality of the subject as perceiver and producer of meaning and experience. The relation between subject, object and space becomes a complex spatial and temporal composition of forces.

Different relations and encounters from those of "to," which invoke subject and object relations, and the centrality of the knower and the known, transform through an emphasis on "in," where moods, atmospheres, haecceities and event become foregrounded; subjectivity and objectivity become relational, dynamic, provisional and ecological. The centred subject becomes a product of interiorization, as distinct from the chief interiorizer.

Exhibition and curatorial practice

Since 1991, I have worked with exhibitions as an interior design practice and more specifically as a site for experimentation with this practice. I call myself an "interior designer" rather than a "curator" or "exhibition designer." Like interior designs, exhibitions involve the arrangement of things and engage with the production of spatial and temporal conditions to mediate between people and their surroundings. Exhibition objects and subjects also implicate ideas of interior and

interiority. A question posed through much of this practice has been, "If one shifts from Cartesian and phenomenological concepts of object/subject relations, then what kind of interior(s) become actualised?"

Fig. 6-1. Video still from curator's floor talk, "SPACECRAFT 0701" (2001). Monash University Museum of Art, Caulfield East, Australia. Installation detail: Gregory Bonasera, *Super Uber Vase* [curator: Suzie Attiwill]

I remember in 1989 as a second-year interior design student, one of the interior design lecturers presented us with a list of quotes from Gaston Bachelard's *Poetics of Space*.[1] This text is still one of the most cited texts by interior design students and staff, together with texts by the phenomenologist and architectural theorist Juhani Pallassma. The strength of this underpinning is manifested now in the citing of the work of the artist Olafur Eliasson as a precedent for many interior design student

[1] Gaston Bachelard, *The Poetics of Space*, trans. Maria Jolas (Boston: Beacon Press, 1969).

projects. Eliasson's practice is defined as one that produces a phenomenological subject.[2]

One can understand why the phenomenological subject is the governing image of interior design practice, as it affirms a working from the inside out, and the phenomenological idea of the conscious self as producer of experience foregrounds concepts of interior and interiority in relation to spatial experience. However, it also problematic in terms of practising as an interior designer — as someone whose role mediates between people and their surroundings — where the emphasis on the experiential is coupled with the privileging of experiencing self as the producer of experience. The centrality of the subject prior to the production of experience means the interior designer needs to know the subject. This is also oppressive because it asserts and affirms the role of the subject as someone who projects their own image into the world. As the philosopher Brian Massumi asserted, "For phenomenology, the personal is prefigured or 'pre-reflected' in the world, in a closed loop of 'intentionality.' The act of perception or cognition is a reflection of what is already 'pre-' embedded in the world. It repeats the same structures, expressing where you already were. Every phenomenological event is like returning home."[3]

An early experiment in exhibition design and arrangement was called *The Collectors,* where I engaged with the different modes of visuality offered by the philosopher Martin Jay in his essay "Scopic Regimes of Modernity": Cartesian perspectivalism, "the art of describing," "the baroque." Each of these modes manifested and produced different ways of seeing through subject/object relations, and through this, different modalities of knowing and knowledge.

Herbert Bayer, an important precedent in my practice, was one of few exhibition designers to explicitly experiment with the viewing subject. He challenged the idea of the viewer replicating Cartesian perspectivalism as a stationary perceiver. There are very few diagrams of exhibition viewers in the history of exhibition making that are not the standard diagram found in exhibition design manuals, which demonstrate the conventional, ergonomic frontal horizontal, 1500 mm eye-level hang.

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[2] Claire Bishop, *Installation Art: A Critical History* (London: Tate Publishing, 2005), 76.
[3] Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2002), 191.

> For the first time Bayer presented his famous drawing of the exhibition viewer whose head has been replaced by an immense surreal eye tracking lines of vision to panels moving from the floor to forty-five-degree angles off the floor, standing before the wall, tilted at angles extending downward from the wall, indeed looking down from the ceiling. Never before had an exhibition-space designer recognised that the line of vision was not limited to the horizontal plane and determined to utilise the immense motility of the eye to focus angles that encouraged the eye to swivel, to rise, and to lower. ... Bayer had succeeded in totally shifting the emphasis from the display to the viewer. Since it had always been assumed that displays required a flat frontality, constraining space to its two-dimensional wall surface in the service of that dumb, lazy, immobile viewer who stands grimly uncomprehending before the display-covered wall, nobody had undertaken to systematically break the plane.[4]

In 1935, he produced "Diagram of 360 Degrees Field of Vision," which expanded on the previous diagram to include a platform raised above the ground, enabling the viewer to scan wall, ceiling and floor panels. It also indicates the mobility of the viewer along the platform as distinct from suggesting a static viewing position.

In *Installation Art*, Claire Bishop foregrounds installation art as an experiment with different kinds of viewer/art relations in an attempt to decentre the viewer. Installation art, she wrote, seeks "to provide an alternative to the idea of the viewer that is implicit in Renaissance perspective: that is, instead of a rational, centred, coherent humanist subject."[5] Bishop presents four models of viewing subjects: psychological/psychoanalytical, phenomenological, Lacanian and political. However, in her conclusion, she notes that despite attempts to decentre the subject, the subject remained centred through a concern with the subject in the production of meaning.

Box of tools

The motivation in my practice is not to dismiss the phenomenological and Cartesian subject, but through making these apparent as theoretical frameworks — as philosophical issues rather than natural self-givens — the desire is to highlight the potential of interior design in attending to

[4] Arthur A. Cohen, *Herbert Bayer: The Complete Work* (Cambridge, MA: MIT Press, 1984), 289.
[5] Bishop, *Installation Art,* 13.

"interior" as a creative problematic, as a question of design — designing interior.

The philosophy of Gilles Deleuze is used as a box of tools for opening and thinking interior differently in relation to my practice, and through this, to contribute to the discipline of interior design through a posing of the question of interior to open it up from current givens of enclosed space and centred subjects. As Deleuze notes, "A theory is exactly like a box of tools. It has nothing to do with the signifier. It must be useful. It must function. And not for itself. … A theory does not totalize; it is an instrument for multiplication and it also multiples itself. [6]

Deleuze dismisses interiority as something that exists independently as the site of production, an embodiment of an essence, or as something inherent, a condition that exists before any connection or relation. With reference to David Hume, Deleuze refers to the subject as a bundle of perceptions and affections: "[O]rganised beings are not the embodiment of an essence or idea, but are the result of enormous numbers of relations between parts which have no significance on their own."[7] There is no pre-given essence. Instead, Deleuze picks up Hume's move to a study of the contingent contents of the mind where the subject is "a set of practical capacities."[8] This is quite a different way of thinking about the subject from a Cartesian mind in a body.

Inflection

This Inflection also changes an orientation in practice from one that concentrates on relations of "to" between subjects and objects to relations of "in," where the subject is understood as constituted from a bundle of perceptions made *inside* a collection of ideas.

There is a significant contrast here from a posing of a phenomenological consciousness which can be likened to "a searchlight summoning things

[6] Gilles Deleuze and Michel Foucault, "Intellectuals and Power: A Conversation between Michel Foucault and Gilles Deleuze," in *Michel Foucault: Language, Counter-Memory, Practice. Selected Essays and Interviews*, ed. Donald F. Bouchard (Ithaca: Cornell University Press, 1977), 208.
[7] Jonathan Roffe, "Exteriority/Interiority," ed. Adrian Parr, *The Deleuze Dictionary* (Edinburgh: Edinburgh University Press, 2005), 95.
[8] Jonathan Roffe, *Deleuze Seminar Series: Empiricism and Subjectivity,* 2014 Summer School, Melbourne School of Continental Philosophy, 20 January 2014.

up from their essential darkness" that effects a bracketing of the exterior — a phenomenological reduction — and a movement away from the outside world to concentrate exclusively on the self as the centre of activity. Deleuze writes of a process of contraction rather than reduction, where sensations act on the nervous system as distinct from the brain, where each faculty "perceives the relations between sensations rather than perceiving them as data or representations of these sensations."[9] Here the world is already luminous, and consciousness is likened to an opaque blade that refracts, reflects and inflects without which light would go on diffusing itself forever.[10]

Techniques of interiorization become highlighted: attending to processes of intensification, of bringing into close proximity through selection and arrangement. Perception is inventive and "no one model can lay claim to a final 'reflection' of or 'correspondence' to reality. It is simply not about reflection or correspondence. It is about *participation*. Differential participation."[11] Exhibitions are worked as spaces for experimentation and research in terms of a different viewer in the twenty-first century — not as one of knower or knowing, a pre-existing subject, but one of experimentation, becoming and transformation, where "experience constitutes a complex place, and our experimentation on ourselves is, for Deleuze, the only reality … leading to the 'intensification of life' by revaluating experience."[12]

Bibliography

Bachelard, Gaston. *The Poetics of Space*. Translated by Maria Jolas. Boston: Beacon Press, 1969.

Bishop, Claire. *Installation Art: A Critical History*. London: Tate Publishing, 2005.

Cohen, Arthur A. *Herbert Bayer: The Complete Work*. Cambridge, MA: MIT Press, 1984.

[9] Eugene B Young, Gary Genosko, and Janell Watson, *The Deleuze and Guattari Dictionary* (London: Bloomsbury, 2013), 276.

[10] Gilles Deleuze, *Empiricism and Subjectivity: An Essay on Hume's Theory of Human Nature*, trans. Constantin V. Boundas (New York: Columbia University Press, 1991), 5.

[11] Massumi, *Parables for the Virtual,* 205.

[12] Inna Semetsky, "Experience," ed. Adrian Parr, *The Deleuze Dictionary*, 90.

Deleuze, Gilles. *Empiricism and Subjectivity: An Essay on Hume's Theory of Human Nature*. Translated by Constantin V. Boundas. New York: Columbia University Press, 1991.

Deleuze, Gilles, and Michel Foucault. "Intellectuals and Power: A Conversation between Michel Foucault and Gilles Deleuze." In *Michel Foucault: Language, Counter-Memory, Practice. Selected Essays and Interviews*, edited by Donald F. Bouchard, 205–17. Ithaca: Cornell University Press, 1977.

Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham, NC: Duke University Press, 2002.

Roffe, Jonathan. "Exteriority/Interiority." Edited by Adrian Parr. *The Deleuze Dictionary*. Edinburgh: Edinburgh University Press, 2005.

—. *Deleuze Seminar Series: Empiricism and Subjectivity*, 2014 Summer School, Melbourne School of Continental Philosophy, 20 January 2014.

Semetsky, Inna. "Experience." Edited by Adrian Parr. *The Deleuze Dictionary*. Edinburgh: Edinburgh University Press, 2005.

Young, Eugene B., Gary Genosko, and Janell Watson. *The Deleuze and Guattari Dictionary*. London: Bloomsbury, 2013.

(RE)PRESENTING EMBODIED INHABITATION PERCEPTION OF CONTEMPORARY DESIGNED PUBLIC SPACE

ISUN KAZERANI

Abstract

This paper explores embodied inhabitation perception of contemporary public space in relation to the design intention and the process. This exploratory interpretation will be (re)presented according to individual multisensory and bodily experience as well as collective sociocultural and political inhabitation of space. The focus is on how the inhabitation of the space could be interpreted and (re)presented in relation to the design intention, process and designers' representational practices. The exploration will be implemented in a contemporary designed public space, Copenhagen Superkilen, with a rich sociocultural and political context. This is investigated through documentation of my embodied inhabitation experience of the space, interviews with the designers and investigating the design documentations and interviews with public users. The collected material is then implemented to (re)interpret and (re)present an embodied inhabitation perception of the selected public space juxtaposed with the design intention, strategy and representations. The outcome will reveal how designer's understanding of sensorial and objectified space and its projection under site-specific sociocultural circumstances could impact inhabitation perception of space.

(Re)presentation, inhabitation perception and the design strategy

Human perception of an architectural space could be shaped through direct physical encounter or through media. The perception of space and its evaluation has been studied in such disciplines as environmental psychology, using methods such as questionnaires and photographs to *measure* human perception of space (Lewicka 2011). Moreover, such

techniques as post occupancy evaluation employ methods such as counting the number of people using different objects, such as furniture, to assess the "success" of designed spaces. Looking at space purely in a visual sense and as collection of objects, these approaches impose a reductive understanding of design, aesthetics and multiplicity or nuance of place experience and its perception. The aim of this paper is to (re)present a multifaceted perception of a contemporary designed public space by creating links between individual and collective inhabitation of space with the design intent and strategy.[1] The proposed textual and visual (re)presentation reconstructs the space through juxtaposing abstract spaces of designers to the space of everyday inhabitation, as subjective concrete lived space. The attempt toward "representation of space" for the formation of "spaces of representation" will also reveal the effects of the design intent and strategy on individual (sensorial) and collective (sociocultural and political) inhabitation of space.

This understanding draws on Lefebvre's critique of the reductive perception of architectural space as purely visual and his emphasis on the role of the user in the production of space. He asks for representation of the "non-visual and sexual, political, a sensory-sensual of the speech, of the voice, of smell and of hearing," a space to be experienced through all the senses (Lefebvre 1974: 363). Conventional architectural representations often rely on visual illustration of how the spaces will be built, projecting a reductive perception of space, which lacks sensorial embodied engagement, sociocultural complexities and the way it is transformed by occupation. Many of the final three-dimensional representations are seductive images of the design outcome, but undermine human embodied engagement with space, such as line of sight, motion through space and the nuance of human visual experience. Typically describing a distant view of space, the conventional *represented* image dictates the designer's view of the project, imposing a considerable influence on user's perception confining open interpretation.

Design representations also reveal the designer's approach to the project in terms of scale and level of engagement with the site or the structures. In this work, the notion of "inhabitation" looks at perception of space at two different levels — as an individual bodily and sensorial interaction with space and as a more collective sociocultural and political occupation of space. Space is spatially experienced by physical presence,

[1] The notion of (re)presentation in this format stresses *re*interpretation and *re*construction of a designed space based on the lived experience of space.

moving and experiencing multiple senses in different physical positionalities. All the senses and their dynamics, constantly changing through movement, affect our impression or experience of space (Böhme 2013). Collective inhabitation of space, the way users socially and politically engage with the space and the way the space adapts itself to ever-changing societal dynamics deeply affect the perception of space. In that sense, the conventional understanding of the role of the designer as the "object-maker" should be challenged. The sheer objectified design approaches leave less flexibility and creativity in habitual perception of space as well as adapting to ongoing social and environmental changes. This will suggest rethinking design possibilities and taking advantage of the inherent physical, sensual and social potential of the site and space (Kazerani and Rahmann 2013). As a result, user's participation and interpretation at the individual embodied as well as the collective sociocultural level will be encouraged.

Here, multiple methods are developed to document and (re)present a multi-modal perception of a contemporary designed public space, Copenhagen Superkilen. The rationale behind selection of this case study is two fold: the significance of perception in relation to strong cultural and political sensitivity of the site as well as the implemented participatory additive design strategy (Kazerani and Rahmann 2013). During a fifteen-day inhabitation in the same neighbourhood and frequent visits to the site, I documented my own inhabitation experience using auto-ethnographic methods, such as embodied photography, in-situ drawing and creative architecture writing. These techniques were developed to capture the nuance of conceptual (sociocultural and political) and sensual inhabitation, such as sound, smell, tactility, line of sight, binocular visual fuzziness, floatation in movement and displacement impression. In order to avoid sheer subjectivity and explore cultural and political inhabitation of other users, semi-structured interviews were conducted with the public, inquiring about their inhabitation memories and narratives of space.

The notion of the "user" in this paper refers to the "I," in subjective terms, as well as the "others," as other visitors of the public space, who were observed and interviewed. Furthermore, interviews with designers and design documentation studies are used to reveal the designer's intention and their strategy in relation to sociocultural and political context of the space. The next section will textually and visually (re)interpret and (re)present an embodied inhabitation perception of the selected case study in relation to the original design intention, process and the implemented tactical and representational strategies. The visual (re)presentations

reconstruct the design space using the collected embodied photography method. It represents a documentation of the habitual perception of space at the eye level and with regard to the movements of the eyes and the body in short time intervals (less than 10 seconds). The in-situ drawings and architectural writing are at times used as the main background theme or integrated within the graphics. Designer's original drawings are also integrated in reconstruction of the space to reveal and challenge spaces of representation, representation of spaces and their distinctions.

(Re)presenting Copenhagen Superkilen

Denmark's post-war immigration started with the recruitment of "guest workers" mainly from Turkey, Pakistan and Yugoslavia in the early 1970s. Before that, only people from Nordic and other Western countries tended to move there. While Denmark did not, and still does not, regard itself as an immigration country, the percentage of immigrants doubled between the mid-1980s and 2005, becoming 9.8 per cent of the total population in 2010.[2] Copenhagen Superkilen (2012) — awarded the 2013 AIA National Honor Award and designed by BIG architects, Topotek 1 landscape architects and the Superflex artist team — is located in Copenhagen's most multicultural urban district, Nørrebro. For many years, with a majority of residents from the immigrant generation [Fig. 6-2], the site was overgrown and vacant, partially adjacent to an unused rail terminus. There were also problems with street crime and local clashes.

In response to the brief for a public space that would promote multiculturalism and social integration, the designers took a participatory design process. The participatory process focused on the selection of urban objects — such as benches, fitness equipment, fountain and pavilion — for local residents from 50 different nationalities, surrounded by a variety of vegetation to match the origin of the selected objects. The park is divided into three districts — red, black and green — through strong implementation of colours and in part surface and function variation. The colourful public space with various international objects seems nothing like the archetypal Danish design or the conservative attitude that freezes the Danish picturesque landscape (Hoyer 1999). In that regard, it succeeds in reshaping the land as a democratic reflection of contemporary society and emerging conditions. As Nanna Gyldholm Møller from BIG and Martin

[2] "Ethnic Entrepreneurship, Case Study: Copenhagen, Denmark," European Foundation for the Improvement of Living and Working Conditions, Dublin, 2012.

Rein-cano from Topotek 1 said, these objects could be considered as brave statements in the social legitimization of the multicultural nature of contemporary society, which both the locals and the Dane community should be proud of. Interviews with locals, particularly those who could not be observed at the urban core and among the Danish community on an everyday basis, such as women in burkas, revealed that they feel more comfortable spending time in Superkilen, unlike areas such as central Copenhagen.

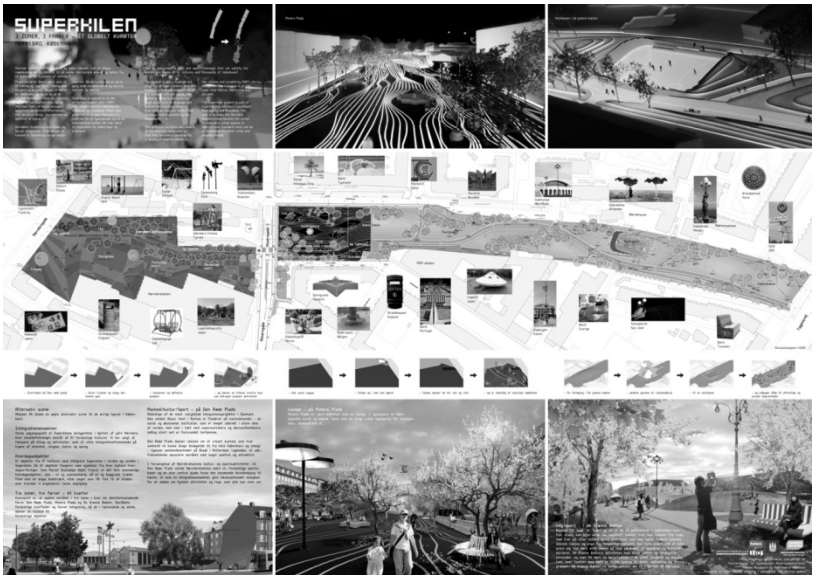
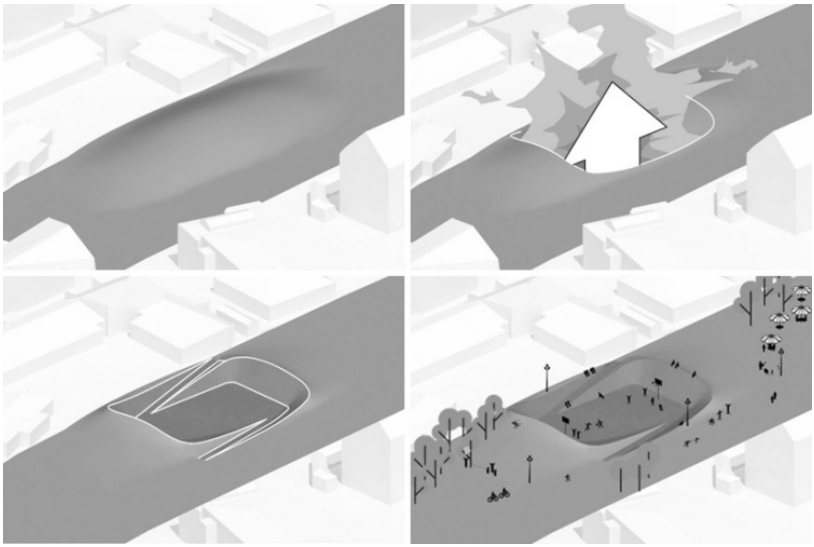
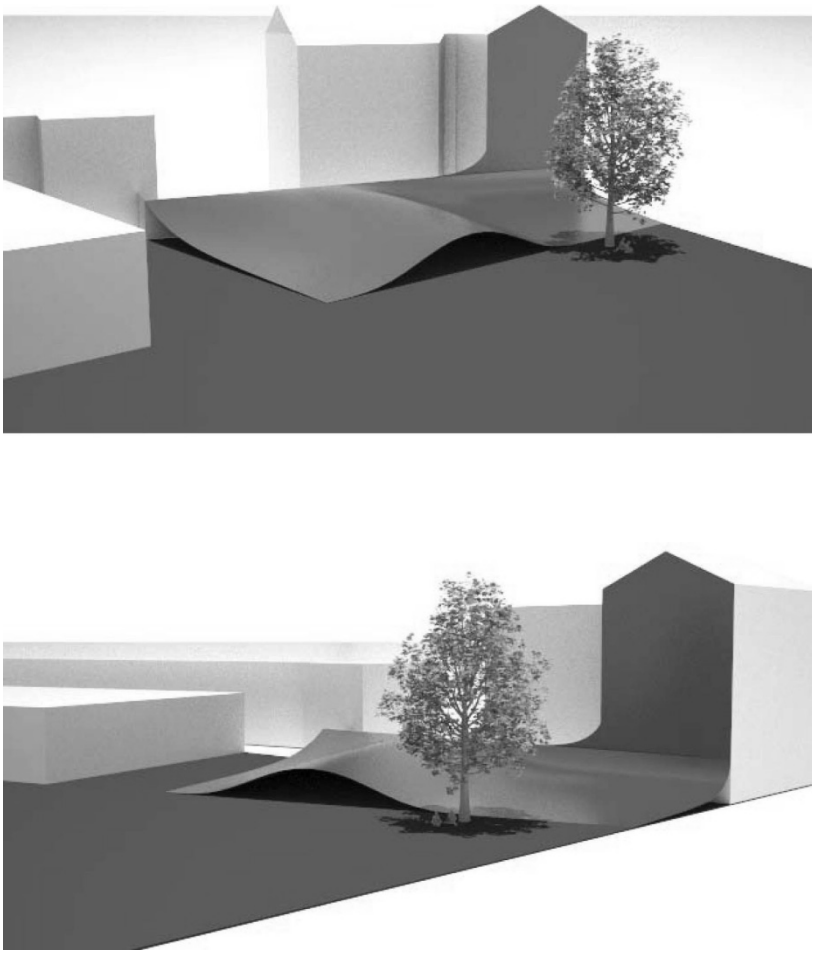


Fig. 6-2. Isun-Kazerani (2014), Copenhagen Superkilen (2012), Copenhagen, Denmark [BIG, Topotek1, Superflex]

Some of the objects encourage bodily movement and are well integrated within the formal and visual landscape variations. One example is the way the Japanese Octopus is integrated into the modulated black square landscape, adjacent to a protruding hilly volume and accompanied by wavy lines accentuating the fuzziness and topographical illusion of space. Apart from some instances in the red and black square, most of the objects are either physically engaging only as play equipment or dominantly experienced in a visual mode. The experience of an objectified space with pure visual character could be perceived as similar to the conventional picturesque approach, reducing space and design potential

solely down to what can be *seen*. Moreover, such an approach raises issues of temporality and the inability to change or evolve over time according to constant environmental and societal shifts.





Figs. 6-3 and 6-4. Isun-Kazerani (2014), *3D modelling: red square, green square* (2012), Copenhagen Superkilen, Denmark [BIG, Topotek 1, Superflex]

The loss of original appearance due to wear and tear and the impact of seasonality, evident in the worn off ground colour, as well as maintenance costs could be mentioned as some relevant instances. Although proximity to these objects creates a pleasant nostalgic feeling for the inhabitants, it does not encourage integration into the society of which they are now a part. Moreover, as a symbolistic design strategy, the objects do not educate

Fig. 6-5. Isun-Kazerani (2014), *(Re)presenting the red square* [Isun-Kazerani; original representation: BIG, Topotek 1, Superflex]

or cultivate understanding among the Danish community about the multiplicity of cultures. However, the new, peaceful image of the site attracts many Danes from other parts of the city to spend more time on the site or in the neighbourhood, e.g. in the local restaurants, and to communicate with different ethnic groups. This will improve understanding and acceptance of a new definition of diversity in contemporary society. Hence, as the first step towards introducing a new picture of contemporary,

multicultural Danish society, the design is effective as a strong, literal declaration of existing cultural diversity and the need for integration.

The publicized representation of the project showcases a linear colourful space with images of objects linked to their location on the site [Fig. 6-5]. While interviews with BIG architects and Topotek 1 landscape architects revealed a tight collaboration between them, the representational practices reflect each designer's distinct design approach. While some of the representations largely focus on the role of the objects in the landscape and represent the site from an orthogonal 2D projection, others use parametric modelling to experiment with features such as form, levelling and topography [Fig. 6-2 & 6-4]. The 3D modelling has inspired more design possibilities, particularly in the black square with various formal experimentations. However, more intimate small-scale 3D representations from a human-eye level perspective and in bodily interaction with the space, surface and the objects are less explored. Lack of such embodied projections has resulted in contradictions between how the space is being represented graphically and experienced in everyday practice. For instance, while the patterns and colours implemented in the graphic representation of the red square leave an impression of level and surface variations, the actual experience of walking on the surface is flat and linear [Fig. 6-5]. The black square seems like the most bodily engaging section of the area, integrating objects, landform, colour and pattern to create an engaging visual and bodily experience of the space [Fig. 6-6]. The integration of all these characteristics in this section leave a dissimilar perception of floatation and fuzziness when combined with movement of the eyes as well as bodily movement, particularly on the modulated land. Although similar formal variation has been implemented in the green section, particularly in the design of the basketball court [Fig. 6-3], the engagement remains at a visual level. This could be due to the defined pathways spread on the perimeter of the protruding curves, the typical grass surface (not adaptable to all climatic conditions) and the conventional chair and umbrella objects in this section.

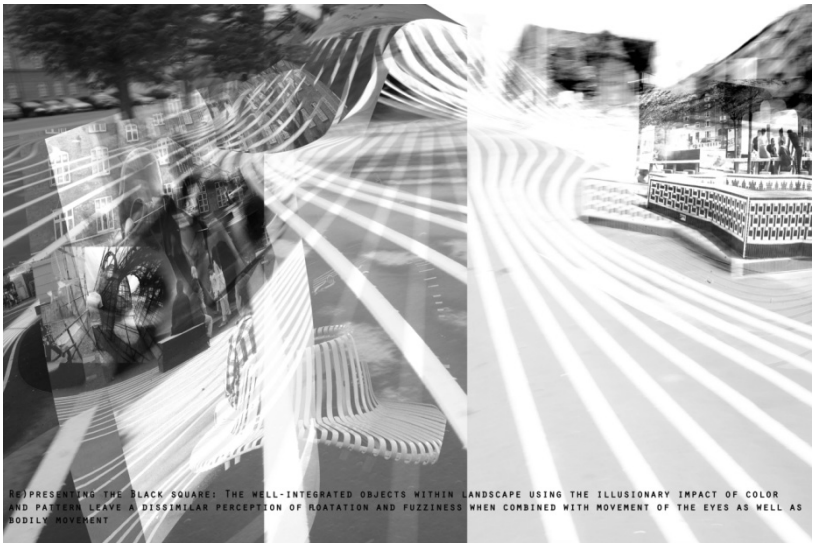


Fig. 6-6. Isun-Kazerani (2014), *(Re)presenting the black square* [Isun-Kazerani]

(Re)presenting juxtaposition of inhabitation and the design process

The proposed critical (re)presentation explores users' inhabitation perception of a designed public space in relation to the design strategy. It also challenges the participatory design process in relation to the potential of the outcome for evoking dynamic embodied and sociocultural perception. Moreover, the preconceived notion of architecture as an object-making practice and the impact of conventional architectural representations on user's spatial and sociocultural perception are questioned. The (re)presentation of the selected case study reveals how the designer's implemented strategy has managed to make a strong multicultural statement and initiate a cultural dialogue in a country with little familiarity with contemporary migration culture. Furthermore, it challenges the potential of a pure objectified design approach in reducing the richness of users' place experience to the visual, unless integrated with more multisensory dimensions to give presence to embodied quality of space inhabitation. This would suggest the significance of using design tactics and representational practices with more awareness of human individual (embodied) and collective (sociocultural and political)

interactions with space that mirror change over time and allows adaptation to the contemporary context.

Bibliography

Böhme, G. 2013. Architektur und Atmosphäre. N.p.: Fink, Bibliotheksverbund Bayern.

Hoyer, S. A. B. 1999. "Things Take Time and Time Takes Things: The Danish Landscape." In *Recovering Landscape,* ed. James Corner. New York: Princeton Architectural Press, 1999.

Kazerani, I. A., and H. Rahmann. 2013. "Design Strategies in Contemporary Open Space Design: From Additive Approaches to Minimal Interventions." IFLA conference, Auckland, New Zealand.

Kazerani, I. A., and H. Rahmann. 2014. "Re-visiting Best Practice: Investigating Place Experience in the Nexus of Theory and Design." ECLAS conference, Hamburg, Germany.

Lefebvre, H. 1974. *The Production of Space.* Cambridge: Blackwell, 1991.

Lewicka, M. 2011. "On the Varieties of People's Relationships with Places: Hummon's Typology Revisited." *Environment and Behavior* 43: 676–709.

CONSTRUCTED EXPERIENCES: AN ARCHITECTURE OF PERFORMANCE

WILLIAM FEUERMAN

In its most basic function, a building operates as a sheltering device, insulating, enclosing and sealing a space from the exterior environment. But more than just a static structure to contain, a building has the capacity to adjust itself to seen and unforeseen conditions. It has the ability to "perform" in varying ways to maximize its relationship to identity, climate, people, culture, context and experience. In David Leatherbarrow's "Architecture's Unscripted Performance" from *Performative Architecture: Beyond Instrumentality,* he writes, *"*The building is its effects and is known primarily through its actions or performance."[1]

The Museum of Modern Art's temporary outpost in Queens designed by Michael Maltzan has a physical sign on the roof of the building that transforms based on ones orientation in time and space. As the above ground subway approaches the building, the sign transforms from what appears to be purely an abstract sculpture to a billboard of characters reading M-O-M-A. Maltzan calibrates the spatial sequence, creating a direct relationship between the subway and the building's sign.

Steven Holl and Vito Acconci's Storefront for Art and Architecture operates as a machine. Its form literally performs and functions, physically transforming to accommodate different uses — from doors and windows to seating and tabletops. The transforming nature of the building's facade extends the limited 1,000 square feet of interior space onto the sidewalk. The boundary between interior and exterior is blurred.

Enric Ruiz Geli's Mediatic has a weather-responsive skin system made of inflatable EFTE panels that enable energy savings while also improving thermal insulation. The building's pneumatic skin transforms to control the

[1] David Leatherbarrow, "Architecture's Unscripted Performances," in *Performative Architecture Beyond Instrumentality* (New York: Spoon Press, 2005), 10.

amount of sunlight and shade within the building. The skin literally performs as a device to measure the building's efficiency.

Louis Kahn, stated "Architecture appears for the first time when the sunlight hits a wall. The sunlight did not know what it was before it hit a wall."[2] A skin's material and form can perform to maximize the surrounding environment.

In Tadao Ando's Church of Light, the relationship between nature and architecture is defined by the way in which light alters the space. The building's polished concrete construction creates a darkened volume penetrated by the changing natural light throughout the day, distinctly shaped by an eastern facing void in the shape of a cross. Light becomes space.

Leatherbarrow writes, "A building can be read purely as a system of components intended in design and realized by construction or as a system of representations outlined in composition and experienced in perception."[3] Architecture has the ability to construct experiences.

Art as the Architecture of Experience

The development of the mathematical perspective opened up opportunities for new spatial experiences to be understood and constructed. First established in the early Renaissance, perspective brought to the visual field an accurate depiction of a three-dimensional place on a two-dimensional surface. The architect and engineer Filippo Brunelleschi sought to develop a way to accurately draw what he could see. "He wanted a mathematical demonstration that was correct, and he wanted the spectator to be critically aware of that demonstration."[4] The linear perspective became a basis for a new conception of space, a tool offering insight into both seen and unseen conditions.

Donato Bramante's Santa Maria presso San Satiro (1482) in Milan was one of the first building's to apply principles of perspective to produce a constructed illusion. Site constraints — a road running along one of the building edges — prohibited Bramante from creating his preferred cruciform

[2] Pierre von Meiss, *Elements of Architecture: From Form to Place* (London: E & FN Spon, 1990), 121.
[3] Leatherbarrow, "Architecture's Unscripted Performances," 9.
[4] Eugenio Battisti, *Filippo Brunelleschi* (New York: Phaidon Press, 2012), 102.

plan. "If the shape of the site did not allow for building along all sides of the structure, a cupola over the crossing and aisles running completely around the church, then this would have to be completed illusionistically."[5] Perspective made this illusion possible. Because the side of the cruciform church could physically not be constructed, Bramante produced an "illusionistic enlargement of the physical space. The end of the vista would be represented in low relief to stimulate a non-existent recession."[6] The hybridization of materials and ornamentation and the limited depth, just over a metre, produce the perception of a space that is actually not real. For Bramante, "the methods of the painter and the architect were interchangeable: essentially, architecture became "painting," a visual fact, a representation complete in itself."[7] A false condition is constructed producing the illusion of an experience.

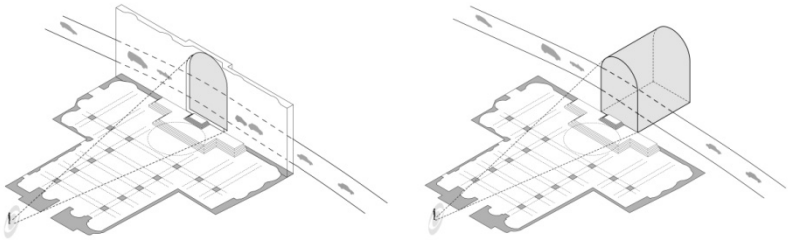


Fig. 6-7. Diagram of Donato Bramante's Santa Maria presso San Satiro"

In the seventeenth century, the painter, stage designer and architect Andreas Pozzo applied techniques of the trompe l'oeil (translated from French as "misleading the eye") to architectural spaces, using imagery to create forced perspectives of imagined scenes and false dimensions. The most famous of his works, the Church of Sant'Ignazio in Rome, has two frescoes that each trick the eye into believing a false reality. In the nave of the church, Pozzo designed an extension to the building making the architecture three times higher than it actually stands. The extension was

[5] Arnaldo Bruschi, *Bramante* (London: Thames and Hudson, 1977), 37.
[6] Ibid., 37.
[7] Ibid., 36.

not to be constructed, and yet what is an extremely shallow cupola seems to extend infinitely into space because of Pozzo's combination of linear perspective and anamorphic projection. Further into the space, what appears to be a monumental dome soaring above the city is actually an image painted onto a flat surface. In *Rules and Example of Perspective* (1707), Pozzo explains how the precision of the perspective provides the opportunity for these experiences to be understood and constructed, offering insight into both the seen and unseen conditions that produce an illusion. In reality, it becomes difficult to identify the transition between architecture and painting, which is further articulated in Pozzo's drawings, literal extensions of the technical architectural plan. The plan provides the basis for an illusion of architecture to be constructed.

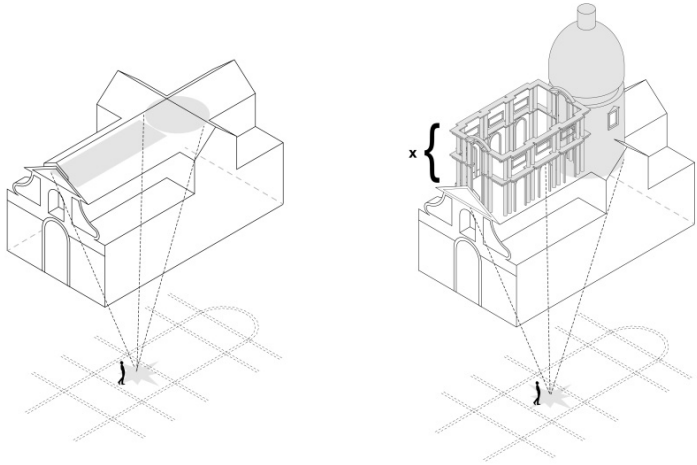


Fig. 6-8. Diagram of Andrea Pozzo's Sant'Ignazio

Bramante and Pozzo were operating on the edge of architecture and art, hybridizing methods from each discipline. The resulting works are carefully orchestrated compositions that are extensions of real space. Precise and accurate distortions of place are measured to create an illusion of an imagined architecture. In these cases, art acts as the architecture of experience, blurring boundaries between disciplines.

Blurred Boundaries between Architecture and Art

Returning to the twentieth century, these boundaries continued to be blurred. At Louis Kahn's Salk Institute, the Pacific Ocean appears to be at the plaza's edge, a continuation of the vast central courtyard. In actuality, however, by strategically stepping the plaza down at one end, Kahn creates a distortion of place. The expanse of land between the building and water slowly disappears, transforming the building-context relationship into a defined perceptual effect. The building acts as a machine, calibrated and measured to achieve these precise effects.

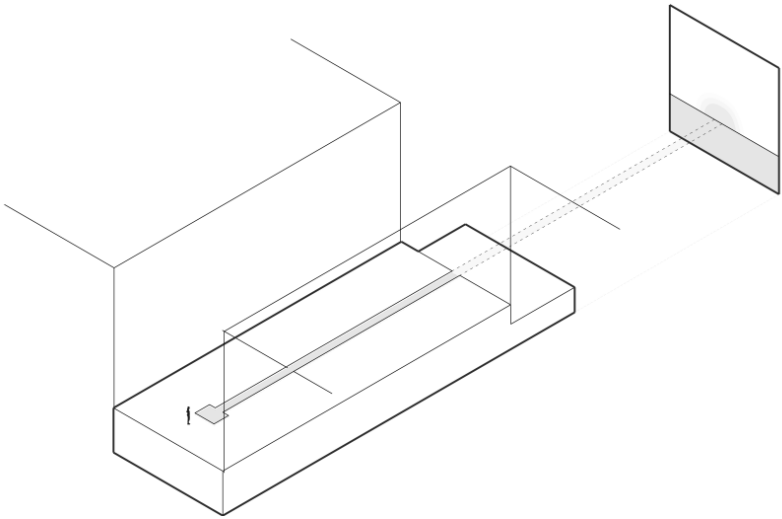


Fig. 6-9. Diagram of Louis Kahn's Salk Institute plaza

In his work Skyscapes, the artist James Turrell similarly uses an architectural detail to create a spatial illusion. By tapering the edges of a skylight, the thickness of the ceiling is not read. The image presented through the void flattens to become part of the ceiling — that is, until the clouds begin to move or a bird flies overhead. Turrell explains: "These pieces deal with the juncture of the interior space and the space outside …

They create a space that is completely open to the sky yet seemingly enclosed."[8]

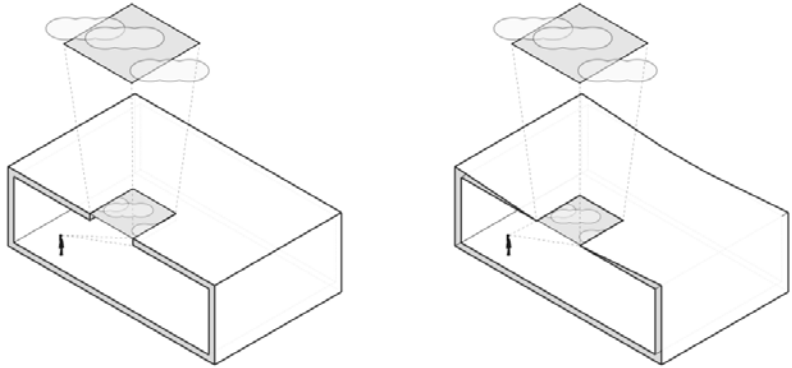


Fig. 6-10. Diagram of James Turrell's Skyscapes

Kahn's plaza and Turrell's Skyscapes in effect mimic one another — Kahn capturing a horizontal vista, bringing what is in the background to the foreground and Turrell capturing the vertical vista of the sky unified with the ceiling. Both rely on architectural methodologies and tools to construct experiences, distortions of reality that transform the relationship between the physical body, its environment and the mind. For Kahn, a measured change in elevation makes something so far in the distance seem as though it's at the tip of your fingers. A thin stream of water running directly down the centre of the plaza, reflects the sky above, further enhancing the relationship between the plaza and the horizon. Turrell redefines the relationship between a pseudo interior space and its window to the outside by manipulating architecture details. He explains:

> I am involved in the architecture of space. To some degree, to control light I have to have a way to form it, so I use form almost like the stretcher bar of a canvas. ...When I prepare walls I make them so perfect that you actually don't pay attention to them. This is true of the architecture of form

[8] Michael Govan, *Retrospective: James Turrell* (New York: Prestel Publishing, 2013), 132.

> I use: I am interested in the form of the space and the form of territory, of how we consciously inhabit space.[9]

Although both works have a permanence, Kahn's plaza can only be experienced in one place (La Jolla, California) and is directly linked to its specific site and context (the Pacific Ocean), whereas Turrell's Skyscapes are site-less in a way, capable of transforming or adapting to different environments, from California to Arizona, from the UK to Japan. Using architectural methodologies and tools, Kahn and Turrell both construct spatial mechanisms to create experience, transforming the perception of a space. These projects represent the blurring of boundaries between the disciplines of art and architecture. Once again architecture is operating on the edge of art as art becomes the architecture of experience.

Architecture as Image

In Ashton Raggatt McDougall's (ARM) 1010 Latrobe Street in Melbourne, Australia, the floor slabs are arranged in parallel layers, although the facade's visual effect makes it appear otherwise. An offset pattern of windows, almost printed on to the surface of the building, produces the appearance that the floor slabs are tilted, shearing back and forth. It is a visual effect, as obviously floors must be parallel. There is no link between the exterior representation, produced by the conventional materials (slabs, panels, mullions, windows) and the operative nature of the building's interior. The skin literally performs as an image.

At Jean Nouvel's Institut du Monde Arabe in Paris, the facade is made up of a grid of varying-sized hexagonal openings inspired by the ornament and detailing often found in the Middle East. Zoom in, and these openings are responsive apertures that regulate the amount of light that fills the building's atrium. The image on the exterior act as a machine to maximize the changing conditions of light over the course of the day on the interior.

[9] Govan, *Retrospective: James Turrell*, 131.

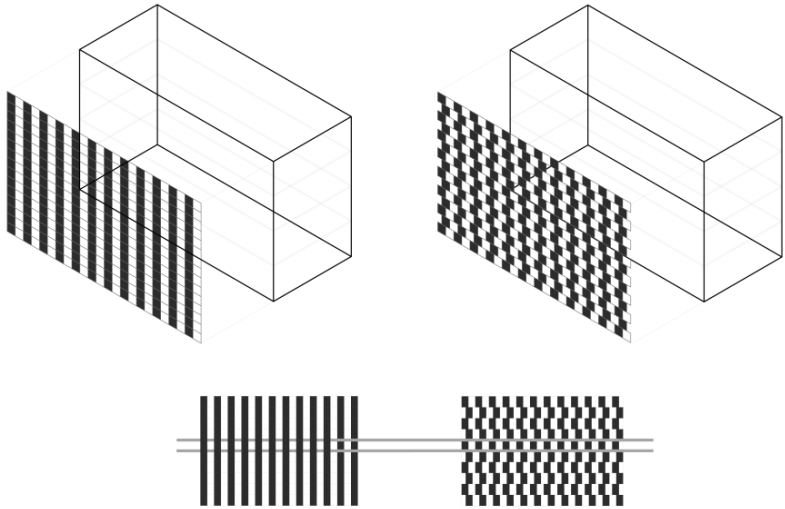


Fig. 6-11. Diagram of ARM's 1010 Latrobe Street

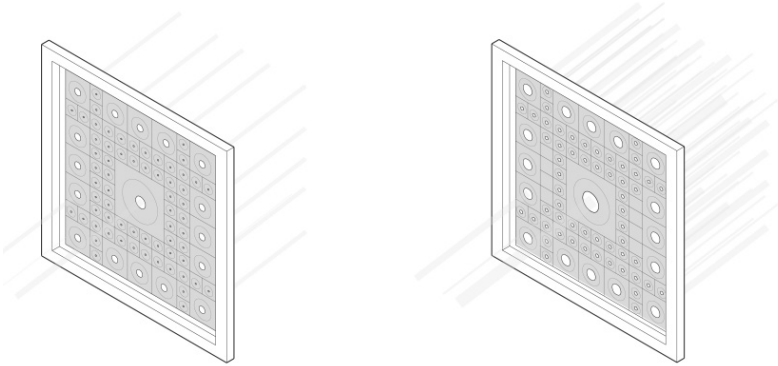


Fig. 6-12. Diagram of Jean Nouvel's Institut du Monde Arabe

In the case of ARM, a "ready-made" geometrical optical illusion serves as a catalyst for constructing a perceptual experience. The building operates almost similarly to a piece of art in a museum. As a viewer approaches, the facade highlights the distortion by framing a specific moment with three-storey-tall circular forms. For Nouvel, the facade's shifting geometric pattern filters light and dramatically alters the interior

space as well as presenting a constantly evolving exterior appearance. Its ornament, produced by the incremental degree of light, becomes functional when the diameters of the apertures are regulated to control solar gain. In this case, the image is a literal measure of the building's performance.

Alternative Modes of Seeing

New ways of seeing are translated into dynamic environments that generate active and responsive spaces. Architectural methods and techniques are used as generative tools to produce new spatial projections in both art and architecture in order to construct experiences. It is here where both disciplines cross, as they deploy techniques, transcending the idea of representational practices as exclusively documentation, to generate speculation about existing and new spatial environments. This blurred boundary between art and architecture has formed my own research practice. The relationship between the physical body, its environment, and the mind — mediating perceptually and operationally between them — serves as a catalyst for design.

In 2007, I suffered from an acute isolated stroke that caused internuclear ophthalmoplegia (INO), a disorder that affected the coordination of my eyes. The stroke caused a surge of instant discomfort as my left eye felt as though it was being grabbed and pulled to one side. I had not lost my sight, but the effects of the stroke dramatically shifted my visual perception. My left eye, essentially paralysed, caused permanent double vision. The relationship between my eyes and my brain was ruptured, and as a result my body experienced a new visual reality. An overlay of information from two different perspectives was being processed by my brain, hybridizing as one and causing great confusion and loss of balance as I navigated familiar spaces. I was in a unique position to document and further understand the spatial implications of my disability.

The precision of architectural representational tools allowed me to explore a neurological perceptual distortion with accuracy. Collages captured my visual surface, juxtaposed with a literal image of the actual space. More than images, the collages uncovered the path of collision between how a space is typically experienced versus how I was perceptually experiencing it. Accompanied architectural diagrams and mappings further investigated the mechanics of the visual experience. The research evaluated the urban condition from a distorted perspective,

reconditioning the urban perspective through my visual perception. A high level of awareness was produced through partial blindness. Certain things disappeared and new things appeared.

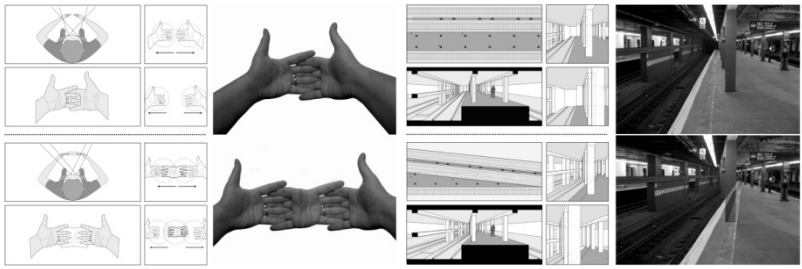


Fig. 6-13. Stroke-related collages and drawings

Current research translates ways of seeing into ways of forming. The stroke-related body of work provided a visual explanation of my new constructed experience and became pivotal in prompting a series of other projects.

Nightlight, a site-specific projected installation for Expanded Architecture 2011, part of the Sydney Architecture Festival, mimics the way natural light penetrates the interior space of a nineteenth-century industrial train depot, the Carriageworks. Light formations over the course of a day were mapped and superimposed on the surface of the industrial space during the night. *Nightlight* transformed day into night by utilizing the agency of mapping to reproduce a new spatial experience. As the projection slowly crossed the floor, tracing the sequence and movement of light, a familiar sensory experience was artificially imposed during the darkness of night. *Nightlight* challenged everyday perceptions, rendering invisible sequences of events, visible.

Fig. 6-14. Exhibition photographs of *Nightlight*

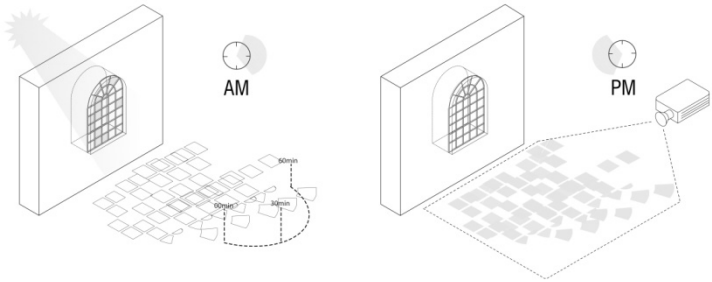


Fig. 6-15. Diagram of *Nightlight*

Street Light Disco, a current collaborative project with the City of Sydney, takes the everyday Sydney street banner and reinvents it as a dynamic and interactive surface. Mosaics constructed from a thin reflective material are adhered and stitched to a fabric to form the banner's surface. The unique material properties produce noticeable light patterns, visual distortions and unique perspectives of the surroundings. At night, the light from street lamps further activates the banner's surface. Natural and artificial light formations, which are amplified by wind, span across the depths of the plaza. The site is instantly transformed from a dark, uneventful thoroughfare into an interactive plaza. The spatial nature of the banner and its contextual influences visually expose the forces of light and wind. The banner's dynamic surface alters and tampers with the existing

urban streetscape, making it possible for the public to experience weather interactively.

Fig 6-16. Day and night renders of *Street Light Disco*

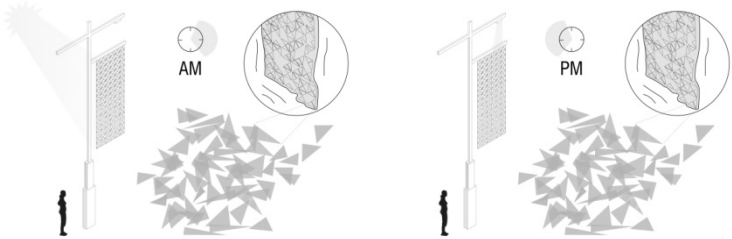


Fig. 6-17. Diagram of *Street Light Disco*

The evident blurring of boundaries between art and architecture, have influenced work from Bramante, Pozzo, Kahn and Turrell to my own research practice, offering speculation into new spatial environments. The intangible mechanics of perception have been utilized to produce a constructed experience, an architecture of performance. My work, which was initially about the experience of urbanism through distortion, has become about reconditioning the urban perspective, transforming the architectural experience. Alternative modes of seeing open up new spatial possibilities. Sight can lead to insight.

REFLECTIONS

PERCEPTION BEYOND MATERIALITY; OR, A TRANSCENDENTAL GLIMPSE OF ARCHITECTURAL SPACE

YANNIS ZAVOLEAS

Introduction: experience in the physical and the digital worlds

More than three decades of precipitated digital evolution have passed, and any of the shock of the first contact with the computer has finally faded away. Navigating in the digital worlds has become more and more natural. The digital worlds are to a large extent recognizable, as many of their characteristics are borrowed from everyday experience, such as the terminology, the formed relationships and the hierarchical order among sets of digital elements. Computer users are now familiar with the idea of digital worlds as mediated platforms supporting common activities, most often related to communication and frequent transactions. Then, is there still anything inherently different from reality in them, often raising doubts that they will at some point be indistinguishable from the physical one that surrounds us?

In response, the first undertaking is to frame what is assumed to be "real" and then to concentrate on physical space, specifically on the perceptive processes by which physical elements are given spatial significance in relation to their material status. The problem of "physicality" turns out to be inseparable from perceptive processes. As technology has evolved, a future is foreseeable in which the digital worlds will appear as convincing as the physical one, offering experiences of equal profundity and richness.

Are digital worlds real or apparitions?

The screenplay of the science fiction film *The Matrix,* by the Wachowski brothers, transfers us roughly two hundred years ahead. It presents the reality of 1999 (the year the film was released) as an absolutely true looking, yet artificial, world. Soon, the terrifying secret is revealed to the characters as well as to the audience — that is, everything is a deception. Streets, buildings, people, common objects, activities and transactions are numerical data making reality as one out of the infinite combinations that has gradually obtained "flesh and bones" and is rendered so convincingly that seems as absolutely truthful, whilst it could equally be any different.

On account of the digital revolution, the "Matrix" scenario emerges as a noteworthy possibility. The hypothesis is terrifying and exciting at the same time, as the worlds made digitally are often exceptionally attractive. Currently, any information flowing into the advanced media networks is either digitally constructed or was converted to digital at some point. Digital infrastructure networks, the vast number of devices connected to it and the binary 0/1 code mediate between information of any kind and the audience.[1] The digital media tools are currently so advanced that the human eye in front of an image on the screen is often incapable of distinguishing between elements that were constructed digitally from those that were real. Moreover, the properties of elements and phenomena of the real world can be quantified and measured digitally in extended detail. As a consequence, someday it will be feasible to describe the entire world by a set of data, and reversely, to construct it directly from this data. What, however, if this day has already arrived, and the world currently assumed as real is nothing more than an apparition, a reality so meticulously rendered, yet a false one, the world of the "Matrix"?

To begin with, it is proposed that an apparition is generally distinguishable from the real world. The term *real* would characterize anything that is generally truthful, objective and original. The notion of reality would encompass any substance or condition that is real, setting up the so-called objective world. In contrast, the term *apparition* would

[1] Such a remark may also be extended in relation to the circulation of information with analog media. In general, for the circulation of information, a medium is needed. Experience with information is always mediated, as there is also a special relationship between the medium and the modes by which information is documented.

describe anything that is phenomenal and illusive, also anything related to imagination and any of its creations, being artificial, nonexistent and unnatural.[2] Thus, the above question describes the possibility of the world being unified, in which it will be impossible to distinguish anything real from anything fictitious.

Vilem Flusser challenges the above hypothesis by comparing the digital worlds to the real one:

> Before our doubting eyes, alternative worlds begin to emerge from the computers: lines, surfaces, and soon also bodies and moving bodies, made up of point elements. These worlds are colorful and emit sounds, and in the near future they will probably also be touched, smelled, and tasted. But that isn't all, because the moving bodies that will soon be realized through calculation and which are beginning to emerge from computation, will be equipped with the artificial intelligence of Turing's man, so that we will be able to enter into dialogical relationships with them.[3]

The above builds up the hypothesis that digital elements on the screen will be so tangible that their separation from those of the physical world will be impossible.[4]

Flusser further assesses an element's status in relation to the density of distribution about its points.[5] For this, he points at Aristotle's definition of

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[2] Dictionary definitions.

[3] Vilem Flusser, "Digital Apparition," in *Electronic Culture: Technology and Visual Representation*, ed. Timothy Druckrey (London: Aperture, 1996), 242. For the implications of technological evolution, see Trevor J. Pinch and Wiebe E. Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other," in *The Social Construction of Technological Systems*, ed. Wiebe E. Bijker, Thomas P. Hugles, and Trevor J. Pinch (Cambridge, MA: MIT Press, 1989), 28–39.

[4] Any of the confusion between the real world and an apparition may be attributed to a phase of technological evolution in which everything will be produced with fidelity and with truthfulness being equal to direct experience with reality. It may be noted that information may only be produced upon a medium. The advancement of a new medium [increases the user's expertise in regards to technologies and techniques being inherent to that medium. Further experience with a new medium raises expertise, specialized knowledge and also awareness about its limitations, a process requiring time, during which the medium generally advances as well, as new ones are being developed. Such a phase difference creates the impression that media constantly evolve towards total integration of mediated worlds and the real one, whereas, in effect, such an end is constantly postponed.

substance. An Aristotelian approach would include the various forms substance can take as the four causes known as matter, form, energy and purpose. Matter is the raw amorphous mass an element is made of. Form gives shape to mass and is responsible for any significance it will take, as it is promoted to a real being. For this, energy needs to be invested in relation to a specific purpose. An element may either be classified as one of the generally recognized material states — as solid, liquid, or gas — or as a material with minimum structure related to fire, even as one in constant transformation,[6] also described by the known material structures and their combinations, as stated in relativity theory.[7]

Consequently, an element is real if it is classified according to a recognized material structure. The classification of all elements in reference to materiality would make up the list of all materials. This list is meaningful specifically for distinguishing elements with recognizable structure from those being impossible to confirm. Elements designated as fake may be those having unidentifiable material status, commonly seen as being nonexistent or belonging exclusively to fictitious worlds, although still being addressed somehow or given a vague sort of character.[8] In this respect, the inability to distinguish real elements from fake ones portrays the possibility of a technologically advanced future in which all elements

[5] "Everything is digital, i.e., that everything has to be looked at as a more or less dense distribution of point elements, of bits. Hence, it becomes possible to relativize the term 'real' in the sense that something is more real the denser the distribution is, and more potential the more scattered it is. What we call 'real,' and also perceive and experience as such, are those areas, those curvatures and convexities, in which the particles are distributed more densely and in which potentialities realize themselves." Flusser, "Digital Apparition," 245.

[6] Manuel De Landa suggests such a categorization of matter, in reference to the Aristotle: "Aristotle's famous four elements — fire, earth, water and air — may reflect his awareness … of what today we know as the three main states of aggregation of matter — the solid, liquid and gas states — plus the state with least structure, the plasma state represented by an open flame." M. De Landa, "Philosophies of Design: The Case of Modeling Software," in *Verb Processing Architecture Boogazine* (Barcelona: ACTAR, 2001), 135.

[7] The relation between mass and energy is grounded in Einstein's Special Theory of Relativity (1905), described by the equation $E = mc^2$.

[8] An apparition developed exclusively by mental operations, that is, without any external stimulus, may be described in a similar manner. In that case, the subject experiences an apparition through operations in which he or she attaches irrational meaning to elements that are either present or imaginative. Generally, apparitions are perceived to be caused by external or internal causes, referring to false stimuli and fictitious elements.

will be inseparable, as the real world can be diffused into any apparition and vice versa.[9]

The above provision raises a personal intonation to the discussion on reality, as with it Flusser turns a pure philosophical and/or scientific question to one involving the subject and the perceptive operations during the classifying process. His approach agrees with cognitive theories of cybernetics stressing the impotency of complete objectivity, striving instead for dynamic models of system interaction between observer and environment.[10] As Omar Khan remarks, "[O]ur perception of light, sound, heat, touch, taste or smell is not to be found in the nervous system but is partly a function of the observer describing the correlation of these sensations to himself."[11] that is, meaning does not reside in the object, but it is created through feedback operations between the systems involved.

An attempt to tackle the processes constructing meaning in a systematic manner requires drawing attention to the modes of interaction between observer and environment. Generally, an element is perceived by stimuli picked by the sensory organs. Affirming an element's relevance to the real world or to an apparition requires assessing the sensory stimuli by which it is perceived as true or false. If assessment about a stimulus refers back to the attributes of the element, then judgment would neither be intrinsic to the element nor point straight at the stimulus that element instigates. As such, between the natural sciences and physics on the one hand and the cultural mechanisms that set up the logic function of mind on the other, a set of perceptive mechanisms ought to be scrutinized, ones that frame any utterance as inherently conditioned upon terms that provide the only solid foundation as principles and methods for the progress of any inquiry.[12] Consequently, claiming stimuli as true or false, also elements as real, material and existent, or as imaginary, immaterial and fictitious, also worlds as real or apparitions, would always be disputable.

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[9] Flusser, "Digital Apparition," 244.

[10] Gordon Pask, "The Architectural Relevance of Cybernetics," *Architectural Design*, September 7/6 (1969): 494–96; also Heinz von Foerster, *Understanding Understanding: Essays on Cybernetics and Cognition* (Urbana, IL: Springer 2003).

[11] Omar Khan, "A Communications Primer Revisited," in *Persistent Modeling: Extending the Role of Architectural Representation*, ed. Phil Ayres (London: Routledge, 2012), 56.

[12] Gustav T. Fechner, "Elements of Psychophysics," in *The History of Psychology: Fundamental Questions*, ed. Margaret P. Munger (New York and Oxford: Oxford University Press, 2003), 142.

Next, physical space and the elements making up spatial experience are being examined. Specifically, spatial experience — as any of the significances appointed to space, including properties, limits and life cycle — is broken down into the stimuli by which all elements are perceived. The following process is applied: First, an element is reduced to the stimuli by which it is picked by the sensory organs. This method is used to describe any of the elements making space such as walls, floors and slabs, and it is further applied to elements of any material structure. As it is shown, spatial significance may be assigned to any element that is perceived under specific conditions, as space/time or mass/energy phenomenon;[13] moreover, an area may be allocated for any element, as a space field in which it is perceived. Reversely, the properties of space may be described in relation to the stimuli caused by the elements picked by the sensory organs. Apart from those elements being undisputedly real, other less tangible ones may still be registered as reflections, mirages, optical deceptions or illusions; they may even be related to the digital worlds of the computer, the computer games, the Internet and the holograms, including all sorts of virtual, alternative, abstract and fictitious worlds, generally termed as "apparition." Respectively, the meaning of "space" is being reviewed, so that it grants the potential to assign spatial significance also to elements whose material status is currently unclear or unspecified. These elements may be those composing worlds that are purely imaginative, yet ones that in a future moment will be scientifically proven.

Formation of spatial perception

Spatial perception is constructed through cognitive operations in which different elements are given related meaning. In describing the process, an element is registered as sensory stimuli and picked up by the sensory organs, acting as recording devices. Perception is developed as the spatial outlining of an element's ability to be registered to applicable organs. Space's attributes depend on the elements, the stimuli they incite and the sensory organs.

[13] Einstein, in the General Theory of Relativity (1915), developed the idea that space, time, mass and energy are one unity. Matter defines the geometry of space/time, as the field in which any phenomenon, even mass, takes place; in simple words, matter produces space/time in which matter takes place. In effect, relativity theory abolished previous assumptions that treated space/time as a precondition to other events.

An element is picked up within certain distance, so it may be attributed spatial significance in the outlined area also according to the stimuli it creates. Spatial significance may be assigned to solid elements, such as those for spatial definition. For example, a wall is perceived primarily through vision. Each side defines the area in which the wall is perceived. Moreover, the wall suspends the circulation of air and other elements, including people, animate beings and inanimate objects, odors, temperature, sound and light, generally any sort of mass/energy. The area's properties at any point — in relation to the observer's position — depend on the wall's properties. Hence, the view is directed towards one side as it is blocked to the other, as the wall is offered as a reference to orientation. Respectively, the areas defined by a semi-transparent wall share some properties; for example, light travels through it. A slab defines areas above and below, perceived primarily by vision and also touch, as stepping. The ground floor is capable of supporting heavy structures, and additionally a void is created by digging in it. Similar descriptions may be attributed to all solid objects — for example a billboard, a seat and other furniture — in general of all properties and sizes — such as a cup or a pencil — as they define areas above, below, around, into and in any relation to them.

The same process of space definition may apply to elements of any material structure, mass or energy. A gas for example occupies a particular area in which it is perceived by the senses of smell and vision, to a lesser extent. An odor defines an area, too; for instance, the kitchen and the bathroom may better be identified with respect to their characteristic smell. A sound also defines space as the particular area in which it is audible. The spatial properties depend on that sound, as the area actually extends to a distance in which the sound signal is noticeable. As with sounds, a light defines the area it illuminates. In general, elements triggering sensory stimuli in a particular area also affect the properties of that area. For example, elements perceived mainly by the sense of touch define the area in which they can be reached, including solids (a surface or a handrail), liquids (the water of a swimming pool) and gas, especially if it is thick or warm. The same applies to elements perceived by the sense of taste. This is not in fact common, but it is possible to distinguish between two pools filled with chlorinated and salty water — by tasting the water. Blind people perceive space primarily by the senses of hearing, touch and smell, in further support of this view.

Respectively, an element is attributed spatial significance as it affects the area it is perceived in. A wall may be assigned spatial significance in

respect to its influence on the properties of the areas it defines. The stimuli are intensified by getting closer, as the wall's spatial significance increases too. By moving away, the wall's spatial significance diminishes and is practically ignored when the observer goes out of the area of its power or if the wall disappears; in that case, the spaces that were once separated are now joined, forming a new space defined by other elements. Spatial significance may be assigned to sonic and other signals, and the properties of the emerging spaces relate with the intensity, the duration and the distance from the source. Elements are assigned spatial significance in respect to the observer's position, and the properties of the outlined area are related to the sensory stimuli that element activates.

Spatial perception at any point is set as the aggregate of the spatial significances of all elements in that point. For example, spatial significance is assigned to a wall with an opening. When a window or door opens, communication begins between the areas once separated. The opening acts temporarily, periodically and contrary to the wall's main functioning, causing dynamic changes of its spatial significance. In the case of a sonic, visual or other signal, and if there is no obstacle, then the spatial properties in the respective field weaken gradually by moving away from the source, along with the diminishing of the signal's intensity. By inserting an opaque wall, the signal is interrupted, causing significant changes in space's properties. A similar effect in lesser intensity applies if the wall is semi-transparent. Generally, an element influences the intensity by which other elements are perceived. As a consequence, the spatial significance of an element is related to all elements perceived at specific point.

The properties of space at a specific point are related to the spatial significance assigned to each of the perceived elements. For example, space's life cycle (its significance to time), may be viewed as the aggregate of the distributed significances of the elements being present during certain time period. An element affects varyingly the properties of space and is responsible for any change. Technological devices such as a television set, a sound system or a traffic light may be assigned spatial significance in regards to the emitted signals. Such devices affect the properties of space temporarily and periodically, depending on whether they are switched on or off. An element operating temporarily or periodically may be called a spatial substructure, a term generally referring to the capacity of specific elements to reveal, vanish or transform space and to influence its properties temporarily. Space's properties return to a previous condition if the element being responsible for a change is no

longer active or if it disappears, for example, when a wall is demolished, an opening is shut off or a light or sonic source is turned off.[14]

Elements interfering with space properties act as "spatial generators." In assessing walls, slabs and columns, the proposed term picks on their significance, and the same is also true for any element of solid or other material structure. This term may also describe electromagnetic phenomena. The spatial significance of electromagnetic signals refers to their capacity to influence the properties of space as they transfer energy from the source of emission to a space point. Solids may be described similarly to liquids, gas and electromagnetic fields, as they define space within their volume. Hence, a solid yields distinctive attributes to its volumetric space related to its material properties, also affecting the properties of waves of energy transmitted through it. In effect, elements of any material structure act as spatial generators.

In summary, spatial perception may be described in relation to all elements registered by the sensory organs. Space's properties and meanings, its transformations and life cycle may be reduced to the stimuli caused by any element. An element causing stimuli is assigned spatial significance. Assigning spatial significance to an element depends on the comparative mode by which it influences space's properties, resulting from the interaction with other elements. In reverse, an element influences the properties of the space in which it is perceived. With proper sensors, measuring systems and scales, it is possible to approximate the degree of its influence on the spatial properties at a specific point, also in relation to other elements. Spatial perception is the result of the interaction among all elements registered as sensory signals at a specific point.

Conclusion: reality beyond materiality

The idea that every element contributes in the formation of spatial perception influences common understanding on the notion of space: how it is identified, how it interacts with various activities and how it is

[14] Perceptions of space and time make up space/time. Any of the properties of space/time, such as distance and duration, depend on the sensory stimuli creating experience. Beyond, before or after the specific space/time a stimulus is perceived, no signal or change is registered, thus any observation about space and time referring to that stimulus is impossible. Space/time is outlined by the potential to register matter as mass or energy, in respect of relativity theory. Here the focus is on space, whereas time may be explained in a similar manner.

affected by them. Perception is a highly mental construct, being the outcome of interrelations among various sensory stimuli, caused by elements of any material structure. These elements may form hierarchies and dependencies also at varying timeframes, with some being more active, permanent, primary and dominant, and other ones being more temporary/periodical, discrete and subordinate.

Moreover, spatial perception may be reduced to the stimuli by which every element is registered at a specific point. The event of registration of stimulus by a sensory organ — the retina of the eye, the membrane of the ear, the mechanisms of touch, the addends of taste and smell, also to any natural or artificial organ — is a moment of energy exchange, in which matter is transferred from the element source to applicable receptors. Any consequent characterization of elements is the result of interpretive, comparative and evaluative operations based on prior knowledge and experience, also founded upon definitions, assumptions and hypotheses, setting established criteria. These criteria evoke Aristotle's account on substance. Substance is identified along with the classification of its status as a mass/energy phenomenon, also through space/time transformations, even as a material structure in constant transformation. In physics, the above definition expresses the inseparable relationship among space, time, mass and energy set out by the General Theory of Relativity. In that regard, spatial significance may be assigned to elements of any status, being empirically or scientifically recognized.

Common assumptions about space should acknowledge how spatial experience is created, including elements other than solids. Descriptions of space as a vessel that carries, facilitates or shelters human activities, also as a precondition upon or in which life is performed, are based on the assumption of a static perception about space, ones not communicating space's dynamic character, it being a complex phenomenon of different actions put together by all elements interacting as agents informing and informed by each other. The formed synapses are happening at a much more intricate level of interactions among everything registered to the senses, including reflections, mirages and all other signals, even elements belonging to virtual, digital, interactive and alternative worlds, also holograms and other kinds of narration, in short, anything described as an "apparition."

Additionally, there are a number of factors upon which judgments about reality are inevitably conditioned, mainly referring to the indirect relationship between a stimulus and its meaning. As Fechner observes, a

stimulus does not release proper sensations directly, but only when a living brain has the living nerves to transmit the effect of the stimulus to the brain.[15] Acquired knowledge produces awareness causing awakening about a stimulus, being a set of internal operations of body and mind that up to then were unnoticed.[16] Moreover, as stated in recent theories of cybernetics, absolute objectivity is untenable, framed instead upon the observation that an element's characteristics are defined through comparative assessment of related stimuli, being dependent on, and subjective to, the observer. Consequently, what is currently set outside of accepted norms about reality may in a future moment be viewed as real.

At the margins of this rather unsettling realization, one may compensate with the fact that it is possible to describe spatial perception by breaking down each of the elements into the stimuli they produce and then by measuring and converting them to data. Ideally, such a process would be extended to include activities in space, also ideas, even our own selves. Reality may be described as a result of infinite numerical combinations, which was given "flesh and bones" due to materialization processes. Admittedly there are similarities between such cognitive processes on the one hand and those with which the computer "renders" the elements of the digital worlds; thereby, it is reasonable to consider the reality in and with which we cohabit as being digital — that is, similar to the "Matrix."

The symposium's main theme has set the conditions to tackle theories related to spatial perception ranging from architecture and art, to media, sociology and psychology and also to computer science, cybernetics, philosophy and physics. It has suggested an interdisciplinary discourse with the aim to interrogate and then to link theories of different origin largely considered as being foreign to each other. The outcome may serve as testimony to a dialogue of great complexity and depth, setting the ground for insightful speculations about architecture, further enriching our awareness about reality.

[15] Fechner, "Elements of Psychophysics," 146.

[16] New discoveries and innovations may emerge from an established setting, gradually cultivating a new belief in the replacement of previous ones. Pinch and Bijker analyze this specific issue, thus attributing social significance to the content, the causes and aspirations of the natural sciences. Pinch and Bijker, "The Social Construction of Facts and Artifacts," 20–28.

CONTRIBUTORS

Annett Zinsmeister is an artist, architect and professor of visual art and experimental design. She focusses on the intersection of art, architecture and media studies. She creates large-scale installations, conceptual and built spaces, photography, drawings, films and collages dealing with architecture. Crucial to her work are the analysis of perception and the creation of modular principles, structures of space and themes referring to the search for identity and utopian ideas as well as social interaction, communication and the transformation of urban space.

Arnaud Hendrickx lives in Brussels, Belgium, and works as an architect, researches at the Department of Architecture at the University of Leuven and teaches at the Faculty of Architecture, LUCA School of Arts (KU Leuven). His fascination with different art disciplines and media has resulted in a diverse body of work: buildings, exhibitions, installations, objects, music and texts. In 2012 he finished his PhD at the Royal Melbourne Institute of Technology in collaboration with the Faculty of Architecture, LUCA School of Arts. Since 2013, he has been involved in a research project funded by OPAK with a focus on the spatial affect in architecture.

Chris Smith, PhD, is associate professor in architectural design and techné at the Faculty of Architecture, University of Sydney. He has lectured internationally. His research is concerned with the interdisciplinary nexus of philosophy, biology and architectural theory. He has published on the political philosophy of Gilles Deleuze and Félix Guattari, technologies of the body and the influence of the "eclipse of Darwinism" phase on contemporary architectural theory. His recent work, *Architecture in the Space of Flows* was a book co-edited with Professor Andrew Ballantyne. Presently he is concentrating on an Australian Research Council Grant research project focussed on the architectural expression of scientific ideals in biomedical laboratories.

Gabi Schillig lives and works in Berlin and Duesseldorf. In 2012 she was appointed professor for spatial design at the Düsseldorf University of Applied Sciences. From 2007 to 2012 she taught at the Institute for Transmedia Design at the Berlin University of Arts (UdK Berlin). Since

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Gabriele Fowler, PhD, is an interior architect and design researcher whose research interests focus on multi-sensory relationships within spatial environments, non-visual design qualities, issues of sensation and perception and questions of a visual hegemony in architectural design. She completed her PhD in 2010 at the School of Architecture and Design, RMIT University, Melbourne, Australia, supported by the German Academic Exchange Service (DAAD). The title of her doctoral research is "Sensory Spatiality: Tangible and Intangible Dynamics in Interior Architectural Design." Gabriele taught in the RMIT Interior Design program from 2005 until 2008 and has worked in design and architecture practices in Germany as well as in Australia.

Holger Schurk is an architect and PhD candidate at the Academy of Fine Arts, Vienna. From 1998 to 2001, he collaborated with several architecture firms in Stuttgart, Rotterdam and Amsterdam. Since 2001 he has been a partner in dform, Zurich. From 2005 to 2008 he was senior lecturer at the Berne University of Applied Sciences, and since 2008 as been senior lecturer at the Zurich University of Applied Sciences, Switzerland. He received the 2011–12 EAAE Prize for writings in architectural education for the essay "Design or Research in Doing."

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Izabela Wieczorek is an architect, and a co-founder of gálvez + wieczorek arquitectura. She has taught and lectured at several universities in Spain and collaborated in *PlanetaBETA*, a weekly radio show conceived as a space for debate and dissemination of architecture in the Radio Círculo in Madrid. Currently she is a PhD candidate at ETSAM/Spain and holds an associate professorship at the Aarhus School of Architecture, Denmark. Through collective and individual research, practice and teaching and by oscillating between theoretical investigation and work development, she aims at building and communicating knowledge of such key areas of connectivity as architecture and atmosphere.

Katharina Rohde designs and realizes projects about structures, phenomena and processes of urban spaces and its associated narratives. With a master's in architecture and city development, she works as a curator, social designer and urbanist and describes herself as an urban street worker. Her field of work ranges from Berlin to Africa and includes small-scale local happenings as well as international major events.

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Lindsay Webb is a director of Lull Studios (lull.tv) focussing on environmental and graphic design, experimental scenography and sound-based works, including soundtracks for live performance and screen. With a special interest in aural phenomena in the built environment, he works in Sydney and Berlin.

Malte Wagenfeld, PhD, is a practicing industrial designer, academic and researcher whose explorative designs (furniture, objects, interiors and appliances) and writings have been internationally exhibited and published. Recent projects have seen a shift away from the design of the material towards a phenomenological investigation of atmosphere and experiential environments. He is senior lecturer on industrial design at the School of Architecture and Design im Melbourne and is a member of the Urban Interior research group at the Design Research Institute at RMIT in Melbourne.

Marian Macken, PhD, is a practising artist, designer and educator and currently an associate professor of architecture at Xi'an Jiaotong–Liverpool University, Suzhou, China. Her research examines the role of artists' books as a documentation of architecture, with particular interest in the implications and possibilities for architectural drawing and exhibition as design outcome. She was awarded a PhD, by thesis and creative work, from Sydney College of the Arts, University of Sydney, in 2012.

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Rena Tavernaraki studied architecture at the National Technical University of Athens (NTUA) and holds a master's degree from the postgraduate course Space, Culture, Design at NTUA, where she taught as an assistant professor from 2011 to 2013. She has worked on research projects for the Technical University of Crete and collaborated with architectural offices in Athens and Crete. She has participated in international architectural competitions and in several architectural and artistic exhibitions. Her main research interests revolve around squatted space. She is currently living and working in Athens.

Suzie Attiwill, PhD, is associate professor for interior design and deputy dean of learning and teaching at the School of Architecture and Design, RMIT University Melbourne. She is also executive editor of the *IDEA Journal*. Since 1991, she has had an independent practice involving the design of exhibitions and curatorial work, writing and working on a range of interdisciplinary projects in Australia and overseas. Her research has been published nationally and internationally. Her practice currently engages projects and research with Deleuzian pedagogy, trauma, residential care houses, exhibitions and writing.

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William Feuerman is the founder and principal of Office Feuerman. He had previously worked at several leading international architecture firms, including Bernard Tschumi Architects in New York and the Cee/Pfau Collaborative in San Francisco. Feuerman has taught in graduate architecture programs at Columbia University and the University of Pennsylvania and coordinated and taught interior design at Pratt Institute. Since 2012, he has been the course director for the bachelor of design in architecture program and senior lecturer at the University of Technology, Sydney.

Yannis Zavoleas is senior lecturer in architecture at the University of Newcastle, Australia, and assistant professor at the University of Patras, Greece. He explores the idea of digital media as extended "tools for thought" by bridging new technologies with core twentieth-century architectural discourse. He is author of *Machine and Network as Structural Models in Architecture* (in Greek, Futura, 2013) and *Surface: Digital Materiality and the New Relation between Depth and Surface* (EAAE, 2013). He has studied architecture and media at the Massachusetts Institute of Technology, University of California, Los Angeles, and National Technical University of Athens.

Convenors

Claudia Perren, PhD, is an architect, curator and academic. In August 2014 she commenced her new role as the director and CEO of the Bauhaus Dessau Foundation. Previously she lectured on design, curatorial practice, history and theory of architecture at the University of Sydney's Faculty of Architecture, Design and Planning. Her areas of interest centre on the intersection of art, design and architecture. The results of her research, teaching and practice have been published and exhibited internationally in Australia, Germany, Japan, The Netherlands, Poland, the Czech Republic, Singapore, Spain, Finland, Estonia and Switzerland.

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