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Ray Lucas

Gordon Mair

Due to time constraints on the research team, it has proven impossible to fully edit each paper. As such, the papers presented in this book are printed much as they were given to us, with some formatting work completed. We apologise for any small typographic and grammatical errors, and hope that the spirit of the paper remains true.

The responsibility for the copyright of papers and illustrations lies with each author. Each author holds the copyright of their paper.

I would like to express my sincere thanks for your patience whilst the proceedings have been in production.

Once again, many thanks are due to all of our authors, who have produced such a fascinating selection of papers. It was a joy to read them all again.

Dr Ray Lucas, December 2008

CONTENTS   PAGE

CONTENTS   PAGE

CitySpinning:
Frameworks for a Collective Reinterpretation of the Ambient Possibilities of Public Spaces

Prayas Abhinav and Yashas Shetty

CEMA, Srishti School of Art, Design and Technology, Bangalore

1. Abstract

The paper examines CitySpinning, a public art project initiated by Prayas Abhinav, a Postgraduate student at the Center for Experimental Media Arts in Bangalore. City Spinning is a series of interventions that incorporates unused and vacant spaces around the city of Bangalore. The project re-interprets these spaces with references borrowed from the free software movement and the creative commons movement, making these spaces more configurable while not imposing any restrictions or transactions on individuals wishing to negotiate with these spaces.

The technology for letting individuals configure such spaces has become more accessible with cheaper environmental sensors, access to physical computing environments such as the Arduino boards, mobile and data communication services and web-based social networks for making ad hoc crews/teams/interest groups. These tools enable collective communities interested in customizing an urban space to come together and share the legal, conceptual and networking tools needed to remix a space. The use of multiple sensors and the ability of the collective to control the sensory ambiance of space can help in creating more engaging experiences for individuals.

2. Indian Cities in Boomtime

Bangalore and Mumbai are two cities in Southern and Western India. Each of them has their own "boom story" to tell. Each contributes an increasing percent of the gross national income.

With this economic success there is almost a universal interest in businesses, individuals, and families to be a part of this story, leading to heavy investments in real estate and migration of labour. This has created pressure of varied intensities on the city planners to make more of the city available for commercial development, enhance urban infrastructure from the perspective of the key economic stakeholders/drivers such as the big investors and big employment providers. However, there are also numerous agitations contesting this drive in these cities.

The most vocal of these agitations might be the ones in Mumbai. The civic authorities want to clear Dharavi, which is the largest informal settlement (or slum) in Asia and auction it off to commercial developers. Although some kind of rehabilitation plan has been put in place, there are bigger questions here. Questions about the identity, rights and

stakes of different communities on the land on which they live. Bordering the airport, it is a city within acity. Numerous researchers, journalists, photographers have spent time there trying to understand the flux on the ground.

In Bangalore with the IT industry driving most of the growth, high-value jobs and global interest in the city, a powerful lobby has taken shape. This lobby has pressurized the government numerous times to look after its interests. These demands have mostly been for stable business infrastructure, like flyovers, roads, electricity, WiMax which helps them increase their business efficiency. They have largely been successful in getting specific commitments from the government. The government is too conscious of hurting its image of being India's leading IT outsourcing hub amid the competitive bids from Pune, Hyderabad, Chennai and Delhi.

In contrast let us look at the garment export industry in Bangalore. It employs a much higher [figures] number of people but contributes substantially less to the city's gross turnover and so obviously doesn't have clout to demand anything for itself or its workers. Manyof the workers in the industry live in one of the 700 slums around Bangalore. Slums marked as 'shadow areas' in government plans. Shadow areas are defined on the basis of water supply level and the number of teachers for the area. (The Two Bangalores, Menon, 2005)

The way these cities are shaping and the way the governments are

taking decisions about the trajectories they should take are not transparent. They accommodate the needs of only some groups of people residing in these cities. The voices and opinions of a vast majority are not even registered.

This "one-sided deafness" creates sometimes amusing urban glitches. For example:

The interest in the late 90s of builders to build malls all across India led to a boom in the retail industry, multiplexes and fast food, a large number of malls exist to day in Mumbai,Bangalore, Ahmedabad and many of them enjoy a lot of walk-ins. But this boom has gone unchecked, with many malls coming up on the same street leading to an over-capacity and a need to convert many of these nearly-completed and under-construction malls to commercial buildings offering office-space instead of retail-space. Other glitches were witnessed in the rapid rise and subsequent disappearance of bowling alleys and pool tables in many Indian cities in the 90s.

If there is an ongoing conversation between the users of cities (that is the citizens) and the planners, builders and architects, such expensive glitches might be avoided. In this paper I will explore different dimensions of this possibility.

3. Public-spaces

"Cities were invented to facilitate exchange – the exchange of ideas, friendships, material goods and skills. How good a city is at facilitating exchange determines its health – economic,social, cultural and environmental. Public space forms a vital conduit in this exchange process, providing platforms for everyday interaction and information flows – the basis and content for the public life of cities." (People Make Places: Growing The Public Life of Cities, Demos, 2005)

Before cars changed the meaning of location and distance in cities,public spaces like plazas, parks and playing grounds were about people from different ethnic and class backgrounds meeting and exchanging ideas, expressing world-views, forming groups and enriching themselves in other ways. One of the attractions of living in a big metropo-

lis was the possibility of this socialization. (Safdie & Kohn 1997, pp 12-13) (Intellectual Property: The Attack on Public Space in Cyberspace, Besser, 2001)

Scott McQuire writes in The Politics of Public Space in The Media City:

[...] the rise of the suburbs was positioned as the nemesis to the public space of the modern city. [...] Daniel Dayan and Elihu Katz (1992) defined the 'media event' largely in terms of the privatization of the public sphere: events once experienced collectively in public space were increasingly consumed by greater numbers of people who watched from the privacy of their individual homes. (The Politics of Public Space in The Media City, McQuire, 2005)

So, across the last half of the 20th century with the rise of suburbs and the commuting culture we have seen public spaces fall out of favour of planners and others who have had a say in shaping the city. And people seem to have no time to just hang out in parks, plazas etc. There has been a trend to think in terms of productivity and functionalism.

In the urban layout the erstwhile role of public spaces is now played by privately owned "pseudo-public-spaces" like malls, multiplexes and fast food outlets. These privately owned shared spaces have been able to exert controls which public spaces had great difficulty in exerting. Controls on free speech, political action(distributing leaflets, doing demonstrations), appearance (dress code), language (everything being in English) filter our undesirable and unwanted elements and create a "sanitized" environment. The "rights of admission are reserved." (Besser, 2001)

In BODY MOVIES, an art project by Rafael Lozano-hemmer "transforms public space with [...] interactive projections. Thousands of photoportraits taken on the streets of the cities where the project is exhibited are shown using robotically controlled projectors. However,the portraits only appear inside the projected shadows of local passersby [...]" (McQuire, 2005)

Scott McQuire suggests that Lozanohenner's work involves strangers to suspend habits and try to figure out the interface and interplay of the project through experimentation. He uses this work as an example to describe the ways in which social inter-mingling and interaction is beginning to happen again in public spaces in the "media-city" and predicts that such projects "could become important tools for rethinking the submission of urban space to commodity spectacle and surveillance, and for forging new ways of engaging with others in public."

Ashok Sukumaran, an architect and artist however argues that Lozanohenner's later works and increasingly also of many other artists influenced by it "could be described [...] as the connection of any

input/sensing device to an arbitrary output format." He says that "audiences just begin to expect one or the other form of benign media to appear, in response to their presence" and the works fail to actually deal with the "publics" in meaningful ways. (Venice Biennale Part II: On Rafael Lozano-Hemmer's Work, Sukumaran, 2007)

With physical computing and code-based art dominating a lot of the buzz around public space interventions, media art and interactive art in the last few years, artists are increasingly asking questioning the enthusiastic use of computing and its effects and are now seeking more human, involving and rooted ways of using tools like arduinoboards, wiring, picocricket and the vast range of possibilities which electronics and computing offers.

Numerous artists such as The Space Hijackers, Reclaim The Streets,kraut, Wochen-

klauser, Bed By Night, Krzysztof Wodiczko, MichaelRakowitz, Ashok Sukumaran use interesting "public" approaches. I will describe some works by these artists later in the paper.

4. Dreaming Up Spaces

The Situationist International (SI) was a group of artists,filmmakers, writers and others active mostly in Paris from 195x-197x. They have influenced the way artists, architects, writers and othersimagine and narrate their cities. Words like psychogeography, derive,detourement, unitary urbanism have become a part of the vocabulary used to talk of cities.

The approach called unitary urbanism proposed a "combined use of arts and techniques as means contributing to the construction of a unified milieu in dynamic relation with experiments in behaviour."(Definitions, The Situationist International, 1958)

They held the position that contemporary city-planning has made people blind to "a living critique of this manipulation of cities and their inhabitants, a critique fuelled by all the tensions of everyday life. A living critique means setting up bases for an experimental life where people can come together to create their own lives on terrains equipped to their ends." (Basic Program of the Bureau of Unitary Urbanism, Kotanyi and Vaneigem, 1961)

For them being sensitive to spaces, listening to what the city had to say was very important. They practised a form of walking / wandering around the city called a "derive."

"In a derive one or more persons during a certain period drop their relations, their work and leisure activities, and all their other usual motives for movement and action, and let themselves be drawn by the attrac-tions of the terrain and the encounters they find there." (Definitions, The Situationist International, 1958)

They were interested in the "specific effects of the geographical environment (whether consciously organized or not) on the emotions and behaviour of individuals." Broadly this process was called "psychogeography" by the SI.

In Another City for Another Life, Constant describe the city as they imagined it.

"[We] envisage covered cities in which the layout of roads and separate buildings will be replaced by a continuous spatial construction elevated above the ground, including clusters of dwellings as well as public spaces [...]. Since all traffic, in the functional sense of the term, will pass on the ground level below or on overhead terraces, streets can be eliminated. The multitude of different traversable spaces of which the city is composed will form a complex and vast social space." (In Another City For Another Life, Constant, 1961)

Some urban interventions by artists and others, which re-imagine cities in radical and sensitive ways are described below.

The Space Hijackers: The Space Hijackers (TSH) describe themselves as anarchists, "[...] we oppose the hierarchy that is put upon us by Architects, Planners and owners of space. Through the events that we hold and the objects that we produce we are attempting to corrupt the culture of architecture, and destroy the hierarchies that exist."(Website, The Space Hijackers)

Some of their notable projects have been:

Circle Line Party: "On the 10th March 1999, the Space Hijackers held our first major event. This involved the Hijacking of a London Underground Circle Line Train, for the purpose of turning it into a moving dis-

co."

" [...] Around 150 people attended the event, not including the passengers who happened to be on, or get on the train. All of whom were given free Vodka, Tequila, and Sweets."

"The point of the event was to completely disrupt the way in which the train works in terms of codes of conduct. We aimed to destroy any

previous ideas as to how to operate within a train, and what a train is used for. By having a party we wanted to corrupt peoples future experience of the Circle Line, as the memory of the party will recur each time they use the train." (Website, The Space Hijackers, 1999)

Guerilla Benching: "Where have all our public benches gone?"Disturbed about the Camden council removing most of the benches from the area and converting the bus-stops in the area to non-seating shades, TSH installed two benches in the area. Public benches are used often by children, the elderly and the homeless and TSH believes that "The basic plan [behind removing the benches] seems to be to move on undesirables and homeless people away as they don't fit in with the aesthetics of the area."(Website, The Space Hijackers, 2006)

Wochenklauser: The group of artists describes its practise as "develop[ing] concrete proposals aimed at small, but nevertheless effective improvements to socio-political deficiencies." (Website,Wochenklauser)

One of their projects:

Medical care for homeless people: Being aware of the problem that the homeless in Vienna (Austria) didn't have any reliable access to primary health care, the group pooled donations lots of small sponsors for setting up a mobile medical van. They used

the media to pressurize the city council in supporting the long-term costs of the project (like salaries of doctors etc.) and so were able to see their intervention evolve into a stable programme which the homeless in the area could benefit from.

Ashok Sukumaran: An architect and artist living in Mumbai. Some of his projects:

Glow Positioning System: "A 1200-foot ring of lights encircles the General Post Office intersection in Fort, Mumbai. [...] Our lights travel between buildings, across roads and onto trees and lampposts, forming an image-scape that is starkly visible at night. A hand-crank mounted on the pavement provides a way for the audience to "scroll" this landscape. It allows the physical length of the view to become a chronological one- to be viewed at a speed determined by the user. The ring responds to panoramic desire, the age-old search for an image to immerse ourselves in." (Website, Sukumaran, 2005)

"There are many ways to "locate" oneself within the city. [...][one] way is to move within the streets themselves; to awaken the more proximate senses, to touch the city itself. In Glow Positioning System, a different kind of travel takes place. This is an interior voyage, a circular tourism... of a place many of us know." (Website, Sukumaran, 2005)

Two Poles: Small bulbs strung to lines connected two light-poles between two bus-stands on Carter Road (a locality in Bandra,Mumbai). At both ends of the line of lights there was a pole-mounted switch, pressing which triggered a line of lights emerging from the pole. Children and adults chose to flash these "pixel" length signals from one pole to the other. After a point the children figured out a way of blocking the other pole from flashing a signal The project became a dynamic and playful medium for inter-personal expression.

"a small work, which deals explicitly, and

perhaps literally with ideas of distance, insulation and the act of refusal, o rblockage." (Website, Sukumaran, 2007)

5. Autonomy, Anonymity and Public Spaces

5.1 Participation in the Urban Dialogue and the Autonomy of PublicAction

The municipality plans the content and nature of public spaces, with inputs drawn from administrative departments, architecture firms or ssponsors. This process involves numerous behavioural assumptions about what people do in cities, where they go, what they prefer and what they want.

"At their best, public spaces act like a self-organising public service; just as hospitals and schools provide a shared resource to improve people's quality of life, public spaces form a shared spatial resource from which experiences and value are created in ways that are not possible in our private lives alone." (People Make Places:Growing The Public Life of Cities, Demos, 2005)

Although the importance of the nature of a city's public spaces in the life of citizens is commonly accepted and acknowledged, there is no effort for public engagement on the part of the municipalities.

"Town-planners and architects still tend to think in terms of the four functions of the city as defined by Le Corbusier in 1933: living, working, traffic and recreation. This over-simplification reflects opportunism rather than insight into and appreciation of what people actually want today, with the result that the city is rapidly becoming obsolete." (New Urbanism, Constant, 1966)

"Proverbially the problems are pushed to a side and whenever possible removed entirely. the focus of the interest is on the city as a product." (A Material That Never Comes To Rest, Haydn,2006)

City-dwellers end up being mere spectators of the "spectacle," with no say in how their city shapes. Their participation is either not considered their right, not considered priority enough, or worst it is assumed that they are not qualified to contribute to the dialogue. Individuals conscious of this exclusion express themselves through graffiti and others forms of "urban improvement."

The possibility of questioning programmes – that is, to open up new, different and better ones – characterizes the democratic city. Temporality contains the essence of democracy. (Haydn,2006)

The artist is not a special kind of man, but every man is a special kind of artist (Transformation of Nature in Art, A. K.Coomaraswamy, 1934)

There have been many changes in the world around us in the last ten years. Changes in the way information, opinions and knowledge is published, accessed and distributed in society.

We live in an age called "the age of the creative amateur" by many. Unlike the .com boom (1999 -9999) the present Internet boom (also called web 2.0) is fuelled by user-generated content. Much of this content is licensed under an open-content license (from the creative commons family of licenses) and is freely usable and modifiable by anyone under conditions defined by the author.

Free Culture a book by Lawrence Lessig (Stanford University Law Professor and founder of the Creative Commons project) gave thrust and momentum to the remix or mash up culture, a practise of creating works

based on multiple existing works to draw new meanings and new contexts or statements. Building upon existing work is an established traditional (as described in Free Culture) which modern copyright laws have tried to impede. Using one of the Creative Commons licenses, creators can be explicit about the freedoms they allow their uses/audience on their work so that unintentionally all the restrictions of the copyright law are not assumed to apply to their work. This has been seen to create vibrant platforms of user-created content on the web, notable platforms are Jamendo, Flickr, Wikipedia etc.

In the early days of the Internet, the potential growth of cyberspace was thought to be impeded by the huge cost of creating content. With the vindication of that concern in recent years it has been understood that there are numerous motivations for people to create and share their creations. And commercial or professional gain is not the only motivation. Socialization, finding an audience, bonding, the cathartic / healing power of telling stories, belonging and numerous other motivations drive people to share their work on the web, under open or closed licenses.

With the rise in prominence and the popularization of such networks,a dynamic bottoms-up field condition is at play in our lives. Cities being hubs and nodes for the flow of capital, labour and material goods as well as information and cultural goods, this new field conditions leads to the possibility of looking at the city as an "information space," as another node in the global networks which facilitate the flow of signs and symbols.

As an "information space," it becomes interesting to draw some parallels between the relations between the "moderators"(municipalities and the planners) and the "users." The Internet and the software world saw a partial opening-up be-

tween the relationships between these two players, due to the failure of existing relationships to come up with successful products.

The .com boom (1995-2000), a phenomenon which saw the rapid rise and then subsequent fall of the value of Internet companies is often seen in the light of the relationship between "moderators" (or producers)and "users" which existed at the time. Internet consumers were looked at as passive consumers of content largely produced by professionals hired by companies. As highlighted above, besides constraining the growth of individual projects, this led to only marginal contributions of any kind from the users. So besides content, even the applications and the software was designed with numerous assumptions about the technological capacity, time and the perceptions of users. No effort was made to get users to communicate what features or design-elements they preferred. So, the first boom saw the failure of Internet businesses on the count of having sparse content, unfamiliar and difficult-to-use interfaces, bandwidth-intensive technologies (remember the time was before broadband was as popular as it is today) and lack of features which were a priority for the users.

In the present model of the city and the way it takes shape, the relationship between the "moderators" and the "users" can be seen to be in a similar flux. We have seen the expensive glitches which the "one-sided deafness" in this relationship is producing. In this relationship again the user, that is the citizen or the city-dweller here, is again seen as a passive participant with noting substantial to contribute to the process of the shaping of the city. In a democracy, voting is thought to be the ultimate act of participation for the citizens, but it is anything but that. Voting in any kind of elections or referendum becomes a game of polarization and coercion by the majority, and not a process of accom-

modation, response and discussion.

Lately in what is sometimes called the "web 2.0" the Internet has the emergence of "the permanent beta," or the infinitely iterative software development model in which user feedback, feature-request,user submission of bugs and user analytics is the major thrust. The "permanent beta" allows development teams to be continually open to user demands and requests and preferences by changing their development paradigm. Some have called this new paradigm as "agile" or "extreme programming" as opposed the the "waterfall development" model. In the latter the value of the project is analysed only at the end of the a series of rigid steps whereas in the former it is a more dynamic and continual process.

This paper looks at the possibility of something akin to the "iterative city," a city continually responsive to the collective dynamic of the needs, demands, requests and preferences of its users.

Artists and activists do temporary interventions of all kinds (some are described in this paper). Some of these interventions are done with permission and by invitation and some are done either way without any kind of permission. These small, spontaneous actions are free expressions of temporary claims over public spaces. These temporary claims and their expressions demonstrate different" concepts for the use of the city."

The imagined temporary spaces create social knowledge and offer opportunities for active participation, rather than temporary spaces for an event-based leisure society. (Haydn, 2006)

These interventions also bring "utopian situations" into the realm of the tangible reality even though for a limited time.

"[...] the TAZ is in some sense a tactic of disappearance." (Temporary Autonomous Zone, Hakim Bey, 1991)

These spontaneous expressions of claims could also be looked at from the perspective of what Hakim Bey (pseudonym of Peter Lamborn Wilson)

describes as the Temporary Autonomous Zone (TAZ). He describes how throughout history individuals and groups have been able to withdraw from the world of structures, hierarchies and control. From pirate utopias to parties to insurgencies to spaces on the Internet Hakim Bey gives out numerous examples and pointers in the essay. The tactic of the TAZ is differentiated as there is a potential to experience it in the here and now as opposed to the revolution with a promise of the "utopia" in the future.

"[...] life is presented as an immense accumulation of spectacles. Everything that was directly lived has receded into a representation." (Chapter 1, The Society of the Spectacle, GuyDebord, 1967)

This world of spectacle and representation can understand/see only entities defined in terms of the spectacle. All else is invisible. So a TAZ can be really invisible to the State as there are no points of intersection and exist for varied periods. (Bey, 1991)

The tactic of the TAZ is a process of seeking "cracks and vacancies" in the supposedly omnipresent, omnipotent State with its many mechanisms for surveillance and control of experience.

"We are looking for "spaces" (geographic, social, cultural,imaginal) with potential to flower as autonomous zones--and we are looking for times in which these spaces are relatively open,either through neglect on the part of the State or because they have somehow escaped notice by the mapmakers, or for whatever reason. Psychotopology is the art of dowsing for potential TAZs." (Bey, 1991)

The tactic of the TAZ has been interpreted and cited by many including The Cacophony Society and many in the early 1990s rave culture. The Cacophony Society (a loose collective of artists,pranksters, performers) organized trips to "the zone" called "trip to the zone" or "zone trip" or "field trips to the fringe." In 1990 it popularized and gave birth to (as zone trip # 4) the annual festival form of a human effigy burning event held at the Baker Beach (SF,USA) from 1986-89. This festival became famous as The Burning Man festival and the zone became known as The Black Rock City. The Black Rock City is a temporary city which comes up across the six-day festival every year and follows the philosophy of "leave no trace,"[glossary] and attempts to establish and demonstrate a space forfree-expression, sharing and self-reliance. (Wikipedia and The Burning Man website)

The festival has supported and popularized an art form that is, "immediately available to large numbers of people." Art that is" collaborative and it breaks down barriers between audience and art work. It's based upon participation — it's radically interactive —and it contemplates the facts of life." Larry Harvey's (the founder of the Burning Man festival) comments also strongly resonate with what Scott McQuire has observed and proposed earlier about art in public spaces of the "media city."

5.2 Anonymity and Public Spaces

"Public space protects us from an excess of intimacy. [it] is a space of great anonymity." (Haydn, 2006)

There was a common perception that we can get away with any action,behaviour in public, because no one recognizes us or knows us and most probably we will never meet any of the strangers around us ever again. One could easily "get lost in the crowd". This is true at least for unfamiliar or alien neighbourhoods. But with surveillance by video cameras and I-card now being very common even in Indian cities,that anonymity is being lost and is being replaced by a perpetual self-consciousness which is not very helpful for free self-expression or intermingling with other people.

What many have attempt to do is attempt to take on an avatar or an alias and use it as much as possible. But this approach creates a schizophrenic rift in the juggling game of managing multiple identities: one on the ID, another which is assumed, another which one carries over etc,

In the "paranoid city" anonymity is automatically associated with danger, shadiness and illicitness. Experiencing autonomy of whatever measure without anonymity or pseudonymity poses difficulties for many people.

6. Collective Reinterpretation of the Ambient Possibilities of PublicSpaces

6.1 Earlier Projects

In 2006 I worked on a short film called, "A Place To Stay." The film tried to map the kids of temporary sleeping places the homeless in Mumbai are able to work out. I found it hard to believe that everyone slept on the street, or on the railway station, I was sure that there existed lots of safe but secret enclaves that homeless people would be using. The idea wasn't to get to know of the spaces and then

reveal them but just to understand how in dense and strictly-regimented cities like Mumbai people still seek out spaces they need.

Not everyone uses cities the way they are planned to be used and the organic growth of cities provides important insights into the needs of the people using them and living in them. The dynamism of cities emerges from the fact that there so many concurrent factors at play   that individuals often feel so small an insignificant that they are able to be spontaneous and be as they choose.

The city is a process. (Castells, 1996)

6.2 CitySpinning

Temporary uses can be understood as the demand [of the city]itself. (Haydn, 2006)

CitySpinning is an effort to synthesize an open decentralized network for sharing ideas about how public spaces around us could be used. It would be an open database of proposals for different urban regions. The network would offer legal and networking tools to crews to start collaboratively work on the proposals they find interesting.

The database of proposals would be like a massive Central VersioningS ystem (CVS) of the source-code of the city. Available for compiling and executing by any crew which feels excited by it.

"Somebody finds the problem, and somebody else understands it. "Linus Trovoids. (As quoted in The Cathedral and the Bazaar, Raymond, 2000)

With Wifi and mobile Internet access becoming more and more common in the outdoors, a kind of merger of indoors and outdoors in happening. People sit and blog or run their businesses from the comfort of the public garden or the neighbourhood coffee shop from their mobile phone or computer. When people start carrying more of their lives into the outdoors, they will definitely want to configure outdoors to their taste and preference. At that point a kind of collective chemistry will need to be evolve as there will be multiple demands from individual spaces.

City-based chapters of the CitySpinning database would allow a space for speculation and dreaming about how different neighbourhoods should shape. Interventions are called spins at CitySpinning.

"Cities are like urban laboratories – they solve their own problems of growth." The Creative City In The Third Millennium, Peter Hall, 2005.

6.3 Ongoing Spins

Though I don't have a crew yet, I have started to work on some spins across the last few months. The crew I am trying to put together would have a mix of people with interests in wood-work, gardening,electronics, physical computing, activism etc. The spins in-progress are:

Common Food (CF): CF is an effort to seed a community of urban farmers. I plan to use public spaces, unused spaces, street-side spaces, gardens of volunteers, spaces under flyovers and bridges to grow easy-to-cook and nutritive vegetables. The project will have a map-based web-interface which anyone can navigate to understand the range and location of the crop and to add or log some now plantation effort. The idea is to compile maps of regular and stable crops in print form and work with organizations to make the maps available to the range of migrant and temporary labour force and the homeless in Bangalore (initially). The objec-

tive is to create a social and communal safety-net of food in cities so that in our modern cities of abundance and affluence, starvation and malnutrition won't be as common as they are now. Also the "circle of concern" which will evolve as a result of this community will make cities less cold,unwelcoming and apathetic.

Know Me, Know My News: A set of bulletin-boards around the city with the day's newspaper in English and Kannada pinned to it and a cross-translation of the headlines on a sheet of paper under them. If individuals wish to edit or add translations they can do so. The objective behind this is to promote cross-cultural understanding. English papers usually represent the National media and the regional language papers (Kannada papers) represent the local media. Both have a different take on things happening in the city and their relative importance.

Look At The Stars: Telescopes placed on small platforms around the city, open for people to use for stargazing or moon watching. To people who can't pursue their interest in Astronomy by joining clubs and associations, will this be of some interest? Or is this media-saturated environment, will it come across as a mundane diversion?

The Muddy-hands Survey: An unused plot of land in Yelahanka, Bangalore, which has degraded to become a garbage dump is the site for this work. An object (a bag of chocolates, a mobile phone, a pair of jeans) and a weighing machine are kept besides the plot. A board with instructional information is already put up there. Anyone who can collect garbage from the plot which weighs as much as the object placed on the weighing machine gets to keep the object. If a particular object doesn't excite people enough to get their hands dirty for it, it will be replaced by another one. It will work as a survey to figure out what people are prepared to get their hands muddy for. What is an incentive enough?

6.4 Process

The web-site of the CitySpinning effort will have a map for each chapter which can be tagged with proposals and add images, text etc. to their proposal to convey it more clearly and interest crews in taking them up.

Crews are diversely skilled teams with a wide-range of interestsincluding (but not limited to) art, politics, anarchy, urbanism,architecture, interactivity, events, social networks). the crews takeup different proposals tagged on the site guided by the dynamicinterests of the team and stage interventions or spins.

7. Conclusion

The contemporary city is in a flux. People living in cities today are being presented with an overwhelming number of choices, which seem to offer them freedom, autonomy and self-reliance but end up making them mere consumers. Creating engaging situations which are simple, fun and socially productive for them and at the same time get them involved in a mesh of wide-ranging concerns is a worthwhile pursuit.

As city-dwellers. being in a situations where we feel responsible,empowered, playful and concerned toward our city would be welcome and quite a relief from the current status of the individual as a disenfranchised, passive observer of the spectacle which the state chooses to churn out.

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Biographies

Prayas Abhinav is post-graduate student at the Centre for Experimental Media Arts (CEMA) at Srishti School of Art, Design and Technology, Bangalore. He has been a filmmaker (documentaries, shorts), communications consultant, a web strategist, copywriter, photographer, painter and publisher. He has worked with organizations like Oxfam, Centre for Media Studies, CHETNA and Darpana Academy. He helped in the launch of the Creative Commons India project in January 2007. He was a Sarai fellow in 2005 and a part of the design business incubator at NID in 2004. Much of his work is documented at http://prayas.in.

Yashas Shetty is a member of the faculty at the Center for Experimental Media Arts(CEMA) at Srishti School of Art, Design and Technology. His work focuses on the intersections of Art, Science and Technology. Main Text FrameMain Text FrameMain Text FrameMain Text Frame

City Spinning

My Kind of Town:
a study in (re)presenting the city

Robert Brown

School of Architecture and Design, University of Plymouth

Introduction

Site representations propose working hypotheses for comprehending and testing working definitions of urban site…Site representation is not a matter of getting a reality right as much as a matter of constructing forms of knowledge that can cope with multiple realities. In this sense, site drawings, models, and discourses are never mere second-order re-descriptions of some pre-existing condition as much as they are evidence of thought in formation, a thought about what the urban site might be. (Kahn 2005, 288-289)

In My Kind of Town, a recent project run at the University of Plymouth, postgraduate architecture students were asked to explore the construct of the city, considering how it is structured (i.e., the elements which define the city physically and how we map it mentally) and how it is inhabited (i.e., the nature of the life which takes place in it and that we associate with it). Students began by selecting a town or city which they knew well. Drawing upon the example of the article My Kind of Town that appears as a standard feature in Architecture Today magazine, they generated a written text articulating what it was they liked about the town/city in terms of inhabitation, the structure of the town/city, and the relationship between the two.

They also had to produce a physical representation which reflected this discussion.

The project's intention was to prompt students to frame questions about their own attitudes towards the idea of the city as a structure and a lived environment. The project's intention also was to test the means by which we represent these considerations. It setting this agenda, the project recognised (and implicitly tested) Kahn's delineation of site representation; i.e., there is no authoritative definition or depiction of site, but rather that any such representation is less a finalised description and more a process of making sense of the site. Implicit in this argument is that the representation of site by architects is constructed; accordingly, students were encouraged to explore and test how they defined and depicted site, experimenting with multiple interpretations and possible techniques for its representation.

This paper will examine the outcomes of this project, firstly by reviewing several students' work and exploring the meanings and implications their work raised singularly. It will then take a more broadened view to consider what their work revealed in terms of a shared understanding of place, the possibilities for its representation and how their interpretation of place is informed by prior experience. It will then briefly discuss the

questions their work raised.

Measured Responses

The ritually polished marble-paved squares glide you through the heart of this small town…Narrow steep cobbled streets feed off the linear main promenade drawing you into a maze of rich vibrant lanes…High overhead the tall streets are decorated with washing hung up out of the timber louvered windows, small gardens squeezed onto aged window sills and fragile iron balconies… Dubrovnik is a far more intricate town than it first appears, compiling both physical and metaphorical layers of history, culture, materials, authenticity, intimacy and density…

Dubrovnik: Rachael Browne

In her representation of Dubrovnik, Rachael relishes in the richness of the place, not only in its visual sense but equally in its haptic qualities. Both text and model tantalise, making explicit our innate desire to engage with the world through touch. Rachael's model hints at the nature of what she found in Dubrovnik; a number of jewel-like pieces are contained within a box perforated with small openings, their tactile qualities prompting an urge to caress them. Yet this container limits what we can see and prohibits us from completing the picture; only by opening the box and touching the pieces directly can we know them intimately.

Rachael's representation evokes Pallasmaa's discussion of engaging with the 'eyes of our skin' (Pallasmaa 2000). Such engagement is presented as more heightened and sensuous than mere sight, affording a '…sense of interiority and tactile intimacy.' (Ibid, 80) Pallasmaa further suggests that '…haptic and multi-sensory architecture makes the experience of time healing and pleasurable. This architecture does not struggle against time, it concretizes the course of time and makes it acceptable. It seeks to accommodate rather than impress…' (ibid) Rachael's discussion of the fragility of elements, of the patina acquired through age and inhabitation, recognises change and age as things to be celebrated for giving richness to a place, and not merely as obstacles in a vain attempt to create a timeless architecture.

…the thick smell of lavender which filled the humid air, interspersed with scents of pine, even simply feeling of warm air rushing through the open window of a car and across my skin…We would enter the centre through an stone arched gateway which leads along a cobbled street past stalls selling melons and olives, subtly filling the air with familiar scents and carefully adapting the grey/brown stone into subtle fruity blends…Every week the "Place aux Herbes" is filled with tiers of market stalls selling antiques, artwork and herbs, which pack the air with pleasurable but delicate musky and herbal scents, which appear to have em-

bedded themselves within the walls of the surrounding buildings tinting the walls with hints of colour…the familiarity of the subtle smells, fine changes in colour and varying scales, provide the visitor with knowledge of place. This faintly and unintentionally maps the town, which at first glance appears to be a fusion of unidentifiable spaces, formed from the negative of one solid mass. Yet subconsciously it defines itself clearly, providing knowledge and awareness of location through a journey of understanding and belonging.

Uzes: Nick Lambert

Nick's discussion of Uzes in France also recalls Pallasmaa's arguments for a multisensory architecture, considering the sense of smell and even taste as they combine with both the visual and the tactile. Nick's text encourages us to make closer physical contact, offering up a sensual experience that sight alone cannot offer. He echoes Pallasmaa's arguments about the strength of smell to trigger our memory and imagination (1994, 32) and that '…certain colours as well as delicate details evoke oral sensations.' (ibid, 37)

In his model a series of carved pieces of wood of varying colours are set within a frame. Each piece has its own hardness, texture and scent, inherently derived from the different woods used, with the roundness of the edges suggesting that they have been rubbed over time by others before us. Nick's model encourages us to make closer physical contact; it asks us to look with our eyes, but also entices our memories and imagination through touch, smell and even the suggestion of taste.

The city is a flood of humanity. It splashes upon the topography like the ripples of a lake…There is no A to B in this place. The city frowns on such narrow logic, instead it presents choice, the structure rejects the single path, always twisting and turning… So much happens here; so much that is reminiscent of a liquid state. Everything has a flow; if you pause, the energy of the city passes you by in waves. Currents ebb and tides ascend and recede in ways which are highly reflective of the seasonal changes which here carry so much value.

Tokyo – Jim Morris

Jim's model presents a seemingly infinite number of needle-thin vertical elements set upon a plane; there is no immediately apparent relationship between these vertices, but rather only loose clusters that may or may not be groupings. They have a nebulous quality – one's eye cannot easily focus onto one, but rather drifts between them looking for something to latch onto. Yet the more that one wanders visually, the more one is engaged by this sense of movement.

Jim's text is equally elusive; it hints, it entices, without explicitly defining the place in the concrete terms that we might expect. It creates a place not through defining its physical structure, but rather through the emotional and physical feelings of movement and initial instability felt in the place.

Inherent in Jim's discussion is the sense of proprioception – that is, a sense of one's surroundings in relation to one's own body. Our movements and spatial location, whether front or back, up or down, position us, affording us an awareness of the three-dimensional space exterior to our body. Our body thus becomes charged as we physically and psychologically take possession of the environment. The valuing of the body, and the emotional-psychological experience of the three-dimensional world this engenders, is reminiscent of Bloomer and Moore's discussion of the body and spatial perception:

The heart of the distinction we are making between the "feeling" of space developed by the whole body and the objective space described through mathematical and graphic measurement is that objective space does not require the existence of a centreplace. Body spatiality, by contrast, refers to an internal world which is not only distinct from and within an external world, but which is centred around "landmarks" and bodily memories that reflect a lifetime of events encountered outside the psychic body boundary.(1977, 45)

It is fitting that Jim's representation of Tokyo evokes a discussion of body awareness; though in the West we are more preoccupied with visual engagement, in Asia there has long been a valuing of learning through the body. While we privilege the eyes and intellectual judgements based on this sense, in Asia, philosophical tradition gives emphasis to the body and feeling. Indeed, the human body is not understood as something that '…distorts the judgement of the intellect, but as a fundamental and trustworthy part of what it means to be human.' (Tanaka and Tanaka 1998, 187) Jim's text and model communicates not only something of his own personal experience of Tokyo, but equally reveals local sensibilities towards place while challenging us to reconsider our own existing attitudes.

An intimate respect for the delicacy of landscape and the local people's contingent relationship to place has enriched their culture with a sense of identity and citizenship, respect and responsibility that is miraculously still alive and vibrant…The physical disconnection of the cityscape from the cultivated surrounding landscape reinforces the strong cultural definitions and distinctions of the local people to these spaces. Nature is not manifest as symbols of countryside used in parks to make the cityscape more bearable, or as a timeless painting of countryside, but is understood innately in seasonality, food and its cultivation. Landscape is instinctively linked to the people's place and identity.

Italian hill towns – Richard Bower

Richard's discussion explores a symbiotic relationship between landscape and settlement and the way that the inhabitants identify with their environment, expressed and celebrated daily through rituals of the growing, gathering, selling, preparation and eating of food. His text reminds us of Norberg-Schulz' discourse on the phenomenology of place, which argues that place should not be understood only in terms of the settlement itself, but concurrently with landscape. (Norberg-Schulz 1980, 11) Richard's discussion recalls Norberg-Schulz's (ibid, 19) emphasis on man understanding his place in the world not only through orienting himself but also more critically through identifying with his environment, to

know not only where he is but also how he is.

Richard's discussion is also reminiscent of Girardet's concerns over the abandonment of traditional ways of life and the adopting of (universal) urban culture. In applauding the direct and visceral relationship the inhabitants of these places have with their milieu, he argues against the disconnected metabolic relationship cities today have with the environment that supports them, and instead for an indigenous culture '…defined by sustainable adaptation to their local environment.' (Giradet 2000, 17)

Richard's model is reflective of the landscape - settlement relationship he advocates, in which he sets up a dialectic between two sides of his model. One side seems a literal representation of an Italian hill town, with contours stepping up to a cluster of vertical dowels in contrast to the surrounding horizontal lines. The other side presents something of a reverse, with contours stepping down, metaphorically feeding into a centre as gathering place, where again vertical elements (the same ones coming through from the other side) have seemingly collected. These vertical elements are moveable, allowing a direct relationship between the two sides – pushing in or pulling out the dowels on one side correspondingly lengthens or shortens the same dowel on the other side.

Richard's work recognises the reciprocity inherent in the environment. It is also a reminder of the need for balance; as we move ever towards an increasingly urbanised world, do we continue with the out-of-balanced consumption-oriented model into which our urban centres are increasingly evolving, or do we consider models that are based on a more benign symbiotic relationship between mankind and nature?

Shared Themes

Viewed collectively, the work represented here (along with their colleagues' work not shown) raised a number of shared themes. This is despite the purposefully open-endedness of the project, which was intended to prompt work of a discursive nature and thus expose a number of attitudes towards the city and ways of representing it. What surfaced however, perhaps not unsurprisingly given some common experiences and values between them (e.g., they had all chosen to study at Plymouth because of its particular ethos), were some very consistent and challenging attitudes which resonated across individual discussions. These included a challenging of more conventional models of urbanism, a movement away from more traditional techniques of representation, and a valuing of memory and prior experience.

'Weak Urbanism'
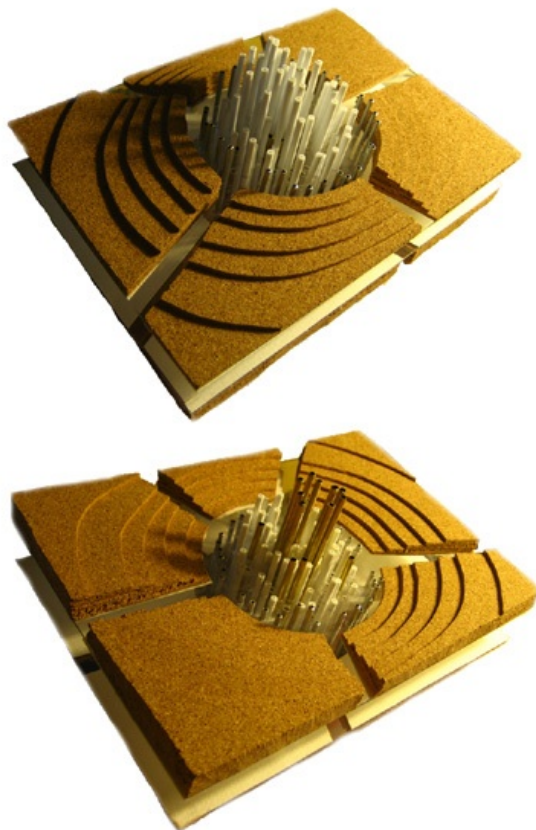
Through their text and models (and the discourse these recall), the students positioned an alternative to more conventional paradigms of an object-oriented architecture. In stark contrast to a visually-biased perspective, the students moved beyond such a mono-dimensionality to consider and discuss place through a broader sensory engagement. Their discussion is not panoptic, iconic, overly-formalised or overly-abstracted as one might expect from much current architectural rhetoric, but rather multi-sensual, personal, and more intimate.

In positing this, the students' discussion echoes Dovey (1993) and others' arguments for 'lived space' over 'geometric space'. This discussion is also reflective of what has been proffered as 'weak urbanism'. In referring to this Pallasmaa (2000, 82) contends that the urban design principles which have tended to predominate are based on strong strategies and form, which reinforce the primacy of the eye. In opposition, weak urbanism gives rise to '…the haptic townscape of intimacy and participation.' (ibid) In their own work the students privilege the first-hand experience of the inhabitant accreted through time and interaction, over the distant and abstracted conceptions of the designer or planner. While they value the iconic landmark and highly-structured order immediately perceived, they value even more cities which open up a greater sense of themselves only through exploration and discovery of the hidden and fragmented.

Representation

The students' work suggests possibilities for a broader sensory representation of spatial experience. In the ways that they have developed to represent their understanding of place, they are implicitly recognising shortcomings of our received conventions of communication – inherited means of representation that date back over several hundred years. While these conventions are useful as tools for study and communication, they are suspect in their inherent emphasis upon architecture as visual art object; drawing techniques (e.g., plan) typically utilised to represent architecture convey this inherent bias. (Bloomer and Moore 1977, 18)

In contrast, the students' work relies not so much on a literal representation, but rather their meaning is communicated more subliminally, through the suggested, the implied and/or the evoked. Their work benefits from not trying to recreate an actual city or specific place in its formal structure, but instead through evincing something of its emotional and tactile experience, notably through prompting us to engage with their work not just visually but instead multi-sensually. Through their writing and physical representation, they do not state explicitly and thus limit our engagement; rather they refer and allude to, triggering our memory and imagination, transporting us to a place and time in our experience. Moreover, their representations challenge us to engage with senses other than just the visual, notably the haptic. They encourage us to break down the metaphorical wall that exists between a drawing and us, which limits us from developing a greater understanding of the experience of what that drawing is depicting.

Memory and Experience

A final consideration raised by the students' work is the proposition that through there may be multiple realities of place, our engagement with it is conditioned a priori. Echoing Tuan's (1974, 31) argument that we interpret environments through prior experience, their work extends and articulates themes already revealed through previous

work, and/or draws upon their personal experience. Whether in Rachael's longstanding interest in materiality and collage, Nick's agrarian upbringing, Jim's engagement with spatial awareness, or Richard's on-going work with landscape, each reflects that they have brought with them their existing concerns, beliefs and values. Their work suggests our a priori attitudes and experiences inform how and with what we choose to engage when encountering a place, and how we interpret the meaning of that place.

The role of memory in this is crucial; throughout our lives we engage with new places and new experiences. With each encounter, and through attrition over time, we discard some as no longer meaningful or significant, while others we (re)synthesise into our developing world view. These memories become a frame of reference by which we engage with the world. No matter how tantalising the notion of an innocent eye, enabling us to encounter the world anew free of the baggage we have brought with us from prior experience, we need to recognise the role of memory in the experience of place. As Downing posits:

Each individual memory evolves and helps select perceptual phenomena to add to the arsenal of knowledge and meaning built over time through idiosyncratic experience and human will. A person is not simply a tabula rasa, as past conceptualizations of our relationship to the world suggested. As non-self impinges upon self, the self makes decisions, values some experiences over others, reconstructs experience, and produces a "will" that acts upon the non-self world in a creative and ongoing interaction. (2000, 14)

Concluding Thoughts

The shared themes revealed by the stu-dents in this project raise some interesting possibilities about urbanism and multimodal experience. Central to the students' work is what it suggests about how they experience, relate to and interpret the city. In contrast to the contention that a visual emphasis typically guides the planning and representation of urban space, their work speaks of a multi-sensory engagement grounded in a sense of inhabitation, and reflects a much broader construct of the city than is depicted in much current rhetoric. Yet it also raises further questions.

The construct of weak urbanism prompts images of a more humane townscape, fostered around interaction between both inhabitants and between people and place, enabled by a more intimate and sensual environment. Yet what validity does a model which cites the medieval townscape as reference point have in the post-industrial landscape of our cities in present-day Europe, much less in other parts of the world? How does such a pattern, developed in response to very different cultural, economic and social needs, begin to be adapted to 21st Century aspirations? How does it facilitate the massive shifts of people on a daily basis that many would argue are intrinsic to contemporary life?

The development of more multimodal forms of representation would be a much-welcomed development to supplement the techniques we have inherited. Yet even a cursory glance at what is being produced in practice and architectural education evidences architecture's visual bias. The development of computer-based graphics that has enabled the production of very sophisticated images, not to mention the allure of virtual reality-based experience of space, only further reinforce this, posing a challenge for experimentation with and development of more multi-sensory forms of representation.

These are questions that cannot be an-

swered within the context of this paper. Indeed, this paper and the work underlying it are merely some early steps forward; and as future work strives to address these questions, it will reveal even further questions to be pursued. The seeming evasiveness of this pursuit is however not quixotic; to infer from Kahn (2005), the working, testing and discourse involved are in essence aimed not at producing a singular reality, but rather are intended to enable thought in formation.

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Biography

Robert Brown is a senior lecturer at the School of Architecture and Design, University of Plymouth. He has spent much of his professional life working somewhere else; i.e., as a transplanted American working on housing and urban regeneration projects in London's East End, and on community development programmes in Africa and India. These experiences have greatly informed his teaching praxis and research, and are reflected in his interests in participatory design, architectural pedagogy and cultural and social constructs of architecture.

Drawing out Experience; Between Media & Place

Vincent Canizaro

University of Texas at San Antonio

Introduction

For architects concerned with ethics and not merely with aesthetic novelty, who seek the realization of places where a fuller, more compassionate human life might take place, that these mediating artifacts and tools be appropriate is paramount. - Alberto Perez-Gomez and Louis Pelletier

This paper considers the role of representation in the practice of architectural design. More specifically it examines the communicative relationship between architectural design media and the phenomenon of place. These two concepts occupy an uneasy partnership when one considers the following. First, drawings, models, and digital files are in their most obvious capacity, representations, depictions, or settings that give a virtual presence to material form. These media tend to represent primarily the physicality of things. In contrast, the phenomenon of place is something that is both physical and non-physical, material and of the mind. In the words of the geographer Edward Relph, places are "impalpable territories of social activities and meanings projected into entire assemblages of buildings and spaces." In architecture, to talk of "place" is to consider a building or environment from a particular point of view – one that privileges the sense of inhabitation and experience over other aspects of a building's existence such as its physical form or tectonic qualities.

In the context of the design process a variety of media are employed to give presence to a phenomenon that is not entirely physical. Place and experience are phenomena that are difficult, if not impossible, to "represent" in the traditional sense of depicting the appearance of a thing. For, how does one represent an "impalpable territory," "social activities," or the meaning of an environment for those that might live there? Further how does a designer gets an adequate sense of inhabitation through drawings, models, and digital files. The presented physicality must be capable of being interpreted as if experienced. If not, then something else must be occurring to enhance this sense. This paper is my attempt to bring some degree of clarification to this rich communicative relationship by presenting six factors that have emerged within my doctoral study, entitled Drawing Place: An Inquiry Into The Relationship Between Architectural Design Media And The Conceptualization Of Place, that appear to favor the communicative conceptualization of place.

1. Memorable Reference

Remembered place experiences have a significant effect on both the inspiration of place-based design as well as upon the designer's ability to judge and conceptualize imagined or designed places.(1)

The first of these factors rests within these comments made by participants in my study: "the key to understanding places is our past place experiences;" "memorable imagery is basic to architectural design;" and "experiences are key to one's ability to make places." Each are indicative of the widespread sentiment that memory is key to place-making. It appeared in two forms: those "touchstone" memories that singularly guided one's design practice; and the more ubiquitous everyday and travel experiences that formed the bulk of an architect's place memory. In both cases, such memories serve as points of reference to understand, interpret, and project (through design) place concepts.

Some noteworthy examples are childhood remembrances of sheets drying in the wind and sun, and a transitional space (a space that mediates between the interior of a building and the exterior) from a summer resort. Each framed a lifelong interest that is carried out in practice. A strong and sustained interest in the sun and wind as forces of place-making, in the former, and special attention to such spaces in all of her work with the latter. Every respondent reported a similar seminal place memory that guides the general focus of their work. Elsewhere these have been discussed elsewhere as "archetypes," "referents," "references" to describe how they function for these designers.(2)

However, it is the everyday place memories and remembrances that provide the richest well for design in terms of place. Simple memories about how a place felt, the sensation of walking under something large, and even the constant reiteration of experiences in everyday spaces such as living rooms and offices serve to build a designers storehouse of inhabitation.(3). By having visited and felt the spatial awe of a great cathedral, a designer gains a degree of bodily, tactile, and sensory experience that may in turn allow them to read a drawing of that space in plan-projection. Through experiences embedded within our memory designers develop an empathetic connectivity described as central to place concepts. (4) Moreover, by having visited and drawn any place my respondents and others have suggested that this ability was enhanced. (5) It is important, however, as one respondent pointed out, documentation of place go beyond the picturesque perspectives she termed "post-card-ology." In its place she suggested "arrays of diagrammatic drawings of these works of architecture. Only in this way can you get at place qualities."

Lastly, this factor also suggests a subtle critique of the practice of studying architecture and environments through pictures and books. If as suggested, that architectural conceptualization relies fundamentally on a background of direct experience, then mediated knowledge derived from text and images about places is incomplete at best. Further, it also suggests that such knowledge, while seemingly valuable for the generation of ideas may have nothing in common with the direct experience of those mediated places about which one is learning.

2. Intending Place

Both purposeful and implicit intention to be concerned with place concepts makes a difference in the designer's ability to develop a place-based design.

It should not come as a surprise that the intentionality of the designer figures almost

as prominently in these findings.(6) The underlying suggestion is that both a designer's purposeful intent and non-purposive intentional stance effect the course and outcome of the design process. Intentions guide the process and serve as a way of maintaining consistency throughout the place-focused processes that are the subject of this inquiry.

From interviews, it was clearly recognized that to intend in the deliberate sense was beneficial. One respondent summarizes this view this way: "…place intentions are good because as architects we have to intend a kind of place. The intend part is important for us as designers. Ideas move us along but are not the prime motivator, place intentions are." For this respondent and others, design in terms of place was felt to be something the designer needs to be motivated for and have a desire to do. – "your energy needs to be into it." Another commented that a designer needs "to have ideas about how one is to live in the world and how your work contributes to a renewed vision and desire to live a particular way by your client. It is about order, site, context, culture, materials and the heightening of emotions in that particular place."

Place intentionality is also linked importantly to "memorable reference" through its role in establishing one's more basic intentional stance. Many comments pointed towards how having a poetic imagination and/or assumption to design in terms of "people in places" made more difference than the selected medium. In reference to the most powerful computer she can imagine, one stated that, "having the right machine is not the key to place-making - having a poetic imagination is - the poetic imagination that is born out of memorable experience." Similarly another, while discussing that one's intent can mitigate the effects of media, states "the most important factor in the making of places is a combination of things foremost of which is the desire. A concern for people can only come from the recognition that people are the most important element." With both there is reference to something more fundamental than intending and speaks of an intentional stance directed towards a concern for design as something to be inhabited not only looked at. Those who made the strongest claim for intentionality felt that place was more than a desire but rather was an assumption.

3. Skill and Comfort

Both a certain degree of skill and comfort with the use of any medium by the designer can have a profound effect on how that designer engages place concepts in design.

Designers who gain skill in the use of a medium or whom are comfortable with its use are able to deal more effectively with place concepts. Ease of use serves to connect to the work at hand. The more skilled and comfortable I am with a tool, such as a tennis racquet, the more engaged I am capable of being in the game. The first time I picked up a tennis racket a swing was difficult and thus the game was impenetrable. Learning how to hold the racket, to keep my eye on the ball, to move my feet, adjust my weight, and swing the racket while keeping the face open to the ball opened up the game through opening my ability to play. Walter Ong refers to this pattern of growth with a tool as the increasing "interiorization of the technology."(7) Through this process, he claims new options of expression and understanding arise.

With drawing, modeling, digital design, and design-build, if one does not have what one respondent referred to as "transparency," they will fail to gain a sense of inhabitation. Or "without the skill the designer is unable to draw out their ideas in order to work with

them." Any designer who can neither see what a medium is showing or manipulate the medium is effectively blind. This effect is visible at two levels. On one, the designers are hampered through a general difficulty of reading through an image. At the other, they are also precluded from dealing with the more specialized focus on place – the ability to read the medium empathetically and gain a sense of what it might feel like to be within what is being imaged. Sagely one respondent stated, "I think your design will be only as good as your mastery of the media you use to represent the ideas. So, learn them all, but master only a few."

4. Multiple Means

The use of multiple forms of media and the mixing of different media result in a more multivalent sense of an emerging design, and is therefore suited to the multivalent character of place.

Perhaps the most prominent pattern to emerge in the course of this study was the necessity of using more than one medium in order to adequately develop a sense of place in the design setting. The basic notion is that by mixing and/or employing multiple media, the inadequacies of each singular medium are foiled by their combination with others. To mix media here, means to combine something into some sort of hybrid which was rarely discussed. More common was a concurrent use of different forms of a media or otherwise, different styles of mediation. With both what has been called "resourceful patching" was the modus operandi to the practices.(8) Those interviewed stated that they work with any and all media as a matter of course as is captured in this comment: "I am pretty happy to work with whatever is out there… There's a ton of media out there and I use most of it." Others saw it as a part of "a balanced practice."

More direct to the question of place, the importance of multiple media was specifically discussed: "Drawing place requires many different types of media"; "Through a broad drawing process, by using a lot of different media is how I come to know the quality of the place." As to the potential difficulty in dealing with multiple and mixed media one respondent commented that "you find ways to sum it all up."

More complex are the ways in which this mixing and combining of media were carried out in practice. I was able to construct three categories of increasing complexity. The suggestion is that the multi-faceted phenomenon of place is most effectively dealt with by multi-faceted means.(10)

4a Multi-media Practices

Perhaps the most obvious, multi-media practice is the combination of different forms within the same medium such as drawing. A multi-media practice of drawing would use plans, sections, and elevations in design. The Beaux-Arts analytique and the process of collage are also examples of this practice by combining projection systems and ways of depicting things within a 2-D graphical format. Most common among the responses regarding the conceptualization of place was the use of plans and sections, in conjunction with perspectives.

David Leatherbarrow has made much of what he calls the process of "alternation" that commonly takes place with multi-media practice.(11) This is often a dialectical process in which multiple drawings are consulted in order to ascertain a more complete understanding. The perspective "allows vision to roam around within it, as if the view were enclosed by the space... The development of a design always involves some alternation between these types...."(12) Andrea

Kahn makes a similar point in reference to the design drawing of Carlo Scarpa explaining that through his mastery and comfortable use of multiple views within the two-dimensional drawing surface, Scarpa "lived" in the three-dimensional space of the drawing.(13) And in reference to those two-dimensional drawings she states that with "orthographic drawing, two plus two equals three [dimensions]."(14)

4b Mixed-media Practices

Mixed-media practice consists of using media forms together; forms that differ from one another, but are part of the common repertoire such as the use of two and three-dimensional drawings, physical scale models, and digital files. The structure of use is the same as above, in that the various forms are employed interactively such that each gives a partial view which together expands the conceptual vision of the designer.

As a form of practice, mixed-media can yield more fruitful yet previously untried combinations of media. My own attempt was to unite the mediation of design-build with scale modeling in the design studio. The students were asked to create a realistic model of the site. We then followed the procedure of design-build in model form, alternating between drawings and modeling. Many of those who participated reported to me a dual advantage of the practice. They reported learning a sense of construction that accompanies design-build, and more importantly reported feeling a deep connection to their surrogate "site" that affected their conceptualization of the design as a place.

4c Multi-disciplinary Practices

Here I refer to the inclusion primarily of text, both verbal and written, and physical presence or what I prefer to call "non-drawings."(15) Both are normal parts of everyday design, but their impact and importance is seldom acknowledged in terms of the significance of their contribution. They figured prominently in searches for ways to better conceptualize place. When the respondents were queried as to what helped them get a clearer idea of their place, most replied the difference could be accounted by the use of text and the ability to have physical presence on site as the "media." Each had slightly distinct variations; one wrote stories as another wrote descriptive words that captured the spirit of the place. Teamed together with drawings and models, these non-drawings seemed to increase these designers' access.

Much like mixed-media practice above, this practice also has implications for the creation of new media. Such a practice as Rene Davids' use of storyboards as design media or Christopher Alexander's Pattern Language could both serve as a case in point.(16) She has proposed and used the combination of plans, perspectives, and a script in order to introduce a narrative into the design consideration. She states, "[t]he narrative implicit in the storyboard encouraged students to think about people's movements in space in ways which suggested inhabitation as opposed to merely using human figures to decorate a space." In much the same way, The Pattern Language captures behavioral incidents that the use of are intended increase one sense of inhabitation.

As to the inclusion of direct physical presence as a form of mediation, these respondents referred to both site visitation and the use of built surrogates as examples of this

form. Site visitation was described as the best way to get and maintain "a grip on the sensory experience of that place." This particular respondent continued by saying, "It is important to get a feel of the wind, a sense of how the place smells, the views, and the sounds that are there if you want to design in terms of the place." Exemplifying this practice, she stated that designers should always bring both their models and drawing to the site to work on and reinterpret them there. The other primary variation on this theme was the power of visiting surrogates in order to understand the feeling of one's own design as inhabited. These were described as similar but different environments that more powerfully convey the sense of a place, its ambiance, that is difficult to represent.

5. Innovation and Empathy

Through adaptation, augmentation, and innovative use, any medium can be made more engaging and therefore conducive to design in terms of place.

Also important necessary to adapt and/or otherwise work with a media in personal ways in order to enhance their conceptualization of place. Common to all of these idiosyncratic strategies is an attempt to engender a feeling of inhabitation and thereby design according to that heightened sense. (18) Phrases such as "feeling through the media," "living in the drawing," going "into the spaces in my drawings," and "being able to understand the building as if I were there, and "running simulations in my mind about the place, about how it would be used" are all examples of what these strategies were aimed at achieving.

Edward Relph's notion of "empathetic insideness" is helpful here.(19) It refers to the sense of taking in a place in such a way as you understand it both as an inhabitant and as an outsider. What is key is that the medium is the agent which "draws" out that empathetic sense.(20) The strategies outlined below exemplify this search for those qualities which engage the sense of inhabitation and empathetic insideness and thereby the conceptualization of place.

5a. The Human Figure as Guide: Motion and Inhabitation

The human figure is not an uncommon element of inclusion in architectural media but it is certainly underutilized. It has been used in a variety of ways and has always played an important role in the development of design ideas. Its inclusion seems to figure largely in all "representative" forms of media and is implicitly important in the practice of design/build through the designer-builder's own physical presence on site. The variety of employment of the human figure extends from their use as indicators of dimension and depth, akin to a ruler, to aid in getting a sense of inhabitation.(21) For those surveyed the human figure acts as a sort of empathetic "ambassador" who participates in the space of the drawing or model for the designer. By drawing, building, or rendering these human figures, which are thought to "illustrate the effect of architecture in everyday life," the designer gets a more complete sense of the possible lived inhabitation.(22)

5b Recognizable and Meaningful Phenomena

The second of these strategies is the utilization of familiar or recognizable phenomena in the designers medium of choice. The depictions of objects, such as a familiar piece

of furniture or artwork can act in a similar fashion to figures by both communicating a sense of scale and allowing the designer to insert themselves into the depicted environment.

5c Realism and Materiality

Realistic depiction also accomplished a sense of immersion within the designed place. Here, however, through the inclusion of realistic and phenomenally rich materials and objects the designer is somewhat more free to deal with the represented thing and not the representation itself. Thus, the focus is on a minimizing of distortion which enables a more unencumbered presentation of an environments materiality and phenomenal presence. By not distracting the designer through an overly "graphical" image, the promise of empathetic insideness is achieved through transparency.

6. Freedom and Ambiguity

Media and styles of mediation that are felt to be more openly structured and which foster ambiguity in their communicative interaction with the designer are important to a place-focused design process.

The character or quality in a medium also enhanced the place-focused process – that feeling being one of openness and freedom. By freedom they referred to the sense that a medium allows a great deal of idea exploration. "The situation that is conducive to place-making is freedom to draw a lot, and to use a lot of trace," was one respondent's way of summing up the issue. For another, it was a freedom that comes from inexactness, "wherein I can feel free to make mistakes." A few others felt that if a media could generate a sense of ambiguity and openness, place

concepts could be dealt with through that medium more effectively than with others.

One respondent suggested that the effectiveness was accomplished because place concepts involve an inherent experiential aspect that is often not conveyed through overly determinate media. This is a sentiment echoed by many theorists on media. Alberto Perez-Gomez, Kimberly Dovey, and Susanne Langer have each unequivocally stated that the senses of place requires a sort of imaginative freedom – one that is as open as poetry is to suggest more than is directly stated.(23) Their specific example is the use of drawings based on descriptive geometry. For them, such media describes what they depict in an overly definite and mechanical manner, which would be akin to reading poetry only as so many words. Both these theorists and my respondents suggest that the multivalency and complexity of place concepts require a medium capable of two things: One, being open enough to allow exploration, and two, being ambiguously structured enough to present place concepts in their incompleteness. Goldschmidt has shown that sketching makes possible to the open-structured dialectical process of design.(24)

Design Processes which were similarly "definite" and overly structured were discussed as impediments to the conceptualization of place. In one particularly powerful example, a respondent told of an important step in his own method. When asked about any specific processes he felt were conducive to place he responded:

If I were to break it up.... when I visit the site I do it alone. I ask not to be disturbed . And when it is possible, I do this without knowledge of the program and the issues I am being asked to solve... It is good because I am able to analyze the site without the specifics of the problem influencing me...In this way I get to know what the influences that

exist on the site are without the constraints of a program being brought to it. When one does look at a site without a program many possibilities present themselves that would not with a program in hand.

7. Conclusion

The relationship between the phenomenon of place and architectural design media is based primarily upon the achievement of a particular mode of engagement; one in which the designer is able to get beyond the sense of working through simulations and come as close as possible to having a direct experience. This type of engagement is facilitated in four interrelated ways. The first is through the involvement of body's sensory input, thus getting beyond a sole dependence on the visual system for the assessment of a design. The second is through the forging of a connection between the designer and the physicality of a proposed place. This can occur through a connection to the actual site of a design, through the conveyance of imagery that corresponds to physical reality, through imagery that evokes an embodied view, or through the approximation of physical form. The third is through any aspect of mediation that affords a sense of the spatiality and/or physical movement that might occur in the designed place. The fourth is through an aspect of mediation which presents no impediments to any of the above aspects. It is characterized by the promotion of possible ideas, the exploration of those ideas, and a general sense of openness to broad and multiple forms of knowing.

What this mode of engagement allows, in its simplest sense, the designer to forge a sense of inhabitation. The above facets make it possible for a designer gain that sense of "empathetic insideness," and to "live" in the depicted or mocked-up environment.

Finally, the relationship rests on interpretation. In this, it rests with the abilities of the architectural designer at work on a design. The tools, or "implicit media" they bring with them in the form of remembered places, intentions, and skills therefore matter the most in the end. If we logically work back up through the text, we will find that first off we need the architect to be interested in the conceptualization of place and concerned with the inhabited aspect of buildings. Next, one who is unconstrained in the use of a medium and has the skill to "see" or "feel" through it. Lastly, one capable of interpreting place imagery, through written and visual clues, and the other sensory stimuli that make it possible.

Distilling all of the findings down to their essence yields three distinctly salient and informative points about the relationship between media and place. They are:

1. The phenomenon of place is not directly represented by design media, it is therefore dealt with indirectly in architectural design. Thus, the relationship between media and place is indirect.

2. Design media, despite the individual differences in effectiveness, are as a whole ambiguous in favoring the conceptualization of place. Thus, the relationship between media and place is variable.

3. Key to the conceptualization of place in architectural design is gaining a sense of inhabitation of the emerging work. Thus, the relationship between media and place is defined by empathetic insideness.

Endnotes

Please note that for brevity I have not cited the many references made by and about respondents. They remain in my files.

1. One of those interviewed for this work considered this point to be so obvious that it would be ridiculous to discuss it in the course of our interview.

2. F. Downing's "referents."

3. Frances Downing has made this claim in a number of places. See note above for references. Also. Marc Trieb in his "Place Description: Written; Rendered," in the Journal of Architectural Education 36, No. 1 (Fall, 1982): 2., he discusses how memories of places condition how a designer understands what is in front of them, whether it is a drawing or real place.

4. A similar point is made by Dodds and Frascari, "Miming a Manner of Building, pp. 396-401. They show how physical experience can be translated into drawing through an analysis of the work of Carlo Scarpa and Valeriano Pastor.

5. Paul Laseau in his Graphic Thinking for Architects and Designers (New York, Van Nostrand Reinhold, 1993); William D. Cooper's "Drawing, Touching and Moving," Journal of Architectural Education 35, No. 3 (Spring, 1982): 9-13;.and this point serves as the impetus for Norman Crowe and Paul Laseau's Visual Notes for Architects and Designers (New York, Van Nostrand Reinhold, 1984).

6. Richard B. Oliver, "Talk," in Akin, Omar and E. Wienel, eds., Representation and Architecture. (Silver Spring, MD: Information Dynamics, 1982), p. 220. States that: "there remains a necessary relation between what one intends to build and how one expresses that in a drawing. There is an intimate and quite functional relationship between the two."

7. Walter Ong, "Writing is a Technology that Restructures Thought," in The Written Word: Literacy in Transition, Wolfson College Lectures 1985, Gerd Baumann ed. (Oxford: Clarendon Press, 1986), p. 32.

8. I borrow this phrase from Kathryn Henderson in her On Line and On Paper: Visual Representations, Visual Culture, and Computer Graphics in Design Engineering (Cambridge, MA: MIT Press, 1999), p. 167. Her implication is the same as mine, that both are inadequate for the task at hand. For the task at hand each provides a patch for the other.

9. Bruno Latour similarly speaks of a "the cascade of images." In his "Visualization and Cognition: Thinking with Eyes and Hands," Knowledge and Society: Studies in the Sociology of Culture Past and Present 6 (JAI Press, 1986): 1-40., he argues that political and economic power are manifest through the use of images that influence through multiplication. Images allow one to see something, and the multiplication of those images should therefore allow one to see more. An extension of Latour's ideas is discussed in Henderson, On Line and On Paper, p. 74.

10. James Corner makes a similar point. "Ideational immersivity" and "synaesthetic imaging" are multiple media which "communicate a different sense allowing the designer to attain "ideational immersivity." "Operational Eidetics: Forging New Landscapes" in Harvard Design Magazine, Fall (1998), p. 26.

11. David Leatherbarrow, "Showing What Otherwise Hides Itself: On Architectural Representation," Harvard Design Magazine (Fall, 1998): 50-55.

12. Leatherbarrow, "Showing What Otherwise Hides Itself," p. 55.

13. Andrea Kahn, "Disclosure: Approaching Architecture," Harvard Architectural Review 8 (1992): 3-21.

14. Kahn, "Disclosure: Approaching Architecture," p. 10.

15. The importance of words and text figured prominently in many of my respondents processes. James Corner in his "Operational Eidetics," pp. 22-26. echoes what many respondents stated. "Whereas most architectural and planning images use words(as labels, keys, names, etc.), the combination of words and drawings is rarely developed beyond its merely descriptive function." p. 26.

16. Renee Davids, "Applications of a Film Making Technique in the Architectural Design Studio," in the Proceedings of the 1998 ACSA West Regional Meeting (Department of Architecture, University of California at Berkeley), pp. 11.1-11.11. Also see: Christopher Alexander, A Pattern Language (New York, Oxford University Press, 1977).

17. Rene Davids, "Applications of a Film," p. 11.7.

18. Kathryn Henderson, On Line and On Paper, p. 84., refers to a similar strategy within engineering drawing of representing "tacit knowledge, which is the representation of something as experienced, lived, and known through bodily action.

19. Edward Relph, Place and Placelessness (London: Pion, 1976), p. 54.

20. George Doddsand Marco Frascari. "Miming a Manner of Building: Drawing and Story in the Work of Valerino Pastor and Carlo Scarpa, " in The 86th Annual Meeting & Technology Conference (Washington DC: ACSA Press, 1997), pp. 396-401.They refers to it as the mimetic capacity of the architect-drawer who "mimics" physical movement and therefore the human body's participation in the drawn environment.

21. This dichotomy is laid out similarly in Alex T. Anderson's "Scale and Inhabitation: On the Human Figure in Architectural Representations," in Proceedings of the 86th ACSA Annual Meeting (Washington DC: ACSA Press, 1997)p. 582.

22. Davids, "Applications of a Film" p. 11.6.

23. Alberto Perez-Gomez and Louis Pelletier, "Architectural Representation Beyond Perspectivism," Perspecta 11 (1992): 20-40; Susanne K. Langer, Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art, 2nd edition. (New York: The New American Library, 1951), pp. 86-87.; Kimberly Dovey, "Putting Geometry in its Place: Toward a Phenomenology of the Design Process," Dwelling, Seeing, and Designing (State University of New York Press, Albany, 1993), p. 251.

24. Gabriela Goldschmidt, "The Dialectics of Sketching," Creativity Research Journal 4 (1991): 123-143.

Biography

Dr. Vincent B. Canizaro isAssociate Professor & Graduate Advisor of Record at the University of Texas, San Antonio's College of Architecture

Ambience Formers in Built Environment:
An Experimentation with Sound and Motion

Grégoire Chelkoff

CRESSON, Ecole Nationale Supérieure D'Architecture de Grenoble.

The visual dimension of space tends to erase other sensory dimensions (like sound for example) in our culture of design although they are so important in everyday life. To make more operative all the senses that architecture involves, our researches and experimentations investigate sensory approaches of urban ambience in a phenomenal and ecological direction. This direction of research get back to the experience of objects and spaces in usual conditions.

In this paper, after a short "flashback" about our laboratory, I will show an experimental research, which have particularly explored the relationships between sound and motion.

The cresson laboratory (cnrs mixed research unit 1563, created in 1979) focuses on the perceptible environment and architectural and urban atmospheres ("ambiance" in French). Architects and urban planners are designing and building spaces, but they create also "atmospheres" by which all our senses are in interaction and in which social or individual uses take an active part. From the beginning of our works, we advocate a qualitative approach capable of helping and possibly guiding the strategies and processes of architectural and urban design in a sensitive way. Based on a pluridisciplinary approach to architectural and urban ambiences, we aim to articulate both physical dimensions (construction and environment) and the human one (sensitivity, practice, cultures).

Many works have shown how architectural spaces and social uses interact, but the role of ambient factors is not really taken into account, and it is often through the category of judgment (pleasant, unpleasant, bad, good, etc.). Our approach does not aim at showing the effects of environment on judgments or behaviours. In order to inflect our projectual thinking, we try to understand the modalities by which the reciprocity between man and environment is experienced in different architectural situations.

1. Sonic Effects

At the end of the seventies, the cresson laboratory initially focused on the sound space in a qualitative way to describe our ordinary experience. It must be said that it was rather difficult to escape to the main thinking about bad noise, the bad urban sound. It was just like if the urban sound was without quality and without any social use or signification. How, in these conditions, could it be a part of our imagination of environment ?

Investigating the sound space of everyday life, the "sonic effect" is the first pluridisciplinary tool that the cresson have developed. This analyzing tool allows us to describe ordinary perception and action in different urban or domestic situations. Some of these sonic effects can be related to spatial disposition and some not. The notion of effect (Augoyard, 1995) refers to a perceptual process that results from circumstances; it is the manifestation of a phenomenon, which comes with the existence of an object.

For example, the following spectrogram shows what we have called a "cutting effect" which is the result of the spatial disposition and the position of sound sources. This effect is felt while the passer-by is walking and crossing an angle between two buildings, the intensity of sound fall quickly. The quality of listening is modified: when the cutting effect is perceived, all the links between sounds are disturbed, and the listener can be more attentive for a while. In imagination, this effect creates a virtual door, in that sense, it is a former of discontinuity in the experience and it plays a role in the representation of space.

Other sonic effects have been described (about 40), some of them are difficult to link directly to build forms (for example "remanence", "sharawadji", "crenel") because they essentially depend on perceptual and active processes, so, it is more difficult to use as criteria of design at very first level.

After the investigation of sound dimension, the laboratory broadened the scope of its works to the many dimensions that are perceptible in situ. Research addresses the phenomena of light, heat, smell, touch and movement, always through an ecological and phenomenal approach and on original pluridisciplinary methods at the crossroads between human and social sciences, architecture and engineering science.

2. Perception and Action

Several researches we have made between the eighty's and now, aimed at understanding the ambient milieu in public spaces, especially through the eye and the ear. It gives more and more importance to the opportunities of perception and action that affords an object and by which the user can feel an appropriated environment : the way to BE in an environment is in part reflected by the way you move and you act. After several surveys and analysis of urban public spaces and housing spaces, we draw the idea that an atmosphere is not only a given physical environment. It is a process based on the active relationship we have when we experiment the built environment and use all its potentialities. If architecture affords spaces to be used, it modifies our phenomenal relation to the world. How these interactions between space, ambient phenomenon and uses could be taken into account in the design process and renew it ?

Walking, sitting, talking, all our practices of architectural space awake perceived ambient factors like sound, light and heat. While these factors are at the basis of our phenomenal relation to the world, they are meaningful for social or individual active uses. Then more than "shapes" given to be static, we experiment "former" that are changing and interacting with environment while we are using it. An architectural shape is not only a material device, it is a potential transformation of our sensitive relationships with environment and people. Our method is then to explore the categories we use to make architecture through the potential of sensitive transformation they involve.

Theses researches led to extrapolate what I have called « formants » in French, (« former » or « formative » in English). This idea (notion) comes from phonology, it is a way to link elements of morphology to plurisensory ordinary experience and action, i- e :

what is rather static in architecture (material, permanence of space) to what is dynamic (sounds, light, motion) when we use a space or an object. For example an « angle » is a geometrical concept, a morphological element : but how can it be felt through sound or through gesture ? What makes it « active » in our sensory experience and what kind of use it could inflect ? The notion of former invites us to question what it means to think, in a sensitive way, for example, a door, a corridor, a passage, and a courtyard ? Of course this kind of question deals with all sensitive potentials and the categories of space.

This way of thinking could modify the cognitive design attitude in a multisensory way integrating the opportunities of action that are suggested. So a new way of research have been improved to test sensory intentions in design and to evaluate an architectural device. After several works which aim to highlight the sensory characteristics of different urban structures, it was necessary to study to a micro morphology scale, that is to say to the scale of body motion and perception. These experiments can participate to the development of a "sensitive ecology" of architectural devices.

3. An Experimental Approach: the Body Scale of Design

In this perspective, we are interested in working at the space scale of those ambient architectural compounds that involve a direct interaction with the human body. We think of ordinary urban objects such as doors, places to sit or to wait, shelters. Around such minimal spaces, a whole array of moving modalities linked to the use of voice and hear are identified : bypassing, sitting or leaning modalities going through, crossing a sonic area, rotating. This array of actions, which come close to, the will of movement

make the hearer's immediate sonic milieu drift. This scale of design induces working on the proximity of walls and on the minimal movements implying modifications in the relationship to the ambient milieu and others. It incites us to imagine what one may do with one's sonic environment, or more globally, with one's ambience. Some of our researches - in housing, working places or public spaces, and especially around transportation system- had shown us that inhabitants are not only passive, they create theirs own environment to improve the listening of others, direct vocal communication or simply remain waiting, sitting or standing. That is why I explore a kinetic approach in public spaces and study how forms offer opportunities of uses relating to atmospheres. It is in order to test spatial compounds and potential of uses that we have build models at the scale of the moving an earring human body.

4. A Kinetic Approach

Space and sound are linked by motion. In the ordinary uses of space, we talk and hear in motion. Moving uses are, for a few of them, linked to their sonic environment. Sometimes, it is intentional : we move to improve the listening of something, or we move to talk to somebody. This evidence strongly influences our reflection about the sonic design of space. That's why, we have to take into account the dynamic relations which couple listening and acting in ordinary uses. These uses are based on the skills of each inhabitant to act in different sonic situations. This active dimension is quite important to design spaces with sonic intentions. It is to be preferred to the passive conception of hearing in the sonic environment, which is usually considered in order to understand how it is appreciated or how it is "identified".

The experimentation we will now talk about took place between April and may 2003 at the "grands ateliers de l'ile d' Abeau". These workshops near Lyon and Grenoble offer equipment as well as space to built for pedagogical and research activities in architecture.

The main points of our method and the conceptual tools we use to design experimental sonic spaces must be related.

Our precise goal was to model a device that creates a situation in which a lot of possibilities of uses and ambience are offered. More particularly, three categories were put through the test in different urban or architectural situations: «articulation», «limit situation» and «inclusion», that have been studied before in real urban contexts. Each of them implies different amplitude of motion. Articulation depends on a displacement between two distinct sonic environments. Limit situations imply the movement of parts of the body like the head or the upper body and also other displacements making the sonic milieu drift quickly. Inclusion does not imply movement, as it is an interpretative move: in a static posture one mentally connects a space to another. All of our qualitative program and our designed equipment aim at creating these kinds of situation in very small spaces.

In our idea, this kind of equipment could find its place in different situations: to create a passage between a building and a street, or to offer a furniture in such places as underground public spaces, or big atria where the sonic environment is usually too homogeneous with great reverberation and ubiquity. This equipment could locally offer possibilities to escape these effects. The prototype is furthermore transposable to other public contexts just like any public equipment where one is to wait, sit, or phone, particularly in ambient transportation a situation.

5. Experimentation of a Wall

The "wall" we have build is a sort of ten meters long and three meters high "double sided" wall. It's thickness varies from five centimetres to 1,6 meter, one can pass through or along it, on one side or the other. Placed along the existing building on a sort of platform, just as it would be on a sidewalk along a road or along a path, its two sides are designed differently. Along the building, wing-like devices are created, in these wings, the sonic environment is ambiguous. It combines the decrescendo of the exterior environment and the interior sound of the existing building. Open to the street, the second side is more concave, it hollows out a niche in the wall and offers several places to wait, standing or sitting, in cavities or inside a minimal room.

While digital and sophisticated tools are being developed, our experimentations are to a great extent hand-crafted (panels of wood and screws). Another aspect of these experimentations consists in sonorizing the object in order to create a situation : to re-contextualize it and arouse new potentialities of uses and listening. It does not aim at simulating a context but rather at generating an imaginary scenario. In the present case, sonic ambience is relative to an urban site connected to several modes of transportation.

6. Principles of design

In order to give a material form to this, our spatial language of design is based on operative deformations such as print, deliting, and fold. In our idea, each of them calls different potentialities of uses and ambience, for example :

Print generates hollow in the solid and gives affordances to sit in variable depth so

that listening to the soundscape or talking someone sounds different.

The little space between different layers of wall (deliting) offers limit situation depending on the angle and the distance of the ear, the oscillation of the head while one is walking according to the slits in the surface also rhythm the view.

Folds generate a continuity of the envelope, which offers surfaces of reflection near the head and other surfaces to sit or to lean on.

All these intentions depend on a great proximity of the passer-by with the wall, which defines his space.

A sonic regenerated context to create a usual situation

To explore more accurately these kinds of interactions between movement and sonic transformations, the experiment is also the way we can improve the element we have built. For this reason, an electroacoustic installation creates a sonic situation. It is composed of two parts. First, one line of sound is diffused in front of the element (3 sources approximately ten meters from the wall); it generates a global ambience with passages of trains, cars, tramways, etc. Second, sound (3 sources) is diffused at a low level inside the minimal room (we call it «inclusion»). This sonorization aims at reinforcing some of the sonic components or at encouraging a listening attitude (searching sound, going toward it, or inversely, staying to listen or to talk, etc).

Figure 1 & 2: Front side & ridge

Figure 3 & 4: Wings side & Installation with Speakers
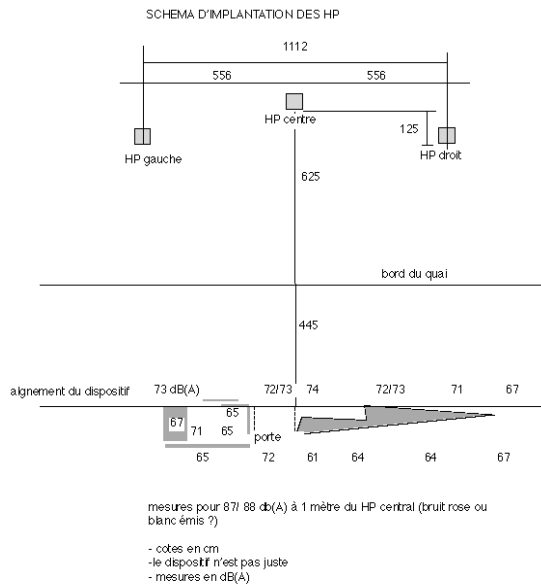
SCHEMA D'IMPLANTATION DES HP

Figure 5

This schema (not at the right scale) shows the place of the speaker. Dimensions are given in centimeters. Measurements in dB (A) : 87 / 88 dB(A) one meter from the central speaker for a pink noise emitted to test acoustical performances. As it was predictable, there is 10 decibels loss behind the wooden "wall" in these conditions. At the beginning of their exploration, each one had to make the choice to go by the exposed side or by the other when he started from the "prow".

7. Fictional use in a virtual situation

On a methodological aspect and with regard to our hypothesis, experimentation allows us to directly evaluate uses in a testing scenario with several persons (ordinary people, acousticians, partially sighted persons).

This apparatus allows us to test how one

acts in the sonic structure created by the space and the diffused sounds. To learn more about it, we asked seventeen persons to experiment a fictional use.

First, they have to walk around the built element and explore it in order to know all its sides, each participant starts from the same point (what we called the "prow"). Most of people (that is to say 16 on 17) prefer to go by the side which is exposed to a greater level of sound, but the difference was not so high : during their experience, the kind of sound diffused by the speakers was an ambiance of a railway station, so the level was not so loud. We have not experimented this survey with pink sound, but it could be tried. Our goal was to understand how people move around the object and use its potentialities.

Second, 4 minutes after start, they have to answer a phone-call and were asked to read us a text on the phone. In the meantime, the sonic environment is made to change and we suppose the reader tries to find a place, or to take a particular position.

This evaluation shows us interesting sorts of adopted behaviours, which illustrate our hypothesis:

The participants walk all around the built element, rather near the walls. When they had this experience with another person, they speak to each other near the walls rather than away from them. It is very rare that they step back, they sometimes touch the walls and they seem to "listen" to it when there is a void. As they have to choose between the left side (wings side) and the front side, the great majority chooses the front side where sound is louder (but the view is open and there is more light). Sometimes they are looking for the origin of the sounds they hear, especially in the "minimal room". It shows they are aware of the changing sounds when they move. After the experience (a short survey is leaded), they tell that

they felt the holes, the apertures in the element thanks to the sound when they passed in front of them.

The following pictures illustrate the different kinds of attitude that make interact form, environment and active uses:

Figure 6: Trying to sit body bent toward the outside. This kind of little moves illustrates the sensitivity to the limits of the sonic environment depending on the sitting depth.

Figure 7: Turning the back to the sound front and facing the wall, the speaker uses this position to talk : the body and the wall make a niche and the whole allows speaking. The first sonic reflections of his voice on the wall give a return to it. During the whole reading, the speaker doesn't move while the ambient sound increases.

Figure 8: A void between two walls offers a position using the phone and speaking : the body and the head are between two walls. This position shows a particular way to form an envelope all around the head ; the position is precise because it changes very fast if the head and the ears are too far from the

limit where sound increases.

Figure 9: A corner offers another form of inclusion in the room, the body is settled in this corner to speak on the phone.

Figure 10: This man stays inside the passage between the sides of the wall during all the phone conversation, the head is orientated perpendicularly to the sides

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44

A corner offers another form of inclusion in the room, the body is settled in this corner to speak on the phone.
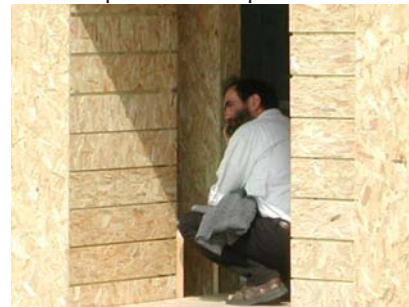
This man stays inside the passage between the sides of the wall during all the phone conversation, the head is orientated perpendicularly to the sides

All these attitudes show diversity but also the kind of observation we can do to understand how this "micro architecture" affords places to hear or to talk and how its sensitive structure is revealed.

In this idea we can notice « formers » of the wall depth on several sensory aspects and scales :

The distance from the variable depth of the wall seems to be felt through sound when one is walking all along it at a short distance

Moving the body in a solid when sitting and feel the sound change is a former of depth.

Get in shadow or in a less lighting ambiance to read the text.

Get a less noisy exposed place when all the body go inside (the minimal room).

We can notice formers of continuity on several sensory aspects :

Changing ambiant light modify the perception of continuity but others sensory formers can give it :

When one follow the material surface with the hand,

The proximity of folded surfaces reflects sound close to the head with better first reflexions

Formers of porosity in ambiance are perceived at several scales :

The emptyness between surface is to evaluate with the body if one can pass through the empty space (affordance of passability) and if one can feel the thickness of the wall

It can transform the sound which is audible when one approach to the void : when the void is a little one, as we know, only high frequency are deviated but it is an important part of information

Porosity in light and sonic environment are interesting to filtrate events, ot make them less present.

8. Short conclusion

The results of this work which associates research and design bring some ideas to develop a sensory approach of architecture that would be attentive to uses in a phenomenal and ecological way.

As we have seen, this experiment doesn't concern only the propagative laws of sound in space, but the potential of action one can get in ordinary local sonic environment. It shows how an architectural form is incorporated as a former through the variations of the ambient flows that accompagny ordinary uses. Of course it is necessary to do more experiments that could give a way to explore an architecture that would not be only visual and that would be more attentive to the perceived qualities in use. On this point, we hope it highlights modestly some of theoretical questions and could inflect the sensory design of space.

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Sensible Forms

Andrew Conio

Department of Fine Arts, University of Wolverhampton

1. Introduction

Deleuzian concepts, 'smooth spaces', 'rhizomes' and 'nomads' are proliferant in 'leading edge' architectural theory. In a recent broadcast of Architecture on Air, Professor Steven Connor said 'architecture is dematerialising and deterritorializing and a frantic pace'. Steven is a well-known phenomenologist, a theory that provides one of the most subtle and open conceptualisation of the subject; it is a incredibly attractive and intuitive theory that has great explanatory force. I mean to show the convergences and differences between phenomenological and Deleuzian conceptualisations of sensation, and how these are both borne out of and lead to radically different theories of the subject and the relationship between the subject and it's world.

Like everyone else I have been asked to present something that might be accessible to a non-specialist audience. This I will do, but I will assume that everyone here will have a great deal of insight into at least one of many of the long and deep debates into the nature of the subject: will have spent at least all of their adult lives thinking about what they believe they are!

In passing, this talk will attempt to correct some misinterpretations of Deleuze, partic- ularly those that hold him to be chaosthetic and in trawl to sensation: in favour of an infinite regression into a type of consummate anarchy called schizoanalysis. This paper will show that these terms are very widely misunderstood, and also, that Deleuze is a highly systemic thinker.

For the last 20 years the subject, the self knowing, self authoring or responsible subject, has shown remarkable persistence in the face of 30 or 40 years of post-modern critiques. Critiques that have comprehensively divested the subject of it's claims for intentionality and powers of signification. And yet the originating subject persists, is taken to be the measure of value, or the basis upon which knowledge and social fabrics are built. In fact, in culture in general, the subject is invested with quite magical almost spiritual powers to be the axis mundis of the world.

The implication of this paper is that there is nothing innate, transcendental or ahistorical about this subject. The putative 'subject' is a consequence of the logics of capital: a system of exchange that is now commonly identified for what it is, 'Empire', that requires the instantiation of the subject as a series of points of (Foucauldian) insertion, and modes of functioning, within a system of dependencies. The subject is the battle-

ground of the new age of Empire. What is so profoundly significant about the modern world's conception of a subject arrogantly standing dominant over all that 'he' surveys, is the planetary climatic calamity soon to overwhelm us.

Husserl was the founding figure of a phenomenology that in essence can be understood as giving foundational status to the consciousness of the subject. In his late work he moved away from his concern with a 'transcendental ego' and sought to resolve the problem of Descartes cogito and the division of the world into knowing subject and perceived world. Husserl starts by asserting that the world as matter needs to be bracketed out as unknowable to man and consciousness. The famous reduction. The bracketed world of brute matter is always irredeemable an outside of thought and therefore remains outside of the scope of consciousness. However, in his famous call to 'things themselves', Husserl posited that the world can be understood in terms of its appearance as phenomenon to man, can be studied to provide insights into the structures of consciousness and the intermingling of subject and object which was lost in all dualistic philosophies. However, Husserl's phenomenology retained a implausible theorisation of the presence of a subject who stood apart from this intermingling, a subject of pure presence to itself, able to be both subject and object. This is the incipient modern humanist subject.

Whether theorised by Descartes or Husserl this self-knowing subject is a deeply problematic notion.

1. The first question is how did this 'person' or mind arise, could we conceive of a starting point which is ahistorical (only perhaps in the manner of Blanchot) This is a mind that uses sensory faculties in order to have a view of the world!

2. The very obvious problem is that

this 'I' or mind thinks of itself as separate from the sensations or phenomena of the world, but of course is made up of exactly that same materials as the world. At what point does 'thinking about' become the same as the thing that is thought about?! Until they are identical, thought is always at some remove from the world, and its own flesh.

3. Additionally, we cannot know the whole as we cannot see beyond the limited horizon of knowledge.

5. A 'self' cannot stand inside and outside of its own thought at the same time.

6 And, each time the self develops a conceptualisation of itself this notion is disabused by the fallacies of its own senses.

7. And, finally, there is always more to an object than its definable properties. You cannot overcome the 'thingness' of the world.

Various dimensions and derivations of these misrecognitions and irreconcilabilities provide the loam for the theories of deracination and deferral of Heidegger, Lacan, Blanchot, and Derrida. Whereas Heidegger may mourn the loss of a primordial openness to being, at least Lacan enjoins us to enjoy our oscillations between real, imaginary and symbolic orders,

We turn now to Merleau Ponty and what makes Merleau Ponty such an interesting figure is his attempt to resolve these problems with a degree of sophistication that is able grasp hold of intangibles, give form to paradoxes and retain a sense of the open and the tangential. Beguilingly Merleau Ponty says:

'there is no inner man, man is in the world,

and only in the world does he know himself'.

It is useful to look in detail at one particular point to find a constitutative moment upon which an argument can turn [1]. Merleau Ponty makes a distinction between Lux and Lumin. Lux is light. Only the most traduced and impoverished accounts of vision see seeing as merely the reception of light hitting the back of the retina and being translated by the mind into images. This is a realist epistemology of the 'outside spectator' somehow seeing what has already been seen through structures that are wholly independent of his constitutive powers' [2][3].

Lux implies a world that is always 'already there' before reflection beings - as an inalienable presence endowed with the status of the empirically 'known' or knowable: somehow 'out there' somehow facing the human being. Merleau Ponty explicitly criticised this approach 'to return to things in themselves is to return to that world which precedes knowledge.[4]

As well as lux we can look at lumin. ADD DETAIL Perception is not something that happens once information is received but is actually integral to seeing. Seeing involves distance, space, air and geometry. As the eye is physically structured as part of the world (there is an horizon to see because we can see, there is figure and ground because figure and ground precedes vision it) is actually impossible to see without perception and therefore the divisions of the gaze are integral to seeing.

Also, it is a staple of phenomenology that seeing is not distinct from other senses, the human is naturally synaesthetic.[5] Senses of smell and sight, hearing and touching are only arbitrarily distinctive.

The phenomenologist famously attempts to understand the rules or structures of thought according to which thought is possible at all; to overcome the various doubles; empirical/transcendental, thought/unthought, flesh/thought.

In sum; the example of seeing as Lux and Lumen is a way of understanding Merleau Ponty's (and Bergson's claim) that perception is active. But much more importantly is his more general proposition that the structural dimension of perception is an aspect of the perceived, seeing is integral to the world itself.

The content of the thing, and the structure of seeing exist in the same continuum – they are part of the same order of signification. A continuum, which he called natural perception. The idea of a presubjective natural perception provides much of the attraction of phenomenology to the unreconstructed 'romantic' school of art criticism in search of a being-in-the-world, which somehow in greater accord with our natural faculties and natures.

Something that is directly relevant to the theme of this conference; Merleau Ponty's work amounted to a critique of representation, because the natural order is a primordial order of signification. Prior to empirical and rational ways of signifying and comprehending the world is a repository of 'an-exact', "sub-representational" knowledge.

Contrary to the most common and worst appropriations of Phenomenology this perpectivalist dimension of all seeing does not lead to solipsism. Instead the 'thing' (the thing that contains the perspective) creates a shared perception. Perceptual experience founds a shared physical nature, an ecstatic intersubjective decentring of the subject.

Being imbued in the life world the subject is able to conceive of itself as part of something larger than itself, a 'coexistence of which 'I' is not the unique constituent'. Therein lies the root of Merleau Ponty's Marxism.

If we extrapolate this porous, folded syn-aesthetic nature of seeing of to all sensate relations with the world we can posit a circular, polymorphous, interactional nature of sense experience. "I Become in the sensation and something happens through the other in the other. And, at the limit, it is the same body which is both subject and object, gives and receives the sensation, a unity of sensing and the sensed'.

'Inside and outside are inseparable. The world is wholly inside and I am wholly outside myself.' Merleau Ponty, xxxx:407

Merleau Ponty's work provides the philosophical balustrade for a raft of theories dealing with tacit knowledge, and sensory intelligence and an embodied visceral relationship with the world. This is because flesh is the condition of possibility for and the medium in which things become visible in the 'carnal formula' of the 'lived body'. Flesh of the body and flesh of the world are exchanged as ideal correlates, ideal coincidence6 it is a flesh 'of the world'.   This is a lived body as preproceptor and a form of seeing, seeing in the flesh, an enfleshing of sight. This embodied seeing is the turning point of this talk. What Merleau Ponty has done is transfer the sentient part of being from the mind to the flesh. Something that is impossible. Not because the flesh cannot think (it certainly can although its cogitations are durational and polymorphous – Bergson says that consciousness in located in matter rather than bodies) but because if its thinking occupies the position of sovereignty over its domains we are back to Descartes.[7]

2. The Deleuzian retains much that is good in Merleau Ponty.

But reconcieves sensations as compounds of affects and percepts.

Affects.

Deleuze reformats the concept of sensation in a manner that extenuates the non-humanness.. Firstly, crucially, affects must be distinguished from affections. Sensation is the thing that happens, the felt, it is not something that emerges from within, It is the 'light that causes our eye to flinch, the sound that makes us start, the image of violence which raises our body temperature'. [8] Affects are the nonhuman becomings of man.

The key is that affect is pre-personal, when we shudder at the tragedy that is presented in the centre of Cow and Calf Divided, the Turner Prize winning artwork by Damian Hirst, that divine pity is still there for the next person to experience.

Affect is absolutely central to Deleuze's work, affect is what human beings are and do, waves of affect ripple though our bodies in systolic and dystolic rhythms; we become part of the world through affects, our relationship with others are affectual. But, 'affects do not arise from subjects but instead pass through them.' We are not subjects standing there generating our own feelings, like a self enclosed, autogenerative monads producing intensities. It is only though affects coming to us do we become what we are. For example, as elegantly phrased by Ronald Bogue, if you think of the colour red, 'this virtual colour imposes my vision upon me as a condition of its own sovereign existence'.[9]

Deleuze's most trenchant condemnation

of capital is that Capital cauterises us, we are subjugated by the repression of our natural desire to affect and be affected, the power of affect is the power to be deluged in the great wash of mankind and life.

3. Percepts

In the same way as affects need to be distinguished from affections, percepts should be differentiated from perceptions. We have already established that the eye has to perceive in order to see. Deleuze removes perception from the intentionality of the subject as it is not dependent upon an interior subjective vision.

Percepts are the abstract forms through which the world is understood, the dimensions of relationships between different modalities of thought and experience. A percept is the making perceptible the forces that populate the world. Percepts need to be understood first and foremost as 'independent of the state of those who undergo them[10].

When Cézanne paints hillsides, he is making perceptible the forces of nature in landscape, when Bacon wrestles blood and sinew from paint he is making perceptible the becoming-animal of man. When we think that we perceive a landscape and horizon, depth and distance, figure and ground, these percepts do not belong to us but precedes us, they are impersonal perceptions into which we are thrown.[11]

4. Summary: Affects and Percepts. Sensation. [12]

I will provide a long quote from Deleuze to summarise this model,

'Percepts are no longer perceptions; they are independent of a state of those who experience them. Affects are no longer feelings or affections; they go beyond the strength of those who undergo them. Sensations, percepts, and affects are beings whose validity lies in themselves{ and exceeds any lived. They could be said to exist in the absence of man because man, as he is caught in stone, on the canvas, or by words, is himself a compound of percepts and affects.

Out of these affects and percepts are formed sensations and artworks are composites of affects and percepts formed into blocs of sensation. This is the logic of sense.

In this radical revision of the phenomenological order of things Deleuze displaces the subject into the world which is why, whilst we earlier found that flesh was one of the most productive of Merleau Ponty's terms, for Deleuze it is a fundamental misconception.

Deleuze refuses to yield to the lure of a 'natural perception' embodied and entwined in an expansive flesh of the world. The lived body is a paltry thing in comparison with a more profound and almost unliveable power[13] of life . The massive, ubiquitous multidimensional charge of life itself can be discovered only going beyond the organism and open to the world itself.

When Deleuze talks of new subjectivities and autopoiesis it is not only the subject but also the autopoiesis of world, of banks, corporation, games, medias, cinema, airlines, cultures, electronics: the autopoiesis of the machine.

In '"flesh" Merleau Ponty is guilty of a strange sensual piety'[14]. Flesh is too tender. Instead Deleuze posits the idea, possibly of direct interest to architects, of 'house', which allows a sense folded and coenacted plans, sections and orientations. House creates a sense of limitation and frames. Open-

ings and passages. Filters and most importantly thresholds.

5. Summary

Gilles Deleuze and Felix Guattari theorise a subject that has an 'exo-subjectivity' that is transindividual or transversal in place of phenomenological and psychoanalytical [15] accounts (that, as much as they might displace the consciousness into life and world) it is still to be found in the normalcy of natural perception.

Both Merleau Ponty and Deleuze cast aside all the divisions, the bipolar opposites between subject and object, self and other, human inhuman, man and nature. But the phenomenological subject grasps these fluctuations out of the air and clings to them shouting 'this is me' they re me', giving itself a propriety identity in an attempt to make itself the Centre of it's world.

For Deleuze, the organism is not what sustains life but what imprisons it. Subjectification stops the subject from diving into the great wash of mankind and it causes blockages and impoverishment to this flow. The subject has to be evacuated, deterritorialised and that which is claimed as its own, reterritorialised into the fabric of the world. Think instead of life in terms of ubiquitous mummers or swarms, multiplies of multiplicities, unbridled intensities. Of de-and re-territorialisation. Twisting, writhing, infinite and dammadbly finite. Instead of a clamour for onanistic being or clearing might we instead conceive of a thousand folds or a Thousand Plateaux.

This conference asked speakers to address the multimodal forms of representation in an urban sensorium. I have selected those philosophers that deal most directly with the question of sensation. Merleau Ponty's work was, I contend, a significant step forward from Husserl's residual Descartian vestiges of a transcendental subject. However, Phenomenology does ultimately reinforce, in deed enhance a notion of the intentional subject because it's subtly, indecidability, and porousness lends to that subject the forces of the world thus greatly expanding the subjects domain over the world [16].

'a world forms itself around me and begins to exist for me' [17]

Codicil. Deleuze provides an account of individuation, because we are affective centres of experience, but humans are only one of things that are individuated. Deleuze says, what we are interest in 'are modes of individuation beyond those of things, persons, or subjects; the individuation of a time of day, a region, a climate, a river, or a wind, of an event [18]. Divested of the habits and seductions of subjectification the individual is able to give up the arrogance of thinking the world is an object in order to enter into the rhythms and flow of life, undifferentiated instantiations of life and living.

Finally, I believe if you restore life to life, we might just have a chance of no longer being unworthy of nature [19] and seek to end the destruction of the planet and all species including Mankind.

'Phenomenology grounds itself on the normalcy of natural perception; it gives natural perception a privilege which makes movement relative to 'poses'. Bergson's significance, on the other hand, for Deleuze, lies precisely in his refusal to yield to the lure of natural perception. According to him, the starting point is a world of continuously changing movement-images – a world of matter in constant flux, with no anchorage or assignable points of reference. In the case of phenomenology, natural perception and movement imply the notion of the subject. In the case of Bergson, movement is not subordinate to a subject which performs

it or undergoes it. Where light diffuses itself with a minimum of resistance or loss, the eye is inside things. The lines of (f)light do not yet appear to anybody, because (f) light has not yet been arrested or refracted. We are dealing here with a 'pre-human' or 'inhuman' world having a privilege over the human-all-to-human world of phenomenology, where consciousness is the search light summoning up things from their native obscurity. For Deleuze-Bergson, things are luminous with nothing but themselves to light them. It is consciousness that constitutes the opaque blade without which light would go on to diffuse itself forever'.[20]

End Notes

1 This discussion of lux and lumin follows Martin Jay's line of thought In Downcast Eyes: the denigration of vision in Twentieth-Century Thought. University of California press 1994

2

3

4 Merleau Ponty, Maurice. (1962) Phenomenology of Perception. Routledge Kegan Paul. London and Henley. pg ix

5 There is no such thing as sight not intergrated with the real. The real is distance, space, air, atmosphere, geomentry. Sight, in other words has to be intergrated with the other senses in order for us to 'make sense' of our experience of the world.

6

7 This line of argument is more fully worked out in Steven Zepke's Art and Abstract machine: Ontology and Aesthetics in Deleuze and Guattari. Routledge 2006

8 Clair Colebrook. Gilles Deleuze. Routledge Critical thinkers. London. 2002. pg 38/9

9 Bogue, Ronald. Deleuze on Music painting and the Arts. Pg 164.

10 Deleuze Gilles. What Is Philosophy pg 154; 164)

11 'this virtual colour imposes my vision on me as a continuation of its own sovereign existence

12

13 Deleuze Gilles, Francis Bacon. Pg 32

14 Deleuze

15

16 'I am the absolute sourse, my existence does not stem from my antecedents, from my physical and social environment; instead it moves out towards them and sustains them, for I alone bring into being for myself (and therefore into being in the only sense that the word can have for me) the tradition which I elect to carry on, or the horizon whose distance from me would be abolished - since that distance is not one of its properties - if I were not there to scan it with my gaze."

17 Merleau Ponty, Maruarce. (1962) Phenomenologyof Perception. Routledge Kegan Paul. London and Henley. pg ix

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Biography

Andrew Conio is Senior Lecturer in Fine
Art at the University of Wolverhampton and
a PhD student at Wimbledon College of Art.
He has exhibited art works and films in Lon-
don galleries and recently published work
in the New Internationaller magazine. The
film created together with Judy Price, Refin-
ing Memory, was premiered at the Museum
of London in 2005 and subsequently shown
at a number of locations around London
including the Whitechapel Gallery, Curzon
Soho and London's City Hall. It was select-
ed as a critics' choice by London's Time Out
magazine.

Approaching Urban Space Through Drawing:
the garden and the neighbourhood

Helena Elias & Maria Constança Vasconcelos

CICANT, Lusófona University, Lisbon

(Centro de Investigação em Comunicação Aplicada, Cultura e Novas Tecnologias – Centre for Investigation in Applied Communication, Culture and New Technologies), Lusófona University

1. Abstract

Encouraged to reflect on art education programmes, particularly drawing for designers, we tried to develop methodologies and strategies that enhance the potential of drawing for the needs of future designers. Through reflexive practice this paper deals with the approach taken for the 3th year of drawing related to space and its relationship with man and human activities. Using project work methodology we argue that drawing can enlarge its capacity as a tool for creativity, thinking, research, problem solving and self-expression. Using students' examples, we will describe two projects (a garden and a neighbourhood in Lisbon) in which, contents of drawing were integrated. The metaphor "escape and permanence" (two sensorial attitudes to space) to illustrate garden paths, works as a catalyst for the project of the garden. The incorporation of abstract ideas from other fields, exercises creative thinking, enhances sensorial awareness and encourages students to see things from different perspectives. The project of the neighbourhood begins by exploring through drawing qualities and the character of the site. The second part deals with a reinterpretation of concepts from artistic practices that reflected urban experience. Cubism, Dadaism, Surrealism, Futurism, Situationism were chosen since they theorized and experienced space in different ways and some the fruition of the urban space in quite revolutionary views. This means to incite students to go beyond just technical responses to design considering the importance of conceptual frameworks. By contacting directly through drawing with concrete places, students achieve not only a richer understanding of places and ambiences, but also reveal to be more prepared for innovative interventions.

Key words: reflective practice; drawing in the "expanded field"; sensorial experience, creativity; place identity

2. Introduction

Facing great changes in society related to the new technologies and globalization, the Bologna process argues that education should move to a paradigm shift that stresses long life learning skills instead of acquisition of traditional knowledge. According to Norman (2001) the paradigm shift needed includes transformations in the educational process that range from: Instruction to construction (the reinforcing of making and doing in a way related to personal interests and needs that make the learning experience memorable); from linear to hypermedia;

from teacher centered to learning centered (empowering students to take responsibility of their learning process and outcomes); from absorbing material to learning to learn; from teachers as transmitters to teachers as facilitators; from learning to school to learning for life (involving skills needed to relearn continuously).

Design occupies a very specific position in art education because it is an area that uses different modes of reasoning such as rational, scientific, creative and subjective. Combining functional and beautiful, designers work for people producing objects, images and systems that should contribute to quality of life. When talking of designer skills needed nowadays, aspects such as creativity and innovation, intellectual and creative flexibility, constant relearning, critical awareness and capacity of working in teams are enhanced. With these ideas in mind we were encouraged to reflect on art education programmes, especially drawing for designers, trying to articulate needs of future designers with the potential of drawing.

3. The role and contributions of drawing

There are in literature many references and reflections about the importance of drawing in education through the development of fundamental skills. Aspects related to the improvement of visual intelligence and literacy, to creativity, drawing as a tool for thinking and problem solving, drawing as a mean of self-expression and communication are commonly referred. Being an effective way of learning to see by the enhancement of perception, drawing has always been considered an important tool to better understand the world and giving it a personal meaning. Through the promotion of capacities of observation, analysis, selection, comprehension, memory and

judgment, drawing can contribute to visual intelligence and perceptual awareness. It is also portrayed as a powerful instrument of creativity helping to stimulate the right side of the brain (perceptive, non verbal, intuitive, interpretive) essential to creativity and working in pair with the left side (verbal, linear, sequential, logical). Garner (1989) concludes based on case studies that drawing appears to facilitate creativity in the most fundamental sense since it develops capacities associated to imagination, intuition, visual and spatial thinking. It is much accepted that it is especially during the phases of sketching that drawing has a central role in creativity in design activities since "denseness" and "ambiguity" of freehand sketches allow multiple interpretations and identification of problems stimulating new design alternatives. According to Do and Gross (1996) through the act of drawing and looking designers find visual analogies, remember relevant examples, discover new shapes in previously unrecognized geometric configurations in their sketches. Drawing as a tool for thinking, exploration of ideas and manipulation of information has an important role in the comprehension of ill defined problems (Garner 1989). Problems emerge in pair with solutions in the design process through drawing (Lawson 1990).

4. Drawing, sensorial awareness and application in programmes

Drawing is an activity requiring a multi-sensorial approach independently of the kind of drawing produced or even presented as a process. Although the result of a drawing comes to be, in most cases, expressed visually, justifying the great dependence on sight, several authors have claimed that not only other sensorial dimensions are involved in the act of drawing but that sight is not suf-

ficient for exercising representation.

According to Connor (2006: 9): "what our senses are, and the kind of existence we have through them depends on their use and exercise." We found this quote relevant when teaching drawing and we encourage students to develop their work having in mind that drawing is not only a matter of sight. Since all senses are more or less stimulated whether it is an observation drawing, a speculative, a gestural or abstract one, we believe that the awareness students can have in the involvement of their senses will contribute to richer approaches. Moreover senses, intuition, feelings and imagination are relevant for design research. We base our arguments in many authors and art practitioners who have written about drawing practice or have elected drawing as a fundamental medium of expression.

Harol Speed in 1913 highlighted the importance of the sense of touch for line drawing when representing an object since it incorporates the knowledge acquired by the previous experiences with the sense of touch.

Nicolaides (1969) frames his approach to drawing in a kinaesthetic and tactile way arguing that all the senses take part on this activity because we "see through the eyes" rather than "with the eyes". Nicolaides (1969: 5) points out in his manual:

"Learning to draw is really a matter of learning to see – to see correctly - and that means a good deal more than merely looking with the eye. The sort of "seeing" I mean is an observation that utilizes as many of the five senses as can reach through the eye at one time. Although you use your eyes, you do not close up the other senses – rather, the reverse, because all the senses have a part in the sort of observation you are to make"(...) "You see what you can discover through other senses – hearing, taste, touch, smell, and eyes alone they can sometimes mislead you".

Some famous authors of drawing manuals (Edwards, 1970; Ching, 1998; Cooper, 2007) are also focused on the importance of senses while making observational drawing requiring the coordination eye, hand and object. Their notes on the role of senses are very helpful when teaching observation drawing in class. However we must also take into account that over the 20th century the drawing panorama in terms of practice has changed. Many art practitioners went through several levels of reflection which opened new ways of inquiring, speculating and interpreting the world much less constrained on the dominance of visual appearance that relies on sight and imitation. In such context we will focus on the approaches portrayed by art practitioners who, while developing alternatives to observational drawing, highlighted their sensorial experiences.

The avant-garde challenged the traditional ways of doing and seeing drawing. Surrealism used several drawing techniques to deceive the rational control of representation as the cadavre exquis and automatic drawings. Max Ernst developed the frottage, consisting in transferring material textures on to the paper in order to create new visual experiences avoiding the immediate identification of the object. This would lead the viewer, trough a kinaesthetic process, to the construction of new association and meanings.

Recently, as many authors refer (Kovats 2005:15, Dexter 2005:8) drawing achieved its own status within the contemporary art practice. This approach to drawing had already been followed since the dematerialization of the art work (Lippard 1997) and concepts of the expanded field (Krauss 1979). The blur of disciplines enhanced drawing as a fair medium to be presented as work and accepted as a way of recording an

action or an intellectual statement (Kovats 2005), enlarging the possibilities of what a drawing might be (Dexter 2005).

Framed by this context many artists elected drawing as the principal medium of their works. The attention given to "process" rather than "result" has brought many artists to work with the performative aspect of drawing. By evidencing the process of their work artists have also exposed the practice of their sensorial experiences. Referents using perception of the senses as a starting point for artistic work are common in contemporary art. The Portuguese artist Helena Almeida presented a drawing index to enhance the relationship between body and the space of a drawing when she was actually drawing. Works of other artists like Robert Morris or Claude Heat highlighted senses such as touch or movement in the act of drawing. For the Blind Time Drawing (1973), a work concerning process and product, Morris started with a set of instructions while drawing with the eyes closed or blindfolded. Claude Heat based some of his works in the relationship between touching/seeing and cognition.

As any other human activity drawing is dynamic reflecting conditions and costumes of its own time. Each time has its own language. The question is to define what is drawing language now. Above all it seems to be an eclectic one, privileging diversity where classical barriers in specific domains are being blurred, where low and high technology can coexist. As Molina (2002) refers the modern drawing articulates and uses procedures from different realities.

What could be the contribution of drawing as a discipline in this context? We argue that drawing can be used at the service of future designers to develop sensorial perception, creativity, intuition, motivation to challenge environment, reflect on changes, create and develop new visions. We consider the importance of project work as a methodology

to give drawing a purpose (Vasconcelos e Elias 2007). Drawing is considered as an act of making things, mainly a process with results. The specificity of drawing for designers is that they must design things that do not yet exist. As Cooper (2007:) states: "Whereas the work of a painter might legitimately remain focused on the reception and interpretation of sensation from the visual world, that of the architect and designer must be directed squarely at the task of constructing something that does not yet exist". We consider techniques as tools at the service of ideas and emotions one wants to express and not ends by themselves. Good grammar is not enough to write a good story, more important is the interest and complexity of ideas at stake. We argued elsewhere (Vasconcelos & Elias 2006) that drawing will benefit as an "Expanded field" (based on Rosalind Krauss (1979) concepts where the usual format is enlarged to encompass different "corporalities" interacting with related areas in cross fertilization. We share with Molina (2002) the vision that drawing does not stop in the means used but in the capacity of organizing its data to create a meaning. Within this context we selected as broad objectives to be tackled in the programme for the 3th year of drawing:

Develop creative capacities and imagination – expand the field of drawing to benefit from other areas such as photography, cinema, video, literature, science (cross fertilization)

Consider investigation as an attitude on the basis of fundamental choices. Explore a vast amount of ideas, concepts and techniques which could support individual approaches

Use the very base of the design process through project work applied to drawing. Contact with reality. Foster critical thinking and personal reflection. Encourage development of individual personalities and styles with capacities to challenge the status quo

5. Urban space trough drawing: Sense of place in a garden and a neighbourhood

The purpose of the programme is to study space and its relationship with man and human activities. Both product and graphic design involve a relevant spatial component, which should be developed and synthesized through the use of imagery. Spatial relationships and the qualities of different spaces should be experienced in order to broaden comprehension of space and enlargement of design vocabulary. Urban space, undoubtedly offers a great potential to achieve this. The direct contact with the environment calls for the observation of spatial relationships, qualities of different spaces and human activities which can be experienced at different levels of sensorial perception. We will describe these projects, using students' examples in which, contents of drawing were integrated in order to get the most of its potential through the methodology of project work. At the same time we will show how students, although developing and presenting their work mostly in a visual manner, managed to use their sensorial experience highlighting that drawing needs multi-sensorial consciousness.

6. The Garden

After a review in classes of concepts of perspective and classical problems of representation two different spaces were chosen to work: a botanical garden and an old neighbourhood in downtown city of Lisbon. The project of the garden comprises three phases using drawing in different ways.

1st phase - Representation through speculative drawing of a "path" in an idealized garden. It is just given to students a site plan of a garden in its abstract generic forms they cannot recognize and where they should highlight a path to be represented. This path should illustrate the metaphor "escape" and "permanence". Working as a catalyst for the project this metaphor depicts two opposite poetical and sensorial attitudes to space. Concepts and key words used for Escape: Blurred / confused / lost / labyrinth / transitory / unbalanced /dramatic/ amplified senses / distorted space references / space fragmentation / stress/ reaction by instinct. For Permanence: Focused / detailed/ zoom / static / contemplative/ peaceful / balanced/ fruition / concentrated / quiet / frozen time. The brief asked for a visual "dictionary", a story board and the presentation of 10 drawings A3 for the "escape" path and 10 more for the "permanence" one (fig 1 – 4).

How is sensorial experience engaged in the process of creating a pictorial language to represent "escape and permanence" as to different attitudes of experiencing space?

Research is required in several aspects such as types of gardens, vegetation and constructed elements, atmospheres, sounds, smells, the way people use gardens. Investigation is also required for the representation of sensations such as calm, peace versus movement, anxiety, drama, corresponding to different visual languages. Slides with the history of gardens were presented to students as well as some parts of films. We choose extracts of Blow-up, Pleasant Ville, Blair Witch Project, Run Lola Run, Tren de Sombras which could be associated to sensations of "escape and permanence" expressed through different points of view (stable, dynamic, perspective effects, zoom effects, different plots, sensorial awareness). The incorporation of abstract ideas from other fields such as cinema, literature, photography among others, exercises creative thinking, enhances sensorial awareness and encourages students to see things from different perspectives. As stated by

Weeks (2005:14): "It is scientifically proven that multi/sense experiences are generally more memorable and more stimulating than single sense experiences".

When asking students to search a visual grammar for these concepts we encouraged them to draw from memory a range of sensations based on their own sensorial experience. Students often reach back into their memories to find inspiration as well as observing people behaviours, moods and experiencing themselves different situations. Memories might be materialized trough marks, textures and images recorded trough rubbing, stamping or other techniques considered appropriate. Students explore a vast amount of ideas, concepts and techniques through experimentation, which could support individual approaches to "permanence and escape" to be stored in a visual atlas. Archives and projects of some artists are given as a reference for organizing their data collection. The story board is then made to understand physical spatiality in the imaginary garden and its transformation trough "escape and permanence". By establishing connections between the information gathered and the paths drawn in the given map such as narrow paths, cross paths, students define which permanence and escape pathways as well as transitory territories may suit their purposes.
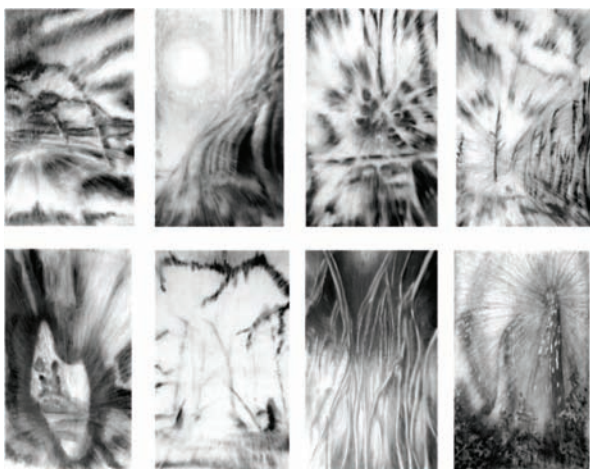
Fig 1: Student's illustration of an "escape" path in the garden (charcoal on paper)

Fig 2: Student's illustration of "permanence" and escape" paths in the garden (overlap of drawings in inkjet transparency film)
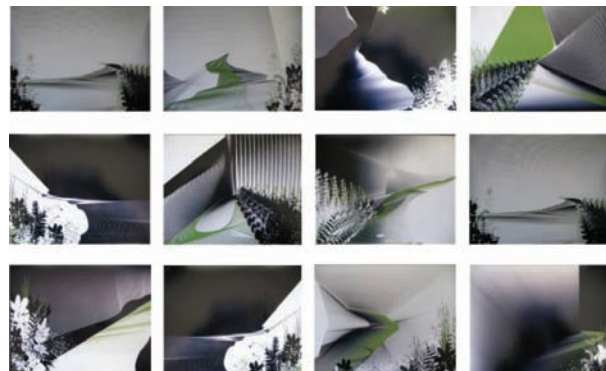

Fig 3: Student's illustration of "permanence" and escape" paths in the garden (vectorial drawing)
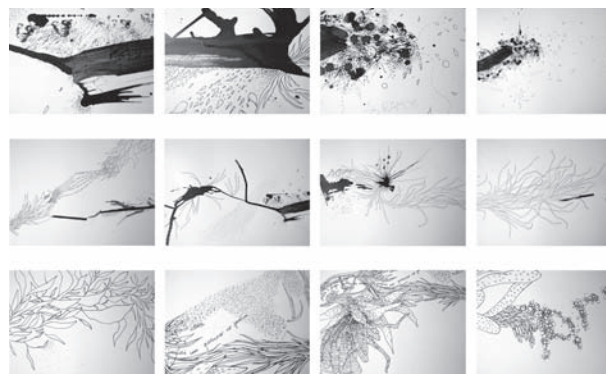

Fig 4: Student's illustration of a "permanence" path in the garden (ink on paper)

2nd phase - The same "path" used in speculative drawing will then be depicted in confrontation with the real garden, through observational drawing, trying to be conscious and register what is really there. Stu-

dents were asked to make a reflection on differences between speculative and observational drawings.

3rd phase - The last part of this work asks students an intervention in the real garden, which qualities and characteristics they know now so well. It is proposed to them to use their designerly skills not only to ask questions and find problems but also as problem solvers in a real context. The interventions could assume the form of proposals of objects to improve any aspect of the garden or to promote its image, or speculative visionary interventions reflecting relationship nature/man (projects for illustration of stories, sculptures, video, or site specific installations). Key words for the exercise are: touch, sound, sight, smell, kinaesthesia, equilibrium, language, interpretation, memory and imagination. Students select specific areas of the garden for their interventions and explore positively the attributes of the space. Senses play a fundamental part in this phase whether the result takes the form of a site specific installation or the design of any piece of equipment (Fig 5).

Fig 5: Some students interventions in the garden: planning a tea place; an ecological puff; a jazz event

7. The Neighbourhood

This project deals with the old neighbourhood of Santa Catarina in Lisbon city centre. The idea was to foster an encompassing knowledge of places through the use of sensorial awareness and encourage students to understand drawing as an expanded field allowing multi sensorial experiences. The project presents two phases. The first one is dedicated to understand and explore in depth, through life drawing, qualities and character of the site: architecture, activities, people and atmospheres. Some classes are reserved to sketch and draw on the place with specific exercises in order to enlarge drawing vocabulary such as: skyline drawings, representation through vertical lines, depict recession just using street signals and urban elements, studies of colour, sketching people in their activities and more finished drawings.

The second stage begins with a theoretical approach, where several art/cultural practices are reviewed, summarized and its main concepts debated. Cubism, Dadaism, Surrealism, Futurism, Situationism were chosen since they have theorized, represented and experienced the concept of space in different ways and some of them the fruition of the urban space in quite revolutionary views. Careri (2002) framework considering walking as a critical tool and as an aesthetic practice was very useful. Based on Careri (2002) we presented concepts of the banal city of Dadaists, the unconscious and oniric city of the Surrealists (in opposition to the hypertechnological utopias of Futurism), and the playful and nomadic city of the Situationists. Students are then asked to portray the neighbourhood studied through the eyes of one of these approaches (Fig. 6). The intention is to stick essentially to relevant concepts and not only to aspects of representations. This corresponds again to the creative process of translation, to incorporate ideas, in this case from the world of art/cultural experiences into their own work, transcending borderlines of disciplines. Knowledge on these relevant paradigms in the history of contemporary culture enlarges their perspectives and facilitates the appearance of new proposals and tendencies. To contextualize and re-contextualize those practices

through a reflexive attitude represents new possible approaches to innovative proposals. This means to incite students to go beyond just technical responses to design and consider the importance of conceptual frameworks in their work.

In both exercises (garden and neighbourhood) they used conventional drawing techniques (sketching, life-drawing) and mixed media (collage, analogical and digital drawing, printing, painting, and 3D modeling).

Fig 6: The neighbourhood based on surrealist and situationist concepts

8. Conclusions

Design is an integrative activity which operates across a variety of different disciplines and areas. Drawing is just one discipline in our design education curricula, although relevant due to its very potential to contribute to design thinking. The strategy we have followed tries to make a balance between the traditional role of drawing (depicted in manuals we still consider essential for its operability) while opening other possibilities by enlarging its field, bringing the contribution of other areas, encouraging the creative coexistence through experimentation of different techniques. This programme questions drawing for designers, tries to stimulate creativity, research, sensorial awareness, visual thinking, put contents within contexts, use design thinking and problem solving through project work.

As future problem solvers students need to develop creative self expression, visual and sensorial intelligence to avoid a "design by guidelines culture" centered on functionality, but also feel that approaches taken must be rooted conceptually and not arbitrarily. By contacting directly with existing places and atmospheres, students achieve not only a richer understanding of places and ambience but also reveal to be more prepared for innovative interventions.

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Acknowledgements

Biographies

Helena Elias & Maria Constança Vasconcelos Lecturer at the Lusófona University, Department of Sciences of Communication, Arts and Technologies, Lisbon, teaching drawing in design courses.

Members of CICANT (Centro de Investigação em Comunicação Aplicada, Cultura e Novas Tecnologias – Centre for Investigation in Communication, Culture and New Technologies) – Lusófona University, Lisbon, Portugal.

Maria Constança Vasconcelos is the Coordinator of drawing in the course of design at Lusofona University (Lisbon) and member of the DRN - Drawing Research Network.

Helena Elias is member of the PAUDO – Public Art and Urban Design Observatory and member of the DRN - Drawing Research Network.

"Blacktop: A story of the washing of a schoolyard"

Suzanne Ewing

University of Edinburgh

Introduction

In this presentation I aim to draw attention to a made piece of work which I feel is successfully urban and successfully sensory. It is a small moment of literal urban action (urbanism?). It is a short film made by designers, who were using film (moving image) and sound (imported score), not multi-modal in content or representation or research, but in creating a space of experiment, for the imagination to fill with literal qualities of sound, touch, taste and smell. Two particular aspects of 'sensory urbanism' which I would like to explore further- firstly understanding time and temperature as implicit particular conditions fundamental to understanding and documenting a place, secondly focusing on the everyday public spaces of playgrounds, playparks, allotments etc which operate at a more neighbourhood scale in urban territory than the usually examined (and deemed 'urban') city centre public (though often privatised) spaces. The deliberate absence or emptiness of this urban moment aims to draw the viewer/listener to consider afresh a marginal, hidden aspect of collective everyday neighbourhood use. I will show a clip of the film at the end of this presentation to be seen, heard, viewed and read by this conference audience to hopefully continue some thoughts this paper raises in further discussion.

Charles and Ray Eames' second film (made in 1952, reprinted in 1989) explores the abstract beauty of soapy water washing down an asphalt schoolyard, accompanied to the sound of Bach's Goldberg Variations. The film won an Award at the Edinburgh International Film Festival in 1954, and has been categorised as one of their 'toy' films (Schrader, 1970), where they focused on and respected everyday, often overlooked objects, for what they were, whether machine or craft based. In some ways they have been seen as working as scientists, a sort of sophisticated play method. Charles Eames has been famously quoted "They're not experimental films, they're not really films. They're just attempts to get across an idea" (Schrader, p2; Kirkham)

In filmmaking they found the characteristics that they were trying to bring out in their contemporary furniture design and other areas of work (Plywood Chair,1945-6, Case Study House 1949, Wire Mesh Chair, 1951-53, House of Cards game 1952, Lounge Chair 1956-8, Eames Report raising standards of design training 1950s).

"there is apt to be nothing self-conscious about the use of materials". Their work in film and graphics has been seen as a fusion of the folkloric and mass-manufactured.

Of course a second preoccupation of the Eameses work was communication, and engagement with the newly emerging US consumer. Kirkham has pointed out that much of their wider film output was in the genre of sponsored films (IBM, Herman Miller, Westinghouse, ABC, Boeing, Polaroid), - Blacktop is an exception- and that Charles and Ray Eames' work as communicators and educators was of equal importance to their design and architecture. "Indeed it was their desire to transmit to others their passion for ideas and objects that led them into film, multi-media presentations and exhibition design." (Kirkham p3)

Over their working partnership of 40 years, they made 80 films and amassed 750,000 images, mostly slides, now held in the Library of Congress, as part of the Eames Office. In wider context, in the 1950s in the US television was expanding, and movie cameras becoming available. The Eameses being in LA also had contact with studios and the movie industry. Genres such as sponsored films were very popular- in 1959, 54000 were made in the US, while just 223 feature films were made. They wrote little about their work, and discouraged others to write about them. Paul Schrader's article "Poetry of Ideas: The Films of Charles Eames" was a rare article published in their lifetime- in Film Quarterly in 1970; Neuhart + Neuhart published a catalogue of their work 1941-78 in collaboration with Ray Eames after Charles' death; Pat Kirkham's "Charles and Ray Eames: Designers of the Twentieth Century" (19) developed a fuller critique of their work, also positioning a feminist critique, drawing out Ray's more marginalised role. Recently Beatriz Colomina has critically looked at their work, the Case study house, and their multi media presentations. An Eames Film Festival 'Design within Reach' was held in the US in November 2006.

Bach's Goldberg Variations – for 2 manual harpsichords, were published first in 1741, the 4th in a series Bach called 'Claview Ubung' (keyboard practice). The inscription of a frontispiece says " composed for connoisseurs, for the refreshment of their spirits" (wikipedia). The form of the 30 Variations is:

Aria (statement) 2 sections of 16 bars, each repeated

Variations following bass line (fundamental bass)

Canon (following ascending pattern)

Genre piece (baroque dance, fughetta, French overture, ornate aria)

Arabesque

Quodlibet (earthy folk songs 'animated rustic feel')

Aria da capo e fine

Variation 13 has been identified as 'sublime', and an 'emotional turning point'.

Angela Hewitt (www.goldbergvariations.com) writes:

"[Its character and rhythm is] that of a dignified, stately sarabande, full of tenderness and poise. It is highly embellished in the French tradition- meaning that the ornaments are an essential part of the melodic line, not optional extras…. Bach builds a magnificent edifice that is beautifully proportioned and astonishingly varied.. There is a strong visual component- thanks to the spectacular hand-crossings- that makes it fascinating to the spectator…It is certainly one of the most therapeutic pieces of music."

"Of all the films, Blacktop is the one most

orthodoxly in the mode of the short 'art film'. Its main appeal lies in the rare visual poetry of abstract patterns changing in time to Bach's Goldberg Variations. The Eames stated that their aim in making it was 'to see what happens when you put one variation over another, visual form over musical ones, and the result was quite extraordinary…"

"to see ordinary things afresh- to offer a new vision of an everyday object or event. The Neuhart's point out that 'Blacktop was a "live action-extension of the [still photographic] studies of the seashore Charles made in his first years in California…to record close ups of tide pools and the natural textures of the water and the sand." They had an interest in how as well as what the eye saw, and in recording images. "You must be committed to the subject, to the discipline of the concept involved, not to the medium. In the process you may make a good film." (An amateur using 16mm Cine-special camera- adjusting parallax technically tricky).

"The Eameses believed in hard work rather than inspiration…they believed that one of life's main objectives was to get as many of the rewards of life from the work that you do. (Kirkham p8)

Sensory Urbanism: Time and Temperature (Variation and Refreshment)

There is an orthodox (mainstream) craving for a certain idea of publicness, as constructed in the post-millennium urban beach events of European cities. Their proliferation can be seen as part of a literal mediterranization of cities defined by reference points of aquatic infrastructure (rivers, canals). The opportunity to escape the everyday is provided through literal fabrication and temporary remaking of the urban realm overlaid on the existing spaces and networks of a home, or destination city (an embankment highway in the case of Paris-Plage).

The success of Paris-Plage, first held in 2002 on the right bank of the Seine, caught the intersecting imaginations of European city dwellers and legislators enough for this constructed displacement and suspension of 'everyday' urban rules to be repeated. Urban beach 'events' (projects? theatres? parks?) have been mimicked elsewhere in France-Toulouse, Lyons, also along the Quai des Péniches in Brussels, the Parco Sempione in Milan, in Budapest, Prague, Berlin, and have been proposed for London.

These are (hetero) topoi of 'sites of temporary relaxation' (Chaplin summarises Foucault: "Heterotopias which have the power of juxtaposing in a single real place different spaces and locations that are incompatible with each other. Foucault cited theatres, cinemas and gardens.

In heterotopias of juxtaposition there is a perpetual accumulation of items or experiences over time, such as with museums, libraries, holiday camps and traveling fairs, where these spaces function as "heterochronisms" which can either be permanent or ephemeral….The heterotopia exists between the two poles of illusion and compensation". Foucault Of Other Spaces 1967): sites of Variation, where juxtaposition and unexpected activity is seen as an essence of desirable urbanism. the Daydream living at the urban beaches is the simulation and marketing of the everyday of collective childhood experiences of beach holidays and wider horizons, of escape and relaxed social codes, a time for refreshment, reinvention, the suspension of ties and duty, the possibilities of creating "a temporary utopia".

Problematic development issues related to environmental quality, control, amenable recreation and transport access of real post-

industrial urban waterfronts and beaches (developing gated apartment blocks of Edinburgh's developing Waterfront for example) are suspended. I argue that these urban beach events are an example of a relatively positive attempt to create an alternative, albeit temporary, public milieu, one that consciously attempts to realign and to 'act away' some perceived ills of the contemporary public realm in the city. In the context of contemporary network space and society, they are an example of an 'integrating gesture', where the simulation of a common experience of place, in this case 'the beach', is used to establish a local node interrupting a place of wider flows, here to reaffirm a coherence, collective civic potential and use of historic city riverfronts.   the urban beach event depends on its clearly defined spatial and temporal limits to sustain a certain outworking of 'publicness' and 'public life' in the city. The juxtaposition of beach (representing nature, openness, reinvention, renewal) and street (representing culture, urban order, the city) is suggestive of a consciously created heterotopia (juxtaposition, collage, variation).

In Paris between 2002 and 2004, a very specific beach scene has been acted out (or performed); one based primarily on cosmopolitan Mediterranean beach experiences of the 1920s/ 1930s European elite. French urban anthropologists Michele De La Pradelle and Emmanuelle Lallement conclude that Paris-Plage is effectively a performance of a beach scene. "What may seem to be a promenade or a sort of seaside beachfront, the kind found in French resorts from Deauville to Nice, is actually a completely artificial operation, resulting from the actions of a great many actors with different abilities and with a wide variety of interests". They argue that the success of this "theatrical event" depended on two key absences-

The Absence of the Sea

And The Absence of the City

The shared goal by all actors was the diversion of the bank of the Seine from its city function- the displacement of usually passing cars since George Pompidou established the high speed expressway in 1967. This was a "political act", "a project" in which city authorities, the press, dwellers and visitors were all complicit. Rhetoric about this being exemplary of the possibilities of contemporary public life and public space in a European city was driven by Mayor Bertrand Delanoë and his electoral promises to reduce traffic and congestion in the city of Paris, and perhaps also a sense of a wider spotlight- the designation of the banks of the Seine as a World Heritage site since 1991. Note the event representations which by Paris Plage 2004 graphically erase representation of the urban, retaining only a code of water (blue), beach (gold), access networks(names) and designated locations of activities.

The artifice of the operation was literally stage managed. The designers, Jean Christophe Choblet, a scenographer, and his team which included sociologists, describe Paris-Plage "The playful, slightly rebellious transfiguration of the space…The highway became a stage, as if in a theatre. And on that stage people played at "being at the beach"". So the designers and participants both had to work together to make the idea of the sea present, a state of being at not on the beach. De la Pradelle and Lallement discover in their fieldwork investigations that the willingness of those visiting and participating in Paris Plage to be interviewed and photographed demonstrated the consensual understanding that they were participating in a theatrical production. The individuals behaved as actors with a role, rather than as suspicious citizens or individuals. People

did what was expected of them, what had been planned.

They propose that by extension Paris Plage is an actualisation of a new special city where "every place would belong to everyone". By erasing a critical aspect of the reality of the developed twentieth century city -cars, expressway link, and critically the feeling of being a constant consumer, they argue that it is possible to overlay a new city of some sort on the edited existing.

In an interesting exploration of the unique character of Mediterranean cities, Henri Lefebvre and Catherine Régulier draw attention to the lack of homogeneity of Mediterranean shores, noting that they essentially have a primarily solar rhythm (as opposed to lunar, tidal ones in oceanic situations) . "If it is true that Mediterranean cities are solar cities, one can expect a more intense urban life than in lunar cities, but also one richer in contrasts inside the city itself" They question what is specific to M cities? "It seems to us that in these, urban space, that is public space, becomes the site of a vast scene-setting…. Rituals, codes and relations become visible and are acted out. A city where 'actors and the public are the same in the multiplicity of their roles and relations'…a freedom that depends on "being free in the city outside the State" "The citizen resists the State by a particular use of time. A struggle therefore unfolds for appropriation in which rhythms play a major role. Through them social, therefore, civil, time seeks and manages to shield itself from State, linear, unirhythmical measured and measuring time. Thus the public space, space of representation, 'spontaneously' becomes place of promenades, encounters, intrigues, diplomacy, trade and negotiation, theatricalizing itself. Time is hence linked to space and to the rhythms of the people who occupy this space". John Urry notes that 'going south' is associated with sensuality, decadence, glamour, contrasts with a 'spiritual' north.

In the case of Paris-Plage and the spawned urban beaches across mainly Northern Europe, this southern/ Mediterranean attraction is evident.

"Blacktop: A story of the washing of a schoolyard"

Some thoughts about the relevance of the film: (the Eameses would probably hate any analysis, though musicians comments would be interesting)

Time-	temperature
Variations-	refreshment
Diversity	water, cleansing (hot climate setting)
Heterogeneity	collective civic agreements- cleansing/education/work

Watching this film (even without orchestral score) does, I feel infer a sense of the above qualities: as well as experimenting with the notion of variations of form, it is a work of physical and mental refreshment.

While not deviating from the literal documentation and observation of soapy water on the asphalt surface of a particular neighbourhood schoolyard, it creates a sophisticated space for the material and narrative imagination. The attentiveness to the small part seems to require an infilling of the qualities of the surrounding environment, the temperature of the air, of the water, the material qualities of surfaces and edges. What is absent is the sound of actual brushing,

swishing, slopping, buckets, body (bodies) working. It is certainly specifically sited in time- the methods (brush and body labour to hoses and machines?) and surfaces may have changed in 55 years (blacktop, paint and mesh to soft rubber and plasticized metal), and will of course have an impact on the frequency and duration of the act of washing. 11 edited minutes of film footage is surely a small proportion of the actual time it took to wash the schoolyard.

  The focus on the everyday – literally often overlooked- surface of the ground, and an everyday or weekly or whatever) event is of course heightened by the camera angle, reinforcing the subject of washing, rather than playing noisily as we would expect of a schoolyard, and by the overlay of the 'high' music of Bach. The local neighbourhood playground has the potential for civic encounter and participation. The film takes us to imagine other hidden spaces and times in the city 'out of hours'/ beneath the surface. It is assumed that the time of day is early or late, the temperature therefore perhaps cooler, the asphalt less hot than mid- daytime, the air quieter, the soapy odour etc. The removal of actual sound from the film is significant- allowing all other senses to synthesise and interrelate in the imagination, or perhaps heightened at various points in the music. It excludes and therefore the abstraction and enjoyment of pattern, form, statement, Variation, Juxtaposition, overlay, Collage etc is conversely more convincing and durable.

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Biography

 Suzanne Ewing is an architect and educator. She studied Architecture at Cambridge University, and has worked in practice in London, Glasgow and Edinburgh. Over the course of the past 9 years she has taught at all levels of architectural education, and has been involved in many European city field-trips (Glasgow, Paris, Madrid, Cadiz). She has published in the Journal of Architecture, Traditional Dwellings and Settlement Review, Architectural Design. The invention and siting of working practices has been a preoccupation since forming zone architects with David Jamieson in 2002.

 Ongoing research is currently concerned with developing a critical understanding of 'The Site Visit in Architectural Education' and she has recently been awarded a Carnegie Trust Grant to develop this. In 2007-2008 she is leading the final year of the 2 year Masters of Architecture course at the University of Edinburgh, with a studio theme: "Salt city: fieldworks-augmented proximities" based on collective empirical studies and research in Cadiz, Spain.

Transit Spaces
Inside-Out (side) Moscow's Metro(scape)

Wael Salah Fahmi

UDERS, Helwan University, Cairo

Abstract

The current paper proposes a post-tourist's journey through Moscow's post-soviet Metro(scape) and transit spaces (October 2003), engendering frameworks of place and memory and time-space compression (Fahmi 2003, 2004), between the retrospective projected grandeur of Stalinist spatial monumentality and the neo-realist cityscapes of the postmodern urban scenery. This is a situational representation of a neo-flâneur's navigation inside-out of transit spaces within Moscow's post-soviet Metro(scape), employing digital imageries and textual narratives, reflecting the hybrid architecture of post-soviet Metro(scape) and Moscow's postmodern urban scenery.

Moscow's Metro(scape), as heterotopian setting in contesting ontologies of a society in transition, is experienced as hybrid transit spaces at the frontier of post-soviet transformation. As spatial infrastructure and venue for contested social spaces, post-soviet Metro(scape)'s spatiality is phenomenologically experienced as 'a series of stages' enacting a variety of (re) (de) constructed local identities (petty traders, commuters, urban youth) under time-space compression. The sensory experience of navigating a metropolis under transition attempts at weaving anecdotal observations and encounters constructed through neo-flâneur's interrelationships within post soviet Metro(scape), whilst witnessing the fetishism of commodification and aestheticisation of Moscow's postmodern urban consumption.

Transit Spaces and Post-Tourism

Postmodern leisure theory has heralded the arrival of the 'post-tourist' defined as a "playful, ironic, and sometimes formally individualized attitude to sight-seeing" (Rojek and Urry 1997: 62), in terms of "proliferation of images and signs presented as spectacles" (Bryman 1995: 176) . In one sense we do live in a society of spectacle in which most environments have been transformed into diverse and collectable spectacles (Debord 1994). This is related to MacCannell's (1976) interpretation of the relationship between the tourist and sight in terms of the visual reproduction of tourist attractions as a semiotic structure and a sign which involves the creation of travelogues, brochures, postcards and souvenirs .

Whilst Urry's (1990) notion of the 'tourist gaze' has become paradigmatic in explaining tourists' visions, the mobile travel glance

provides a visual 'cinematic' experience of moving landscape images to the traveling spectator. Larsen (2001) argues that a contemporary pleasure of leisurely automobility is related to the vehicle's flexibility and the imagined freedom that set in motion the motorised flâneurie (neo- flâneurie) . The neo- flâneur is therefore subjected to changing visual experience of mobility which imposes a specific viewing position, and hence, way of seeing with respect to tourists' landscape.

Nevertheless in a territory where non-place (Augé, 1995) and space of flow (Castells, 1996) prevail, a new category of landscapes 'in transit' are experienced by 'post-tourists on the move' as they cross 'in-between metro stations', providing the possibility of a more situational location of the urban self within global mobility. 'Trains' users' or 'transit people' do not fully engage their senses in the landscape experience but reduce the physical interaction to a remote gaze. De Certeau (1984) refers to a heterotopian state as 'traveling incarceration, immobile inside the train, seeing immobile things slip by'. Therefore a train is an extraordinary bundle of relations "because it is something through which one goes, it is also something by means of which one can go from one point to another, and then it is also something that goes by" (Foucault 1986).

The Neo-Flâneur

According to Benjamin (1973), the Baudelairean flâneur is a figure/object (for interpretation) that embodies ambivalence: one who always borders on leisure, joy , melancholy, alienation and familiarity, resulting from the fragmentary nature of city life. The gaze of the flâneur can be compassionate, invested, and inquiring and at the same time detached, alienated, and passive.

"The flâneur is still on the threshold, of the city as of the bourgeois class. He seeks refuge in the crowd. No matter how protective the crowd can be, the flâneur is still a loner, someone abandoned in the crowd" (Benjamin 1973: 55).

As the nineteenth century Baudelairean street walker / urban drifter (flâneur) is displaced by the post-pedestrian and metro train navigator (neo- flâneur), the paper assumes a sensory post-tourist navigation inside-out of transit spaces within Moscow's post-soviet Metro(scape). This represents a spatio-temporal narrative through the urban spectacle of Metro's socialist realism and Moscow's post modern landscape.

By walking in a city dominated by time-space compression with conspicuous global landmarks, the flâneur derives the sensual pleasure from the dazzling urban spectacle, shifting social spaces and interpersonal encounters. What he sees is montage, one snap shot after another with the dream world of urban spectacle offering the flâneur no complete narrative, but a series of fragments . The flâneur, defined by his/her 'incognito' and narratives , relies on a fetishistic identification with the camera's lens. This is commensurate with the flâneur's eye-swiping of the urban landscape for creative material (Sinclair 2002). Simultaneously, eye-swiping suggests the act of appropriation, saturating the text with proliferation of visual information as Sinclair (2002) refers to the camera to eye-swipe the detail, to log the sights which will later be translated into words (Seale 2005). As photography presents itself as the ideal technology for eye-swiping, Sternberg (1997) and Garlick (2002) discuss the role of photography in determining the authenticity of the post-tourist experience through an array of representations and images. It is the type of filter that Baudelaire stressed was essential to the flâneur's depiction of urban life.

In the current study, representation of post-soviet Moscow's Metro(scape) provides sequence of narratives in the journey along East-West transition. Walking through Moscow's gentrified urban spaces and post-soviet Metro(scape) dominated by time-space compression, the neo-flâneur is engulfed in signs of global flows within GUM Mall (near the Red square in Moscow) (the aesthetic cocoon, Leach 2001), witnessing the fetishism of commodification and aestheticisation of postmodern consumption.

Neo-Flâneur's Spatio-Temporal Journey through Metro's History

The 1931 monograph 'Socialist Reconstruction of Moscow and other Cities in the USSR' by Kaganovich who organised the building of the Moscow Metro, described the need for comprehensive city planning as an integral part of the building process of the new 'proletarian' socialist capital (Alden et al 1998). Stalinist 'socialist realism' planning approaches involved the construction of wide boulevards and large blocks of flats serviced by an underground Metro transit system, which were later adopted in other communist Eastern European cities. The Moscow Metro has 11 radial lines, with a 20 kilometers circular connection line, comprising 171 stations, covering over 200 kilometers of track and serving 9 million people each day. There are 70 deep-level stations, and 87 shallow, with 10 ground-level stations and 4 above ground. Two of the stations exist as double halls, with two having three tracks, and five having side platforms.

The stations of Moscow's Metro system were called 'the people's underground palaces', for their lavish profuse use of marble, mosaics, chandeliers and stucco-covered ceilings, with popular art deco-style compositions merged with socialist realist design and artwork commemorating historic events

(Figure 1). The Metro, which represented the most grandiose architectural phenomenon of the Stalinist era, signified the ideological and artistic shifts that characterised the Soviet State during the post war period. From the vast forces marshaled for its construction to the shelter it provided for Moscovites during World War Two, the Metro had evolved from a monumental public work project and a rapid mass transit into a hybrid of palace, basilica and fortress.

Figure 1. Mosaics within Metro Stations

The political and ideological proletarian course of the Soviet Union during the Stalinist period is reflected in the vision of public social space with four principle lines and forty stations constructed from 1932 to 1954. The First Line, built in the early 1930s, possesses an invigorating modernism representative of the Soviet avant-garde. With the Second Line, built in the late 1930s, a program of monumental sculpture and art was introduced that signaled Stalin's stranglehold on the ideological goals of the Soviet state. The Third Line, built during the 'Great Patriotic War' from 1939 - 1944, became a symbol of Soviet tenacity and ultimately a memorial to the peoples' resistance during World War Two. The Fourth Line, completed in 1954 shortly after the death of Stalin, is perhaps the most flamboyantly ideological

and represents the epitome of the leader's vision for the Metro. With the demise of Stalin, the expression of the system reverted to its rationalist origins.

During the late 1950s, the architectural extravagance of new Metro stations was significantly toned down, and decorations at some stations, like VDNKh and Alekseevskaya, were greatly simplified compared with original plans. This was done on the orders of Nikita Khrushchev, who favoured a more basic decoration scheme. A typical layout (known as 'Sorokonozhka') was developed for all new stations, which were built to look almost identical, differing from each other only in colours of marble and ceramic tiles. It was not until the mid-1970s that architectural extravagance was restored, and original designs once again became popular.

One characteristic of post communism was the creation of a new symbolic culture in terms of renaming of streets and places (Graeme 2005) . A significant number of stations have retained names resonant of the Soviet era, representing a number of institutions (the exhibition of economic achievements VDNK and Red Guards); the revolutionary heritage (1905 Revolution and Revolution Square); and the labor ethos (Proletarian and Trade Unions) .

At the beginning of the 1990s the Metro received no money from the federal budget, with part of Serpukhovskaya line from Savelovskaya to Altufievo Stations being launched by raising money through leasing Metro buildings. Whilst Moscow's Metro stations have always reflected the tough persona of the city, the introduction of new train cars within recently upgraded stations contributed to the feeling of an airport terminal train rather than historical Metro subway. On May 2002, Moscow government approved the program of the Metro construction until 2010 which planned the building of new stations and parts of the Metro lines .

Neo- Flâneur 's Navigation within 'Post-Soviet' Metro(scape)

Spaces of Transition.

Moscow's urban experience is identified along Metro lines, with stations being regarded intermediary transit spaces between train routes and city streets, whilst forming anchor spatial points and providing entry and exit to specific urban places . Metro stations limit the line of sight to short distances, whilst creating a strong sense of enclosure, keeping passengers in close proximity for extended periods of time, with minimal and often complete lack of personal spaces. Metro walls not only respond to the physical need for enclosure, but give very subtle direction to a continuous movement along its sinuous surface (Figures 2,3,4).

Figure 2 Neo-Flâneur's Sensory Navigation within Metro's Transit Spaces (circulation spaces)

Figure 3. Neo-Flâneur's Sensory Navigation within Metro's Transit Spaces (corridors and halls)

Figure 4. Neo-Flâneur's Sensory Navigation between Metro's Transit Spaces (platforms and trains)

Moscow's Metro lines are represented by symbolic language for orienting passengers, in the form of signs and symbols , with some stations having distinctive exterior designs (pavilions) that allow them to function as visual landmarks. New artworks, as well as fragments of 'Stalinist' spatial monumentality further down the Metro platforms , reflect the postmodern rejection of a unified public sphere. This exemplifies the contestation that occurs when Metro stations are commodified and imagineered into spaces of marketable characteristics (shopping malls) whilst being devoid of their socio-cultural contexts (Deutsche 1996).

Narratives made about Metro transit spaces are related to general political and social concerns related to movement and people after regime shift. These stations have become places where 'transition' was most visible to inhabitants of Moscow, with the Metro being considered both a background to local narratives about social order, and a place-setting in contesting ontologies of society in 'transition' as related to the emergence of new consumer class (Lemon 2000).

Figure 5. Semiotic Matrix within Moscow's Nocturnal Spaces Tverskaya Ulitsa and Vozdvizhenkaya Ulitsa streets

Spaces of Marginalisation

Recently, Metro(scape) experienced major spatial changes which affected the monumentality and rituals associated with soviet urban spaces. Alongside images and symbols of soviet era, commercial activities became highly visible around Metro stations, with hawkers and street musicians (violin players) filling transfer tunnels and underground crosswalks, and with Metro pedestrians combining tactics of shopping and commuting without detouring. As petty traders' presence was regarded unlawful and inappropriate, and were considered as 'people out of place', movements restrictions (propiska system) requiring registration of residence with municipal authorities were called for.

However, police in Moscow are using ethnic profiling in their law enforcement within Metro stations, with Central Asians being the primary targets for document checks as they are commonly stigmatised by the media as the cause of crime and social disorder. In addition to ticket attendants (babushka) and police supervision, new measures were introduced to enhance security within Metro stations in terms of closed circuit cameras (CCTV), marking stations as surveillance spaces and defensive areas rather than as places for civic involvement and social exchanges. Metro stations are thus becoming an articulation of an 'aesthetic cocoon' - a heavily serviced space of scrutiny.

The persistence of institutional and cultural discrimination within Moscow's Metro stations characteristic of Soviet era, where order was imposed through the propiska registration system, has forced poor migrants to adapt to the new urban environment by creating informal spaces within the Metro proper. Urban poor were obliged to find locations on the outside periphery of the Metro, as non state kiosks were set up at subway entrances, with vendors' trading being conducted on folding tables, stalls or cardboard boxes . This is in contrast to historical socialist realism aestheticisation further down the Metro platforms, tunnels and cavernous stations (Lemon 2000).

Spaces of Globalisation

In order to conform to the socialist notion of a unified and independent public sphere, Metro stations, as civic projects, were originally established in autonomous locations within public-right-of-way, whilst being disconnected from retail systems. Recently the distinction between Metro stations and Moscow's commercial activities has become more blurred, a situation similar to Tokyo's metro stations which were founded by department store companies. Commercial uses emerged within boundaries of some Metro stations and were linked to 'gentrified' post-soviet public spaces , such as Okhtny Ryad Metro station and Tverskaya Ulitsa street and Red Square; Ploshchad Revolyutsii Metro station and GUM shopping mall; and Biblioteka im Lenina and

Arbatskaya Metro stations and Vozdvizhenkaya Ulitsa street.

As Deutsche (1996) points out that the prevalence of commerce as a public function, reinforcing the role and dominance of consumption spaces, has led to the privatisation of public spaces. With postmodern transformation challenging the modernist notion of public space, and with the separation between various central stations and commercial spaces diminishing, the recognition of these stations as public spaces have declined, particularly with the introduction of shopping activities aspiring to the gentrification of Metro transit spaces. Rather than separate/ demarcate spaces that correspond to rationally defined roles, Metro stations have recently become an extension of the space of commercial transactions and part of the shopping experience .

Nevertheless spatial variations ranging from suburban Metro stations and Central Moscow's gentrified stations reflect the scene of the sharpest contestation between traditional street markets and the exigencies of the changing high commercial development. Open air and covered markets, stalls and kiosks, as part of the informal sector often controlled by different ethnic groups, were located on large expanses of vacant land within high-rise residential areas (mikrorayons) of Moscow's periphery.

Neo- Flâneur 's Navigation within Moscow's 'Post Soviet' Public Spaces

Since 1990s Moscow's promotional tourism strategy was launched to establish a new place image and foster a new reinvented identity, exploring discourse on the future of post-soviet urbanism, whilst recounting the erasure of 'Stalinist' past from its historical narratives (such as renaming of streets and places). Postmodern landscape of contested East-West transformation was observed, when Moscow's Mayor Luzhkov, embarked on a major development program.   The capital has seen a remarkable program of reconstruction and restoration of historic structures such as the Victory Memorial, the Gostinny Dvor (guests' court), Kazanskiy Cathedral and Resurrection Gates at Red Square (Vinogradov 1998; Glushkova 1998 cited in Lang 2004), together with the newly constructed statue of Peter the Great. Whilst Moscow's Kremlin and Red Square were designated as UNESCO World Heritage sites in 1990, a wider program of historic preservation and revitalisation was launched including museums and nine railway stations dating from Tsarist times (Luzkov 1998, cited in Lang 2004) There was the downtown development of large, new postmodern hotels and office and apartment buildings, often funded by foreign consortia, which have impinged on such historic areas as the Arbat, a major tourist area near the Kremlin.

Spaces of Consumption

During the 20th century, Moscow acquired a limited number of downtown shopping center spaces, mostly in the form of high-profile fashion galleries such as the 35000 square metres (376,670 square foot) Manezh Square near the Kremlin, the 63000 square metres Smolensky Passage; and the 10000 square metres Petrovsky Passage. A symbolic sign of the times was the conversion of the famous state department store GUM (State Universal Store, Gosudarstvennyj Universalnyj Magazin) , a Moscow shopping tradition since 1887, which is now a 30000 square metres mall arcade with 185 specialised retailers, including many Western high street brands.

The 'bazaarization' of Moscow was the main agent of structural change during the

first phase of post-soviet transformation (Rudolph and Brade 2005). Shrines of market places appeared together with bazaars, street petty trading and informal exchange of goods (Andrusz 1996), with the commodification of post-soviet urban spaces near the Red Square: Tverskaya Ulitsa and Vozdvizhenkaya Ulitsa Commercial Streets, GUM Shopping Mall and Manezh Commercial Store. By the end of the 1990s market trading have become a primary means for the accumulation of capital and the way towards consumption- oriented society with large-scale retail location dominating Moscow's urban landscape

Moscow's post-soviet spaces of consumption represent an inevitable outcome of pursuing commodity-oriented city development, whilst attempting to create new forms of place marketing. Globalisation brings a new imperative to post-soviet Moscow, with its transformation into the 'entrepreneurial city', invoking the legitimacy of place re-making, even through substantial public investment. Newly built suburban shopping outlets are competing with inner-city retail centers. The townscape of merchant stalls in the early years of post-soviet transition is gradually fading into one of supermarkets, chain stores, shopping centers, and malls.

Conclusion

Meaning is being (re)constructed within Moscow's post-soviet Metro(scape), with issues of collective memory and erasure of historical soviet symbols being reflected upon imageries of contested urban spaces (between historical 'soviet' elements of the city and recent 'postmodern' architectural development) . The juxtaposition of historical traces of (communism) and (postmodern) urban spaces has promoted themes of aestheticisation, whilst reflecting the increasing role of image consumption. Con-

sequently, the definition of Metro stations' public role is beginning to reflect the gaining dominance of postmodernism, with the introduction of shopping facilities, gentrification and commodification of 'touristic' urban spaces, whilst challenging symbols of 'Stalinist' spatial monumentality within Moscow's post-soviet Metro.

Leach (2002) emphasises the waning of historical sensibility that is often associated with the 'postmodern condition', with perceptions of history being reduced to a collection of images of the past. In a culture of simulation, a hyper-real world of images detached from their original cultural referents, we progressively lose the potential to grasp the ontological reality of the past. Accordingly Leach (2002) identifies two strategies in dealing with urban monuments, collective memory and historical erasure. Firstly, the physical eradication of monuments 'Berlin Wall syndrome'; and secondly the symbolic re-appropriation and re-use of monuments 'Bucharest syndrome' .

Whilst many of Moscow's Metro mosaics are regarded as urban semiotics which depict symbols of historical Soviet production, monuments of Russian soldiers during World War Two and the Great Partriotic War, such questions are posed :

Will the artwork change with time or will it remain as a representation of the past ? and as time passes how will people perceive the mosaics that will fade further and further in Russia's past ?

Will new stations reflect the life of modern times, with modern depictions of Russian life?

How is one to deal with the architectural fabric of Moscow's Metro which bears witness to the traces a former Soviet regime?

Various factors emerge to play a crucial role in determining the spatial experience within

Moscow's Metro(scape) with its historical context in terms of both time and place, and its 'social ground' .The Metro assumes a socio-political status through a mechanism of semantic associations, either individually, through its particular politics of use as a space of transition, or collectively, through its stylistic affinities with Stalinist Monumentality associated with its use as a space of memory. This is in accordance with Roland Barthes' (1976) claim that 'use never does anything but shelter and generate meaning'. Accordingly we find that Metro's meaning is defined by its actual function as a transit infrastructure and its symbolic meaning as a tourist soviet heritage of Stalinist urbanism. Political content depends upon a memory of what a particular form is supposed to mean, and as that memory fades, so the meaning is erased, as noted in the pattern of name changes of Metro stations which reflect one aspect of the nature of post- soviet Russian experience (Graeme 2005).

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Acknowledgement

Biography

Wael Fahmi is an Associate Professor of Architectural Design and Urbanism at Helwan University in Cairo. He was trained as an architect at Cairo University and is a visiting academic at The University of Manchester (UK) where he received his PhD in Planning and Landscape. Through Urban Design Experimental Research Studio (UDERS), he explores deconstructive experimentation within urban spaces, postmodern spatiality and representation of city imaging employing narratives, digital photo images, video stills and architectural diagrams.

A Proposed Structure for a Programme of Urban Soundscape Research

Mike Fedeski

Welsh School of Architecture, Cardiff University

1. Abstract

Complex and rich urban soundscapes resist visual representation because of their aural, ephemeral, and value-laden nature. This has not only hampered the communication of soundscape research results to urban planners and the public, but has been a handicap to developing results that are meaningful to urban design. The difficulty of manipulating sonic data to demonstrate ideas hampers discussion of research results with stakeholders and policy-makers.

Assuming that a major objective for designers is to plan for an enjoyable and beneficial urban soundscape, rather than a merely tolerable one, it is suggested that objectives for a soundscape research programme should include: 1) public participation in order to discover what sounds people value when they shift from basic listening to enhanced hearing; 2) working with sonic data in ways that explore new soundscapes that can inform urban design; and 3) finding ways of communicating the results of such research to urban designers and the public.

A programme structure for urban soundscape research is proposed that brings together some recent technological advances in digital processing and communication.

In this structure, sonic data is cycled between the urban public and researchers, or between the city and the laboratory. On the urban side, the public collect and semantically tag sound samples, which they stream from a mobile phone network to a database on the research side. Quantifiable fields from the database can be mapped into spatial dimensions in a laboratory through which listeners can move. New soundscapes developed by exploring the database in the laboratory are returned to the city in a public gallery and inform the further choice of samples by contributors to the network.

This cycle generates a database which can grow and enrich over time, it supplies a means of investigating future soundscapes which supplements modelling, it can replicate these soundscapes easily and rapidly, it can present them to the public and urban designers, and by extension allows access to them over the Internet.

2. Aim

This paper proposes a methodology for urban soundscape research. It reflects a shift in emphasis in urban sound studies from negative to positive issues, as reviewed in Dubois, Guatavino and Raimbault (2006).

In the U.K., prominence has recently been given to this shift through an RGS-IBG Annual Conference in September 2005 Urban Sustainability: Rethinking Senses of Place, at an RTPI EPP Network event in September 2005, Planning for Soundscape Quality, and an EPSRC Ideas Factory in January 2006, A Noisy Future. Positive soundscape design has even reached urban planning policy in London (Greater London Authority, 2004, p.207).

The research structure outlined here is coloured by a number of ambitions. It wants the results of soundscape research to assist urban design. The overall objective that it hopes to serve is to help designers plan for enjoyable, beneficial, and positively engaging sonic environments, rather than merely tolerable ones. It expects the creation of such environments to involve the public, and it sees a place for creative "composition" using the material of urban soundscapes.

The sound we hear in cities is an outcome of activity in the city, activity in which the city's inhabitants take part. Sound carries a great deal of information about this activity, concerning what it is, and where, when, and for how long it is happening. It can be understood, correctly or erroneously, to infer the motivation of the people producing it, and this can arouse marked emotional responses in the hearers. The spatial reach of sound is greater than that of the visual field, and the information it contains tells more than can be learned from looking alone.

The soundscape has the potential of enriching our interpretation of city life and our collective experience of being a part of it. Yet urban sound receives little attention from the public or city planners unless it gives rise to complaint. The full panoply of sound within the city lives at the edges of our attention. The case for giving it closer attention is argued persuasively by Schafer (1994) and Blesser and Salter (2007).

Improving this situation must involve at least three parties, each with different perspectives: the public who use cities, the designers who shape them, and the researchers who study them (Raimbault & Dubois, 2005, pp 340-1). Collaboration between them is required, which for all should promote a shift from basic hearing to enhanced listening.

All three parties have different modes of contact with the urban environment. Public users have direct experience of environments that exist, moving through them and interacting with them. The sonic environment is ever present and changing for them, although they often do not attend to it. Researchers can study existing sonic environments, but these are often limited to samples and abstractions which, whilst close to user experience, are restricted in compass. Designers have to be content with representations of future environments that they have imagined. The sonic environment is often simply absent from these representations, as are activities that give rise to it.

Communication between these parties is necessary: users need to understand what designers intend, researchers need to understand what users value, and designers need to understand what researchers have discovered. But with each type of user occupying a different world of experience, there are difficulties in sustaining a dialogue between them on the subject of sonic environments. Channels of communication need to be opened and a commonly understood form of representation needs to be made available. This problem will be the subject of discussion in this paper.

3. Challenges that face the public users of urban spaces

Members of the public wishing to discuss the urban soundscapes that they experience, have language they can use to describe it. The vocabulary they use has been analysed by, for example, Hedfors (2003, pp. 47-8), and Dubois, Guastavino and Raimbault (2006). However, unless the discussion is located in the sound environment being described, this vocabulary is limited in its ability to describe soundscapes evocatively and reliably. It thus fails to facilitate extended dialogue on the subject, which is essential if there are to be advances in public awareness of soundscapes.

To be useful, any descriptive language needs to support value judgements as well. Such judgements should not be limited to whether this or that particular kind of sound is preferred, but should relate to complex soundscapes as a whole, on the level of aural aesthetics.

4. Challenges that face researchers

Since its introduction in the 1970s by Schafer (1994), soundscape research has been concerned with the central problem of how to represent the phenomenon being investigated. The problem presents itself in working with and archiving the sonic evidence gathered during the research, and again later in describing to others the nature and significance of the research results.

Sharing and comparing aural experiences is at the heart of the matter. A representation of the sonic phenomenon being investigated helps to identify it clearly and to separate its several strands. For example, communication with subjects about what it is they are hearing in cities is not straightforward. If the research is conducted in the field in the direct presence of the phenomena being investigated, the constantly changing and fleeting nature of the phenomenon is problematic. Subsequent reference to what was heard is needed if the views of several subjects about the same phenomenon are to be compared or if the context for what they say is to be understood by others not present at the time. One way of dealing with this is to abstract sound recordings from the field and conduct the listening research in a sound laboratory (e.g. Paquette, 2004, sec. 4.2).

But the use of sound recordings throws up another kind of problem, which is that of characterising the sonic environment of a place from short samples. How do we define the modal thread running through a changing soundscape in order to capture its character? This is analogous to the process of changing a recorded time sequence of weather data into climatic knowledge. Related to this is the problem of finding a convenient way of associating semantic data with the recordings, such as commentary by listeners about what they are hearing.

Moving on to the second difficulty, communicating the results of soundscape research, the standard means of publishing research results through papers limits the direct representation of data to such means as text, pictures, diagrams, and symbols.

In specialist fields such as architectural history, researchers are able to discuss in writing the nature of things seen with some precision by using and servicing a well-developed and commonly understood vocabulary, but even then the support of drawings is essential. In the field of soundscape, the vocabulary is more primitive, and the aural support difficult. Valuable work has been undertaken to address this shortcoming at CRESSON (Augoyard & Torgue, 2005), where a vocabulary has been developed

around the idea of "sound effects".

Existing ways of representing sonic data visually are limited. In principle, the complete data set can be illustrated graphically by showing the changing pressure of air presented to the listener's ear as a linear sequence. However, this could not be interpreted without analysis. A more articulated graphic representation that existing software can generate is the sound spectrogram (or sonogram), which locates the data in frequency, amplitude and time dimensions. But it fails to evoke an impression of complex urban soundscapes, principally because the various sound sources are difficult to distinguish. This can be illustrated by applying the method to the sound of an orchestra performing a classical composition (e.g. Winckel, 1967, p. 76, which shows the opening of Beethoven's 8th symphony). It is difficult to identify from the sonogram either the instruments used or the composition.

In contrast, traditional musical notation enables practiced readers to hear the sound in their heads. There have been attempts to develop analogous graphical notations for soundscapes. They generally begin by identifying the separate sources to be notated. One approach is then to characterise their qualities, e.g. attack, pitch, grain, dynamics, decay (e.g. Schafer, 1994, pp. 134-139), and another is to chart their duration and their apparent variation in loudness (e.g. Southworth, 1969, fig. 4).

Direct access to aural records has been enhanced by the Internet. It has always been possible to make sound files available by post on request, but on line they can now be integrated with research papers. Sound files can be attached, say, to maps that locate sampled sound geographically (e.g. Sound-Seeker at www.nysoundmap.org/), or to GPS tracks that record the journeys their collectors make as they record them (e.g. Experiencing Issun-Boshi at www.field-works.net). But we are a long way from having a comprehensive reference archive of soundscapes for use by researchers and designers.

5. Challenges that face designers

Urban designers have traditionally used drawings, often supplemented with physical models, to represent their designs prior to construction so that their patrons can see what to expect. Drawings and models have also been used by specialists as the basis for calculations to predict performance in transport, lighting, drainage, structural stability, and so on. More recently, computer models have been used for simulating future performance, but their output is also often presented using drawings or animations to make it more explanatory.

The primacy these methods give to vision over hearing, discussed, for example, by Hedfors (2003, pp. 17-18 & 21-22), hampers their ability to represent the sonic environment in urban design. They can hint at expected soundscapes through the use of labels and pictograms, but this does not give an impression that is in any way adequate to the needs of the designers or the public.

Moreover, visual presentations emphasise acoustic enclosures rather than sonic sources. They show the proposed building fabric, but not the active life that will eventually inhabit it, although this latter is as important in defining the soundscape. Whilst the particulars of what happens in a city from day to day are outside the control of the designer, the generic activities anticipated in spaces are the subject of design, and so could be shown, if the medium were available, bearing in mind that they too change over time.

An obvious improvement would be to add

aural information to the visual presentation, and in this respect computer terminals, which give access to sound as well as vision, open up a promising, though under-exploited, opportunity. However, standard presentation for acoustic modelling in urban design is still numerical and graphic; current methods are reviewed by Kang (2007, pp. 107-174). Acoustic software that enables sound environments to be auralised has been developed, but for simulating the acoustic interiors of buildings, so that it retains a focus on the building envelope and simple interior geometries. To simulate sonic futures at an urban scale, the models would need to be populated with sound sources, whose nature, diversity and variation are critical to the outcome. Suitable sound sources, associated with the generic activities proposed for the city, and programming techniques for using them, are only beginning to emerge. Kang discusses techniques for auralisation on pp. 134-142.

Such computer enhancements do not provide designers with methods of representing soundscapes that they can work with directly, or that lend themselves to deeper exploration and evaluation, or that supply archive material to work on. This paper suggests alternative ways of representing soundscapes to help researchers characterise soundscapes and archive them for future reference, and to help designers envisage improved soundscapes, such that the synergy between research and design could be improved.

6. Objectives for the proposals

This paper suggests a research environment in which the three parties (public, researchers and designers) can communicate to their mutual benefit. The focus of their communication is to be the collection and evaluation of sonic data from cities and the exploration of this data in the laboratory by working with new soundscapes. The process is expected to increase awareness of soundscapes amongst the public and to assist urban designers in creating positive soundscapes.

The following objectives for the methodology can be specified, relating to the discussion above:

to persuade urban inhabitants to shift from basic listening to enhanced hearing;

to discover what the public value in their sonic environment, not just what they find intolerable;

to capture sonic data together with its associated meta-data, attributes and perceived values;

to substitute aural for textual and visual representation in propagating research results;

to enable aural data to be manipulated in order to increase understanding of soundscapes;

to investigate representation of the long-term character of soundscapes;

to enable soundscapes to be appreciated at an aesthetic level;

to discover and define new soundscapes that can inform urban design;

to give access to the results via the Internet after completion of the research.

7. Description of the proposals

The proposed methodology has four stag-

es which feed information from one to the next in a cycle. The stages are a Network for collecting data from urban soundscapes, a Repository for storing it, a BlackSpace for turning it into new soundscapes, and a WhiteSpace for presenting the results. The cycle straddles a notional interface between the public and the researchers, centred respectively in the city and the academy. The Network collects data from the city and delivers it to the academy. The WhiteSpace collects soundscapes from the academy and delivers them back to the city. The data and the soundscapes are stored virtually but presented aurally. A schema illustrating the method is shown below.

On the city side, a Network of contributors is established for collecting sonic data which they transmit by mobile phone to a Repository on the academic side. The Repository is a database created to receive and store live sonic data, the circumstances of its collection, and the contributors' comments. Research on this data is conducted in a Black Space, which is a room for listening. By mapping data fields from the database into spatial dimensions in the BlackSpace, listeners will be able to "inhabit" and "walk through" the Repository. It is intended that spatial exploration of the data will enhance understanding in the planning context, and allow composition of new soundscapes. The insights developed will be taken back to the city in a similarly equipped White Space, which is a public gallery for the spatial presentation of the results. Contributors to the Network have access to the White Space, and it is hoped that what they learn will influence their choice of sound samples for further input.

The function of each of the four stages in the cycle and the physical component which enables it are stated in the table below. This is followed by a fuller description of the four components in which examples of technologies they could draw on are given in endnotes.

Name/theme/function/component

Network/

Engaging Gather an ongoing commentary on a city's soundscape from its inhabitants. A continuously receptive mobile network in which subscribers transmit data.

Repository/

Analysing Collect, sort, search, and deliver audible data and related semantic data contributed by citizens. A database capable of inputting and outputting annotated streaming aural data.

BlackSpace/

Revealing Investigate the characteristics of the data and explain it aurally to the research and planning community.
An aural laboratory able to map selected fields from the database into its spatial dimensions.

WhiteSpace/

Exhibiting Share the research outcome with the contributing public, and promote further data gathering. A public exhibition of soundscapes composed in the BlackSpace related to the city's geography.

Network

A Network is established for collecting audio samples using a wireless Grid of remote terminals and mobile phones. It monitors the contributors' perceptions and their creative interpretations of sonic place. This activity is to have the character of play rather than research, taking the form of a sonic game in which the contributors explore the soundscape collaboratively. In preparation, a website will

be established to generate interest, attract subscribers and provide an initial conduit for data contribution.

The audio samples are accompanied by metadata documenting provenance (date, time, location, sound source, amplitude, contributor) along with unstructured data (comments). The progress of the collection can be followed on the website. A map shows the location from which samples were collected, and plays them back when selected. It can be searched by its provenance (date, time, etc.). Contributors will be able to reach these maps and the aural feedback on their mobile terminals, supplemented with headphones, to provide motivation and allow them to improve the quality of their input.

Repository

The Repository is a database created to receive and transmit semantically tagged streaming data and to allow the addition of supplementary data collected later in the research. The tagging will in part describe and in part classify the data. The practicality of using semantic labels to abstract qualitative dimensions is illustrated in Hedfors (2003, pp. 47-52 & 35-38). For an overview of soundscape classification as it relates to auditory design and urban planning, see McGregor, Leplatre, Crerar and Benyon (2006, sec.2) and Raimbault and Dubois (2005).

Its interrogation may range from simple retrievals based on location information to more complex queries using data integrated from external databases such as land values or weather conditions. The sonic data being collected can be played through a streaming server to remote listeners. As well as archiving past contributions, the database will allow synchronous presentation of its current and changing state.

BlackSpace

The BlackSpace is a room equipped for listening to and analysing the aural data. Any ordered data field from the Repository database can be mapped into a physical dimension of this space. The mapping may mimic spatial dimensions in the city or reveal such diverse properties as the age of the contributor, the perceived quality of the sound, the order of sampling, the time and date, the type of source, and so on. Participants listen over headphones, which feed them sound appropriate to their spatial location as indicated by position sensors. Movement through the BlackSpace then corresponds to movement through these data fields, allowing the database to be explored. This technique unpacks attributes of the data to reveal information about the way people experience space aurally. Bodily movement through the space relates to the exploration and memory of space in cities, keeping participants in mind of the urban context. Several participants can share the experience interactively.

The BlackSpace also allows evaluation to be made and recorded for whole soundscapes. This provides for an aesthetic dimension. Varying the quality of sources and their spatial and temporal distribution will help planners make choices, as illustrated by Hedfors and Berg (2003). The equipment offers a means for making soundscape compositions with the ambient sound, regarding them as environments for listening rather than objects of attention.

The spatial discrimination of the BlackSpace lends itself to miniaturisation on the screen of a computer monitor or a smart phone, and a tool is proposed which will be both a control console for configuring the fields in the Black Space and a monitor for making the compositions acces-

sible when the BlackSpace is not.

WhiteSpace

The WhiteSpace "turns on the lights". It is a public event curated to demonstrate the results of the research to the public, and to complete a "research bargain" with subscribers. It may take place in a gallery or be integrated into the area of a city being investigated.

It adapts the technology devised for the BlackSpace for public presentation. Sounds from the city - known, forgotten, unheard, recreated, imaginary - will be located geographically in the space. Textual commentary on the sounds from contributors will be available to participants on their mobile phones.

Exploring the database in the BlackSpace will drive curatorial questions for the WhiteSpace. New soundscapes will be composed for potential use there. On occasion, live contributions will be invited from the Network, to modify these compositions, filling gaps, adding layers, altering sounds, and extending the commentary. Over the time span of a WhiteSpace exhibition, it is anticipated that the original compositions would be transformed, to reveal emergent patterns that will help understand the public's interpretation of soundscape.

The WhiteSpace offers a new curatorial method for practice-based research, which is resonant with the increasing trend for exhibitions to become less passive, to involve the public, and to reach into the city.

8. Conclusion

There has not been space in this paper to discuss the technology proposed for each of the components. The recent advances in digital representation and communication that they will employ have been used by others to realise similar components, although some refinement and adaptation is needed for them to serve the objectives stated here. There are several alternative ways of doing this which need to be explored, but what is featured in this paper is the proposed relationship between the components, which is believed to be novel. This provides a continuum for handling aural data in soundscape research: capturing, storing, studying, reproducing, and disseminating. Its stages make important links between investigating the public's preferences and advising urban designers, in a practical cycle that serves the objectives for soundscape research listed earlier.

A research programme structure of this kind opens channels of communication between urban citizens, planners and researchers and provides incentive for using them. It maintains a collaborative environment in which the parties can make discoveries interactively and share results. It can receive from the public streams of live sonic data, semantically tagged, capture them in an aural buffer for research, and deliver the outcome back to the public aurally in an unfolding interpretation of the city's sonic fabric. It addresses the question of how the public experience and interpret sonic place. It offers a method for experimenting aurally with new urban soundscapes which can inform urban designers.

It subverts the issue of finding a commonly understood form of representation for sonic information by presenting it aurally, but coding it digitally in a system that allows for the aural database to be explored and associated with semantic comment. The sound samples and soundscapes are replicable, and, given the proposed laboratory set-up, their aural presentation is immersive. For users who do not have access to the set-up, the information can still be made available on display screen analogues of the Black-

Space (and WhiteSpace), although in a simplified way.

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Acknowledgements

Biography

Academic and professional qualifications: PhD, MSc, MA, Registered Architect.

Current posts:Senior Teaching Fellow and Director of Postgraduate Research Studies at Welsh School of Architecture, Cardiff University. Director of the Graduate School in Physical Sciences and Engineering, Cardiff University

Research Interests: I am an architect whose persistent interest in the interface between

architecture and the physical sciences has steered me through changing currents of public enthusiasm through the years for energy conservation, bio-climatic design, and sustainability. The part played by climate in architectural and urban design has been my area of expertise. My focus has moved from individual buildings towards urban environments, and such issues as the integration of green planting in cities and the adaptation of urban design to climate change.

More recently, I have become interested in the broader implications of environmental research and design in relation to "senses-capes", and in particular to urban sound-scapes. I consider the soundscape to be a neglected aspect of urban design which calls for investigation at a fundamental level. I am investigating the concepts and issues that are pertinent to its understanding.

The work described in this paper is the outcome of discussions with other researchers in the Welsh School of Architecture and the Welsh e-Science Centre at the Cardiff School of Computer Science, with artists outside the University.

I am currently collaborating with the School of Psychology in a study of the effects of ambient sound in rooms on speech intelligibility. My major role at the Welsh School of Architecture is co-ordinating the school's taught masters programmes in architectural science.

City Identity and Presence:
form furnishing events

Marie Frier, Nanna Gram Thomassen, and Anna Marie Fisker

Dwellab, Department of Architecture & Design and Department of Civil Engineering, Aalborg University, Denmark

1. Abstract

This paper explores how small scale architecture utilising new technologies can mediate relations between people and objects within the future city strengthening our multi sensory experience of place.

Economic prosperity and population growth has within the last decades caused cities to develop into metropolises, experienced as flows of metros, highways, elevators and escalators. This flow allows society to develop into fascinating urban environments and large scale visually perceived prestige architecture, but simultaneously it raises the question whether the individual inhabitant is losing the experience of physical and metaphysical presence within this mainly visually represented unfurnished city?

Introducing the pavilion NoRA as a case study, the aim of this paper is to explore the potential of using small scale sensory architectural experiments as generators for future urban developments, by combining architecture, light, sound and even gastronomy in a sensuous furnishing of public spaces. NoRA is a mobile pavilion combining aspects of architectural-, product-, urban- and sound design in a multimodal structure, built and exhibited at the 10th International Architecture Biennale in Venice 2006. The pavilion is a 32m2 experience unit, seeking to establish relations within the city through the mediation of events such as exhibitions, concerts and gastronomy, offering a sensory experience of place. NoRA has two identities; on the one hand "she" describes a particular interior experience of form, on the other she unfolds a digital eventscape, hence both grasping and communicating points of presence within the city.

Born in the compressed pedestrian passages, the secret explorations and encounters of Venice, NoRA offers a perspective on the subject of presence, relations, identity, and senses of place via form; furnishing and narrating events in the urban interior.

2. Introduction

"The phrase "to go into town", which replaced the nineteenth-century´s "to go to town", indicates the uncertainty of the encounter, as if we could no longer stand before the city but rather abide forever within." (Virilio in Leach et al., 1997, p.382)

Architect and theoretician Paul Virilio's statement in his The Overexposed City questions our encounter with the modern

94

metropolis. His interpretation describes an alienation herein suggesting that we have lost control of our own constructions becoming megalopolis' no longer relating to the scale of our bodies. Simultaneously we seem to be lacking the means to act upon the city, to start anew, to straighten out, to develop further, or even to add another layer; a problem which became obvious already in the early 1920's when Le Corbusier presented his radical urban visions (Frampton, 2001). Since then a number of strategies have developed suggesting different ways of acting upon the city; different ways "to go to town" if continuing Virilio's analogy.

In continuation hereof the 10th International Architecture Biennale in Venice took the subject of Cities – Architecture and Society as its point of departure, proposing "rather than an exhibition of (models and examples of) architecture, a discourse on the consequences and possibilities of architecture applied to urban and meta-urban systems: the world-city." (Burdett et al., 2006, p.ii). Visiting the exhibition at the Arsenale a literal encounter of the kind described by Virilio was experienced, an encounter of uncertainty confronted with structures, smug, slum, destinies. The Cordories of the Arsenale, transformed into experiences of cities understood and encountered through graphs, numbers, mega-scale architectural projects, statistics, maps and photographs; visually exposed facts. The world quantified, shaped, shaping, out of shape.

"As architects we give shape to the house and the house gives shape to us facilitating a necessary experience of belonging" is what one can read from architectural theoretician Andrew Ballantyne's introduction to the book What is Architecture? (Ballantyne, 2002, p.2). It is our conviction that the same can be said about the city; our involvement with the city is reflected in its materiality, we are a part of the city's interior. However, as it appeared at the Arsenale the city seems overflowing, expanding, unfurnished; difficult to shape and to inhabit. It seems that "we have to approach the question of access to the City in a new manner. For example, does the metropolis possess its own façade? At which moment does the city show us is face?" (Virilio in Leach et al., 1997, p.382). Following the lines of thought of Virilio and Ballantyne, this paper raises the question: How to develop the necessary experience of physical and metaphysical presence, inhabitability, relations, taste, feel and face to face communication within the mainly visually represented unfurnished future city?

According to American architect and theoretician Marie-Ange Brayer, a chair, a carpet, a bed etc. are immediately inhabitable due to their proximity to the human body (Brayer & Simonet, 2002, p.42). Hereby Brayer suggests that when specifically designed a chair has the capability of unfolding a micro cosmos; a place. Following this line of thought a chair can possibly generate relations between individual and community, unfolding a furnished place in the city allowing us to dwell as well as to interact. This raises the question whether a small scale architectural experiment comparable to a chair can mediate sensuality, communication, and inhabitability, by suggesting a furnishing of the expanding city. Thus, adopting Virilio's phrase "to go into town", suggesting a personal physical involvement with the shaping of the city, present paper investigates how an experimental approach, combining experiences of event and form; architecture, furniture, light, sound and gastronomy can help developing future potentials of the city from small scale furnishing points of encounter. In this matter the paper introduces a specific project as a case study in order to exemplify how the developed approach can be utilised as theory and design method. The project chosen as a case study is a 32m2 mobile pavilion called NoRA, developed in Northern Jutland by a group of students in cooperation with supervisors

and local industries.

3. The city approached as event and form

In his influential book S,M,L,XL architect, urban planner and theoretician Rem Koolhaas approaches the question of the uncontrollable expanding metropolis head on suggesting to solve the problem of the Large by climbing. Under the headline "Bigness-the problem of the large" Koolhaas state that "The best reason to broach Bigness is the one given by climbers of Mount Everest "because it is there"", an approach which has for Koolhaas resulted in a number of XL projects where the exertion is fruitful (Evers et al., 2003, p.818). In Rotterdam the Kunsthalle speaks both to the pedestrians arriving from the park leading to NAI and to the drivers on the orbital road on the other side, likewise can be said about the giant Seattle Central Library which unfolds an urban interior which has become of significance for the city identity. These projects are of a scale and expression which has an impact on the form of the city. However, with reference to the quotation of Virilio in the previous one could ask whether at some point the mountain can become too high and hereby impossible to climb?

As it appears in Virilio's theories on space, power, speed, and the acceleration of vision, which are highly inspired by the circumstances of war, the escalating size and speed of the city causes an encapsulation, both physically and metaphysically. When the speed and need for surveillance of the "enemy" increases we become encapsulated, in the car, the office, the tank, the bunker, the airplane the spaceship and simultaneously face to face communication and presence decreases (Thau et al., 2006, p.315). According to Virilio and his "law of dromology" speed will continue to increase causing an implosion of our physical presence in space. Consequently size does not matter, the range of dimensions of grand scale architectural projects become insignificant and without impact on our experience of the city; insensible. Instead Virilio foresees digital and electro-optical devices and event-implants doubling, or even taking over our senses (Thau et al., 2006). Thus, when relating the prospects of the future city as described by Virilio, exhibited at the Biennale, and endeavoured climbed by Koolhaas two opposing strategies for future developments seems to evolve: As architects we can either choose to endeavour to satisfy the digital implants and speed of the city by developing architecture as "software events" or we can insist on the significance of our physical encounter with architecture and the city by focusing on a slowed down sensuous material architecture understood as form.

In opposition to the digital prospects of Virilio architect and theoretician Aldo Rossi has formulated theories on what he called "the analogue city". Rossi's intention with the formulation of his book The Architecture of the City was to produce an architectural treatise equal to architectural writings of the renaissance (Rossi, 1982). Through a methodological analysis of the cities components, Rossi endeavoured to map the identity of the city and hereby of architecture. The dissection of the city's components aimed towards an answering of the question concerning the quality of cities and architecture as artefacts of form hereby Rossi meant human generated objects and carriers of the inhabitants' memories of past and present (Rossi, 1982, p.29-35). The identification of the city with the inhabitant's memory is rooted in Rossi's notion of "the analogue city", illustrated in his collage of the same name from 1976 (Petersen, E. W. et al., 1985). The collage shows how the city consists of different structures and artefacts implemented in different layers, forming a symbiosis, and hereby both

preserving and developing the city for future inhabitants. In the collage Rossi's own work is placed together with an extraction of plans of the ancient Como, Filarete's ideal renaissance city, Sforzind, and several other historical elements. In this way the collage at once articulates the characteristics of the historical elements but also insinuates the singularity and particularity of Rossi's own work. Thus, Rossi did not conceive of the city solely as an object of preservation, but rather as being part of an analogous transformation, manifest in and dependent on the inhabitant's and the architect's experiences of artefacts and city. By placing his own figure, "the poet who watches the city from the window" in the collage, Rossi stresses the human perception and presence as significant for constituting the singularity and particularity of an urban artefact (Petersen, E. W. et al., 1985, p.9). Hereby the ability of an artefact to remain relevant over time occurs in the ability of a specific form to accommodate and motivate different events.

As an example of an artefact which is in its essence both event and a form Rossi introduces Filarete's column in Venice (Rossi, 1981). The column is set in the corner of a palazzo, where a narrow canal crosses a wider canal, however the column is not a regular column supporting for example a cantilever. The column is set into a massive corner, and has a strange length, it seems a leftover from an earlier construction of a different scale or perhaps the beginning of another structure breaking out and into the palazzo; changing it. The column is a remark related to a context but also a definite closed form in itself, the column poses questions, it is impossible to sail by it without considering it. With this column and Rossi's remarks on architecture as event and form, a combination of the two opposing strategies outlined in the previous seems to evolve, suggesting an involvement with our sensory experience of form as well as with future technological developments mediating events.

The column at once expresses a beginning, a development and a conclusion; it is at once both form and event. We can relate to the column in scale; it is smaller than other columns, of a strange size compared to the building, fighting to hold the masses up, but at the same time confident and shining. Thus, with the column a relation between such diverse and influential conceptions on media, city, architecture and interior put forth by Virilio, Koolhaas, Ballantyne, Rossi and Brayer starts to evolve focusing on our ability as architects to furnish places within the city. Compared to the exertions of Koolhaas, Filarete's column is of a different scale, it does not force its significance and mark in the city; rather it comments and suggests. The column has left a trace in the city motivating thoughts and events due to its specific form. Hereby a theory and design method for how to approach the future city is suggested based on our sensuous understanding of the urban interior, motivating utilisation of novel technologies in the furnishing of future events. In the following an application and development of this strategy is sought introducing the pavilion NoRA as a case study.

When the 10th International Architecture Biennale in Venice was announced it was as mentioned with the theme of the city and its architecture and society as the point of departure. At the same time, an idea to develop a mobile and multifunctional pavilion capable of promoting food related products was formulated in the Northern part of Denmark by the Network consortium Food College Denmark. Cooperation between Food College Denmark, chefs from The National Culinary Team, food related manufacturers, local industries and supervisors and students from Department of Architecture and Design at Aalborg University was hereby founded and the cornerstone for developing NoRA was laid out. The biennale became NoRA's

first journey and hereby also a framework for her emergence.

4. NoRA

The mobility and flexibility demanded by the pavilion called for a small scale collapsible unit able to set roots at different locations, attracting and communicating its presence by unfolding a place in the urban interior. Hereby a radical point of departure was taken in relation to the theme proposed at the biennale mentioned in the introduction. NoRA would never become a grand scale vision for the future city, but a potential for her to express an alternative strategy developed; a small scale approach of encounter. The group of supervisors and students working on the design were of different fields of study, architecture, industrial design, urban design and digital design, which was reflected in the design process. The complex programme, the multiplicity of applications (cooking events, exhibitions, concerts, workshops etc.), locations and design approaches demanded for a common point of departure, Venice became that point.

walkways, and palazzos are narratives of a mysterious and fascinating past, a sensuous experience of form long forgotten in the modern asphalt city. Thus, Venice as artefact came to represent a number of shaping potentials when a mapping of characteristics of the biennale site; light, shadow and flow of people became digitally translated into polar forces, pushing and pulling shaping the initial sketch(see Figure 1). This volume became the outset for developing the specific pavilion, an artistic approach which allowed for an ensuing discussion and development of the specific potentials of the form as artefact. By optimizing the geometry of the pavilion in relation to programming, functionality, entrances, furniture etc., a crystalline formal language for the pavilion developed. Likewise a number of characteristics; an ear, a bottom, a mouth, a number of smaller satellite volumes surrounding the pavilion, and the name NoRA developed (NoRA is short for the maiden name Eleanor, which means light and shining). Thus, the digital emergence of NoRA became a narrative for the pavilion, both in terms of shape and functionality, as the satellite volumes started to unfold potentials for NoRA as an urban structure occupying a large area despite its limited size.

Figure 1: The development of NoRA from a digital analysis of site into specific physical modeling and programming followed finally by production.

As stated by Ruskin in The stones of Venice; "The raising of stone into the air is at its most miraculous in Venice" (Davis, P., 1995, p.172). The streets of water, narrow
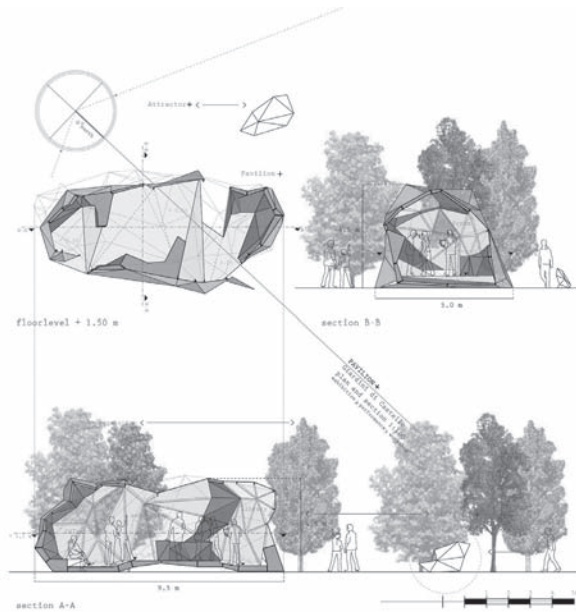
Figure 2: NoRA in plan and section facilitating stage, lounge and library, as well as smaller satellite units unfolding a digital eventscape of light and sound activating the physical form.

In the processes of detailing the initial digital approach changed into a specific analogue drawing and cardboard-modelling process aiming to specifically shape the pavilion and its interior according to a number of defined scenarios of use. The interior of the pavilion unfolds three specific zones; a lounge in one end, a library in the other and a kitchen fitted on a raised stage-area in the middle designed to accommodate different performances of cooking, exhibiting and work-shopping (see Figure 2). The twisting floor and fluent interior of the steel frame and polycarbonate covered pavilion catches the light and forces visitors to mind their steps as they enter the pavilion, an experience similar to the uncertain jump onto the Vapporetto. Consequently the specific form of the pavilion came to support the idea of multi functionality, combining digital and analogue references and approaching the pavilion as both form and event (See Figure 3). Hereby the pavilion happens to combine physical experiences of formal sensuality with the potentials of a digital eventscape

encompassing light and sound which opens up for the potential of further applications expanding the intended programme. Because of its mobility the pavilion can hereby become an urban mediator; a forum for discussing future plans, a meetingpoint in the metropolis forming a furnished micro cosmos to taste, feel, and encounter face to face. Hereby NoRA as an effect of being a small scale experiment suggests how to leave traces and hereby contribute to our experience of the future city's identity and presence. The combination of reference to the physicality of our bodies and the temporality of the pavilion offers a new kind of trace; a way of furnishing encounters and hereby relations within the city. Like Filarete's column NoRA poses immediate questions and suggests involvement.

Figure 3: NoRA at night time unfolding a tempting sensuous interior strengthened by the use of digital, constructional and material technologies.

5. Discussion

Through a study of the city conceived as form furnishing events introducing the pavilion NoRA as a case study, the initially proposed small scale approach to future urban initiatives has developed into a specific view of the qualities of the city as an artefact. The opposing strategies previously outlined as consequential means to act upon the "Bigness" of the city have both been found in-

sufficient: Choosing to either endeavour to satisfy the digital implants and speed of the city by developing architecture as "software events" or choosing to insist on the significance of our physical encounter with architecture and the city by focusing on a slowed down sensuous material architecture. Future architectures and urban development's must consequently, in our opinion, be positioned in relation to future technologies, utilising them as generators of events and communication while in keeping with the immediate sensuous qualities of a specific furnishing form. Thus, as a consequence of being an experiment NoRA brings new perspectives to architecture and urbanity in general, suggesting the potential of small scale furnishing points of encounter as generators capable of rooting in the urban interior while motivating changing events over time. NoRA is at once an expanding mediated urban space and a small tempting interiority, akin to furniture.

Thus, the subject of developing future potentials of the city is closely related to the question of approach; how we "go into town". Based on the theories of Virilio, Koolhaas, Ballantyne, Rossi and Brayer a potential to develop our sensuous understanding of the future urban interior arises. By combining the sensuality of specific interiorizations of space with the integration of technologies, there is perhaps a potential that our future industrialised houses, public buildings, urban spaces, and maybe even parking lots could be made as chairs inviting us to sit, enjoy, communicate and interact (See Figure 4): A challenging and inspiring task, encompassing a great responsibility and empathy wherein the future city might show its face, allowing us to "go into town".

Figure 4: NoRA offering a sense of belonging and suggesting action.

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Biographies

Anna Marie Fisker, b. 1957, is Architect maa. from The School of Architecture, Århus in 1984 and PhD in "Food and Architecture" from Aalborg University, Institute of Architecture and Design in 2003. Anna Marie is today Associate Professor at Aalborg University Institute of Architecture and Design, Project Manager in the Networkconsortium Food College Denmark and Head of Development at Culinary Institute of Denmark.

Marie Frier, b. 1982, is M.Sc. Eng. In Architecture from Aalborg University, Institute of Architecture and Design in 2007 and is today Ph.D. Student at Institute of Architecture & Design, Aalborg University, Denmark.

Nanna Gram Thomassen, b. 1980, is M.Sc. Eng. In Industrial Design from Aalborg University, Institute of Architecture and Design in 2007 and is today Ph.D. Student at Institute of Architecture & Design, Aalborg University, Denmark.

Tenna Doktor Olsen, b. 1981, is Master Student at Institute of Architecture & Design, Aalborg University, Denmark,

Haptics and Vision in Architecture:
designing for more senses

Jasmien Herssens and Ann Heylighen

University College of Hasselt & Belgium 2 Katholieke Universiteit Leuven

1. Abstract

Architecture is experienced in a multisensory way. Moreover, human capacities to perceive architecture are highly diverse. Unfortunately the emphasis in designing and creating architecture lies in large measure on the visual representation. Other senses are hardly represented or even considered during the design process. Because of this, the resulting building does not always comply with the human needs. This paper reports on a research project that calls in the experience of people who are blind to restore the multisensory qualities in the built environment. These users/experts are more attentive to other senses. Their spatial experience relies mostly on the haptic sense, which appears to be the foundation for cognitive spatial representation. In this paper we point out the differences and similarities between visual and haptic perception related to architecture. This should allow to identify design parameters which create the opportunity for architects to take the haptic sense into account during the design process. In this way the paper hopes to point out the potential contribution of Design for All for improving the multisensory quality of the built environment.

2. Introduction

Although the built environment is experienced in a multisensory way, architecture evokes for most people visual associations.

These associations are stimulated by the visually marked Western society (Classen 1998; Bowring 2007) and the fact that architects, like other designers, tend to practise design mainly in a visual way (Cross 1982). Campbell (2007) wonders whether architecture results in a visual sport. Our cultural history gave rise to this visual predilection. The ancient Greeks already adored the eye as the primary sense and this adoration led to what is called the field of optics, studying light and vision and used by the Romans too. In the Renaissance, this visual adoration revived and new insights contributed to the scientific rise of perspective. This development was very far-reaching for visual dominance as it stimulated working in a new virtual visual world (Herssens 2004); moreover, at that time, the arts favoured painting.

Western culture is dominated by ocularcentrism, the hegemony of the eye. The appearance of museums and zoos further elevated sight to the position of the pre-eminent sense (Bowring 2007). This visual dominance lives on to the twentieth century and peaks during Modernism (Frampton 2001).

102

Visual dominance is striking and it disguises the importance of the other senses.

In view of this, our research aims to question the visual dominance in architecture, and, to find ways to restore the multisensory qualities in the built environment. After all we should not adapt ourselves to the environment; the environment should be adapted to us. This view fits in with the principles of Design for All (DfA)—also called Inclusive Design or Universal Design—a recent design paradigm aiming at handicap elimination in the environment so as to establish a more inclusive environment for everybody. Ultimately, our research hopes to contribute to the realization of this design paradigm.

Increasingly disability is viewed no longer as a (physical or mental) characteristic of the individual, but as resulting from the interaction between individual and unadapted (social or physical) environment (Devlieger et al. 2003). By consequence, designers, producers and constructors are responsible for handicap elimination in the built environment (Froyen 2002). To realize DfA we use insights from Design for Special Needs (DfSN), which focuses on adaptations for people with certain impairments.

Our research relies on the abilities of people who are congenitally blind because they are more attentive to other senses than sight (Warren 1978, Hollins 1989, Heller & Kennedy 1990, Froyen 2002). The age of five is critical with respect to loss of sight: "If people keep their vision up to this age, they seem to retain some sort of visual memory (...)" (Fjeldsenden 2000). Because spatial representation of people with visual impairments is so diverse, we work with one specific group: users/experts who are congenitally blind and have no residual vision, because they cannot rely on a visual reference system (Warren 1974). Moreover we focus on the haptic sense in the exploration 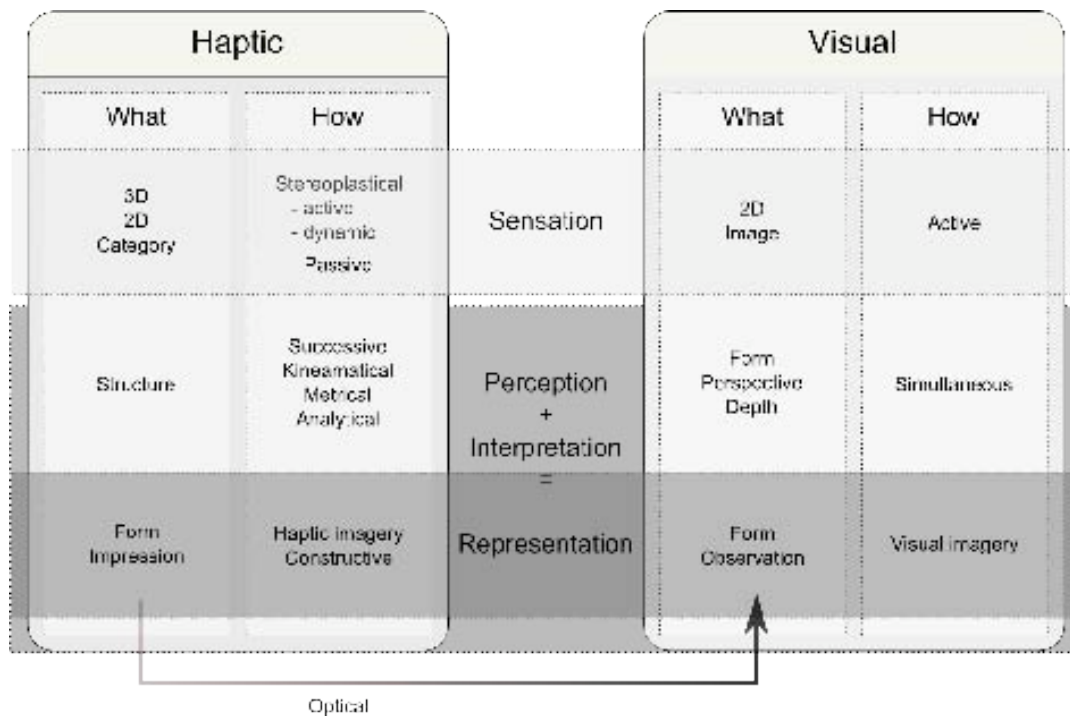of space. Although the insights are based on the expertise of people who are congenitally blind, some turn out to be relevant for all of us.

3. Objective and approach

In questioning architecture's visual dominance, this paper compares the visual perception of architecture to the haptic, the focus of our research. Just as vision is the psychological science of the optic input, haptics is the science of what is tangible (Kennedy & Juricevic 2003). The term "haptic" refers to touchable experiences and derives from the Greek word "hapthai", to lay hold of . When comparing the haptic and visual sense, caution is necessary in order to avoid generalising sensory perception (Heller 2003).

For this comparison, insights from literature are complemented with in-depth interviews with people who are congenitally blind. Interviews with 10 people with congenital blindness have been conducted and analysed (8 male and 2 female with an average age of 44 years). Each interview took place at the participant's home and started by an open discussion on living patterns based, recorded on a dictaphone. We asked the participant to give a guided tour throughout the residence, while filming their movements and asking to demonstrate how they orient themselves in the dwelling.

Spontaneously they started talking about (mis)fits in their environment. Afterwards we transcribed the interview and made a plan of the residence with annotations of (mis)fits and guiding lines. For each participant we filled in a filing card with the coordinates, personal data and medical information. This paper verifies findings from literature concerning the similarities and differences between visual and haptic perception of architecture with examples from the interviews.

Haptic			Visual	
What	How		What	How
3D 2D Category	Stereoplastical - active - dynamic Passive	Sensation	2D Image	Active
Structure	Successive Kineamatical Metrical Analytical	Perception + Interpretation	Form Perspective Depth	Simultaneous
Form Impression	Haptic imagery Constructive	= Representation	Form Observation	Visual imagery

Optical

After briefly discussing the importance of haptics in architecture, we zoom in on the haptic perception process through Révész's classification of principles (Section 3). We close by defining haptic design parameters as tools to obtain more haptic qualities in architecture (Section 4).

4. Feeling what architects see

4.1 Haptic experiences in architecture

Imagine your environment without ever having felt the texture of wood, the temperature of steel, the sharpness of a corner, the verticality of a wall, or without ever having moved on a ramp. Space is determined by haptic sensations, as subscribed by architect and critic Juhani Pallasmaa (2005): "The mental experience of the city is more a haptic constellation than a sequence of visual images; impressions of sight are embedded in the continuum of the more unconscious haptic experience. Even as the eye touches and the gaze strokes distant outlines and contours, our vision feels the hardness, texture, weight and temperature of surfaces. Without the collaboration of touch the eye would be unable to decipher space and depth, and we could not mold the mosaic of sensory impressions into a coherent continuum. The sense of continuity unites isolated sensory fragments in the temporal continuity of the sense of the Self."

This process from sensation to representation is a human way of perceiving and similar for vision and haptics. Nevertheless, in the perception process, the type of and way of gathering information differs between both.

In relation to the environment, the term "haptic" was first introduced by Révész (1950) and further investigated by Piaget and Inhelder (1956). Révész investigated the spatial perception of people who are blind and considered spatial experiences as the central problem of the psychology of the blind (Révész 1955). He defined the –in his view– key principles for haptic perception: the stereoplastical, the successive, ki-

nematical, metrical, constructive, analytical and optical principle (Révész 1938). Using his principles as guiding line, we compare the different phases of spatial exploration in vision and haptics.

4.2 The sensation phase What: characteristics of the stimuli?

During the sensation phase, the information on buildings and spaces received through our senses differs. Whereas visual sensation only relies on two-dimensional information, c.q. an image, haptic stimuli are three-dimensional in the first place, but can be felt as two- or three-dimensional dependent on the scale of the environment. For example, one interviewee refers to his piano as most important 3D reference point in the house. When moving through the house, he orients himself by referring to the piano, suggesting that in haptics furniture is as important as the building itself. Révész (1955) calls this the active-passive way of sensation or the stereoplastical principle; it is one of the most fundamental principles of haptics, because we live with an instinct to touch in our three-dimensional world.

Indeed the haptic system is a direct sense: haptic perception occurs in real time and real place. In both haptic and visual perception, the stimuli rely on material (texture, temperature, density) and space characteristics (form, place, orientation, length) (Hatwell 2003). Yet, the haptic system relies far more on material properties, and the nature of the features in both senses is different (Klatzky and Lederman 2003). What we look for architecturally is similar in both senses, but the emphasis on the stimuli and the stimuli themselves differ, which makes the representation different. Thus the way of extracting information in both is different too.

How: the process of sensation

Dependent on the field of study or scientific interpretation, haptics involve different ways of sensation. We can sensate the haptic actively (active touching), passively (tactile touch or being touched without any preceding action) or dynamically (touch by means of a tool). Some scientists define haptic touch as active and tactile touch as passive touch. Others make no difference and use tactile, touch and haptic as synonyms. Related to architecture we interpret

haptics as an active and passive as well as dynamic way of perceiving. For example, we actively walk into our office and passively feel the warmth of the sun shining on our skin. Dynamically we feel the weight of the door through the door handle. This differs from visual sensation, which requires active visual participation; in real time we can always actively choose whether we want to see or not.

4.3 Perception and interpretation lead to representation

What do we perceive/represent?

Haptics and vision both use information based on context and past experiences (Klatzky & Lederman 1995), but the former makes us perceive in a structural manner: we explore things in an analytical way. An interviewee explains: "(..) but yeah moreover a house is also, in a pure structural way, very practical for me. Euhm, sometimes more practical than an apartment. Yes, because in fact certainly in a house, a workman's house of about 4.5 to 5 metres large, you've got a fairly structured interior. You've got a little place at the front side, a place in the middle and in the back a little place. There are no doors here for the moment, and that is absolutely not necessary, otherwise it would be

a very closed feeling, those have been there once, but we didn't remove them, they were already removed…(…)"

Haptically we perceive every part separately (Révész 1955). This is reverse to the visual process: we start by seeing a whole, but do not see the structure immediately. We can find structure by analysing the whole. Révész compares this process to sketching. If you start drawing you first receive an overview, but during the sketch process you gain insight into the structure. This confirms that, for haptic perception, structure and materials are the most important aspects. Material characteristics are first perceived, while in vision (Klatzky & Lederman 2003) space characteristics as form, depth and the basic principles of perspective are ruling. For example, the estimation of corners is more accurate in visual perception than in haptics (Appelle 1971).

The differences between the haptic and visual puzzle of perception result in a difference of representing space: visual perception leads to form observation, whereas haptic representation provides a form impression. The process works reversely.

Révész distinguishes between three kinds of haptic spatial impressions or haptic imagery: haptic space, concerning the spatial experiences of haptics; haptic spatial form, standing for the representation of forms related to touch; and haptic spatial objects, covering the recognisability of haptics thanks to the recognition of things and materials. Those three impressions all support the haptic experience of space.

In haptic representation, form is discussable as it can be unrelated to its meaning. This is due to the fact that, related to form, visual information dominates haptic information (Révész: the optical principle). Yet a slight difference exists between the form of movements and the purely haptic forms. Movement and the successive-kinematic

experience of space is still very difficult to observe visually. Purely haptic spatial forms even exist only for people who are congenitally blind. Moreover, research shows that the process of form perception for haptics as well as vision refers to the same dimensions of differentiation (Pick & Pick 1966) and pays attention to the same complexities (Brumaghin & Brown 1969; Owen & Brown 1970). For example, scale, symmetry and complexity are aspects people rely on when using vision as well as haptics to identify objects (Garbin & Bernstein 1984; Garbin 1990). Haptic spatial objects even work as haptic triggers, which can provide recognizable information.

For people who are blind or visually impaired, haptic triggers are considered as rewarding recognition points. Haptics in space are positively experienced when space is not

that large so that one is still surrounded by haptic triggers, but not too small as movement is sill required to perceive haptically.

Interviewee:

"euhm but the largest advantage for me is that it is all very small in here and in fact you can move yourself very easily from one tactile point in the house to the other. Like this you'll never be on a place where you won't know where you are in the house. (…) " Researcher: "Do you feel yourself at ease in this house?" Interviewee: "mmm yes but there wouldn't be much more (furniture) in this interior… otherwise you got such a closed feeling"

Texture appears to be the most important information to identify objects through touch (Klatzky & Lederman 2003). We should not underestimate the role of pattern recognition (Klatzky et al.1985, Klatzky & Lederman 2003) and the ability of texture recognition (Hatwell 2003) in haptics. You have certainly experienced the night quest

for the lavatory. Most of the time this movement happens in a dark environment, but still you are able to find the door handle or light switch. One interviewee describes it very poetically: "For me good architecture exists in its imperfections". He refers to the traditional made architecture in which you feel the authenticity of its production. For example, a little twist in a wooden armrest can provide a good orientation point. The whole of haptic impression related to architecture largely relates to the first aspect: haptic space. It is the more fundamental cognitive space of interpretation or basic space from which pictorial (cognitive interpretation of taste, smell, sound and visual senses) and transperceptual spaces (refering to wayfinding) are metaphorically derived (Mark 1993).

Figure 2: An at first sight normal interior is in fact a supporting haptic space. Due to the concrete chair and flower box, the furniture of the house became as important as the house itself. The interviewee and his partner kept these remnants of the barn and now use them as orientation points.

How do we perceive/represent?

Haptic stimuli are experienced in a successive way by use of kinematics, the kinematical principle according to Révész. Space is haptically explored through movement and by means of a step-by-step process, analogous to solving a large puzzle, in which structure is the key aspect. One interviewee refers to his daily walk to the postbox. He explains it verbally and repeats his action in real time and place to show that he walks very sequentially in search for his daily mail applying his haptic sense: he opens the front door, follows the wall of the house which guides him to the hedgerow. Following the line of the hedge, he suddenly feels a change in the tactile pattern of the path. A grid serving the drainage of the drive indicates the way to the postbox. To go back inside, he just walks the same path in a reverse way. Characteristics and differentiations are perceived through movement. Lederman and Klatzky (1987) identified exploratory procedures as windows through which the haptic
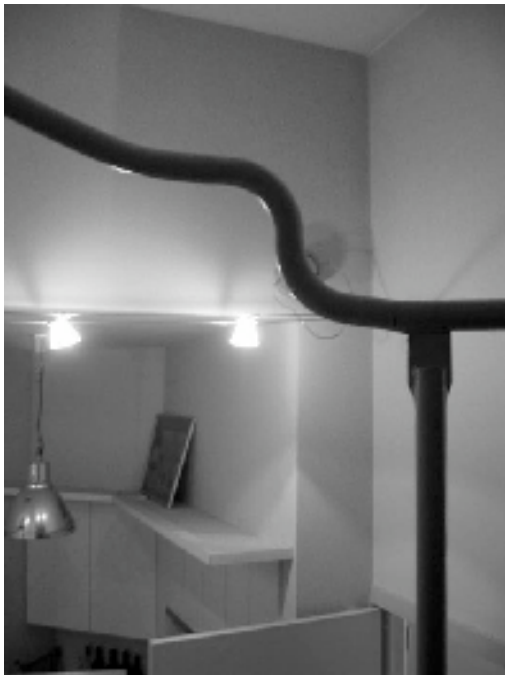

Figure 1: Twist in a metal armrest. Although from a visual point of view one may prefer a straight line, this armrest is haptically marked as a good armrest due to the twist as orientation point.

system can be perceived. For example, if we eliminate vision while exploring space, we first start moving through space and experience the environment through the floor and walls which lead us to the windows. "Information from movement output thus plays an important, and probably crucial, role in tactual recognition" (Millar 1994). We measure space with the help of our own body (Révész 1955: metrical principle) and our body gives us information about spatial as well as material properties (Hatwell 2003). Vision, on the other hand, can be considered as remote perception providing spatial information simultaneously. Visually we perceive the architectural puzzle as an image and notice the structure afterwards. Form overrides structure. This aspect contributes to the consideration of vision as the primordial sense for perceiving space as less time is needed to explore space visually. While visually we start with a holistic (Streri 2003) form to be analysed into a structure, haptically we perceive in a constructive-analytical way (Révész 1955) an impression of the structure which evolves into a whole. Due to this different way of gathering information, some scientists conclude that haptic representation is less sensitive to the laws of Gestalt. (Hatwell et al.1990, Lakatos & Marks 1999). In haptic representation the whole is only perceived as a unity by accident.

An interviewee refers to the usefulness of passages instead of a void, which gives him the feeling he is lost. The walls give structure to the space and a feeling of safety and comfort. Another interviewee refers to the structure he made with the help of little carpets in his living room. Details and structure are important in haptic perception and, of course, there must be a haptic stimulus in the first place, otherwise there is no haptic perception. We should not forget that we once learned to give meaning to our environment thanks to the interaction between visual and haptic sense (Piaget & Inhelder, 1956). Burton (1993) subscribes the impor-

tance of haptic (he uses the term tactile) perception in the exploration of the environment and the fact that this sensory source is universal in the animal world.

5. Towards haptic design parameters

Strikingly, the architectural concepts for visual and haptic representation tend to rest on similar categorisations of mental maps. In his book "The image of the city", Kevin Lynch (1960) analysed the city and its representation. Focussing on visual perception he divided the visual mental map into five categories of networks: paths, nodes, landmarks, districts and edges. Judging from the interviews with people who are congenitally blind, these categories even exist in the haptic mental map. For example, they make use of haptic landmarks in their orientation process.

This is an interesting point for architecture: if we want to implement haptic aspects into the design process, we can make use of recognizable architectural concepts. This offers a clue for translating haptic experiences in a useful architectural language.

However, because of the distinct characteristics of the haptic sense, haptic landmarks, edges, paths, nodes, districts will likely differ from the visual categories. For example, a large tower can be an excellent visual landmark in the city, but when walking sightless around the tower, you cannot feel the difference with a 2 storeys high building. This is illustrated by a funny story about blind men who gave two completely opposite answers to the question "What is an elephant?" after touching one. The one who touched only the animal's leg replied "It is a tree", while the one who touched only the animal's body replied "It's a wall" (Kusajima 1970).

In summary, the interpretation of what a landmark, node, path, district or edge may differ from visual experience. Moreover, the hierarchy which exists in the categories is not similar to that in the haptic categories. This interpretation is what we call a haptic design parameter. It is a description of a haptic design structure and its resulting environmentbehaviour, which can be useful to implement in a design process. This haptic structure consists of a description in material, space and scale. The environment-behaviour defines the movement, experience and time. For example, a haptic path can be a route through your house, marked by the texture of the materials and subscribed by the form it makes. The fact that this route has the shape of a wave makes you feel free. It gives the impression of relaxed time. By this means the information in these haptic parameters relates to architectural concepts defined through haptic behaviours.

6. Discussion

This paper attempted to draw up the similarities and differences in perceiving architecture between the haptic and visual sense. It becomes clear that differences are due to the characteristics of the stimuli and the way they are sensed, which lead to a different manner of representation. Notable is the fact that we mark the same mental patterns in the haptic spatial

representation as in the visual mental maps, although they sometimes are supported by a different way of perceiving.

In the future we want to identify haptic design parameters which can be introduced in the design process to realise architecture with more haptic qualities, or to check these qualities in an architectural design. For this purpose we will make use of the patterns which correspond in haptic and visual mental maps.

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Acknowledgements

Biographies

Jasmien Herssens studied architecture at the university college of Ghent, WENK, Sint-Lucas where she graduated in 2001. Afterwards she went to the Catholic University of Louvain to take a MAMA in architectural sciences. She started her internship at Ante-architecten in Saint-Nicolas. After 6 months she finished the internship and started to work at Wim Goes Architectuur in Ghent where she had worked for 3 years. In 2005 she began teaching architectural design at the University College of Hasselt, where she also does research in Design for All. Her current phd-project aims at finding new haptic design parameters with the help of people who are congenitally blind.

Ann Heylighen studied architecture/engineering at the K.U.Leuven (Belgium) and E.T.H. Zürich (Switzerland). She received her MSc in Engineering: Architecture (1996), and her PhD (2000) from the K.U.Leuven. As a post-doc she conducted research at Harvard University, and at the University of California-Berkeley. Since Oct 2006, she is research professor at the Design & Building methodology research group of the K.U.Leuven. Currently her research and teaching focus on fostering more knowledgeable ways of designing, especially in the context of Design for All.

More information on http://www2.asro. kuleuven.ac.be/home/heylighen/

Design and Communication in a Multi-sensory Environment

Peter Howell and Julia Ionides

Dogrose Trust

1. Multi-Sensory Thinking

In his Preface to our book, Another Eyesight, Professor Juhani Pallasmaa wrote:

"In fact it is misleading to think of the senses in isolation from each other. The senses interact and collaborate, and their interplay with each other and the body gives rise to more complex systems of perception, memory and consciousness than any one of the senses singly."

Although Professor Pallasmaa points out what an ocularcentric culture we now have, he believes that, 'after centuries of neglect, the body and the senses are shifting into the centre of today's architectural discourse' and our neglected senses are being rediscovered.

The Dog Rose Trust over many years has been running parallel with Professor Pallasmaa's thinking as we have worked to develop intelligent multi-sensory design and the consideration of all senses. Most design and communication is presently sense-specific, but many people have difficulties with one or more sense and an environment designed to take into account all the senses would include and help everyone.

2. History and Work of the Trust

The Dog Rose Trust has been directly concerned with the communication of the history, form and function of buildings and environments to blind and visually impaired visitors for over 20 years.

The Trust worked on the project Cathedrals through Touch and Hearing and developed in situ binaural recording techniques for one of the most complex forms of building that exists. This technique uses microphones in the position ears on a dummy head and gives a very convincing stereo image. The microphone was always correctly positioned for that particular acoustic space.

Besides the spatial aspects of the sound, there are what we termed the iconic forms of sound: people walking and talking, choirs singing, and even the sound of some particular function. It is possible through listening, to position the sounds but sometimes not possible to identify them unless you are well versed in how a cathedral works, but the same principles apply to other specific places.

After that project finished, Dog Rose then formed itself into a separate charity to research and develop access to all environ-

ments for people with sensory impairments.

A significant part of our work is design and supervising the manufacture and installation of tactile and audio signs. Although the situation is changing slowly and through the Disability Discrimination Act and general humanitarian pressure people are becoming more aware of the need for universal communication and we look at new technologies to fit the situation.

So far very little deep thinking has gone into the design, modern manufacture and contemporary use of tactile forms for everyone, particularly in the open environment and interesting tactile experiences are rare. A recent research project where we produced tactile fish in a range of materials such as glass, stainless steel and ceramic which are very promising.

3. Using All Our Senses

We are less aware of our senses than we should be. We must look at the senses as a whole expression of our life, but we are restricted at a very early age in the use of them. Do these phrases bring back memories? Do not touch! Keep quiet! Do not mention smell! Whether this is socially right or wrong is not the issue, the issue is that the use of our senses is restricted almost before we have been able to use them. In consequence we have little experience in using them in life or in design.

It is important to realise that all our senses are important although some are difficult to design for and some are lacking the necessary research.

If we take one sense, that of smell, and give it some thought we can see how complex the general situation is. Typically smell is not really thought of as a sense but in fact it is and a very important and evocative one. Richard

Mabey in his book 'Fencing Paradise' which relates to the Eden Project wrote:

'For all its overlay of cultural associations, smell is the most direct of our senses. The odour molecules fly straight to the receptor cells at the back of the nose. And there is no way, except in the very short term, we can close scent down, in the way we can sight. To stop smelling we would have to stop breathing. Smells continue to operate below the level of our consciousness'.

Anthropologists have found that many groups of people, unlike us, have cultures that take into account the sense of smell.

We have used smell in our guides where possible and it can be used as wayfinding too with certain food shops for example. Another example is the damp smell of an undercroft in a cathedral.

I hope that we have made the point that it needs sensitivity and skill to design for the senses and we do need to develop postive ways of designing for the senses if we are all to enjoy and extend the richness of our environments.

4. A Basis for Design

We have, because of our aim as a charity, had to come to terms with design work in several areas that are traditionally unusual for the architect and the designer. We, and in fact all of us, need a new basis on which to work. In the view of Juhani Pallasmaa it is difficult to isolate senses, and the compound senses are what we need to deal with. We find this to be true. There are very few real situations that concern only one sense. However, for practical purposes we need to simplify the list so that we can begin to understand. They are simple areas which you will be aware of.

The list, based on Aristotle, is as follows:

VISION

TOUCH

SMELL

HEARING

TASTE

All of these headings have physical and physiological characteristics that can be considered in design but all have unknown regions as we have demonstrated with smell. However, the real problems in the consideration of our senses in design occur when the signals get to the brain where it becomes exceedingly complex but the processing is slowly being researched and understood.

To be more serious about this, we as the human race seem to have lost the full use of our senses. Our developing knowledge of the broader sensory world in, for example, bats and insects is beginning to demonstrate what we have lost. We in the Trust have been fortunate to work with many blind friends who have been teaching us about touch and listening. There is something to be learned from everyone.

For historical reasons our own work has been aimed at those who have problems with perception and cognition. However, we believe that the techniques that we are using could perhaps, with suitable research, be used to form general design techniques. This does not mean that we know all the answers but at least we have had to design using all our senses. This is not simple. Indeed, the more we work the more we see a need for design groups that should contain specialists from every discipline.

In simple terms the actual design process follows the three steps given below.

Analysis

Synthesis

Evaluation

These operations recycle almost continuously during the design process. It is a simple problem solving model. However, the analysis depends on the definition of the problem or event that generates change that is central to the first step and indeed our judgement of the evaluation which is the last step. Without these definitions we cannot effectively use the model.

But we think that in the consideration of the design model there is a vital factor generally missing. The missing factor in simple terms is human need. This need may be real or imaginary but is necessary. Real or imaginary because advertising often dictates and interprets our need in a way that benefits the advertiser rather than us.

Considering the analysis of the problem there is a story about a very well known scientist who stood up at a meeting and said 'tell me the problem and I will solve it', and all the other scientists present fell about laughing! Solving problems is far easier than defining them.

There are consultants who carry out what has become known as 'usability testing' and mostly this is product specific, but the technique is worth consideration.

This technique is very focussed and useful but it does not go far enough. Generally, as designers we are commissioned by a client and paid to do what we are told, but is this our total responsibility? We feel there are certain basic factors that we must for moral reasons include.

Writers like Philip Thiel, as set out in his book 'People, Paths, and Purposes – Notations for a Participatory Envirotecture' begin to look at the way people are in relation to an environment in a cooperative way which is good. Further he refers to 'Envirotecture', design and organisation of the whole environment, which is a concept that we find relevant. If one takes into account all the senses then it begins to add up.

Human needs are complex but one aspect that is always a problem is 'Wayfinding', which is the necessary understanding of the environment. Some of you may be aware of the book by Arthur and Passini entitled 'Wayfinding' and also the work of Reg Golledge. Considering the overall concept of 'Envirotecture' it is almost overwhelming and it is the real problem in front of us. But this is just the beginning!

As part of the understanding of an environment we need to have an image of it in our mind and it does not need to be visual. For a blind person this is difficult and in order to enable them to do this we have made many tactile plans and three dimensional models to help form this image. All the signs that we make are both visual and tactile and so are suitable for everyone.

Materials used vary according to use: often model are outside and not protected so the most satisfactory material is bronze which is expensive but bomb proof and repairable. For interior use wood is adequate, but our experience with the model we made for the Palace of Westminster suggest that is will be damaged however it is protected.

5. Interactive Systems

The Dorcas Project, developed by the Trust in 1994 was our first interactive system. The Dorcas Project involves three senses, sight, touch and sound, using an interactive system. Dorcas was our friend, Eric Sayce's late guide dog who was part of our research team. We received a Millennium Product Award from the British Design Council for this, one of a thousand products that were thought to be outstanding in Britain.

One of the most popular methods of interpretation is a three dimensional model, either of a building, city or outdoor environment. Designing a tactile model, especially a costly bronze one, of a complex historic city such as York is not easy from any point of view.

In order to design the general layout of the model we carried out a telephone survey of blind and partially sighted people in York and asked them what routes they took and what features were important to them; it was essential to make routes clear and the model must be designed in such a way that the fingers could follow them. Special key buildings were modelled in more detail. Of course all these help sighted people as well.

Models are obviously three dimensional and there seems to be little problem with the tactile interpretation of these, but simple raised images or plans, that is 'two and a half D', such as the one above, are not easy to read and many blind people find them difficult to interpret. They need to be carefully designed and we test them out with swell paper, that is, special paper on which the images can be raised by heat. Where possible we provide an audio description of the images. It takes some time for even an experienced touch reader to make out the images.

Signs designed for townscapes have to be robust and to have sufficient strength to deter vandals as well as withstanding the weather and natural hazards. They can be made in many different tactile forms such as raised silk screen printing.

With the advent of the mobile phone we have another way to communicate images and information and we are doing this for Transport for London.

We are scripting and recording descriptions of places and routes and placing these on a relay station and so when you key in a pin number you hear the description or information you need on your mobile phone. The scripts have to be suitable for everyone including those without sight.

Consultation is necessary for all projects. For the replacement panel in London, a group of people met with us to give their advice which was very; consultation also took place at for a model of Downpatrick Museum, Northern Ireland.

Some organisations have developed clear statements on inclusion: "Coventry City Council states that: Our aim is to work with the people of Coventry to explore and celebrate the creativity and cultural heritage of all our communities."

The Trust was involved with the Coventry disability access committee and as part of our work on this committee we produced tactile plans of the sections of the city that were being redeveloped so that the members with visual impairments could take part in the discussions. These plans were well tested and were available from the internet: it is possible to print these, photocopy them and make a raised copy from this suitable to take on site. The same basic forms were used for one of the city centre signs, in the manner of this example.

Although touch is necessary to read tactile images, this sense also applies to a much broader experience and context and we must remember that the whole body is equipped with sensors.

Many conventions such as the surface of a door need to be reconsidered. We have all had the unfortunate experience of feeling a plastic door that has moulded onto it the imitation shaping that would have been originally created by a moulding plane. While we can interpret such a tactile image it does not have relevance any longer since few traditional doors are now used. With the machines that we can now use more exciting tactile shapes can be generated and the door could be something quite different.

A five axis milling machine can make very exciting shapes and so can moulded plastic.

Thus, we suggest that we need to consider all our senses because this is what we are and defines our perceived 'envirotectural' world. Each of our senses has its own characteristics and consequently we must develop for each its own design technique. There is some progress here but not as much as we need.

All environments have the same problems in their appreciation: the sound environment might be as it was in the past - for example in a bazaar in Istanbul or the choir of an English cathedral. Or it might be unacceptable where the pattern of the old roads cannot cope with heavy modern vehicles and have become dangerous as the traffic noise blots out the natural and acoustic environment.

6. Spatial Hearing in the Environment

Much of our appreciation of space is by the interpretation of reflections of sound and this is often produced initially by the person who is trying to appreciate the space. However, if we were trying to destroy somebody's appreciation of a painting we would pour engine oil all over it. This is exactly what we do with the sound environment; vehicles

produce nasty, oily sounds that override everything else. Few environments are completely without background sound, but if there is no background sound then there is an opportunity to carefully introduce sound in a meaningful way. If there is meaningful sound then the situation is more complex but could be very exciting.

But, there are places where the unhappy by product of the internal combustion engine does not penetrate and cover the world with a nasty noisy cloud. An example of this is the Greek island of Hydra which has no motorised vehicles on it and Venice where the sound of bells is enhanced by the absence of the constant hum of cars.

This kind of quiet, changes our way of hearing the sound of an environment. Venice is another example of a place with a quite different kind of sound and here we have made over one thousand recordings of this environment. We find that these 'unclouded' environments allow us to see the environment through our ears. Sometimes, it might not be a romantic ideal environment but it is real. It is important to remember that sound is an important way of communicating in all situations.

Surveys of Rural England show that the sound of traffic slowly but surely is eating up the space between roads and in only one or two counties there are still small areas where there is no noise from vehicles except from the occasional passing tractor or car.

Our town of Ludlow in Shropshire, England, it is a good example of practical sensory urbanism with its feast of historic buildings for the eye, the sound of the rushing river, the smell of the food shops and the taste of the many award winning cafes. There are also sensory clues around the town: the cobbles underfoot for example; tactile clues such as railings and statues; open spaces where the wind blows through more than sheltered corners, smells such a baker or brewery or a

flower stall; bold easily seen landmarks such as large interestingly shaped trees or colourful seats or murals with tactile details. Listen to the sounds such as clocks striking to give orientation, footsteps that might sound different in various places, trees that the wind blows through. We are starting on a survey of Ludlow right now in order to produce a sound picture and a tactile booklet.

In the Avalon Marshes in Somerset we worked on panels, a tactile booklet and a sound guide which included oral history from the older members of the community and contributions from local experts in history, trees, mythology and natural history. Wind-up audio units have been placed around the site.

We need to encourage designers and architects to include sensory icons in their projects – the sound of water is an obvious sound icon to navigate by, different textures underfoot provide tactile clues, especially if there is a difference in the sound of the material used; handrails by steps can have messages built into them in Braille and images – I am sure you can think of many more.

If we believe in multi-sensory design as a component of a new world which will allow communication with everyone then we have to watch information flow concepts very carefully, otherwise we will be firmly locked out from the development of a world that considers control and profit more important than people! In other words a world that follows human greed rather than human need!

We have talked about various techniques and concepts in relation to the creation of communication systems to connect people with the urban environment and to design for people. It is vital in this consideration to realise that there are real people out there. The human race is very varied in experience, language and sensory ability. It is important to realise that they, that is human beings, are

the essential aim of the design programme. Sadly this is often overlooked!

eryone, and in particular people with visual impairments, to access all environments, especially heritage sites and museums.

Biographies

Julia Ionides, M.A., is an art and architectural historian with a special interest in the 18th and 19th centuries. She is the author of Thomas Farnolls Pritchard of Shrewsbury, Architect and Inventor of Cast Iron Bridges (1999) which she published with her husband, Peter Howell, under their own Dog Rose Press. Other books published by the Dog Rose Press are Memories by Luke Ionides, with an Afterward by Julia Ionides and Victorian Days in England by Anna Maria Fay with Additional Material by Julia Ionides and Peter Howell. Also The Old Houses of Shropshire in the 19th Century by Julia L Ionides and Peter G Howell. Work is progressing on a book on the Poor Law in the Ironbridge area and a book on Shropshire Churches based on water colours by Edward Williams.

Peter Howell, Diploma in Architecture, Architect, RIBA, trained as an architect at the Birmingham School of Architecture. He was a Research Fellow at the Building Research Station in England, group leader of a research and development unit at the Greater London Council Architects' Department and Regional Architect with the Department of Environment. After taking early retirement he followed an interest in acoustics. As part of a project by the University of Birmingham he developed the Acoustic Fingerprint Guides which enabled blind visitors to appreciate historic buildings.

The Dog Rose Trust was set up by Peter Howell and Julia Ionides following this work with the University of Birmingham. The charity, which is committed to universal design, carries out research and development work on tactile and audio facilities to enable ev-

Awakening the Blinded Sensation

Min-Feng Hsieh

University of Edinburgh

Abstract

This paper will focus on pursuing the issues of why we should, and how we could, understand our urban environment as a series of sensory scenarios and perceptual encounters in spaces which are to be performed by our perception of and interaction with the sensory context and events happening and flowing around us. Following this argument, an anatomic exploration of the "experienc-escape" of an urban space will be discussed. This exploration is to be executed by utilizing notions of "musical perception" as analytical device in revealing the subtle and dynamic complexity of the sensory fabric we perceive in a lived space. The concept of UPIC system1, devised by Xenakis, and a digital music composition tool will be applied in the process of abstracting and transforming the rhythmic perception of a space into a musical episode as an approach of awakening the blinded sensations in our everyday experience. Since vision became the noblest sensory faculties, we have been unconsciously and conceptually confining ourselves to this sense. Consequently, the world we live in and our understanding of the world have, therefore, been built upon the concept, knowledge, and skills developed through this ocular bias. This overpowering sensation, as Juhani Pallasmaa pointed out, not only directed us towards an ocularcentric culture in which the vision-centered thinking largely dominated the development of the Western culture but also suppressed other senses and restricted "the way architecture was conceived, taught and critiqued"(Pallasmaa 2005).

To emancipate from these conceptual constraints, we need to restore our knowledge of perception and reactivate all the overshadowed sensory aptitudes in reconstructing the missing layers of the way we experience, understand, and create urban reality.

1. Emancipation: Awakening from the Absolute Space

Since vision became the noblest sensory faculties, we have been unconsciously and conceptually confining ourselves to this sense. Consequently, the world we live in and our understanding of the world have, therefore, been built upon the concept, knowledge, and skills developed through this ocular bias. This overpowering sensation, as Juhani Pallasmaa has pointed out, not only directed us towards an 'ocularcentric culture'in which the vision-centered thinking largely dominated the development of the Western culture but also sup-

pressed other senses and restricted "the way architecture was conceived, taught and critiqued"(Pallasmaa 2005).

While celebrating the advances and prosperities that modern architectural and urban culture had brought to us, the negative development of architecture and city has been overlooked. As Pallasmaa states that "the inhumanity of contemporary architecture and cities can be understood as the consequence of the negligence of the body and the senses, and an imbalance in our sensory system" (Pallasmaa 2005). As a consequence, architecture and cities were created through Cartesian conception and abstract thinking which appeal to the disembodied visual appreciation and intellectual eyes and eventually "push us into detachment, isolation and exteriority"(Pallasmaa 2005).

Although the visual-centered thinking and the ocular bias are still overwhelmingly dominating the practice of today's architectural design and urban planning, an awareness of this sensory depression has emerged and called for emancipation from the constraints and restrictions which imposed on our perception and conception. As the anthropologist Ashley Montagu reminds us, "We in the Western world are beginning to discover our neglected senses. This growing awareness represents something of an overdue insurgency against the painful deprivation of sensory experience we have suffered in our technologised world,..." (Pallasmaa 2005). According to Pallasmaa, "this new awareness is forcefully projected by numerous architects around the world today who are attempting to re-sensualized architecture..." (Pallasmaa 2005).

These claims reassure how the biased ocularcentric culture has blinded the other sensory faculties, and how the visual thinking has overshadowed the primordial relationships between our body and the world. These claims also suggest that there is a missing dimension needed to be revealed and restored in the way we understand and construct the world.

To emancipate from these sensory bias and conceptual constraints in the course of reconstructing the missing layers of the way we experience, understand, and create space, this paper will try to adopt a phenomenological approach in reorienting our conception of sense and perception. Through utilizing the notions of perception derived from the theories of musical experience in exploring the spatial experience, an experimental observation and its musical translation will be presented and discussed as an attempt to reveal the blinded sensations we encounter in a lived space.

2. LivedSpace: A Phenomenological Interrogation

According to Monika Langer, "...the classical dichotomy between a fully determinate world in itself and an impartial human observer had been challenged". He also suggested that "space and time lost their absolute standpoint was no longer tenable; the perceiver's situation could no longer be ignored...the perceiver became a participator..."(Langer 1989). In this sense, space should no longer be thought as an absolute and determinant object and void, but something appealing to our bodily sensation by which we form the dynamic, fluctuant, incarnate, and sensuous understanding of it. It may be true to say that this embodied approach of space and its architectural and urban implementation could and should be understood as a series of sensory scenarios and perceptual encounters performed by our perception of and interaction with the sensory context and events around us.

2.1 Space is an Experienced Phenomenal Field

Nevertheless, what do these lived and experienced sensory scenarios and perceptual encounters actually mean? The notion of 'phenomenal field' introduced by Merleau-Ponty's has suggested some helpful insights. According to Langer, Merleau-Ponty's 'phenomenal field' "is not a spectacle spread out before a disembodied mind, but rather an 'ambiguous domain' in which perspectival, incarnate subjects are situated. It is in this domain that perceptual experience can be rediscovered" (Langer1989). Merleau-Ponty went on to argue that "which is perceived... belongs to a context–or 'field'–which shapes it" (Langer 1989). In other words, seeing space as a lived and experienced phenomenal field is to stand for the perspective that space is never static and identical but is continuously altering itself by "our primordial relationship to the world" which is, as phenomenology declares, "the dynamic, internal relation between body-subject and world." (Langer1989)

Therefore, while a space is a phenomenal field to be lived and experienced by way of the relationship established between one's body-subject and the world, the lived and experienced space is in flux; constantly being shaped and reshaped; corresponding to the changes in both the perceiver and the context; and contrasting to the static and identical counterpart we hold as the concept of absolute space.

2.2 Experiencing a Space is Perceptual Exploration

One might ask that what a performance of the perception of the sensory context and the interaction with the happening events could be like? Langer explained that, Merleau-Ponty considered experience 'a process of transcendence' (Langer 1989). In his phenomenological approach of perception, Merleau-Ponty stated that "the perceiver is not a pure thinker but a body-subject". He also claimed that "phenomenology must awaken us to an awarenessof consciousness as incarnate in a body and inhering in a world"(Langer 1989). On this view, experience could be considered a sensuous perceptualization of the interaction between the body and the world. This perceptualization has to be performed by a body-subject and with in a lived world. It is an act of transcending what is perceived by not merely paying attention to 'pre-existing(sensory) data' but also by actively and progressively articulating "what is initially given as positively indeterminate, as a 'still ambiguous meaning'..."(Langer 1989).

This positive indetermination and ambiguity of our perceptual experience is something needing to be explored and rediscovered other than something being literally received as fixed and ready-made.

Expending these views, we may say that rather than only focusing on visually appreciating the formal characteristics and intellectually interpreting the symbolic representation, to experience a lived space is to explore the phenomenal field by enacting the sensorial dialogue between the body-subject and the world, and it requires attentive and transcendental perceptualization.

3. Investigating Spatial Experience via Musical Agency: Rhythmic fabric in Spatial Perception

Along with the phenomenological approach to understanding experience, music is generally recognized as an art form

grasped by experiencing it through listening. The following discussion, the notion of perception proposed in the theories of musical experience will be introduced and extended in meaning for further investigation of spatial perception.

3.1 Musical experience

Leonard Meyer defined music as "the relationship between moving sounds and felt experience"(Reimer and Wright 1992). Thomas Clifton believed "Music is an ordered arrangement of sounds and silences to be experienced with human mind, feelings, senses, and wills" (Clifton 1983). According to Roger Sessions, "Music is intrinsically experienced sound-in-motion"(Reimer and Wright 1992). Despite the different aspects these definitions focus on, they all point towards a consensus that music is an experiential art. No matter what music is considered as an experienced relationship or as ordered sounds and silences, these dynamic relationships and order-in-motion can only be realized through experiencing them with an embodied perceiving mind. Bebbet Reimer & Jeffery E Wright summarized in their 'On the Nature of Musical Experience 'that "A piece of music is a particular episode of sounds organized to create dynamic interrelationships and the internalized experience of their dynamicism (their expressiveness) constitutes musical experience"(Reimer and Wright 1992).

In these inspiring insights of music and musical experience, we can derive three principle attributes about how music is realized perceptually through experience which is also believed to be true in experiencing architecture. Firstly, art requires an act of experiencing by which it can be brought into live; secondly, this act of experiencing has to be performed by a perceiving mind with embodied perception; finally, this embodied perception is always dealing with fluctuant interaction between the art work and the perceiving mind.

Based on the phenomenological stance of experience, rhythm, an agency in musical experience, requiring the principle perceptual attributes acknowledged previously, has been chosen to be applied in the investigation of the perceptual experience of a lived space.

3.2 Rhythmic Perception in Music

James Mursell said, "Rhythm is the primary element that causes the sensuous response of kinesthetic experience..."He continued that "Rhythms are perceived in hierarchical groups which are quite literally like real feelings physically felt in life"(Reimer and Wright 1992). Susanne Langer wrote that "Music is a vital, dynamic, organic form that is characterized by rhythm...Rhythm in music is a virtual time, an image of lived time, the immediate sense of passage, and the semblance of one's subjective time"(Reimer and Wright 1992). She claimed that musical time "has the same logical patterns as our tensions which are brought to life by rhythms" (Reimer and Wright 1992). According to these descriptions about rhythm, we realize that rhythm dominates the kinetic aspect of musical experience and characterizes the dynamicism of music. In listening to music, rhythm reveals itself as a lived and subjective time which can also be found in our everyday experience.

3.3. Rhythmic Fabric in Lived Space

An experimental observation of an urban space has been conducted based on an assumption that rhythm is a lived temporality

involving transcendental perception, and the rhythmic perception of a space can only become perceivable by enacting an attentive exploration with multi-modal senses. By depicting the rhythmic fabric of a lived space, we will be able to disclose the implicit perceptual landscape, orasI called it 'Experiencescape', of a lived space and to reveal the mechanism of the perceptual structuring performed by the perceiver. The concept of UPIC system1, devised by Iannis Xenakis, and a graphical music composition tool will be applied in the process of abstracting and transforming the rhythmic perception of a space into a musical passage as an approach of awakening the implicit peripheral sensations which are experientially blinded by vision in our everyday experience.

Figure 1: A crossroad at Portobello in Edinburgh.

The experiment has been carried out by following the steps as below:

1. Acrossroadhasbeenchosenasthesiteforsamplinganurbanepisodebyvideo recording.

2. A 10 seconds short clip was selected out of this video recording.

3. This video clip has been processed, using Max/MSP+Jitter, a graphical programming environment for music, audio, and multimedia, for filtering the kinetic dispo-

sition of the moving entities which produce the rhythmic fabric of the observed spatial episode.

4. Based on the mapping analysis of the kinetic disposition detected by MaxMSP2, a rhythmic-graph was produced in graphical music composition software HighC33, which was inspired by Xenakis's UPIC work of the mid 80's.

5. By assigning sonic parameters, this rhythmic-graph has been transformed into a musical passage as a translation of the kinetic experience of a spatial episode.
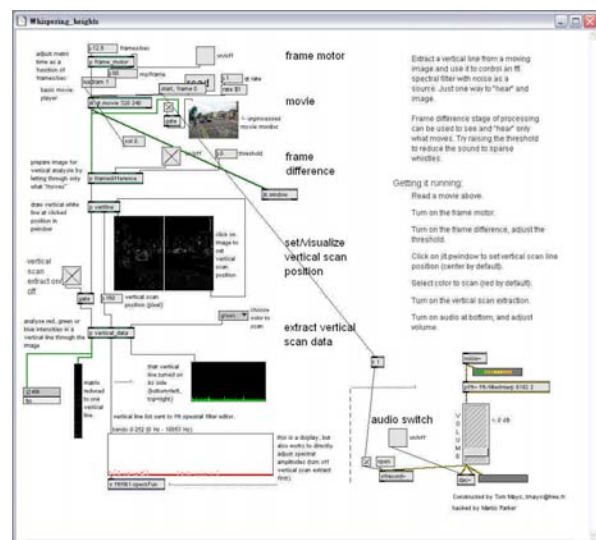

Figure 2: Max/MSP+Jitter Interface

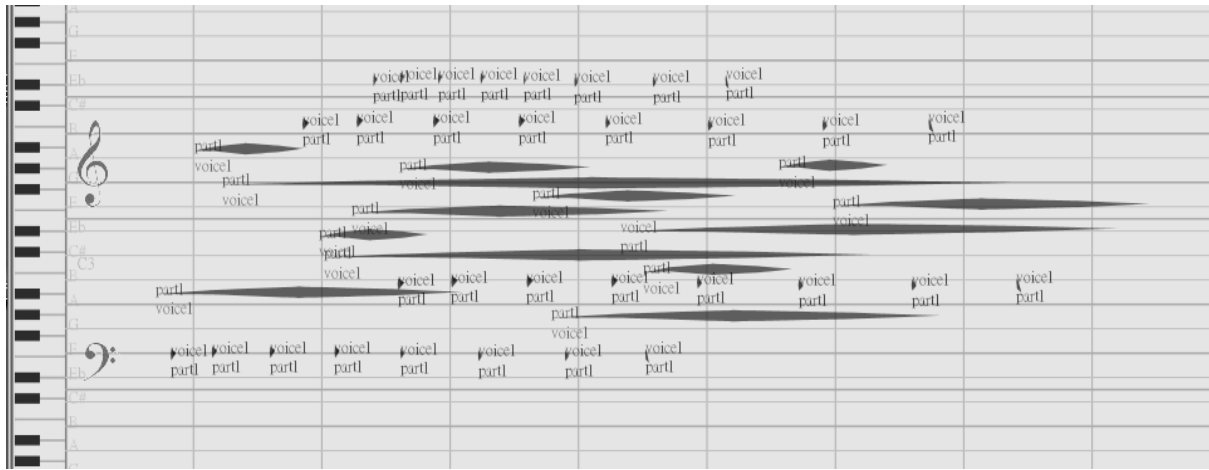Figure 3: Vertical scanning component

Figure 4: A rhythmic-graph created with HighC

Derived from this observation and musical translation, there are several points to be elaborated and extended: The translation of spatial perception via a musical agency is an attempt to divert the perceptual interaction away from visual mode, which is a relatively passive and focus perception, to aural mode, which requires active and peripheral perception. Through this perceptual transmission from one sense to the other, the correlations between all the alternative sensations reshuffle themselves. In this reshuffling process, the visual sensation concedes and the aural sensation takes the center stage.

While listening to this musical passage with a perceiving mind, our attentive perceptualization of the heard sensorial episode can be considered as an embodied performance of experiencing the rhythmic fabric which dynamically evolves itself in a lived space. This perceptualization is an active performance which perceptually structures the sensed by constant shifting and prioritizing the multimodal sensations we engage.

In the way and process of our experiencing, perceiving, and confronting these felt and lived perceptual encounters, the perceiver acts not just as a passive receiver but an active performer and creator. By and through the perceptualization conducted, we recreate the perceived sensorial episodes as an embodied 'Experiencescape' in which we, the perceivers, transform the physical space into a 'phenomenal field' and perform the dynamic perceptual landscape in our inner subjectivity. In short, this 'Experiencescape' emerges in a body-subject and requires active and creative performance of perceptualization with all senses. It also dynamically evolves itself, and is fluctuant in nature.

4. Think and Experience Rhythmically:

Towards a Music-phenomenological approach to Multimodal Perceptualization of Space

Extending from the previous discussion, I would like to conclude this paper by reflecting upon the wonder of how rhythm could be utilized as a musical agent and as a phenomenological conception, and by proposing, at the same time, a music-phenomenological approach of multimodal perceptualization of space.

In the framework of spatial experience, rhythm, in its implicit dimension, only exists in an attempt to grasp the temporal relation as a kinetic pattern among instances happening simultaneously. The kinetic relation can only be perceived through an act of relating

and integrating the felt sensations in an active way. In this sense, while we are attending to the rhythmic context of a given situation, the process is executed by correlating the available multi-modal sensations in real time which utilizes rhythm as a 'perceptual coordinator' in searching for a kinetic relationship in a given spatial episode. Instead of being a kinetic pattern to be grasped, perceived, and experienced, rhythm, in its explicit dimension actively regulates and modulates the related felt sensations by which it shapes, changes, and dominates the perceptual experience when the perceiver's interior rhythmic impulse (biological and psychological rhythm) is over powering its felt exterior counterpart. In other words, rhythm plays its role in our perceptual experience as a 'performative modulator' by which the 'Experiencespace' of a lived space is shaped and reshaped from within.

By conceptualizing and utilizing the dual facets of rhythm inwardly as an implicit perceptual coordinator and outwardly as an explicit performative modulator, this approach not only suggests the necessities and importance of taking both aspects into account in understanding the rhythmic perception, but also points out the potential of using rhythm as an 'experiential device'. It allows us to articulate the richness of our lived spatial experience through organizing the kinetic patterns and relations between the multi-modal sensuous catalyzers which are allocated and to be composed in the process of experiencing and designing our space.

All of which has been brought out give us some confidence in believing that adopting these views in investigating spatial perception will potentially direct us to a new approach to reconsider the way we experience space and create architecture and our urban environment. As Henri Lefebvre declares that "rhythms surrounds us, if only we pay attention, with all our senses..." an order will "reveal themselves through rhythms in the apparent disorder currents..."Through these "accidental or determined encounters"... "The Rhythmanalyst thus knows how to listen to a square, a market, an avenue". He asserts that "what Rhythmanalyst does... is to increase the reader's sensibility to the diverse, multiple rhythms of everyday life" (Lefebvre c2004).

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Biography

With a background of 12 years of training in classical music, I was offered recommended admission with full scholarship by National Board of Special Education to continue my music study at Tunghai University. A year later, I transferred from Music Department to Architecture Department to start a five year architecture course and obtained my BA degree in architecture in 1990. In 1993, I graduated with a Master degree of architecture from the University of California at Berkeley, USA.

After practicing as an architect for more than 10 years and teaching in universities as a full-time lecturer for 6 years, I continued to pursue my interest in thinking and exploring the correlations between architecture and music in my PhD research. By ways of studying the concept, theory, and aptitude of musical perception, my current research aims at developing a conceptual model for investigating the perceptual aspect of the way we experience architecture and the potential application of this model in architectural design and its education.

Aural Wallpaper and Music of the City

Laura Lewis & Harvey Ward Turner

Mugstain Design

1. Introduction

Aural Wallpaper and Music of the City provides an initial investigation into the aural experience of urban space; urban 'place', and the ever-increasing presence of white-noise. How do we harness this white-noise; this wasted aural energy? And how can we utilise it to enhance the sensory experience of place; to heighten the aural without compromising the visual?

Befriending diffraction and appealing to the mind's ear; the knowing ear, we use Russell Square as a case study, endeavouring to find not the solution at this stage but the location of a solution; how do we design with aural integrity in mind?

2. History

Kennington Park, February 2002; it's a cold, grey winter afternoon and a local historian is giving an al fresco talk on the significance of this South London park's social and political past. Approximately 15 willing receptors are huddled against the wind, gathered around the speaker in increasing discomfort. As the group huddle ever closer, the speaker raises his voice ever higher. The problem is the barrage of traffic noise thundering off the A3 and A202 that circumvent the park on two sides.

Lambeth Council was proposing a wholesale regeneration of the Park; an opportunity to consider diverse approaches. First thoughts followed the traditional approach to this invasion of noise, that the solution was to screen it by hard, or soft landscaping or a combination of both. To weave pedestrian pathways from their point of entry to the park, creating distance from the periphery.

In the following weeks, the park was visited on a number of occasions; different days, different times and under differing weather conditions. On each occasion and following a predetermined location grid, sound-level readings were taken. The central thesis at that time was that this noise was hostile with no value, simply an invasion to be repelled. Beyond a public presentation to the committee Friends of Kennington Park, the proposal; following traditional thinking but nevertheless radical, never advanced further.

Moving on two or three years..........

3. The Experience of Others

Encouraging students of the built environment; future architects, spatial and urban designers; to abandon a purely visual exploration of place and to explore, whilst blindfolded, relying on their sense of touch, smell, sound and intuitive perception, reveals that quite alternative views of place and meaning can emerge; what Pallasmaa calls the "associative power of smell, touch and taste as opposed to the sterile retinal image." Suddenly, the visual seems not so exciting, even when place or edifice are described within traditional visual terms as radical and groundbreaking.

Led in this direction, students are capable of generating work of greater originality that reveals an alternative view. Of these alternative senses perhaps our sense of hearing, enigmatically in this time, in which we live, might be simultaneously the most used and the most neglected; the most assaulted and the most under-utilised. For sound animates a picture; as Sullivan and Gill explain, "Sight paints a picture of life, but sound, touch, taste and smell are actually life itself."

But when not focused on the immediacy of specifics; our own voice or the conversations of those with whom we are engaged or noises attendant to our personal activities and industry, a sort of white-noise ensues. With the exception of intrusive big-noise, the further the cause of noise is removed from our own making and immediate location, the more it becomes a sort of wallpaper. Interwoven threads forming a fabric from which, without focused intent, no recognisable design or meaning emerges.

As we hurry through our days this wallpaper might be a constant that through familiarity we hardly take too much notice of, we learn to live with it. Yet on occasion we are reminded of it, it intrudes rudely into our consciousness causing annoyance and irritation, perhaps causing us if the occasion permits, to seek refuge.

But where do we take refuge from traffic or city noise?

4. Case Study: Russell Square

Public squares; elegant, ordered and enclosed by trees; the oases of London, were built for people to take refuge. They were 19th century instruments of escapism; then, from Victorian poverty.

Russell Square, a typical example, was designed by Repton originally in 1805. Neglected, redesigned, with a blatant disregard for the original design, and neglected again, Russell Square was eventually restored, back to the original plan, in 2003. While its success in terms of historical aesthetic accuracy is not at question, its success in terms of functionality for the 21st century is.

Setting the scene…

December 2007 and it is perilously cold in Russell Square. It is winter; all the trees are bare; the Square is barren; the wrought iron railings are exposed. Russell Square is exposed – to the elements as well as the noise. Vegetation, a potential, yet involuntary noise buffer, is minimal; dead or dying. How easily it could be replaced – the Square dressed up at Christmas time! Here, the commercial Christmas tree provides the only real visual interval from the cold, bleak wilderness of the Square.

A family with young children pause to play chicken with the fountain; a man eating lunch on the move sits; weary shoppers rest; cold walkers adjust their itchy woolly socks; couples linger momentarily, breaking their march through the axis of the Square. Crows squawk in unfriendly chorus. Youths on bikes stray from the path. Cigarette
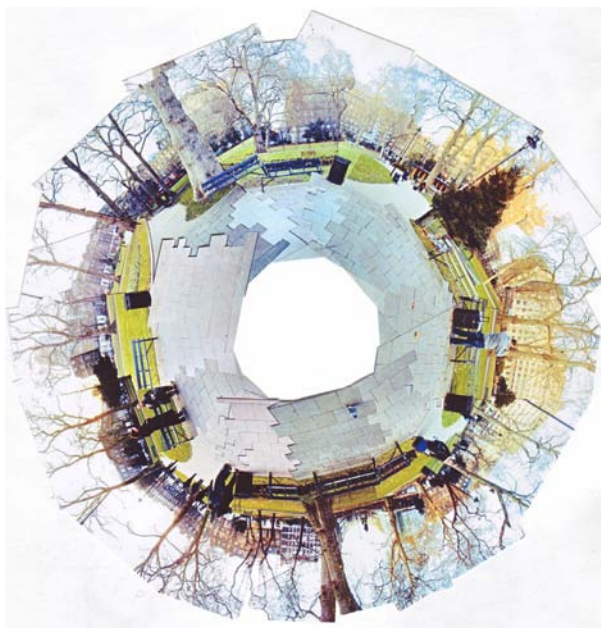
Fig. 1. Photomontage: Russell Square, December 2007

breaks are taken, as well as photos, despite its winter hostility it is still a tourist attraction, but most city pedestrians pause only briefly, failing to find the refuge they're in search of.

This begs the question, are public Squares of less value to us in the winter? Do these urban places have a kind of seasonal effectiveness? And what is the function of a Square; on a summer's day; in the grey of winter? To gain a clearer insight into the aural quality of Russell Square and its potential effect on our experience, decibel level readings were taken at three specific points; the periphery, the interim and the centre of the Square.

Location

dB

Periphery   65

Periphery – acceleration   72 – 75

Periphery – emergency sirens   78 – 80
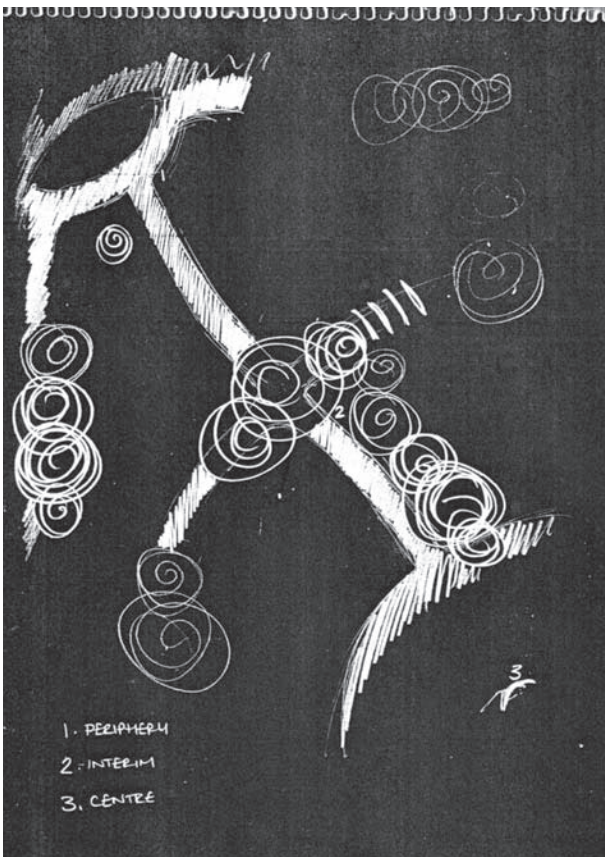
Interim   62

Centre   62

Fig. 2. Illustration: Meter reading locations

Conversation in Russell Square   67

Average conversation   50 – 60

Threshold of outdoor noise level   50 – 55

Pedestrian crossings adorn each side, allowing access to the Square and providing brief respite from the acceleration of vehicles. When traffic pauses to let the pedestrians cross, the hum of the bite reads 65 dB towards the periphery of the square, at the outermost footpath loop. When acceleration resumes, the average reading of traffic at the same point is 72 dB, 75 dB if motorbike traffic. At the top of the hierarchy of noise is the emergency vehicle's siren, heard but not seen, so evidently not even that close, pushing 78, 79, 80 dB. These noises are shrill, unwelcome, intrusive.

At the interim as well as at the centre, the average decibel reading is 62 dB with a dull

130

hum of traffic. The average conversation is conducted at 50-60 dB, but with 62 dB as the volume of aural wallpaper, conversation in Russell Square is pushed to 67 dB to compensate for, or compete with, this wallpaper of white-noise. While 62 dB is enormously lower than the 80 dB of emergency sirens, this is a public space of refuge; an outdoor living room. For comparable readings, the World Health Organisation recognises that an outdoor noise level of 50-55 dB (LAeq) is the threshold of acceptable noise.

Fig. 3. Illustration: Russell Square noise source

5. Types of noise…

The noises within the café however, as loud – louder! – are friendly, welcoming, allowing the comfort blanket of anonymity. Incessant chattering reads an average of 69 dB, with the clattering of cutlery up to 76 dB. But these sounds; these immediate sounds, do not offend. Decisions are made subconsciously, and a taxonomy of noise acceptance is created.

Back in the Square…

It was assumed that the further one got away from the noise source, in this case the traffic in the neighbouring roads, and to the centre of the Square that the noise would lessen. This was barely the case. Yes, there is 3 dB difference between the periphery and the centre, but only 3 dB. It became immediately apparent that the greater the distance from one noise source, the closer the other three became. Russell Square is violated by noise from all sides.
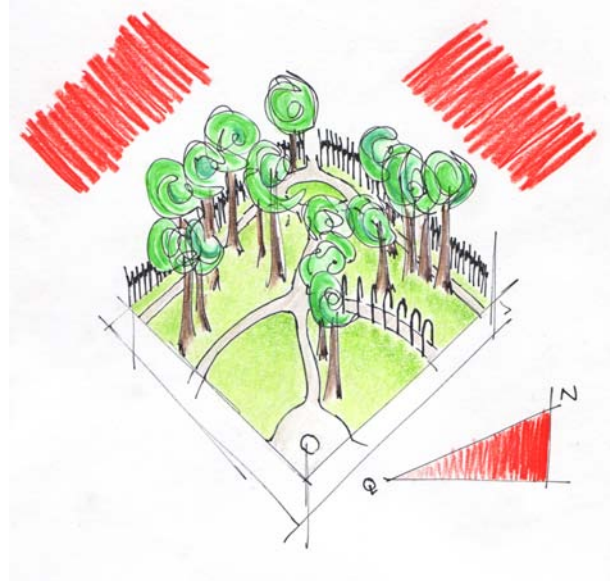
Although our own inherent decibel reading ears recognise that it is a little quieter in the centre, the hostility created by the exposure to the elements registers with our minds that we are no more protected. Additionally, the eye can't see the vehicles; the machines and their noise become nothing more than wallpaper, but the mind's eye creates a picture based not only on the noise, but also on the smell and taste of the car fumes. A visual equivalent is created. Note, the associations are visual, but the original source is not.

Back to the 2003 restoration…

The restoration however was largely, if not solely, geared towards a visual aesthetic. The Square is Grade II registered by English Heritage, and the restoration was designed to replicate the original plan of 1805, rather than to produce a contemporary interpretation. In fact, the official information for Russell Square states that the restoration was designed "to return the garden as far as possible to its appearance in the 1800s."

Form was faithfully restored and it was expected that function should automatically follow suit. But what is the function? Can

pedestrians follow the exact same route as before? Yes. Can they do it with the same feeling of escapism from city life? No.

Can the aim of any restoration project be purely physical at the absolute detriment to the original intended function of urban space? Here, due consideration has been given to the arrangement of plants "according to Regency horticultural principles", but not according to the creation of noise management. Additionally, "ornamental" planting has taken precedence over strategic planting to control traffic noise. Archaeological research has it that the inner horseshoe-shaped path was lined with "a cloister-like tunnel of lime trees" originally. To replicate this as closely as possible, a pergola has been erected in its place; the effects of its complimentary planting are yet to be seen.

Commendable as this regimented approach to planting and the preservation of past methodologies may seem, inconsistencies then arise with the built aspects of the Square. A pick 'n' mix mentality is adopted as a contemporary water feature is introduced; and a reclaimed 1960s café is used, retaining nothing of the visual integrity of the 19th century concept.

If such compromises can be made at leisure, then surely here is an opportunity for the introduction of structural elements to enhance the aural experience of the city stroller. This does not have to be at the expense of symbolic or historic references, but with average decibel readings of 62 dB at the core of the Square sentimentality can hardly be afforded.

The development in transportation over the last 200 years, and all that this brings with it, has been ignored throughout the restoration project. As with many urban spaces; the Coliseum, the Eiffel Tower; Russell Square has become a busy roundabout. Compensation for this progression in transport needs to be designed-in, and formulas for urban design and landscaping created, so as not to mar the visitor experience.

In 2005, in a progress report of the Mayor's Ambient Noise Strategy, it was noted that "recent transformation in the visual quality of new buildings and public spaces has not always been matched by a similar attention to sound quality." The proposed solution? More water features in urban parks and squares; masking intrusive noise with acceptable noise.

The contemporary water feature at Russell Square reads 65 dB when on high. This is little competition for the traffic noise, let alone enough to mask it completely.

So what is an effective solution? How do we provide refuge from intrusive noise and create ambient urban parks that really do achieve Repton's original intention, and become, "a space for the wider community, and… a welcoming escape from a busy city."

6. Conceptual Proposal; being for now more question than answer!

Where is refuge when on the streets? Where is refuge for the pedestrian traveller, the promenader, the city wanderer, the flaneur, the urban voyager, the stroller, drifter, somnambulist? Convention, represented by Kennington Park and Russell Square, is for soft landscaping and the laying of paths that direct the pedestrian away from the machines of noise; creating distance as much as the situation might allow.

Our proposal, our area of exploration and thought, leads us to perhaps think otherwise. Our proposal is for the very opposite. In the lee of the machine, if not quiet, is at least a
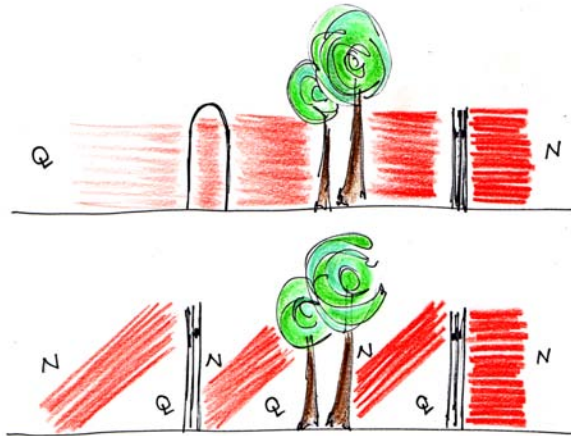
quieter place. In its very shadow is refuge!

Fig. 4. Illustration: Location of quiet zones

If we consider for a moment what happens when sound energy travelling from its source reaches an intervention: Some of that energy is absorbed. Some of it is reflected back. How much is dependent in part on the types of sound waves from which that energy is comprised and in part the physical characteristics of the intervention. The remainder spreads outwards until it reaches an edge; a turn of direction, where it responds by spilling over, not directly inward, or downward, but diffracting at an angle until it hits a ground and continues its outward journey from source to exhaustion.

Might this offer a quieter zone up against the vertical intervention? And might there be correspondingly less quite zones moving away from the intervention?

And if there are zones of variation, might these be given visualisation through materials so that the pedestrian passing through or wishing to remain for a while, might consciously make a choice about the sort of auditory experience they want to engage with. The focus for us is not the science; it's the idea, as designers, as conceptual thinkers who are always willing to explore every possibility.

Let us for the moment conjure in the imagination what we might for ease of clarity call full-height vertical interventions across an open space, especially at the periphery. The boundaries, the physical enclosure (of Russell Square for example) provide the occurrence of horizontal diffraction.

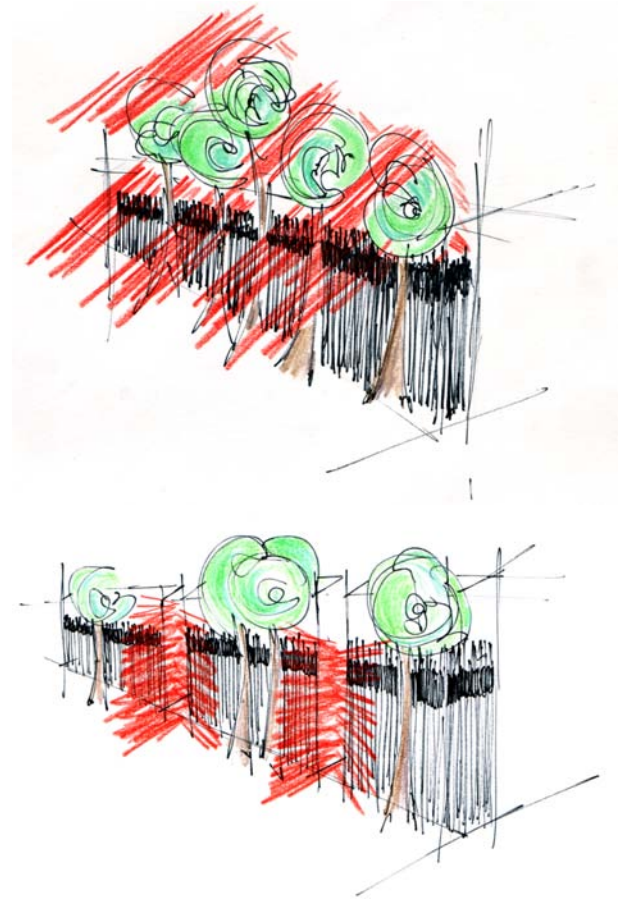Fig. 5. Illustration: Horizontal and Vertical Diffraction

The traditional approach to designing-in visual relief to these perhaps fairly long structures might be to provide breaks through which site-lines sit, and where pedestrians pass through from one place to another. But what if the placing of these breaks were governed not by a visual aesthetic, but an aural one!

This again requires an act of open mind-

ed imagination; to start to think of these breaks and the solid structure as notes and the intervals which separate them in music! We might place these vertical breaks with a view to creating an interaction with the aware passer-by, not visually alone, but aurally too.

7. Visualising the Concept

The 'Square' becomes a vessel for slowing down and containing human activity. The Urban Design Group reminds us that roads are corridors and squares are rooms; and that research reveals pedestrians slow their pace when entering and crossing a square and then speed up again as they exit into a road. The removal of walls succeeds only in widening corridors rather than enlarging rooms.

In attempting to give visualisation in our minds eye to the concept being outlined, we all no doubt conjure an image of a labyrinthine maze of walls as a low-rise extension of the surrounding built environment; a series of interconnecting brick rooms open to the sky. Open views across a space sacrificed for a view across a room. Expansiveness replaced by closed views. Multi-sensory engagement not only connects us to place, but awakens a wish to belong – to dwell; as Heidegger says, "to feel inside a place and to be at home." He continues that human existence is inseparable from a sense of place; the spirit of a place.

In this time of extraordinary material inventiveness, and without neglecting the aural integrity of design, we cannot ignore that any instrument or structural addition to a space has a visual implication.

What if, instead of vertical hard-landscaping consisting of heavy impenetrable and dense materials we were to consider questions of transparency, semi-transparency, coloured, textured and patterned skins that allow for changes in light conditions; that react and respond to movement; that respond to shadow as pedestrians pass by and through a space? Vertical structures as membranes clothed in surfaces that are not static, but ever changeable, surfaces that perhaps contradict the structure beneath?

An entire space may come alive to the activities of both the natural world and human activity. These membranes may be varied so as to include the potential for active engagement; a climbing wall, a bird wall, a basketball wall; plants climb, shadows climb, light falls and fades, colours brighten then pale, surfaces reflect brightly then dull; the physical spaces between skins being constantly divided and reformed by shifting conditions. These sensory interstitial boundaries creating a seamlessness between notions of inside and outside. The idea of what comprises the 'pedestrian' square might shift to encompass pavements on the opposite side of the roads that define the parameters of the square.

In thinking about the Aural Wallpaper of the City, it's characteristics and the mechanisms that might be required to make creative and inventive use of it, we are lead to re-adjust our view of other senses and how in addressing the one, we see possibilities in the others. Through creative use of materials, visualisation can be given to 'zones' of differentiated auditory experience so that the aware pedestrian could negotiate their own auditory experience across a space.

In visualising the 'zoning' of aural spaces, we are led to consider the notion of turbulence. Turbulence takes place immediately in front of an intervention and immediately after diffraction when both vertical and horizontal diffractions collide.

Turbulence always takes place immediately adjacent to an area of greatest calm.

Further research leads us to investigate not only the potential placement of physical boundaries but also other important conditions. Decibel level readings reveal those conditions to have an effect on the outcome of the data. These include weather, volume at source, composition of wave frequency, fluctuations in sound level and distance; additionally so too in regard to the nature of the intervention; its physical characteristics, dimensions, positioning and shape.

However there are some general propositions that can be claimed:

A simple vertical intervention can reduce decibel levels by 2 to 5 points.

Closer to the source is better for a clearer aural definition of difference.

A 'boxed' area appears to hollow-out the aural effect (subtle echo).

Greater distance from source, although reducing the overall decibel levels, immediately before and after intervention, also noticeably reduces the effects caused by screening to a point where no noticeable difference is aurally apparent.

The human auditory apparatus is extraordinarily sensitive and clearly differentiates where machines for recognising sound-level differences fail to respond. This is not just a question of decibel level, but is about qualities of impact and muteness and understanding; the knowing ear processing all it receives through the repository of the brain.

It hears, it recognises, but then so too it understands!

8. Interim Conclusion

There are questions, many questions.

How desensitised is our hearing when it is required to engage and respond without undue focus, perhaps randomly, to such subtle encounters? For attentiveness "unlocks a sphere of reality that no one suspects."

How much control can be applied to such an apparently uncontrollable energy?

And on the question of aural intervals; as pedestrians we move at a moderate pace. How effective and meaningful might these intervals be, for, if the distance between them is too small, the overspill (diffraction) from vertical edges may mitigate any perceptible aural recognition of 'difference' and further, if the interval is too wide, any sense of connection with the interval immediately preceding may be lost.

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Biography

Harvey Ward Turner BA (Hons) MA. Fine Art, Visual Culture, Applied Arts (Architectural Metal Working). Mugstain Design. Lecturer in 3 dimensional design, North West Kent College (Spatial Design & Visual Studies). 1995 Torridon Design. 1982 IDEAS spatial design.

Laura Lewis BA (Hons) MA. Architecture, Art History. Mugstain Design. The University of Greenwich PGCE (NWK College) Architecture & Art History. 2002 Visual Merchandiser: The John David Group plc.

Designing a Notation for the Senses

Dr Raymond Lucas

University of Strathclyde

'If you desire only to possess a graceful accomplishment, to be able to converse in a fluent manner about drawing, or to amuse yourself listlessly in listless hours, I cannot help you: but if you wish to learn drawing that you may be able to set down clearly, and usefully, records of such things as cannot be described in words, either to assist your own memory of them, or to convey distinct ideas of them to people; if you wish to obtain quicker perceptions of the beauty of the natural world, and to preserve something like a true image of beautiful things that pass away, or which you must yourself leave; if, also, you wish to understand the minds of great painters, and to be able to appreciate their work sincerely, seeing it for yourself, and loving it, not merely taking up the thoughts of other people about it; then I can help you, or, which is better, show you how to help yourself.' (Ruskin, J. 1971:25)[1]

Introduction

This paper is drawn from the work of the Multimodal Representation of Urban Space research project for the UK's AHRC and EPSRC under the Designing for the 21st Century stream of projects. The aim of the project is to understand the role of the non-visual senses in our experience of urban spaces. We then intend to design tools to allow for crafting urban environments to respond to these other senses.

Understanding the role of the non-visual senses is difficult, as there is at present no recording medium for the olfactory, gustatory, tactile or even aural environment which is useful to the practice of urban design. In any case, recording has a different aim from drawing and notation. The reason for this rejection of recording technologies can be understood through the following observation by Jorge Luis Borges:

> 'The taste of the apple... lies in the contact of the fruit with the palate, not in the fruit itself; in a similar way... poetry lies in the meeting of poem and reader, not in the lines of symbols printed on the pages of a book. What is essential is the aesthetic act, the thrill, the almost physical emotion that comes with each reading.' Borges, J. L. Foreword to Obra Poética cited in Pallasmaa, J. 1996:6 [2]

When using audio recording equipment, all one records is the sound that the microphone technology can pick up. Even when using equipment that mirrors the positioning of human ears such as binaural microphones, it is clear that many of the effects of

aural perception are not replicated. These differences may include memory or attention functions of perception, meaning that situations such as the 'Cocktail Party' effect where one picks up on your own name being spoken across a noisy party are not fully replicated by recordings.

This all moves us away from a recording technology to a more prosaic solution: drawing and notation (although this still constitutes a technology, of course). This is also important methodologically, as it places our proposal firmly in the realms of creative practice rather than scientific understanding. As such, we are not looking to collate the responses of a wide variety of respondents (although this is possible within the system developed) in order to find a common understanding of a place, but to rely upon the observations of a designer in making informed decisions. There is a crucial role for community engagement of course, but this comes at a different stage of the design process.

1. What is Notation?

Dividing up the various forms of inscriptive practice is a difficult task, defining the difference between sketches, drawings, drafting, notation, diagramming and mapping is an activity fraught with blind alleys, problems of definition and intent. Rather than see each of these as a different subset of inscriptive practice, I have come to understand each as a potential property of any inscription, so that an architectural drawing, for example, can be said to have the interplay of white space and line inherent to drawing, the instructional quality of notation, the scale and ruled quality of drafting, and the pictorial representation of a sketch all within the same set of marks on paper. Many other qualities can be found within this drawing, and others can be said to be factors by virtue of their denial or absence. Each of these qualities is nested within the artifact, coexistent with, and essential to each other [3].

'Because a plan is a drawing, with lines and angles subject to continuous variation, the first guess would be that it is technically a sketch. But on the plan are measurements in words and figures. This suggests that we have here a combination of sketch and script. But I think this again is wrong. In the first place, the drawing is used only to indicate the relataive location of elements and measurements. Careful drawing to scale is merely for convenience and elegance; a rough and distorted version with the same letters and numerals, qualifies as a true copy of the most precisely drafted blueprint, prescribes the constitutive properties as rigorously, and has the same buildings as compliants... Thus although a drawing often counts as a sketch, and a measurement in numerals as a script, the particular selection of drawing and numerals in an architectural plan counts as a digital diagram and as a score.' (Goodman, N. 1976:218-219)[4]

Nelson Goodman's work on Languages of Art (a title that Goodman is somewhat embarrassed by, given the connotations of language as a term) describes in great detail the distinction between scripts, sketches and scores as creative activities. These definitions are particularly useful in terms of activities and practices rather than completed, crystalline objects [5].

In Goodman's system, sketches are working documents, but not in any language system, rather being in an internalised system without semantic or syntactic differentiation (Goodman 1976:192). It is the relationships

of the elements pictorially that are of primary concern in a sketch, and, unlike a score, where some elements of the inscription are redundant, none of the pictorial elements of a sketch can be discarded as irrelevant. Furthermore, the sketch is a work rather than something that determines a later performance.

'In short, the sketch–as a sketch–differs from the score not in functioning as a character in a language of a different kind but in not functioning as a character in a language at all. The notational language of musical scores has no parallel in a language (notational or not) of sketches.' (Goodman 1976:193-194)

Score and notation are conflated by Goodman, who states that the score is a 'character in a notational system' (1976:177). Scores are understood to have performances compliant to them: scores are to be enacted and acted upon, suggesting that a notation is a set of instructions. This performance is understood to be an artwork in its own right, as is the production of the score, as Goodman cites Sir George Thomson's views on experimental science:

'You see no experiment can be repeated exactly. There will always be something different.... What it comes to when you say you repeat an experiment is that you repeat all the features of an experiment which a theory determines are relevant. In other words you repeat the experiment as an example of the theory.' (Sir George Thomson cited in Goodman 1976:177).

This recalls Bergson's statements in The Creative Mind [6] (1992:100) regarding the essential difference between speculative and creative problems, stating that the speculative problem such as a mathematical formula has its solution present as soon as the problem is correctly and properly stated. The creative problem, by contrast, has the time spent on the activity enfolded into the solution: it cannot exist without the creative practice being engaged in, as decisions and modifications are so open and constantly in flux that the temporality is inherent in the result. The speculative problem is absolute and has a right and wrong answer defined as the possible rather than multiple potential solutions, as is found in the creative process. In this context:

'the possible is only the real with the addition of an act of mind which throws its image back into the past, once it has been enacted.' (Bergson 1992:100)

This project seeks to find a notation for the sensory experience of urban environments for these very reasons. Rather than to draw the senses, we aim to produce scores for the senses, scores that allow for creative replication through a common code or rudimentary language. This is to allow for the essential design activity of both understanding and recording phenomenological experiences, and then to establish patterns from these recordings that can be used to form new design solutions.

2. Attention and a Taxonomy for the Senses

The senses are not a given category, of course, but abstractions that have become deeply embedded in our thinking about our bodies and the external world. Making sense of these sensations is not surprising, of course, and many of the systems categorising the sesnse agree on a number of fundamental qualities. The fact that the sensory modalities themselves remain up for grabs is a useful opportunity for our project of a notation for the senses specific to the experience of the urban environment. This specificity makes the task possible in many regards, as it narrows our concern substantially. This is methodologically crucial, allowing a man-

ageable set of sensations to be selected.

The alternative to this is the parable by Jorge Luis Borges, On Exactitude in Science [7] where a ruler sets his cartographers to make an exact map of his territory. The resulting map is so exact in fact that it covers that territory completely. Our task in notation is not only to record information, but also to edit it, allowing only what is relevant and useful.

Taxonomy, listing and categorisation is itself a problematic activity, particularly as it specifies what, in many regards, cannot be specified. It also divides the sensorium, which is experienced as a totality with corroboration and overlapping between senses. This artificiality is not an insurmountable problem, however. The task is, in itself, an artifice that should be recognised and understood rather than rejected or hidden. This artifice allows for a sytematisation of the senses, a functional and operationalising system which facilitates further actions such as design.

One such writer is the essayist and novelist Junichiro Tanizaki in his classic work on Japanese aesthetics, In Praise of Shadows [8]. Tanizaki takes on the notion of the shadow, finding its qualities throughout architectural design, but also in terms of material quality, food, theatre and other arts. This approach unites the sensorium, and borrows concepts across modalities. As an essay on aesthetics, Tanizaki reminds us that the basis of an aesthetic response (where it even exists as such) is a deeply encultured response to phenomena, and open to multiple approaches and variations in the concept of what is desirable or beautiful.

'Every time I am shown to an old, dimly lit, and, I would add, impeccably clean toilet in a Nara or Kyoto temple, I am impressed with the singular virtues of Japanese architecture. The parlor my have its charms, but the Japanese toilet truly is a place of spiritual repose. It always stands apart from the main building, at the end of a corridor, in a grove fragrant with leaves and moss. No words can describe that sensation as one sits in the dim light , basking in the faint glow reflected from the shoji, lost in meditation or gazing out at the garden. The novelist Natsume Soseki counted his morning trips to the toilet a great pleasure, 'a physiological delight' he called it. And surely there could be no better place to savor this pleasure than a Japanese toilet where, surrounded by tranquil walls and finely grained wood, one looks out upon blue skies and green leaves.

As I have said there are certain prerequisites: a degree of dimness, absolute cleanliness, and quiet so complete one can hear the hum of a mosquito. I love to listen from such a toilet to the sound of softly falling rain, especially if it is a toilet of the Kanto region, with its long, narrow windows at floor level; there one can listen with such a sense of intimacy to the raindrops falling from the eaves and the trees, seeping into the earth as they wash over the base of a stone lantern and freshen the moss about the stepping stones. And the toilet is the perfect place to listen to the chirping of insects or the song of the birds, to view the moon, or to enjoy any of those poignant moments that mark the change of the seasons. Here, I suspect, is where haiku poets over the ages have come by a great many of their ideas.' (Tanizaki, J, 2001:9)

This drive to the poetic in describing a total experience of space is a common response, of course, and fulfills certain of the requirements of communicating this experience of being in space as an immersive experience of being in space rather than on a surface. This is a distinction made by Ingold [9] in

his work on perception, and is borne out by architects such as Peter Zumthor [10] in describing the manifesto for his architecture as the creation of atmospheres. In this extended essay, a number of the challenges to our project at large are given form.

As well as these holistic approaches to complete sensoriality, a number of texts draw upon one sense, particularly an alternative to vision, which is given a place of priority, a place that is ripe to be usurped. The most likely candidate to overthrow vision is hearing. Sound is uniquely developed as a field thanks largely to the pioneering work of R Murray Schafer on the Soundscape. Schafer is, of course, only the first, and a field of sound design and appreciation of the urban environment has developed across a variety of disciplines. Rather than give a survey of this work by the likes of Blesser [11], Augoyard [12], DeNora [13] and Bull [14], I shall instead consider taking the aural as a starting point for the other senses.

This may at first seem to be replacing the visual bias with another, but is intended purely as an exercise in thinking and perceiving. Were the other senses to be considered in terms of sound, a series of other qualities are revealed. Foremost amongst these is the impermanent and fleeting nature of sensation. Rather than fixed, total and permanent as vision might suggest, the senses (and I include seeing in this) are contingent to a large number of factors such as season, weather, time of day, social and cultural events, and many more temporal and rhythmical variables.

This focus on the temporal recalls the work of Bergson once again, where everything can be understood through duration. It also suggests a more useful theoretical text by Henri Lefebvre, Rhythmanalysis [15] in which Lefebvre posits rhythm as an alternative concept to that of geometry. As a character, the rhythmanalyst is described thus:

'For him, nothing is invisible. He hears the wind, the rain, storms; but if he considers a stone, a wall, a trunk, he understands their slowness, their interminable rhythm. This object is not inert: time is not set aside for the subject. It is slow only in relation to our time, to our body, the measure of rhythm. An apparently immovable object, the forest, moves in multiple ways: the combined movements of the soil, the earth and the sun.' (Lefebvre 2004:20)

Lefebvre's method encourages a certain aloofness, like an early detached ethnographer. The site of observation is suggested as a balcony, with a good view of the area in question. Our method would critique this part of Lefebvre's rhythmanalysis, preferring to place the notator in the action of the urban environment. I would even suggest that the action of memory in recalling an event soon after its happening would be preferable to the aloof method proposed by Lefebvre here. Despite this problem, there is a great deal to recommend Lefebvre's theory of rhythm. The phenomenological basis of the work is clear, to the point of incorporating one's own bodily rhythms into the process: an awareness of the heart rate and pumping of blood around the body, the action of breathing.

There is a great deal more to say about Lefebvre than we have space for here, the concept of social dressage, for example, informs which gestures are encultured into a city. This can be particularly important as in examples such as subway and metro systems where the spatial configuration is very similar from London to Paris, New York, Moscow or Tokyo. The dressage of the participants in these quotidian events are however, completely different from one city to another.

'Observe the street, from time to time, with some concern for system perhaps.

Apply Yourself. Take your time.

Note down the place: the terrace of a café near the junction of the Rue de Bac and the Boulevard Saint-Germain

the time: seven o'clock in the evening

the date: 15 May 1973

the weather: set fair

Note down what you can see. Anything worthy of note going on. Do you know how to see what's worthy of note? Is there anything that strikes you?

Nothing strikes you. You don't know how to see.

You must write about out it more slowly, almost stupidly. Force yourself to write down what is of no interest, what is most obvious, most common, most colourless.' (Perec, G. 1997:50)

A similar method is explored by the writer Georges Perec in his essay The Street [16]. As an exercise in perception, Perec asks us to 'decipher a bit of the town' (1997:52) and to concentrate on the quotidian and obvious, in order to find deeper observations, you must first, 'force yourself to see more flatly' (1997:51).

With these observational frameworks in

Name	Mode of Attention	Receptive Units	Anatomy of the Organ	Activity of the Organ	Stimuli Available	External Information Obtained
The basic orienting system	General orientation	Mechano-receptors	Vestibular organs	Body equilibrium	Forces of gravity and accelleration	Direction of gravity, being pushed
The auditory system	Listening	Mechano-receptors	Cochlear organs with middle ear and auricle	Orienting to sounds	Vibration in the air	Nature and location of vibratory events
The haptic system	Touching	Mechano-receptors and possibly thermo-receptors	Skin (including attachments and openings), joints (including ligaments), muscles (including tendons)	Exploring of many kinds	Deformation of tissues, configuration of joints, stretching of muscle fibres	Contact with the earth, mechanical encounters, object shapes, material states, solidity or viscosity
The taste-smell system	Smelling	Chemo-receptors	Nasal cavity (nose)	Sniffing	Composition of the medium	Nature of volatile sources
	Tasting	Chemo- and mechano-receptors	Oral cavity (mouth)	Savouring	Composition of ingested objects	Nutritive and biochemical values
The visual system	Looking	Photo-receptors	Ocular mechanism (eyes with intrinsic and extrinsic muscles, as related to the vestibular organs, the head, and the whole body)	Accommodation, pupilary adjustment, fixation, convergence exploration	The variables of structures in ambient light	Everything that can be specified by the variables of optical structre (information about objects, animals, motions, events, and places)

Table 1: Gibson's perceptual systems chart [17].

mind, I return to the various taxonomies of the senses, and in particular the work of James Gibson in The Senses Considered as Perceptual Systems. This work is widely cited in Malnar & Vodvarka's comprehensive work on Sensory Design and offers a model of the senses which considers them as active modes of attention. This rejects many of the assumptions of psychological studies of the senses, where experiments are conducted on passive subjects robbed of any context for the sensations experienced. This lack of context is essential for the scientific method to operate, but it misses several of the fundamental features of perception: that it is attentive and active, and that it is always within a specific context. We see in places and spaces, we perceive in the environment and are always a part of it.

These attentive systems of perception are arranged slightly different to the traditional notion of five senses we have in the West: Sight, Hearing, Taste, Smell and Touch. Instead, Gibson gives us the Basic Orienting System, Auditory System, Haptic System, Taste-Smell System and the Visual System. Each is given a mode of attention, receptive units, anatomical details of the organ, the activity of the organ, the stimuli available and an account of what external information is obtained.

3. Laban Notation, Derivations from Effort & Shape Matrices

One system of notation of particular interest is Laban movement notation [18]. This notation is most commonly used in the notation of modern dance and ballet, but remains a contentious way of understanding movement amongst professional choreographers, dancers and notators. This is due to the notation's strength in imposing an un-

derstanding and theory of the movement of the human body onto how it is represented. This is no different to the way in which any form of inscriptive practice imprints some form of accepted understanding onto what it represents: no form of inscription is neutral.

One feature of Laban notation of particular interest is the effort and shape matrix. This is one small part of Laban[19] which is used to depict qualities of a movement, where the main notation scripts the direction and specific parts of the body in motion, the effort matrix tells the dancer more detail on a given instruction.

The matrix notation is particularly elegant and efficient as a means for giving this information, depicting a series of axes of opposed terms, the notator draws only the elements of the matrix required for that instruction.

The first attempt I made to design a notation for the senses drew heavily upon this system, establishing a matrix for each sense and relating these phenomena to a plan drawing. The spatial extent of each sensation was depicted through a variation of Kevin Lynch's famous Imageability [20] symbols which describe urban spaces in terms of paths, nodes, landmarks, districs and edges (Lynch 1990:18)

This notation was tested with our advisory board, and met with mixed reactions. Valuable lessons were learned through this process of design and testing, however, that lead to the development of the subsequent system. The matrix notation does, however, remain an option for development as it has the benefit of being graphic in nature, with a finite range of variables that can be learned through use. The layering and relation to other forms of description such as Lynch remains at the heart of the system as a way for describing the essential qualities of urban space. Other tools such as Section drawings depicting volumes such as those found

in Allan Jacobs [21], the serial drawing of Gordon Cullen [22], the play of public and private space or even the Situationist Drift of Guy Debord [23].

4. Radar Notations, Routes and Sites

The notation system itself is only one part of the process, of course. Ordering the perception itself is also necessary, in order for the best to be gained out of the diagram. The following is being tested with the collaboration of groups of senior undergraduate and Masters students in a variety of disciplines from architecture, urban design, product design, anthropology and sound design.

These workshops focus on the radar diagram method described above, but in a structured way. The notations were conducted in two main ways. First of these is to record a route by taking a reading at either each traffic intersection or at specific timed intervals. The second notations are static recordings of a fixed places such as a square. Several sites around this place are recorded and plotted on a plan.

The notation progresses in the following order:

Location: plot the site being recorded, whether a part of a route or a static position. Details such as time, date and weather may also be included.

Priority: draw a line on the chart corresponding to the priority given to that perceptual system in this context.

Corroboration: indicate how the senses overlap.

Temporality: indicate the repetition, singularity, etc. of the observations.

VISUAL	AURAL	TACTILE	KINETIC	THERMAL	CHEMICAL
Dark	High Pitch	Static	Strong	Hot	Weak
Bright	Low Pitch	Mobile	Light	Cold	Intense
Saturated	Quiet	Rough	Free	Dry	Stagnant
Neutral	Loud	Smooth	Bound	Wet	Fresh
Perspectival	Clear	Light	Indirect	Natural	Musky
Flat	Reverberant	Heavy	Direct	Artificial	Putrid
Intimate	Vocal	Porous	Level	Ambient	Floral
Vast	Non-Vocal	Resistant	Graded	Source	Fruit
Solid	Natural	Hard	Sustained	Radiant	Spice
Void	Artificial	Soft	Quick	Convective	Resin
Detailed	Attack	Warm	Crowded	Constant	Meaty
Blank	Decay	Cold	Empty	Responsive	Oily

Table 2: Descriptor terms.

Descriptor: use a word from the list given to characterise each of the six perceptual systems: visual, aural, olfactory/gustatory, tactile, thermal, kinaesthetic.

By locating the site on a traditional drawing such as a plan or section, the notational scheme can be understood as a layer or transparency added to traditional modes of depicting urban spaces. This is an important step, as it identifies the process as part of the traditional toolkit, rather than completely alien to it. Additional information such as time, date and weather conditions are necessary for the future usefulness of the record, as the sensory data vary widely depending upon the time of day or the season.

The next step is to place a descriptor word on each of the six perceptual systems employed by the notation. These are chosen from a restricted and carefully selected list of words for each sense. The terms are chosen for their clarity and lack of metaphorical content. This precision of language finds its roots in Laban notation's Effort and Shape matrices, where a very tight use of language helps to describe quite complex movements. Similarly, a lesser known system of movement notation, Saunders Notation (Hutchinson-Guest 1989:xx). Additionally, names of things causing particular sensations such as traffic or wind may be added if the notator feels it necessary.

The third step in the notation is the main graphic step: priority. This step is subjective by its very nature, but it offers a strong
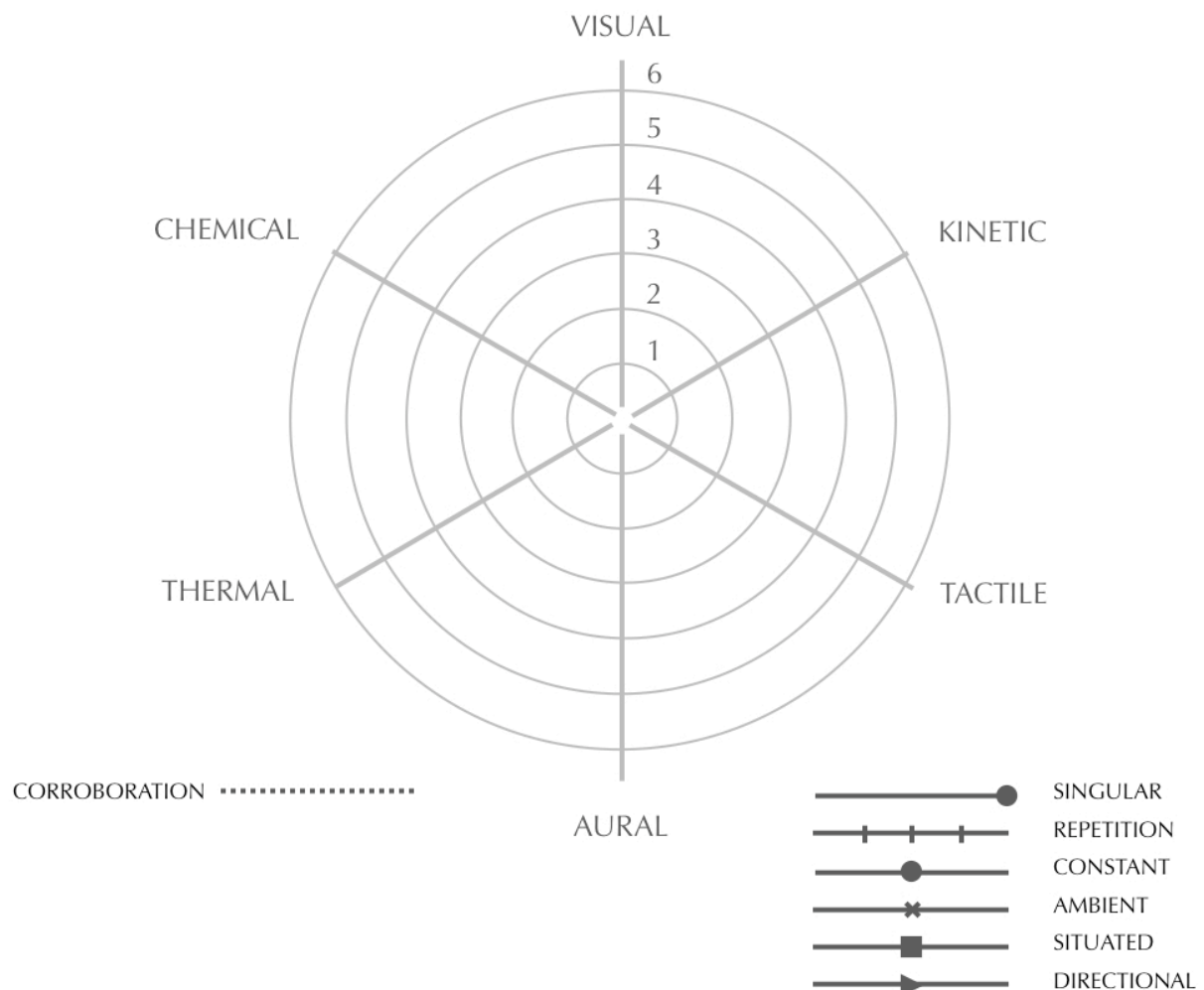

Figure 1: Key to Sensory Notation

picture of each environment as well as suggesting immediate ways in which the environment may be changed. This step consists of deciding which senses are strongest, most affective and prominent. The senses are then ranked in order of priority. This is drawn in an order of priority rather than introducing artificial constructs such as the percentage of the sensorium devoted to that sense. The Radar chart is drawn with numbers from 1 to 6, outside to inside. The highest priority is placed at one, the least at six. There is flexibility within this, of course, allowing some senses to be placed at the same rank as each other, or the gulf between two perceptual systems to be depicted as larger or lesser as appropriate.

The next, optional step, is to depict the corroboration between the senses by using curved, dotted lines between the different senses. These lines can contain a variety of data about this relationship, but the main thrust is to efficiently describe where these overlaps occur without overloading the diagram.

The final step recognises the temporality of the senses, and adds indications to the main Radar diagram lines of the quality of time inherent to that sense. This can be persistent, repetitive, singular, rhythmic or intermittent. This notation is not necessarily timed using chronological time, but rather recognises the phenomenological basis of the notation. The conceptualisation of time in this regard is experienced time rather than the clock time of the physical sciences.

The diagrams are collected and analysed in a number of different ways. The route notations can be layered, showing the progress along a path through transparency. This allows the route to be understood in terms of how the senses change from one position along the path to another. This can aid in identifying the prominent sensory stimuli on each route, where there are deficits, and

what makes this trail unique in character. Similarly, the static locations can be reviewed and understood, particularly where a body of people have taken a record of the same place under similar conditions.

These observations are collated, so that patterns may emerge. These patterns are understood in the same way as Christopher Alexander's Pattern Language with a different slant: the sensory experience of place. Of course, Alexander's work has been deployed differently by a variety of academic disciplines over the years. One example is the adoption of his work by computing science as a model for how creativity and design works. This is a false picture, however, and is attractive to that discipline precisely because it is easily understood through computational models. Other uses have included rather reactionary movements in urbanism which use Alexander's patterns as a justification for pursuing a purely historicist agenda, rejecting everything the 20th Century and Modernism had to offer. This is not to devalue Alexander's approach of course, as it certainly has its place and is of intense interest. A new pattern book is being assembled using the Sensory Notation method, not as absolute models, but as suggestions and examples to be played with and designed with freely, but in an informed way. Patterns will include public squares, fountains, gardens, thoroughfares, boulevards, arcades, steps, subway entrances, and many more.

These patterns can be used as given or adapted freely as required by the designer. The patterns give help to designers looking to create urban spaces, offering short-cuts and opportunities for designing richer multimodal environments. The notation can be used to record existing sites and diagnose problems with them, or offer rich descriptions of desirable places for the construction of completely new sites. The toolkit shall be distributed in printed form and consist

of the Sensory Notation system and Sensory Pattern Book [24] as well as detailed essays on the importance of the senses in urban design.

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Biography

Ray Lucas is Postdoctoral Research Fellow on the AHRC/EPSRC Designing for the 21st Century project 'Multimodal Representations of Urban Space'. This research is looking at developing new notational systems for urban design that respond to our whole experience of space. This includes notations for the different senses, movement through space, the feel of space and more. The project intends to test these notations and to publish a design guide to encourage multimodality in urban design.

Lucas recently worked as Postdoctoral Fellow at the University of Edinburgh on a collaboration between Music and Architecture entitled 'Inflecting Space'. The project examined the capacity and extent of the human voice to transform and define public spaces.

Lucas has a PhD research in Social Anthropology at the University of Aberdeen, and examined the role of notation and inscriptive practices such as drawing as cognitive processes. Prior to this, Lucas gained an MPhil by research at the Department of Architecture, University of Strathclyde in Filmic Architecture, examining the relationship between cinematic montage and architecture.

From January 2009, Lucas will be working on "Cultures of Legibility', a research project based at the Departments of Architecture and Geography, University of Edinburgh. The project will examine migration and representation in Jakarta, Indonesia.

The Play's the Thing

Geoff Matthews

Lincoln School of Architecture

1. Introduction

For very understandable reasons phenomenological approaches predominate in the field of sensory urbanism. This paper does not seek to add to that particular discourse. Rather it takes Rorty's postmodernized Pragmatism as its starting point and develops a position on the role of multi-modal design representation in the design process as a means of admitting many voices and managing multidisciplinary collaboration.

This paper will interrogate some of the concepts underpinning the project to help define the scope of interest in multi-modal representations. It will then explore a range of techniques and approaches developed by artists and designers during the past fifty years or so and comment on how they might inform the question of multi-modal representation. In conclusion I will argue that we should develop a heterogeneous tool kit that adopts, adapts and re-invents existing methods because this will better serve our purposes during the exploratory phase(s) of any design project that deals with complexity.

2. Conceptual context

The major hypothesis of the Sensory Urbanism project uses the term 'appeal' to index a rich conception of aesthetic responses. In the classical sense of 'aesthetic' the visual is not privileged; stimulation of any of the senses can elicit aesthetic responses. The aesthetic calls to the intellect and not vice versa. 'Appeal' then appears an appropriate term to embrace the breadth of possibilities entailed in reflection on aesthetic responses.

However, use of the term 'convenience' suggests a reductive ambition for the qualities of urban spaces; this is inadequate. Social difference gives meaning to much of existence. To admit the richness of everyday practices urban space needs ambiguous, reflexive, liberatory and communicative qualities, which do not entail convergence of means; they include the inconvenient. Not everything can have a clear meaning because people have very different perceptions. The ambiguous embraces what it means to be confused, annoyed, offended, and even assaulted by the affordances of urban places. The more regulated the public realm the more likely it is that the excluded increase in variety if not visibility (Sennett, 1990, 150-68). In a perverse way the liminal is of greatest interest. To those excluded,

the space between what we attend to invites colonization, to those included it invites transgression (Woods, 1992). The reflexive nature of the urban environment reminds us that designers' intentions are eventually countered by inhabitants' behaviour, that place making can be too prescriptive; the loose programming of space is not a crime unless it remains non-participative. In post-industrial, post-humanist discourse the value of self-enhancement has been added to those of free-expression and self realization (Gray, Mentor & Figuerda-Sarriera, 1995, 3). The liberatory motive associated with radical humanism (Burrell & Morgan, 1979, 32-3) suggests that the best way to counter the human propensity for habitat destruction is to restore responsibility to the inhabitant by making the experience of consequences immediate and comprehensible. In this way behaviour adapts to shape a more sustainable environment and the environment adapts to shape more sustainable behaviour. In this context the communicative refers to the overarching concepts of fluidity and renewable purposefulness. The dynamic responsive condition of an inhabited environment depends upon rapid, simple, largely involuntary, networks of mutually regulating forces that serve to sustain the environment in dynamic equilibrium. In the confusion of urban existence pragmatics comes into play.

An uncritical notion of 'convenience' signals anaesthetic legitimacy, a license for the senseless, insensible and inhumane. If redescription is required the term 'liveable' might be considered, although I will not digress by doing so here. What I wish to pursue is the representation of multi-sensory possibilities for urban space in the design process, something well within 'the expanded field of drawing' referred to by Elias and Vasconcelos (2008). But first I will question the assumption that by adopting or adapting an appropriate method of representation we bring anything under 'control'.

3. Propositions

Sometimes communication is about striving for control, for stable meaning; sometimes it is about deferring control indefinitely and allowing alternative meanings to emerge. I offer two propositions.

Adequate representation allows control to be deferred indefinitely during the exploratory, 'divergent' phases of a design process. Bringing things under control is essentially a 'convergent' task of specification and is much less of a problem. Indeed, there will be no worthwhile specification problem unless creative exploration successfully resists reduction of the design to spatial and visual terms. Specification easily succumbs to good project management, i e in organising conventional means of documentation and communication.

By looking at the variety of 'drawing' techniques commonly used in the creative disciplines, we can identify representational tools that can be adopted, adapted and reinvented to meet the needs of urban designers.

4. Methodology

Collaborative exploratory designing involves a particularly dynamic process of sense making. In pragmatic style, therefore, design can be seen as a genre of 'humanity's ongoing conversation about what to do with itself' (Rorty, 2007, ix). Design is not a question of truth but of quality. Design is best at playing out the consequences of the 'what if?' type of question. Designers concern themselves with exploring the realizable possibilities for change and communicating their qualities and realisability. In this limited sense design is prescriptive and,

because it deals with the ambiguity and flu- idity of things in the process of becoming, representation works with metaphors rather than absolutes. The most important facility offered by the iconic image is access to the rich array of associations that authors and audiences have in their minds. It can 'point towards original resemblances, whether of quality, structure or locality, of situation, or, finally, of feeling' (Ricoeur, 2003, 224) but to arrive at some shared meaning everything must be played out in conversation. This sense-making activity is interminable, how- ever, individuals and groups do not have an unlimited capacity to cope with representa- tions. In practical situations complexity is contingently attenuated to some degree or another; not only do we work with meta- phor, these naturally agglomerate into work- ing myths (Carter & Jackson, 1984, 523 & 528).

Ashwin argues for a semiotics of design drawing starting with the observation that 'iconicity does not provide a comprehen- sive account of drawing in relation to de- sign' (1989, 201). Design drawing tends to elaborate a hybrid sign system by combining elements of indexical, iconic and symbolic quality. In design specification drawing tends to be conventional and monosemic in intention. But design exploration is more broadly communicative and associated drawings are more or less polysemic. Ash- win discusses drawing in terms of six func- tions of communication; it may have a refer- ential, emotive, conative, poetic, phatic, or metalinguistic function or function in several of these ways. Presentation (not representa- tion) implies unambiguous and persuasive communication, a compromise between referential and emotive functions combined with the conative. The multi-functionality of design drawing, its dynamic polysemic qualities, and its hybridity as a sign system, make a semiotics of drawing a complex but potentially subtle means of analysis. The primary interest I wish to explore here is how the design process functions through drawing and a range of necessary supple- ments in writing, speech and gesture.

5. Representational tools:

towards a heterogeneous design tool kit

I have selected work by artists, designers, choreographers and composers (but not ar- chitects) hopefully to attend to the less obvi- ous. The trajectory of many contemporary artist's technique is rather unpredictable. Very often the 'art' is not in the mastery of particular media but in the invention, filter- ing and transformation of new means of ex- pression.

The coincidence of synaesthetic compe- tences and programmatic interests produces many interesting results. For example, Ralph Steadman's expressive model of the set de- sign for 'Crashed Car' utilizes unexpected model-making materials to signal a layer of sensory meaning that would be missing in a more orthodox presentational scale model. Its emotive functionality elicits haptic sen- sations just from looking; one can almost smell the accident (Goodwin, 1989, 187).

Another innovative technique achieves a more extensive sensory simultaneity. It involves layering disparate conventional elements to produce a hybrid document. In temporal terms Tom Phillips libretto for 'Othello' does this to intensely poetic effect by combining musical score, script, stage direction and visualization (Hall & Burnett, 1999, 8), yet it also succeeds in combin- ing referential and conative functions, and in relation to the original musical score, a metalinguistic one. In spatial terms Lev Nusberg's 'Plan for Kinetic Environment for the Seaside Area of Odessa' (1970) presents an event landscape persuasively by insert- ing indications of movement, sound, texture

and smell into a conventional plan drawing (Henri, 1974, 131-2).

Sometimes the artist will subvert the conventions of a drawing system to better communicate an idea. For example, Juan Downey's 'With Energy Beyond These Walls' (1971) connects the elements of an installation like components in an electronic circuit. Although referential in function and closer to specification than presentation, the drawing is more openly polysemic than one might expect; it dispenses with coherent perspective space in favour of a looser diagrammatic connectivity and combines visual representation of physical things, invisible fields and sensory elements with descriptive annotation (ibid, 73-4).

Most theatre designers use model making to facilitating creative dialogue. The empty stage is recreated to scale and its interior used to develop ideas in full colour and naturalistic detail. This iterative process involves director, writer, actors, lighting technicians and others directly in discussing and manipulating physical content. Andrew Storer's design for the ballet Romeo & Juliet (1990) shows the result of collaboratively refining the orchestration of space, movement, sound and light (Burnette & Hall, 1994, 70). In the earliest stage of the process emotive function may predominate as the designer makes broad interpretative gestures with expressive materials but this quickly turns over to a referential-conative function as ideas of structure, space, movement, light, sound, period feel, etc. begin to emerge. Richard Bidgland's sets for Resident Evil were designed as composite structures and built in the hanger-like space of a film studio stage (Anderson (dir), 2002). Simpler white-card models were used to focus the team's creative attention on manipulating form, structure and space. Arguably their key function is metalinguistic because they supplement and clarify ideas initially visualized in and annotated on storyboards.

Some theatre designers make extensive use of storyboards. Typically a sequence of sketches, that represent the whole stage as seen from the best seat in the house, is annotated with information about sound, smell, movement, special effects and lighting. Bob Crowley finds that he gets a more collaborative response from those involved creatively in a production using storyboards rather than a model. The sketch storyboard of the 'The Plantagenets' (1988) shows how rapid and dynamic the process can be (Goodwin, 1989, 55). Michael Spencer's storyboard for 'A Midsummer Night's Dream' (1993) emphasises action and atmosphere (Burnette & Hall, 1994, 60). Multifunctionality is apparent in these examples as conative function combines alternately with the referential and the emotive.

Model and storyboard facilitate development of the overall stage design. Other techniques are used to focus on detail. Character development, for example, relates closely to costume, props and set decoration. For 'Street of Crocodiles' (1993) Rae Smith used close observation of rehearsals to fix characters and generate a sense of setting (ibid, 86). The annotated sketches are emotive in the sense that they record the designer's aesthetic and intellectual responses; they are phatic in that they signal to the company that something designerly is happening. They are also metalinguistic insofar as they supplement and clarify costume designs and model details. The same interpretation works for the 'character bible' Anna Asp builds for each principal cast member in a movie production. Each character in 'The House of Spirits' (1993), for example, is captured in a montage of textures, colours, patterns, fragrances, flavours, photographic images, found objects, and natural and synthetic materials (Ettedgui, 1999, 116-17). The construction of these very specific identities compares with the outcomes of psychographic studies. For example, the design of the Bluewater retail complex was

informed by an extensive programme of focus groups designed to reveal the richness of consumers' lifestyles (Baker, 2000, 19-20). This created, in effect, a cast of principal characters with which the developers, retailers and marketers could orchestrate the Bluewater experience.

In Alison Chitty's drawings for 'Turandot' (1997) annotation refers to the embodiment of quite visceral sensory experience in the design of physical elements (Burnette & Hall, 1999, 90). Welfare State's community-based participatory methods similarly realise the potential of place through the embodiment of site-specific ideas. For example, in 'Fragile Gift' the location, a traditional indoor market hall, informs a critical reflection on the commercialisation of Christmas shopping (Burnette & Hall, 1994, 117).

Conventional systems used in choreographing martial arts and dance can be by turns openly polysemic and monosemic. They are very flexible when developing ideas for movement and very precise when recording action as it happens and analysing movement captured on video. The Carter Ferguson system is a simple accurate way of planning swordplay and hand-to-hand combat. It is referential and conative. Four-column tabulation, a list of letter codes and conventional annotation is used to describe two combatants' movement and contact (website: Fightdirector).

Benesh Movement Notation and Labannotation are the two common notational systems for dance. The Benesh system uses a horizontal five-line stave for each performer. It represents the vertical division of the body into zones associated with the feet, knees, hips, arms and head, and is favoured for choreographing classical ballet. Symbols representing specific body and limb movements are supplemented with a range of expression marks (website: Benesh). Anthropologists, clinicians and physiotherapists

use the system for recording and analysing movement because very detailed aspects of posture, dynamics and interaction can be described. Labannotation embodies similar principles. The key differences are that it uses a vertical three-line stave and a palette of geometric symbols (website: Labannotation). Both systems are available as software packages.

In the second half of the 20th century some composers were particularly inventive in dispensing with the regulated soundscapes of the symphony orchestra and chamber ensembles. Stockhausen's 'Kontakte' for electronic sounds (1959), for example, explores spatial distribution and (real and apparent) movement of sound sources (Smith Brindle, 1975, 95). Improvisation and chance operations were important in some avant-garde work and this gave rise to innovative notation. Morton Feldman's 'Intersection 1' (1951) and Gyorgy Ligeti's 'Volumina' (1961-2) are examples of simplified notation designed to create scope for interpretation within a precise framework for the ensemble (ibid. 67 &71). Some scores resemble abstract diagrams or maps and are more indeterminate still. J Levine's 'Parentheses', for example, harks back Renaissance part songs in layout and evokes the graphics of electronic circuitry and set theory: associations that are quite deliberate on the composers part (ibid. 90). Guisepe Englert's 'Aria for Tympani' reads like the map of an eventful journey across the instrument's membrane, which is precisely the intention (ibid. 83). There is a clear connection here with Stansfield's propositions for 'physical scores for engagement' (2008).

The concept of the 'sound map' is current in technical applications and Web 2.0 culture. Colour-coded mapping of the noise environment is a service available from organizations such as Cambridge Environmental Research Consultants (website: Noisemap). The Danish Wind Industry Association pro-

vides an on-line design tool which calculates noise levels in and around wind turbine arrays (website: Windturbine). There are many participatory web-based projects based on the idea of hyperlinking location-specific recordings to Google Earth maps (website: Soundseeker). One can, for example, find time-dated recordings of animals and ambient sounds (website: Wildsanctuary), and linguistic surveys of dialects and regional accents (website: Soundsfamiliar).

Finally I want to look at work by exhibition designers' because they often produce multi-sensory, multi-media, communicative environments. Neal Potter's first drawing for the Agit Prop Train exhibit at the Museum of the Moving Image (1988) is annotated in the top-right corner: 'Evocative sounds of the train running. Smells of the laboratory. Train on rockers to simulate movement' (Matthews, 2007, 29). The reference here to aural, olfactory and haptic elements broadens the referential capacity of the drawing and limits its polysemic qualities. The drawing represents at least three stages in a collaborative process. Initial discussion between designer, project director and historical consultant inspired the exterior perspective. The interior sketch, drawn on a separate piece of paper, was collaged onto the sheet much later; it adds detail to the experiential aspects of the exhibit. A researcher added the annotation during a creative session. The techniques are simple and very adaptable.

When associated with specification, plan and elevation are conventional types of drawing. But they are also exploited in exploratory design in forms that progress from loose sketch to precise scale drawing. They facilitate collaboration by allowing emotive and conative functions emerge as the conversational nature of the design process unfolds. Sketches, photographs and symbolic elements, such as directional arrows signifying movement and coloured rings or tinted areas signifying zoning of content, can be layered over the basic drawing to present the experiential dimension of the design. In the design of the 'Restoration and Conservation' exhibition at Ludwigsburg Palace (2004) Bertron, Schwartz & Frey utilized a range of layering techniques to explore and present the zoning of light, sound and haptics (2006, 95).

Some exhibits use smell for very obvious reasons, such as the Perfume exhibit produced by the Museum of Art and Design in Hamburg in partnership with International Flavours and Fragrances (Website: IFF). In others, however, fragrance is ambient and designed to condition the audience in quite specific ways. This is very difficult to do because there are cultural differences in the interpretation of smells. That Samsung's flagship electronics store, on the upper west side of Manhattan, smells like Honeydew Melon is evidence of very subtle and detailed brand design management (Trivedi, 2006). In the 'Scents of Space' exhibit (2002) Usman Haque specifically focussed on the potential for communication through the orchestration of fragrances in time and space. The drawings of the exhibit describe a three-dimensional space within which each fragrance and duration of exposure is presented using colour-coded blocks of varying size and interval (Responsive Environments book XXXXXX).

6. Conclusion

Arguably exhibition designers, in exploring a dynamic, sensory and experiential idea of communicative environment, contingently acquire a rather eclectic range of creative design tools. This illustrates, I hope, potential for sensory urban design; it offers the facility for multidisciplinary collaboration, for deferring synthesis and control, and allowing the process to play out its potential for as

long as practicable.

An all-encompassing conventional means of representation is not possible or desirable. But it is useful to pursue a holistic and humanistic ambition in environmental design because pragmatically we do better by remaining open to new ways of exploring possibilities and communicating their realizability.

Francis Coppola once described being a film director as 'one of the last truly dictatorial posts left in a world getting more and more democratic' (Bahr & Hickenhooper, 1992). He also welcomed video camcorder technology because he thought that 'for once the so-called professionalism about movies will be destroyed forever and it will become an art form' (ibid.). These sentiments sum up the dilemma facing all creative practitioners involved in complex projects, on the one hand determining the place of creative leadership and on the other the place of dialogue and participation. This can be construed in at least two different ways, as an argument in general between interdisciplinary and multidisciplinary approaches and individually between the comforting illusion of control and the seduction of play.

The interdisciplinary approach focusses attention on the individual practitioner and develops through the appropriation of theory and technique. It is healthy only insofar as creative direction is needed. The multidisciplinary approach, on the other hand, emphasizes team building and is healthy only insofar as design must deal with complexity, i.e. the rational and non-rational, the large-scale and the interminable. In this context, co-operation is inadequate, collaboration is requisite, creative conversation in the sense that Rorty recommends: admit many voices and follow pragmatic rules (1989)1.[1]

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Biography

Geoff Matthews holds a doctorate in management systems and sciences from Univer-

sity of Hull and an undergraduate honours degree in interior design. He is a Fellow of the Chartered Society of Designers, a Fellow of the Royal Society of Arts, and a Member of the Higher Education Academy.

He is a Senior Lecturer and leader of the masters programme in Design for Exhibition & Museums at Lincoln School of Architecture. His professional experience includes performance art, museum and exhibition design, museum collection documentation, and art direction for a publisher. His research is broadly in the field of communicative environments and includes exhibition language, museum design organization, and sustainable exhibition design. Recent publications include: Neal Potter: Design Knowledge, Drawing and Process (2007, catalogue and biographical essay), 'Friendly Chimeras: The Evolution of Critical Creative Practice in Exhibition Design' (2007, The Role of the Humanities in Design Creativity conference paper) and Sustainable Exhibit Design: Guidelines for Designers of Small Scale Interactive and Travelling Exhibits (revised 2007, with Karl Abeyasekera, 56pp report).

Factor Analysis of the Pedestrian Number in a Downtown Area Using Visibility Indicators:
A Case Study of the Sakae-South District, a Downtown Area of Nagoya

Akira Ohta, Rim Meziani, Yuta Sugiura
and Toshiyuki Kaneda

Tokyu Land Corporation, Nagoya Institute of Technology and Nagoya City Office

1. Abstract

In the Japanese downtown district especially in the age of "Urban Renaissance", the making of turnout has become an important matter. For exploring the solution, the authors are trying a factor analysis of pedestrian number on each paved street on a holiday in Sakae south district, Nagoya, Japan, where the area of 400m x 800m has many retail shops including several department stores that showed eminent turnout. In our analysis, we use a visibility indicator by applying Space Syntax Theory as a candidate factor, as well as other candidate factors such as the accessibility from the subway station and the space use intensity. Then, apply mainly a multiple regression analysis. Especially, when we make Visibility Graph by using UCL's Depthmap, we had to consider the "high degree of space openness" in the case of Sakae south district, thus we devised a kind of improved indicator of the visibility.

We need a comparison among a wide variety of visibility analysis. This time the authors preferred to deal with a Visibility graphs rather than the axial maps for the convenience of time and data. From the local measures of the Visibility graph of Sakae south district, the connectivity and the Isovist area were used in the Visibility analysis. Additionally, A GIS data from the planning section of Nagoya city bureau were used.

2. Research Background and Objectives

Creation and simulation of the "hustle and bustle" found at the heart of the world's large cities is now a widely studied subject. For this study, factor analysis of the hustle and bustle is important; the visibility analysis research of the UCL Group that approaches such "hustle and bustle" or high pedestrian activity from the viewpoint of spatial configuration is well-known.

In our research, based on a case study of the Sakae-South district, a thriving and dynamic area in the heart of Nagoya City, in order to carry out factor analysis of the pedestrian activity in each pedestrian lane and street, multiple linear regression analysis was conducted for the pedestrian number, using the following explanatory variables: (1) accessibility to the nearest station; (2) intensity of land use (a floor-area ratio of commercial and office space); and (3) a visibility indicator. In addition, by using regression equations, trial calculations were made to assess the impact of converting the whole of

Ohtsu Avenue into a pedestrian mall.

3. Sakae-South District: a Case Study

Nagoya City has a population of 2,200,000 and in the city central area there are two main commercial centers: the areas around Nagoya Station and Sakae Station (Fig. 1).
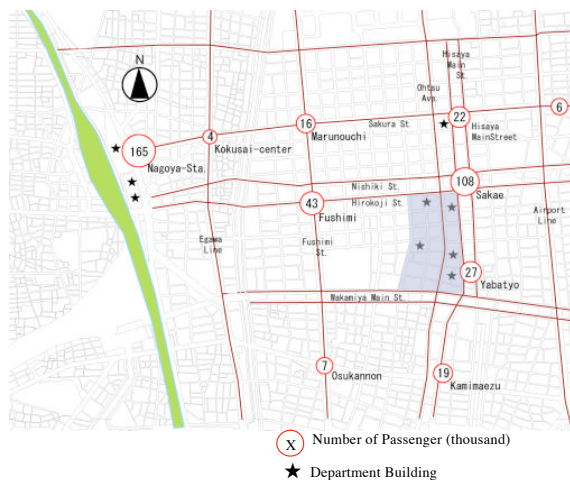

Figure 1: Location of Sakae South District

The Sakae-South district, the subject of the case study, is located to the southeast of Sakae Station and comprises 25 ha of commercial properties, surrounded by Hirokoji Street, Hisaya Main Street and Wakamiya Main Street.

In the area sandwiched in between Ohtsu Avenue and Hisaya Main Street and running from Hirokoji Street to Wakamiya Main Street, a row of eight department buildings can be found. In this area, there are two stations, Sakae Station, which has a daily passenger throughput of 108,000, and Yaba-cho Station with 27,000 passengers (as of 2006).

An indicator of high pedestrian activity used in this research is the all-day (10:00 a.m. to 9:00 p.m.) sectional pedestrian traffic volume measured at 61 points located in pedestrian lanes and streets.

The data was created based on data from 12 surveys conducted between 1989 and 2005 by the Minami-Ohtsu Street Shopping District Promotional Association, and adjustments for the weather and missing data were made; Fig. 2 shows a typical example of a holiday with fine weather in 2005. The largest pedestrian number was found at a measurement point located to the west of the Matsuzakaya Department on the Ohtsu Avenue that runs north to south, with a total all-day traffic volume of 35,000 pedestrians; as a whole the Ohtsu Avenue recorded the highest overall pedestrian traffic volume.
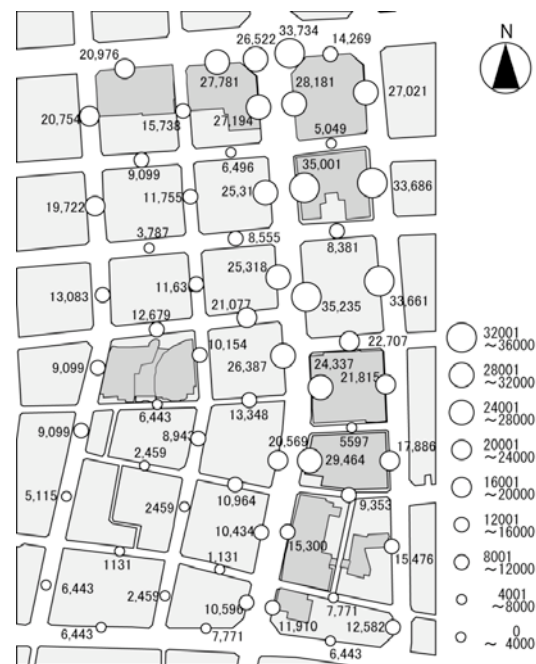

Figure 2: All-day number of pedestrians.

4. Creation of Visibility Indicators

4.1 Summary of Visibility Indicators

This research particularly focused on spatial configuration as a primary factor of high pedestrian activity. Space syntax theory conceived by Hillier is one of the methods to analyze spatial configuration, and it seeks to establish quantitative benchmarks for accessibility in urban spaces. Our research used the concept of visible sectors called 'Isovist' in this theory. Isovist refers to the total area visible from a single point and this is defined by such factors as screens and borderlines that will be described later.

In this research, in order to clarify a relationship with the pedestrian number that indicates high pedestrian activity on a pedestrian lane, any area of pedestrian lane located in an isovist sector was used as a visibility indicator that explains a contributory factor of high pedestrian activity on the pedestrian lane.

4.2 Method for Measuring a Visibility Indicator

For the measurement, DEPTHMAP, software developed by UCL, was used. A grid was laid out with one-meter intervals on a map and any grid square where more than half of the area is occupied by a pedestrian lane was marked as a pedestrian lane.

If there is no screen and no borderline between a marked grid square and another marked grid square, it was assumed that both grid squares were visible to each other and the number of visible grid squares was counted. The visibility of all grid squares was assessed and the total number of grid squares that can be seen from a grid square containing a measurement point was considered to be the visibility indicator of that point. In DEPTHMAP this concept is called 'connectivity.'

4.3 Specific Calculation of a Visibility Indicator in an Open System Space

This section describes specific procedures. Firstly, by using GIS data, the surface of the urban area was divided into pedestrian lanes, screens and others.

A pedestrian lane is considered to be: a pavement between a city block borderline and a road; a pavement around a public park; and an entrance of a subway. Vacant ground created due to the setback of a building, parks and paths in a park are not categorized as pedestrian lanes.

A screen is considered to be: a wall, hedge, fence and an entrance to an elevated road, all of which are 1.5m or more in height. When there is a screen, it is assumed that a pedestrian lane located beyond the screen cannot be seen. The category others, refers to parks, vacant ground, trees, fountains, and elevated roads that do not restrict visibility.

For configurations of the ground, especially, for a vertical drop, the following assumptions were made:

The heights above sea level in the district vary between 12.5m at the highest and 7.5m at the lowest; however this difference of elevation is not taken into account.

Outside the district, a contour line of 1.5m or higher is a borderline, and any area beyond this line cannot be seen.

Figure 3: The Visible Range from the District

have good visibility. This is particularly noticeable on Wakamiya Main Street, which has the widest pedestrian lane in the district measuring 10m on one side, where the visibility indicators were the highest, and also along the three main thoroughfares, Ohtsu Avenue, Hirokoji Street and Hisaya Main Street with pedestrian lane widths of 4m, 6m and 6m respectively, where high visibility indicators were also confirmed.
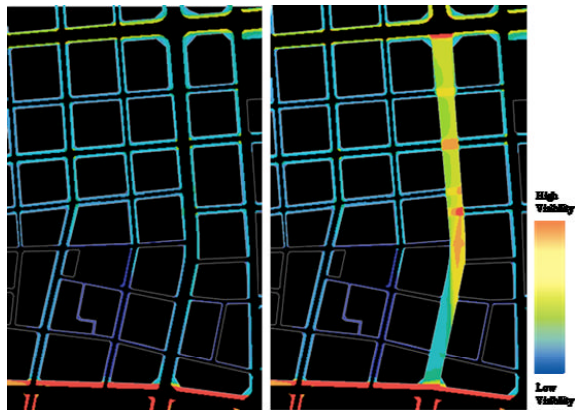

Figure 4: Visibility graph of the study area (a) in base case, (b) in pedestrian mall

4.4 Examination of Visibility Sector

In figure 4(a), we show the measurement results of the visibility sector. The darker the color, the larger the area of pedestrian lane visible from the measurement point. The lighter is the color; the smaller is the area of visible pedestrian lane. The sections that are not pedestrian lanes are uncolored.

The figure shows that the streets with wider pedestrian lanes and roadways have a larger visibility indicator. Possible reasons for this result are that the visibility indicator depends upon the area of a pedestrian lane, and an unobstructed view that gives depth; a wider pedestrian lane often has a greater area; and a street with a wider roadway tends to

5. Factor Analysis of the Pedestrian Number, Taking into Consideration Visibility Indicators

5.1 Summary of Other Explanatory Variables

As other explanatory variables this section describes accessibility from the nearest station and the intensity of land use. With regard to accessibility from the two subway stations, Sakae Station and Yabacho Station, the walking distance from the nearest exit of the nearer station to the measurement point was used.

For the intensity of land use, floor-area ratios of both commercial and office space were used. The main use for each building and each floor was regarded as representative use, and a total floor area for these two categories of use in a block was calculated, and the result was then divided by the block area to find a floor-area ratio by use. The data was taken from "Data on Present Usage of Buildings 2006" published by Nagoya City. In a case where a road bordering a measurement point has a central divider, the floor-area ratio of the block that is adjacent to one side of the road was used, and if a road does not have a central divider, the average value of the floor-area ratios of both side blocks that border the road was used.

5.2 Selection of Explanatory Variables

In the procedures, as other candidate explanatory variables, the intensity of land use (total floor-area ratio, area for commercial use on the ground floor) and pedestrian lane width were prepared. When a correlation matrix was created, the correlation between accessibility from the nearest station and the intensity of land use (commercial use, total floor-area ratio, and building-to-land ratio of commercial use on the ground floor) were -0.786, -0.749 and -0.763 respectively. The correlation between commercial use and total floor-area ratio in the intensity of land use was 0.942, the correlation between total floor-area ratio and building-to-land ratio of commercial use on the ground floor was 0.898, and the correlation between commercial use and building-to-land ratio of commercial use on the ground floor was 0.840. Each of the correlations was strong; therefore' in order to avoid multicolinearity, only the intensity of commercial land use was adopted and the total floor-area ratio and building-to-land ratio of commercial use on the ground floor were rejected. Pedestrian lane width also showed a strong correlation with the visibility indicator, which was 0.739; therefore, it was rejected too.

5.3 Examination with Multiple Linear Regression Analysis

Multiple linear regression analysis was conducted to derive multiple linear regression equations (Table.1) and their applicability was examined.

The multiple correlation coefficient of the regression equation with four variables was 0.611 and the coefficient of determination was 0.373. When standard regression coefficients of explanatory variables were examined, accessibility to the nearest station X1 (-0.341) was the strongest and it can be perceived that the closer to a subway station from a measurement point, the larger the pedestrian number at that point. This was followed by intensity of commercial land use X2 (0.260), intensity of office land use X3 (0.184), and visibility indicator X4 (0.139), and it can be seen that at those points with a higher ratio of commercial and office floor area to site area, and higher visibility of pedestrian lanes, the pedestrian number is high. The order seems to be indicative of the relative strength of these factors. However, a t-test showed no significant difference at the 5% level for any explanatory variable; a possible reason is the small number of samples.

	Regression Coefficients	Standard Regression Coefficients	T	P	T-Test
Accessibility	-24.960052	-0.340815	-1.98489	0.05206	
Visibility Indicator	0.328639	0.138604	1.27462	0.20771	
Commercial Land Use	686.315117	0.259769	1.48235	0.14385	
Office Land Use	1728.229606	0.183600	1.69653	0.09534	

Table 1: Multiple Linear Regression Analysis

6. Test Calculation for Converting the Whole Ohtsu Avenue into a Mall

We used Equation 1 to make a forecast of the pedestrian number. Trial calculations were carried out for the case of a whole roadway section of Ohtsu Avenue, the main thoroughfare that passes through the case study district from north to south is converted to a pedestrian mall (Fig. 4 (b)).

In this case, the visible sector expands; therefore, based on the increase of X4 (visibility indicator), the increase of Y (the pedestrian number) was calculated. When we examine the distribution rate obtained by dividing the pedestrian number at each point

by the total pedestrian number at all points, the distribution rate at each point changes after conversion to a pedestrian mall.

By using the change in the distribution rate, the rate of increase of the pedestrian number was calculated at each point for two different scenarios: no change in the pedestrian number in the whole district; and a 20% increase in the pedestrian number in the whole district due to conversion to a mall.

With no change in the pedestrian number in the whole district, in sections where pedestrian lanes are invisible the pedestrian number dropped by a uniform 4% and at points where the mall can be seen, the pedestrian number increased to a maximum of 13%. With a 20% increase in the pedestrian number in the whole district, in sections, where the mall cannot be seen, the pedestrian number increased by a uniform 15% and at points, where the mall can be seen, the pedestrian number increased to a maximum of 36%.

7. Conclusion

With the Sakae-South district in Nagoya City as the subject, the research analyzed factors that have an effect on high pedestrian activity. As a result, it can be considered the main factors that affect the pedestrian number and create the hustle and bustle of Sakae-South district are in order of importance: accessibility from the nearest station, intensity of land use (floor-area ratio for commercial and office space) and the visibility indicator. However, it cannot be stated that the results of the regression equations are statistically significant.

With regard to the forecast where the whole street was converted into a mall by the application of an equation, the results of trial calculations were as follows: in the case of no change in the pedestrian number in the whole district, there was a uniform drop of 4% in sections where pedestrian lanes are invisible, and there was a maximum increase of 13% at those points where the mall can be seen; and in the case of a 20% increase in the pedestrian number in the whole district, there was a 15% increase in sections where pedestrian lanes are invisible and a 36% increase at those points where the mall can be seen.

For visibility analysis, many reports have been presented for closed system spaces and it has been considered that such analysis is not suitable for application to open system spaces; however, by establishing borderlines the research enabled the application to an open system space. This is a key characteristic of the research.

In addition, for a visibility indicator, connectivity attaches great importance to an unobstructed view, and regardless of the distance, all points within a visible sector are regarded as equal. However, in reality, from the perspective of human vision, objects at a distance look smaller and objects that are closer look larger; therefore, a future project is to create an indicator that takes into account the actual distance from a point.

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Biographies

Akira Ohta: Master Course Student, Urban Planning Laboratory, Nagoya Institute of Technology.

Rim Meziani: Doctor of Engineering (2006, Nagoya Institute of Technology), Post Doctoral Fellow, Urban Planning Laboratory, Nagoya Institute of Technology (2006).

Toshiyuki Kaneda: Doctor of Engineering (1988, Tokyo Institute of Technology), Associate Professor, Urban Planning Laboratory, Nagoya Institute of Technology (1996).

Pictorial Fictions:

A Borgesian Reading of Guillermo Kuitca's Sonorous Geographies and Opera Houses

Malca Mizrahi

Bartlett School of Architecture

1. Introduction

How do imaginary cartographies convey narratives and reference memory, excluding any allusion to the familiar? To address this question this paper re-reads Kuitca's bed-map paintings and his recent architectural drawings of opera houses collected in the series 'Acoustic Mass' (2002–05).

Initially led by the sound and resonance of the name of a place, Kuitca creates a private and intimate cartography by rearranging spatial relations of distant places over conjectural maps. Excluding his own known territory from the series, the Argentine painter avoids any familiarity of place or visual reference and, in this way, imaginary cartographies painted over child-sized beds become 'black holes' filled only with sounds.

Influenced by Borges's fictional devices to create an imaginary geography without spatial or temporal continuity, the bed-map series produces itineraries that do not take us anywhere; instead it uses the map to depict displacement. By looking at how these failed navigational instruments create a Borgesian itinerary, I will explore the relationship between unfamiliar geographies and the representation of a fictional spatio-temporal order; and how, by subverting the principles of cartography, a 'narrative of emotion' is portrayed.

Kuitca's mattresses bring a tactile aspect to the representation; they make the paintings present both to the eye and to the touch. However, this comfort zone vanishes as the result of a tension between the territory of the bed, private space, and the territory of the map, socio-political space, colliding in the same piece. This paper examines this tension, reveals its cultural recurrences, and shows how a memory of place is evoked by contributing towards a de-territorialized cultural identity. Finally, it discusses the change of scale that led to the deployment of architectural space in the series 'Acoustic Mass', and how space is revealed as sensory experience in these later paintings.

In the context of my investigation on the transformation of the idea of space in contemporary visual arts and architecture, Kuitca's recent paintings are relevant because they are explorations in space, place, narrative and memory. In the first of the series analysed here, cartography is manipulated by subtly transforming the most commonplace forms of maps, the street map and the road map into an imaginary collection of dysfunctional navigation tools. In one painting, for example, all names of major cities are replaced by the name of a single town belonging to another country; in another, the names of the cities in one country are interpolated into a fragment representing an

entirely different nation, and in the installation Untitled 1992 European road maps are painted onto mattresses that become a metaphorical image of spatio-temporal voyaging, placing them in the realm of fiction and imagination. While there is no internal narrative to the maps, their reading invites the viewer-voyager to imagine one, turning the bed-map paintings into a territory to re-think the notions of place, experience and memory. I start here looking at them as spatio-temporal tools, to show how their spatial aspect includes time.

Although other art critics and writers have already traced Borgesian references in Kuitca's paintings, I will define here where that influence resides and what its effect is. The analysed paintings will be read not as illustrations of the literary but as visual works influenced by those spatial ideas and devices with which Borges imagines space and activates the fiction.

The second series discussed here, 'Acoustic Mass', examines his painting as investigations of space and language. I will show in what way a change of scale, the inclusion of the body and the incorporation of architectural references act as place-making tools. Even though the spatial container itself is generally absent, the paintings transform the opera houses into images of resonance; they portray the event of music taking place in the concert hall, materializing visually an audio-spatial experience.

2. The map as a representation of both time and space in one

Doreen Massey's essay, Some Times of Space, invites us to imagine an everyday journey from Manchester to Liverpool, and to picture the voyager travelling between two apparently fixed places on the map. His movement has a trajectory which is not only spatial but temporal because it has duration. The passing of time, both at the place he left and at the place of arrival, is also considered, for neither origin or destination are passive places, 'they are an intertwining of ongoing trajectories', and when he steps out of the train he becomes entangled in the stories that began before his arrival. To open up space to this kind of imagination is to think space and time simultaneously, Massey says; it is not travelling across space-as-surface but across a multiplicity of stories. Movement here is a process of change, and here is not a place on a map, it is an intersection of trajectories and of stories of place, '… Every here is here-and-now, and space has time within it.' The map we imagined when we embarked on our journey is a representation of our trajectory, and captures time and space.

From the idea of a map as an intersection of spatiotemporal trajectories, I propose another journey, an epic one through an unknown territory where the line of the trajectory is traced on Afghanistan (1990). The time of the journey is unknown, but it has duration. Unlike other paintings I will discuss later, Afghanistan still suggests a collection of coherent trajectories. It was painted before 9/11, and at the time the place did not have the connotations it has now.

The bed-map series, including the maps of Europe and Asia, represent 'a kind Orientalism, but in reverse', the painter says. As a result, the series evokes the unknown, what is distant and different: they are a collection of sonorous geographies which do not include anything familiar. For the painter, 'the names in Afghanistan or The Song of the Earth are just names, pure topography, pure geography: 'the places didn't represent anything I knew, saw in films, nor read in books; they are just sound and resonance'. Led by sound, the quality that is sought in the map

is not only visual but sonorous, eroding any reference to the familiar to achieve abstraction.

San Juan de la Cruz, a pictorial fiction: The map as a failed navigational instrument

Kuitca's interest in cartography is shared with Borges: 'The map is one of the most fascinating forms of spatial representation', he says. San Juan de la Cruz is the painting where the map subverts the principle of cartography, transforms the geography, and turns into the opposite of a navigational tool. It is the instrument for getting lost: its purpose is not to identify where you are, but to show where you are not. Here the trajectories are organised as if one place is all places: the city of San Juan arbitrarily replaces all major cities of Poland, suggesting a terrifying journey in which all roads return to different points but which are the same place. The labyrinthine itinerary of San Juan de la Cruz (1992) is also a recurrent spatial characteristic of Borges's stories. The image of the map is the representation of a world as organised and complete as Borges's 'Death and the Compass' (1942) for example, but also as nightmarish. Moreover, Kuitca's map is also trespassed by a referential aberration, i.e. the constant recurrence of the same place, and represents visually Freud's uncanny: '…after having wandered about for a time without enquiring my way, I suddenly found myself back in the same street, where my presence was now beginning to excite attention. I hurried away once more, only to arrive by another détour at the same place yet a third time. Now, however, a feeling overcame me which I can only describe as uncanny…'

Two more fictional devices are there in the paintings that suggest Borges's influence. The first is the use of the Borgesian method of verisimilitude. In the story 'Tlön, Uqbar, Urbis, Tertius' (1949) for example, verisimilitude is achieved by combining false attributions to a mixture of existing and invented texts, and the use of many of Borges's real friends as characters in the plot. If in Borges, maps, encyclopaedias and the names of real people and places are the way to persuade the reader of the veracity of his stories; in Kuitca's paintings names are there to dislocate, to subvert the fictional character of the maps. By creating a mixture of real places and fictional geographies, the collection of painted maps supports invention through the juxtaposition of reality and fiction in the same way as Borges achieves verisimilitude through fictional intertextuality and false attributions to real people.

The second device is what Beatriz Sarlo calls 'mise-en-abîme', a spatiotemporal pattern applied to both narrative and spatial design. Borges's 'mise-en-abîme' builds upon a spatial paradox that lies on the superiority of images over reality, a baroque type of space. In her essay 'Tropes of Fantastic Literature' she explains how this type of spatial paradox compels us to experience infinity in a finite space; according to the principle of endless inclusion, it modifies our belief in the truth of our perceptions and sets a tension between what we can conceive logically and what can be concretely, materially or sensorially perceived. In Borges's Tlön there is no spatial continuity, space is by definition discontinuous, and a place or an object in space is never the same if considered from the point of view of time. 'Identity, according to this conception, is unimaginable, because no substance extends its being through time'. The painting San Juan de la Cruz, as the structure of an imaginary geography with no spatial or temporal continuity, proposes a visual presentation of a geography where space is discontinuous, where the same place can appear in a map again and again, transgressing the concept of identity: as objects and places multiply in Tlön, the city of San Juan multiplies in Kuitca's map.

3. Material tension

Giuliana Bruno in Atlas of Emotion says that the art of mapping is a function of fictional imagination. She explains how in Kuitca's installation Untitled (1993) where road maps of Europe have been imprinted upon used mattresses, 'the sequential layout of the map-inscribed mattresses in an architectural space entices us to share a private bedroom fantasy'. She continues, 'the space is suspended and frozen, as if something has just taken place or is about to happen; no one is lying on the beds. But the maps do speak of a fiction–an arresting architectural tale. This is a story written on a bed, inscribed in the fabric of a room, layered on the geological strata of used mattresses...The map haunts the mattress like a stained memory. It is a residue, a trace, a living document… It absorbed a story… It recounts the tale of what was lived, or unlived on it…

Like a film, the bedroom map retains and explores "folds" of experience. It charts the private inner fabric of our mental landscape… The mattress-map is a complex narrative, a nocturnal chronicle… It belongs to the realm of dreams and their interpretations'.

The mattresses bring physicality and a tactile aspect to the representation; they make the paintings present both to the eye and to the touch. However, this comfort zone quickly vanishes when we approach them, as the result of a tension between the territory of the bed, private space, and the territory of the map, socio-political space, or 'the space of others' colliding in the same piece. On one hand, the mattresses incorporate proximity to the piece: the body making known its presence through the stained, used beds. On the other, the accurately painted maps bring the notion of distance into the work, interposing it between evoked places and an absent body. Thus, by juxtaposing proximity and distance, they re-create a tension rooted in Argentine culture, for playing with opposites was the strategy that emerged from the Borgesian game to achieve originality.

4. Architectural language and the body as tools of place making

The 'Acoustic Mass' series, a pictorial reinterpretation of opera houses' plan drawings and interior views, presents a different approach to the practice of place-making in painting. Three elements contribute to it: the body, scale and the reference to built space. The body here is not present as figure but as a sensory tool. It tacitly adds a dimensional reference to space and reveals the theme: the immersive expression of experience. In 'Acoustic Mass' the body is listening to the concert, it is experiencing space and sound: the painter inhabits the space depicted.

John Berger's essay 'Studio Talk' argues that painting is a visual translation of experience, a tool to make place: he defines it as an extension of a presence or the consequence of an action, and here the words presence and action refer to the body. In 'Steps Towards a Small Theory of the Visible' he affirms that the conscious experience of inhabiting space is what painting is about: 'Painting is an affirmation of the visible which surrounds us and which continually appears and disappears. Without the disappearing, there would perhaps be no impulse to paint'.'. This impulse to paint exists to make permanent the experience of seeing, to express through form and colour the effect that the act of seeing has upon the painter. Even abstract paintings, he continues, like 'a late canvas by Rothko represents an illumination or a coloured glow which derived from the painter's experience of the visible'. 'Acoustic Mass' presents this impulse of permanence, the series expresses through form

and colour the effect that the act of listening has upon the painter. In a similar manner, Borges's 'The Aleph' is the story that tells the experience of seeing oneself inhabiting a paradoxical space. Therefore, and as a result of the necessity to make experience permanent, both stories and paintings are here to prevent experience from disappearing in Berger's sense.

Scale is the second element that contributes to the practice of place-making. In 'Acoustic Mass' the pictorial image emerges now from a manipulation of architectural symbols: the seats in the concert hall. Their size places the body in space, and space is there not as container, but as the event of music taking place in the hall, as an image of resonance. By inventing a pictorial language that consciously borrows signs and symbols from architectural codes, built space is present as experience. Its configuration is not a deconstructivist composition, but an arrangement aimed to visualize the perception of sound. The paintings transform the halls into visual accounts of an audio-spatial experience, and the rearrangement of the architectural geometry is used as the means to do it.

Tangentially, Zaha Hadid's early paintings are examples of a similar exploration on experience. It is not dynamism of form what she was after as their visual distinctiveness comes not only from the manner in which the shapes were composed to inform a particular language, but also from the effect that geometry applied to a spatial object has upon the user. Hadid's language is distinctive in that it reflects the emotional effect that the experience of built space produces in the user. There are striking similarities between Hadid's early paintings and Kuitca's 'Acoustic Mass' series for the work of both painters renders space as a pictorial composition of experience. The architectural language in Kuitca's paintings develop geometrical pat-terns that do not suggest dynamism or drama per se. Imagining the experience of the space that geometry suggests, i.e. the space perceived when the concert hall is filled by music, is what induces the idea of spatial drama. Equally to Borges's characters facing spatial paradoxes, Kuitca's paintings are experiential accounts, and both visual and literary expressions attain lyricism through the representation of experience.

Finally, space in these paintings is powerful because it is present to the eye and absent to the touch, the canvass is an empty space to be filled with the potentiality of every portion sensed or perceived. In particular the paintings Untitled 1 and Untitled 2, both painted in 2004 and part from the same series 'Acoustic Mass', can read as a multifaceted and aural account of built space, where their geometry is not related to a deconstruction of the elements that configure space, but to a phenomenological account of the space perceived.

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Biography

Malca Mizrahi is an architect and writer. She graduated from the Faculty of Architecture, University of Buenos Aires and has a Masters Degree in Architectural Design from The Bartlett School of Architecture. She is currently undertaking graduate research at The Bartlett, working with contemporary art practices which engage with the production of space and architecture.

She taught architectural design at the University of Buenos Aires and at The Bartlett School of Architecture at Diploma Level. She practiced architecture in Buenos Aries, Madrid and London, where she worked for Zaha Hadid Architects, being the lead designer for The Glasgow Museum of Transport. Her writing and visual work explores the production of space from an interdisciplinary approach, interweaving visual and literary strategies of fictional construction; it has been exhibited in London, Venice, Madrid, Rotterdam, Vienna, Sao Pablo, Santiago de Chile and Buenos Aires.

Adjacency, Permeability & Inter-Visibility:
micro scale spatial analyses tools for revealing the private - public space relationship and its impact on urban safety

Akkelies van Nes

Department of Urban Renewal and Management, Faculty of Architecture, Delft University of Technology

1. Introduction

Research on urban environment by means of space syntax methods tends to focus on macro scale spatial conditions. However, micro scale conditions should not be neglected. In a research project on space and crime, it became inevitable to pay attention to the interdependence between the macro as well as the micro scale spatial conditions. For this purpose, spatial analyses methods were developed and tested in the Dutch towns Alkmaar and Gouda. The application of these analyses tools shows clearly that micro scale spatial relationships have impact on street life and crime distribution in urban areas.

As various studies have shown, the spatial configuration of a city's street and road net affects people's natural movement patterns and the distribution of shops and retail (Hillier et. al. 1998) and the geographic and temporal distribution of crime and anti-social behaviour (Hillier and Sahbaz, 2005). However, the spatial relationships in these studies are mainly calculated on a macro spatial level.

Little research is done so far on the urban micro scale level when it comes to the spatial relationship between buildings and streets. The few conducted studies make it clear that a building's degree of exposure to neighbours plays a role on where burglaries take place (Shu, 2000). When revealing present design practice, the demand for privacy in combination with a demand for high quality dwellings in urban central areas seems to neglect the spatial possibilities for social interaction with their vicinity on an urban micro scale level. Up till now, spatial tools for measuring the topological relationship between private and public space were missing.

2. The Private-public Space Relationship and Urban Living

During the last two decades, living in central urban areas has become popular in Europe. This kind of "urban renaissance" has contributed to an increase of estate and property prices in inner city areas. Several people seek for urban areas with high social, cultural and spatial diversity, short distances from dwellings to work, leisure and cultural activities, and to use all the opportunities a city has to offer (Rogers, 1999).

Many recent urban renewal policy documents propose to intensify existing city and

town centres instead of creating new out of town settlements. The idea is that high diversity and density of various kinds of land use, functions and cultural activities will contribute to vital lively urban areas and economic growth. As stated in most policy documents, the density of the built mass should be high without loosing good living qualities (Nota Ruimte 2004:71, Rogers 1999:45). The compact city is used as a model for urban renewal for enhancing growth in existing centres instead of urban sprawl for promoting sustainable development. How this must be realised is, however, never demonstrated in recent policy documents.

What is striking is how project developers promote new housing areas in urban central areas. In their glossy brochures, full of pictures of traditional urban street life with a large variation of cafés and individual small shops and enterprises, they sell it as "urban living." Often the intention is to create lively and diverse urban areas. However, when it comes to the final product, the urban street life inside these areas is missing – even though the integration of the street net is high.

The topological spatial relationship between private and public space and its impact on urban life is a forgotten aspect in contemporary urban design and planning disciplines. Architects tend to emphasise the feeling of privacy within the context of modern living in their design projects. Often an explanation can be found in the individualisation process of human beings during the last 60 years in the western society. There seems to be a need for high degree of privacy when living together with others. However, when the city itself offers high degree of anonymity, then one can ask whether it is necessary or not hiding one's dwelling entrance and windows away from public streets. Urban project developers build with high density or a high floor-space-index and propose large

variations of urban functions in new areas. However, the degree of inter-connectivity and the topological shallow public-private interface is often forgotten.

3. Micro Spatial Relationships

A method describing micro scale spatial variables in urban studies aims at defining the inter-relationship of buildings or private spaces and adjacent street segments. The focus is on how dwellings relate to the street network, the way buildings' entrances constitute streets, the degree of topological depth from private space to public space, and inter-visibility of doors and houses across streets. As Jane Jacobs and Jan Gehl argue, many entrances and windows facing a street is one formula to ensure urban liveliness (Jacobs, 2000; Gehl, 1996). The challenge is to quantify these kinds of spatial relationships. Only then it will be possible to gain a genuine understanding on the spatial conditions for vital street life and urban safety.

4. The Method

In a research project on space and crime in Alkmaar and Gouda, an opportunity was provided to register various spatial relationships between private and public spaces (López & Van Nes 2007). In each town one local area was chosen and studied in detail. These areas are more or less comparable when it comes to their function, size and the large variation of their social composition of dwellers and architectural composition in terms of a large mixture of various housing types. The local areas contain boroughs with homogeneous building types as well as areas with a mixture of several types. In total 1.168 street segments were observed and 25 different spatial features registered

for each segment. The results of the micro spatial registrations were put in a database together with various macro scale variables derived from the space syntax analyses of the street and road net and the number and characteristics of residential burglaries and thefts from cars for each street segment.

Figure 1: Picture of the local areas in Alkmaar (left) and Gouda (right). Source: Google Earth.

There are several ways of analysing spatial configurative relationships between building entrances and the street network. An easy way is to register the topological depth between private and public space. This can be done as follows: one counts the number of semi-private and semi-public spaces one has to walk through to get from a private space to its public street. If an entrance is directly connected to a public street, it has no spaces between private and public space. Then the depth is equivalent to zero. If there is a small front garden between the entrance and the public street, the depth value is one since there is one space between the closed private space and the street. If the entrance is located on the side of the house and it has a front garden or it is covered behind hedges or fences then the topological depth of the entrance has a value of two.

Entrances from back alleys covered behind a shed have a value of three. It is the topological steps between the street and the private spaces inside homes that are counted. Entrances into flats can be represented in several ways. It all depends on the degree of permeability between the private space and the street. Some flats have upper walkways where the entrances to each apartment are connected, while others have a closed main entrance where visitors have to use a calling system. During registration the degree of permeability was used. Where a flat's front door or main entrance was permanently locked and provided with a doorbell or calling system, it was registered as a private space from thereon. When flats have open main entrances, the number of semi-private spaces was counted up to the apartments.
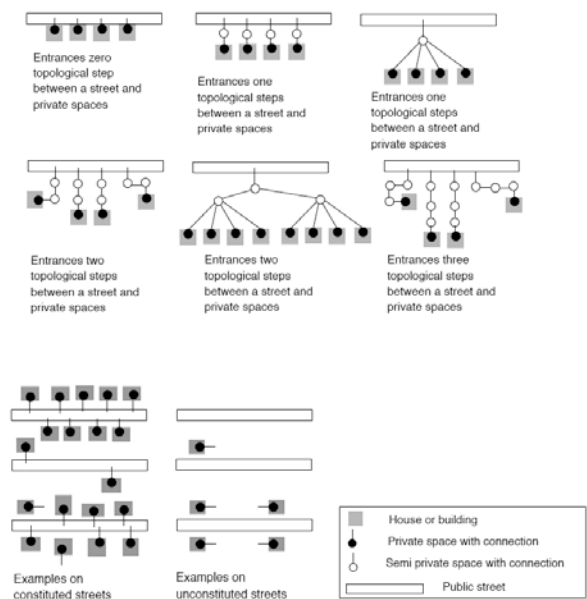

Figure 2: How the topological depth from entrances (top) and degree of constitutedness (below) is calculated

Figure 3: Example of a dwelling located to a traditional street (left) and a dwelling located on an upper walk-way in a flat (right). In the traditional street there is a direct connection between the private home and the public street. A stranger passing through one's front door is perceived as a source of safety. Conversely, in the case of the upper walkway, there are many semi public and semi private spaces between the home and the street. A stranger passing through one's front door is perceived as a source of danger.

Each side of a street segment is registered separately. There are many streets where entrances are directly connected to the street on the one side, while there is a flat with an upper walk gallery on the other side. If a street segment's side has several depth values between private and public spaces, the average value is used. The diagram in figure 2 (top) illustrates various types of relationship between private and public spaces. The black dots represent the private spaces, while the white dots represent semi-private spaces.

A street's degree of constitutedness depends on various degrees of adjacency and permeability from buildings to public space. When a building is directly accessible to a street, then it constitutes the street. Conversely, when all buildings are adjacent to a street, but the entrances are not directly accessible, then the street is un-constituted. A street segment is constituted when only one entrance is directly connected to the street. If the entrance is hidden behind high fences or hedges, or has a large front garden, or located on the side of the buildings, then the street is defined to be un-constituted. The diagram in figure 2 (below) illustrates the differences between constituted and un-constituted streets. The number and density of entrances are not at issue. The degree of constitutedness is about the number of entrances connected to a street divided by the number of buildings located along that street.

Figure 4: Example on constituted streets (above) and un-constituted streets (below).

Figure 4 shows some examples on constituted and un-constituted streets. The two entrances on the top are constituted streets. In both cases the entrances are located only at one side of the street. The example on the left is a street dating from 1600 and the example on the right is a street from the 1970s. Both two streets below in figure 5 are un-constituted. No entrances are directly connected to these streets. The example on the left is a street located in a high rise flat area from the 1960s. One has to go into the semi public side streets in order to reach the flats' main entrances. Regards the example on the right, dating from the 1990's, all the apartments are located adjacent to the street. Even though the street is highly visible from all the apartments' windows, all entrances are located at the buildings' backsidesand from the underground parking garages.

Figure 5 visualises the difference between constituted and un-constituted streets in Gouda. Un-constituted street segments are marked with a grey colour, while the constituted ones are in black. Most intruded homes (presented as dots) are entered from un-constituted street segments. The points of entry into dwellings are marked with a line from the street or back alley to the dot.

The more entrances connected to a street, the higher the probability that someone comes out from a private space into public space. However, high density of entrances connected to a street does not always imply high inter-visibility. There is a distinction in the way entrances constitute streets and in the way they are inter-visible to each other. The way entrances and windows are positioned to each other influences the probabilities for social control and street life. Figure 6 shows some diagrammatic principles on the relationship inter-visibility and density of entrances.

In Alkmaar and Gouda the percentages were grouped in 100%, 80%, 60%, 40%,

20% and 0% inter-visibility for each street segment. The density of houses and entrances was registered separately. Thus, two buildings with two entrances facing towards each other indicate 100% inter-visibility of doors. Conversely, a street segment with high density of entrances on only one side of the street segment and no entrances on the other side is defined to be 0% inter-visible. High density of entrances directly facing a street segment at only one side can be an indicator for street life, but is not necessarily a sufficient condition for crime prevention. A strong correlation was found between a street segment's inter-visibility and the risk on residential burglary (López & Van Nes 2007).

The street form describes the mode of transport suitable for the street as well as the spatial possibilities for a perpetrator's escape. In line with Shu (Shu, 2000), street form was categorised as: through carriage ways, cul-de-sac carriage ways, pedestrianised street, cul-de-sac driveways, throughfootpaths, cul-de-sac front footpaths and cul-de-sac back alleys.

Figure 5: A visualisation of the constituted and un-constituted streets in Gouda.
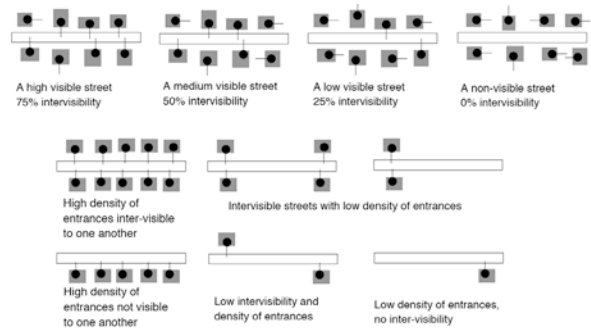

Figure 6: Diagrammatic principles on the relationship inter-visibility and density of entrances

Figure 7: Examples on 0% inter-visible streets. When a burglar is inside these fences or hedges, he can operate without being noticed by neighbours or people in the street.
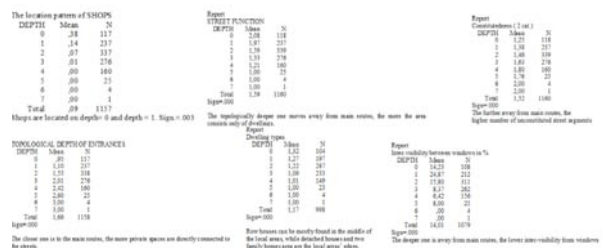

Figure 8: Statistical diagrams.

5. Combinations of Micro and Macro Spatial Measurements

A combination of various micro spatial measurements makes it possible to gain quantifiable spatial data for testing on socio-economic data and provide understanding on the spatial conditions for safe and vital urban areas. For example, a street with few connections to its vicinity (macro scale analyses) can still be full of social activities if a high density of entrances constitutes the street and when there is high visibility

between public and private spaces (micro scale analyses). The reverse can be seen in un-constituted streets with a low number of entrances and low inter-visibility, but where the connections to other streets are high. Independent of cultures and architectural styles, micro spatial measurements make it possible to describe the spatial set up of built environments on a local scale level.

As the results from the spatial analyses in Gouda and Alkmaar show, both micro and macro spatial variables are highly inter-dependent for de-scribing areas' degree of liveliness (López & Van Nes 2007). Especially the topological depth of a street segment in relationship to its nearest main route gives a detailed description of the spatial set up of the area. Most micro spatial variables turn out to be related to the macro scale variable local angular analyses. This variable identifies the main routes through cities and shows strong correlations with the micro-scale variables. The following results were obtained (figure 8).

The further away a street segment is from the main routes net, the greater the topological depth between private and public space. Along the main routes through urban areas, most entrances are directly connected to the street. When changing direction two times from the main routes, the average topological depth for entrances is 2 while it is 3 in all street segments that are located more than six topological steps from the main routes.

Visitors usually frequent main routes, while only inhabitants frequent highly segregated streets in which gives neighbourhoods a desolated atmosphere. Dwellers inside these areas often prefer to protect their private life from insights from neighbours. When the streets are too much occupied by neighbours and there are almost no visitors around, the social control from neighbours can be too present. Therefore curtains and high hedges are used to prevent social control, and entrances are hidden away from streets and visible neighbours.

Urban areas located close or adjoining to main routes tend to have entrances directly connected to public streets. The streets are frequented by visitors as well as by inhabitants. The inhabitant wants to be a part of the urban street life. Often dwellers contribute to street life by sitting outside on a chair or the staircase in front of their homes. From their windows, dwellers keep an eye on what is going on outside. In many integrated areas, inhabitants like to contribute to the urban living by displaying their interiors to the view of passers by.

The more segregated a street segment is, the more mono-functional the adjacent buildings tend to be. Topological deeply located street segment usually only have a residential function, since offices, shops and public buildings tend to locate themselves along the main routes. The semi-private segments are among the topological deepest and segregated streets. Row housesand flats tend to be located along topological shallow street segments, while maisonettes, vertical separated dwellings and detached and semi-detached houses are located at the areas edges.

The further a street segment is away from the main routes, the lower the values of spatial integration and constitutedness. Homes located along unconstituted streets deeply located inside urban areas with low inter-visibility from windows tend to have a high risk of being burglarised (L´opez & Van Nes 2007). The un-constituted back alleys tend to be the most segregated street segments.

6. The Urban Street Plinth

Micro spatial relationships play a crucial role in the socio-economic life of human

beings. Often the concept "bringing back the human scale" is used in urban policy making. It is referred to the metrical properties of space. Maybe a more genuine understanding on urban vital street life can be pro-vided through a topological approach on urban micro scale level? In particular, urban renewal projects, modern housing areas and new large-scale urban development projects often tend to lack adjacency, permeability and inter-visibility between buildings and streets. This has negative effects both on street life and degree of safety of these areas.

High value on the floor-space-index is not always a condition for safe and lively streets. A "vertical city" like Hong Kong has several examples of new housing projects not well connected to the street. Even though the number of apartments is high, there is little street life at the street plinth (Hwang 2006). Often stacking apartments can contribute to vertical sprawl, but it seems to depend on how these flats' entrances are connected to the street.

However, the degree of inter-connectivity and the topological shallow public-private interface is often forgotten. All these activities depend on how the spatial configuration is on the plinth or built up street sides. Therefore, there is a need to bring micro scale spatial relationships on the research, policy making as well as the design agenda in the urbanism discipline.

As the study of 1.168 street segments clearly shows, the micro spatial conditions of the street segment are inter-related to the macro spatial conditions of the cities' street network. The definition and operationalisation of the micro scale conditions is, however, still in a preliminary phase and an area that can be improved upon in the near future. At least, some concepts useful in urbanism are introduced and bring significant aspects into the urban sustainability and compact city debate. This is not only important for urban studies, but also for the design and planning of our cities.

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Acknowledgements

Biography

Akkelies van Nes researches and teaches for the International Master Course at the Department of Urbanism, Faculty of Architecture, TU Delft, in the Netherlands. In addition, she has her own firm "Space Syntax Norway". In 2005 she was the chairwoman for the 5th International Space Syntax Symposium. At present, she develops new spatial analyses tools in a research project on space and crime, sponsored by the Dutch Police.

In 2002 van Nes received her PhD at the Department of Land Use and Landscape Architecture at the Agricultural University of Norway. She graduated at The Bartlett School of Graduate Studies, University College London in 2000 and at Oslo School of Architecture in 1993. She worked for 5 years as a planner in Drammen and Asker municipalities and at the Public Road Administration in Akershus province.

Night City and "Schizophrenia"

Julien Richard

Charles University in Prague, Czech Republick

"Many of the surrealists were nightwalkers, specialists in an exercise through which they laid their own particular claim to the city" (Krauss, 1981, p.13 as cited in Zardini, 2005).

"Antonin Artaud, well-known surrealist, was a dissociated and hallucinated schizophrenic" (Heuyer, 1968, p.109)*.

Being at the same place at different times, whether it is the day or night, makes you feel the place differently. Imagine it is 11 pm, you're walking alone in the street... Suddenly your hear steps behind you, someone is running. A dose of adrenalin spills into your body. Yet, nothing more will happen. What would it be if it was happening at 11 am? Absolutely nothing, not even a dose of adrenalin, because you wouldn't even realize that someone is behind you.

In this example, the place is the same, the person as well, but something between this person and this place has been modified. Except the fact it is day or night, the perception seems to be the link between the human being and the place.

This paper attempts to examine through a behavioural geographical way how the five senses and perception set horizons in human experience and the resulting „sense-scapes" at night. It aims through this geographical approach and through an ethological approach of schizophrenia to show how there seems to be a relation between man at night and the schizoid.

According to the geographer Yi-Fu Tuan, perception is defined to be „both the response of the senses to external stimuli and purposeful activity in which certain phenomena are clearly registered while others recede in the shade or are blocked out (Tuan, 1990, p.4)." Also he continues by

saying that „much of what we perceive has value for us, for biological survival, and for providing certain satisfactions that are rooted in culture (ibid.).“

It appears clear that a keyword of perception is sense, not limited to the five classic senses, but also according to the sensitivity of each to perceive for example changes in humidity or in atmospheric pressure, or also with an acute sense of direction, as explains Tuan (ibid., p. 6). But the most obvious change between day and night is the contrast between lightness and darkness. This is perceived by means of our eyes.

Day is directly associated with lightness, night with darkness. At day-time, our perception of the place is essentially visual, sight is the main sense. In daylight indeed, the sensitivity of the human eye is highly capable, and technically called photopic vision. It allows us to see the original colors of the light.

In the dark, the sensitivity of the human eye is slightly different and called scotopic vision. Scotopic vision does not enable color sensors, we thus only perceive brightness image, which consequently means that we do not see as far as during day time. Once deprived from our main sense, we tend naturally to rely more on our other senses. In cities however, since the apparition of artificial lightning during the 19th century (Schlor, 1998), the contrast between day and night is less flagrant.

"Even the night, traditionally a time of darkness [...] has slowly been colonized by the eye. We have been able to cross the frontier of darkness with the help of artificial lightning, which offers us an illusory sense of security. So dependent are we on vision that it is only by prolonging it into the night that we feel secure in our ability to understand and control our surroundings" (Zardini, 2006, p. 44).

In the lighted night, the human eye is either in scotopic vision or in mesopic vision, but never in photopic mode. Mesopic vision is a combination of photopic vision and scotopic vision, in low lightning situations.

By saying that Man is predominantly a visual animal, Tuan affirms that the human being is more dependent on sight than on the others senses to locate himself in space (Tuan, 1990, p. 6). Moreover, people "equipped" with the five senses probably fear the most the loss of sight rather than another one. Our "visualocentrists" contemporary Western societies seem not to reverse the trend.

The geographer Paul Rodaway affirms it:

"To be blind is to be lost in space, it is assumed" (Rodaway, 1994, p. 119).

Between night and day, the most obvious contrast occurs in the visual perception. As our eyes get at night less information, we get less information to locate ourselves in space. Without sight we loose our marks and without marks we are subject to panic. To avoid panic, we will concentrate ourselves on our others senses in order to locate again.

"In total darkness sight is useless. The blind have no use for eyes" (ibid., p. 107).

In order to not give in panic without sight, man tends to be overconcentrated on his others senses. Urban lightning reduces but doesn't erase this phenomenon. This signifies that through our senses, whether it is night or day, we perceive differently. Concerning these others senses, the further quotation describes well what is happening:

„[...] only through darkness, through the temporary blindness produced by the fading of the light that enables sight, are we able to recapture the experience of the other senses. In the darkness, noises are suddenly amplified, odours are intensified, and we even rediscover the sense of

touch" (Zardini, 2006, p. 45).

Taste as well is amplified. It is one major argument of blind restaurants where people have dinner in a total darkness, their food being served by blind waiters. But this example doesn't concerns directly the night flâneur we are. Concerning hearing, a city at day-time is more known for its noise than to be quiet. Of course, this depends on where we are. It seems is very hard, even impossible to trust this sense when located in an urban area, except for people who have the experience, like the blind. The blind are highly sensitive to the masking of sounds and the confusion of myriad sounds, especially in complex soundscapes such as a city street [...] (Rodaway, 1994, pp. 103-104).

At night, time of rest and relative quiet, one can then think that our sense of hearing is more trustworthy. However according to the further quotation in Yi-Fu Tuan's Topophilia (1990, p. 9), it seems to be wrong once again.

> „[...]a world that seems to have lost its dynamism appears less demanding and nervous; it induces a feeling of detachment and peace, as happens in a pleasant way when the sounds of the city are muffled […]. But soon the silence, the severe loss of information, induces anxiety, dissociation, and withdrawal in the deaf" (Knapp, 1948, pp. 203-222 as cited in Tuan, 1990).

Smell, as well as hearing is definitely not trustworthy to get located in space. A delicious smell of freshly baked bread indicates there might be a bakery in the vicinity of where we are. However we are not informed of its distance. At last, tactile sense appears to be the only sense which can inform us precisely, at both night and day, in order to locate ourselves in space.

> „blindfolded […] a man can nevertheless tell the difference between plastic, metal,

paper, or wood […] The fundamental nature of the sense of touch is brought home to us when we reflect that, without sight a person can still operate with a high degree of efficiency in the world [...]" (Tuan, 1990, p. 7).

Unfortunately, touch remains a sense of high proximity, and restricts our field of action.

> „[...] on occasion the senses may give conflicting information and so undermine clarity of environmental perception" (Rodaway, 1994, p. 36).

Finally, except tactile sense which allows us to perceive only close to the body; in urban areas, our others senses, smell and hearing, when not confused by many kinds of parasitic factors like traffic noise or a higher atmospheric pollution, remain obsolete when it is about to locate ourselves in space, especially concerning distance and direction because they do not allow the precision one can have with sight or touch. At least from a point of vue of a non-blind person.

Tactile sense appears then to be the only sense that can inform us precisely on our location, at both night and day. Unfortunately, touch remains a sense of high proximity, and restricts our field of action. We just said that in order to locate our body in a place, we tend then to be overconcentrated on our other senses and try to build either from our memory of the place or from our imaginary of the place which is rooted in our culture, both regarding the degree of habit and experiences to that place.

> „While the night comes to the city, removing dust from its remembrances and its phantasms, each of us is able to indulge in singular associations" (Bureau, 2005, p. 119)*.

The same author mentions then,

„[…] the cold and pasty night of the homeless sleeping on the pavement, the night filled with the nice smell from the backup kitchen of a restaurant, the studious night of the student dreading the exam, the pert night of clubs and pubs, the frightened night of the one who hugs the walls, the long and somnolent night of the night watchmen, the boisterous night of the party man, the conniving night of gangsters and murderers, the reassuring night of closed shutters […]" (ibid.)*.

On account of our sensory limitation and mislead at night, space appears more subjective than its diurnal counterpart and is as a consequence subject to a more fertile imaginary such as wonderment, fear or aggressiveness. Night is full of symbolisms in every culture around the world. The huge amount of resources in literature, cinema, mythology, music, photography […] sounds as an evidence of this sensory limitation and mislead.

> „The city that is revealed to us at night is more abstract place in which unexpected vistas of streets, parks, buildings, or details emerge, while familiar ones suddenly vanish" (Zardini, 2006, pp. 44-45).

At night, our sensory field tends to shrink and to work in a beam of proximity. Retracting our territory, its frontiers come nearer. The individual comes closer to the frontiers of its territory, particularly where the sight is not clear. Our senses play tricks on us and we get contradictory signals. Some of them come from our territory, others are totally unknown. At night, our senses create then parasites on our territory.

We have introduced the notion of imaginary concerning the perception of night territory. It has also seemed to us interesting to go into detail about mind mechanisms relating to territorial perception at night. The perception being the link between man and place and is defined to be both the response of the senses to external stimuli and purposeful activity. Our territory at night is retracted and threatened by the unknown. Deleuze and Guattari define this unknown by „chaos" and use the example of the child striken by fear in the dark singing a melody in order to reassure himself. By singing, the child creates territory in the „chaos".

> "He walks or stops according to the song. Lost, he shelters himself as he can, or finds his bearing as best he can with his little song . This (the little song) is like the draft of a stable and calm centre, stabilizing and calming, within the chaos" (Deleuze & Guattari, 1980, p. 382)*.

This example illustrates well the fact that at night, the child as well as any other human, are looking for a known territory. Sami people, also known as native scandinavians, due to the particular length of the night under these latitudes had a very developed sensitivity towards the night. They had ceremonies linked with the obscurity which were perceived like intervals where time and the order of the world were stopped. During the period of darkness, the Samis tried to reaffirm their existence and to forget their fragility by asserting life by means of feast and all its excesses, against the forces of death (Vigard, 1992, p. 99-100).

Here once again, an other way to create territory in the "chaos". Indeed, the ceremo-

ny is for Samis what is the little song for the child: a way to create at night territory in the unknown. The human behaviour at night is a question of territory. At night we feel more threatened mainly because our senses create „parasites" on our territory. We get contradictory signals: some are known and remind us our territory, others are totally unknown and thus appear threatening.

"I don't want one touching me, I grumble if one enters into my territory [...] It's about to keep at distance the forces of chaos knocking at the door" (Deleuze & Guattari, 1980, p. 395)*.

Territoriality, as explains the geographer John R. Gold (1980) is a central principle of ethological theory. Considering the ethological point of view, unknown signals appear clearly threatening. António Bracinha Vieira (1974) in his ethologic approach of schizophrenia notices that the schizophrenic individual has a conflict of territory similar to the behaviour of an animal whose territory retracts and who feels threatened by intruders. The schizoid gets contradictory signals which can belong to his territory, some are known and reminds him his territory, others are totally unknown to him and thus appear threatening. He acts like if an unknown vector was moving incessantly the frontiers of his territory.

As a consequence, the individual enters in territory conflict with himself, he is at the same time landlord and intruder of his territory. All of this results a territorial duality explaining a strange behaviour of the schizoid, a feeling of fear or aggressivity and a non-certitude to control his thoughts (ibid.). A non-certitude to control our thoughts, fear and aggressiveness, this remind us the case of man at night. We can so notice that this man has a similar behaviour to the schizophrenic individual.

That would enlighten us about shrinking territory, contradictory signals and moving frontiers. These causes of disorder are the same in both cases for schizoid and man at night: conflict of territory or territorial duality. Causes and consequences are the same. We can then think that disorders endured by the schizoid and the man at night are from the same family.

Schizophrenia is defined to be a long-term mental disorder involving faulty perception, inappropriate actions and feelings, and withdrawal from reality into fantasy and delusion.

The man at night seems to be subject to a kind of schizophrenia.

Indeed, the paranoid delirium and the dissociation are components of the discordance, which is itself a fundament of schizophrenia. Schizophrenia is a delirium. Thus, the man – human beings – delirate places at night? Jan Patocka (1975), philosopher, defines (as cited in Halik article, 2001) that the night is an other horizon of sense that doesn't impose to man and to the world the rationality, seen as a source of power and manipulation.

He lets us think that night could be a world that is worth it. Wouldn't it be good to try adapting nocturnal spaces in a different way than diurnal spaces which means developing buildings and spaces in function of our nocturnal abilities?

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*All necessary translations have been done by the author of this paper.

Biography

Julien Richard, is currently a PhD candidate at Charles University in Prague in the Department of Social Geography at the Faculty of Natural Science. His main research interests are in urban, social, behavioural geography and in geophilosophy.

Beyond the visual:
the "moral geographies" of sensory urbanism

Robert Rogerson and Gareth Rice

Department of Geography, University of Strathclyde

1. Abstract

he relationship between moralities and geography can be traced back to the late 1980s when ideology and imagination were used to engage with particular social groups as 'outsiders' from mainstream society (Philo 1987; Sibley 1991; Valentine 1997; Craddock 2000). Increasingly, however, the specific term 'moral geographies' has become aligned with a more general 'moral turn' (Smith 1997; Lee and Smith 2004) across the social sciences to raise a number of questions about the relationship between Urban Renaissance and the design of public (and semi-public) spaces. In examining this relationship, scholars with an interest in 'sensory urbanism' have made some headway in acknowledging the non-visual aspects of the built environment. Previous work includes research on 'soundscapes' (Smith 1994; Raimbault and Dubois 2005; Zhang and Kang 2007), 'semiotics' (Gottdiener 2003) and 'atmospherics' (Wakefield and Baker 1998; Smith and Burns 2001).

In this positional paper, we contribute to the field of 'sensory urbanism' in two main ways: exploring the connections between whose representation of space, and whose modalities are 'desirable' as part of the design process of public spaces. Firstly, drawing on the theoretical apparatus of Henri Lefebvre (1991) we reiterate the importance of 'spatial practice' as a key tenet running right through the urban 'design control' process. Secondly, we put forward ways in which subsequent multi-modal representations of urban space might act as a rejoinder to questions raised by the 'moral geographies' literature. In conclusion, we build upon our observations to argue that a consideration of 'moral geographies' offers one way to unlock the multimodal qualities associated with a progressive sensory urbanism.

2. Introduction

In this paper, we seek to contribute to the developing debates over how the city can be sensed through multiple sensory modalities. We start with three positions. First, sensory dimensions have percolated unevenly into areas of research into the design of space(s). Sometimes this is because of the relative absence of sensory aspects of space, sometimes because such dimensions challenge the basis of control of space, but at other times even when at the heart of research agenda, there has not been developed suitable research methodologies. Second, multi-sensory research has created opportunities for alternative ways of conceptualising of space-place relations, including the

need to draw on other theorisations beyond those traditionally underpinning urban design. And, third, greater attention has to be given to questions of moral geographies to gain an understanding of the multimodal qualities of spaces.

In working with these positions, this paper is divided into five parts. The first outlines some of the key points of sensory research, illustrating briefly some of the diverse ways in which sensory dimensions have been absorbed into contemporary areas of urban design. Second, we turn to summarise (equally briefly) some of the geographical debates over space:place which could contribute to clarifying the contemporary entwining of space and place in the sensory literature. Third, and taking one approach, we draw on Lefebvre's notions of representations of space to offer some alternative ways of thinking about sensory urbanism, before suggesting how strands from debates on moral geographies can enrich the study of sensory urbanism. Finally, and primarily as a point to open further dialogue, we raise some issues to shape the future direction of such research.

3. Trends in Sensory Research

In the last few years there has been a welcome shift away from sensory research being the narrow preserve of psychologists and neurobiologists to include contributions from disciplines as varied as architecture, history, anthropology and geography amongst others. Such multidisciplinarity has largely reflected a recognition that the sensorium (the sensory apparatus or faculties viewed as a whole) is a social construction and not merely to be understood through individual behaviour and sensory responses. As Howes (2006, 115) expresses it, the current interest acknowledges that "sensory studies approach themselves emphasize the

dynamic, relational (intersensory - or multimodal, multimedia) and often conflicted nature of our everyday engagement with the sensuous world". In other words, the senses are theorised as mediating the relationship between mind and body, idea and object, self and environment (both physical and social)" (Howes, 2006, 122).

Sensory research has also percolated into many studies of places and spaces, including in the design of such spaces unevenly. The following illustrate some of this unevenness through three examples – selected to show some of the challenges mentioned above.

a) Design and public spaces

As nodes and landmarks, public spaces have long since been at the centre of city –through time viewed as means by which to navigate through the city (Lynch, 1960), as connections between buildings (Bentley et al., 1985), as residual spaces left behind by the socio-spatial fragmentation of the city (Sennett, 1994), or more recently as sites which enhance and represent the tolerance and social cohesion of the city (Miethe, 1995).

b) Governance and sensory control

The visual dimensions too continue to have most impact in other ways of 'viewing' space. The visual remains the chief register through which governance of the city is registered (eg. CCTV, traffic flows, direction signposts) and where there are other sensory registers these are comparatively light touch and often expressions of release from the controlling aspects of the visual (Amin and Thrift, 2002). In the past soundscapes of the city have often eluded the visual and thus too been outside of the controlling reach of governance. Sounds are uncaptured by the silent lens of the

CCTV camera, absent from the descriptive signs to (visual) sites and areas. But research on soundscapes has highlighted the creeping control reaching its tentacles into this sphere (DeNora, 2000). The use of music to shape buying moods and the consumption experiences, the sounds projected into the public spaces of clubs, pubs and cafes as they spill out onto the pavements and sidewalks, the design of sites to elevate (or minimise) the chatter from customers and users (eg internet cafes; eating spaces in bookshops) have gradually changed the control and governance of space.

c) Soundscapes and sound ambient environments

The challenge to ocular-centricism has included the rapid growth in auditory studies, including acoustic ecology, cultural studies and musicology research. In human geography, since Smith's (1994) influential reflections on the soundscapes of social, political and cultural life, research has progressed – covering not only links between music and space (Smith's initial call) but more widely musical listening practices and the timing and spacing of memory (Anderson, 2004), music and citizenship (Revill, 2000) and music practices transgressing hegemonic spatiality (Kong, 1995).

Such brief accounts can, of course, be contested and do not represent the diversity of activity being undertaken. Rather, each has been chosen to illustrate how sensory dimensions have often been added to conventional areas of analysis in urban design and architecture or where novel (as in soundscapes research) have tended to call on traditional methods of analysis.

4. Space and place in sensory research

Defining and engaging with the concepts of place and space continue to provide a major challenge right across the social sciences but it is geographers in particular have sought to distinguish between them suggesting that they are 'related but distinct concepts' (Hubbard, 2005, 41). Crucial here is the tradition of humanistic geography that emphasises the 'sense of place' or a largely unselfconscious feeling of belonging to one's place immanent in different in different settings. This definition of place is supported by Paasi (1986, 111) who states that:

'[In this way] place is based on the lifeworld and everyday actions of the individual. It is a perpetual, personal interpretation of the meanings emerging from time-space specific situations in one's everyday practices.'

In other words the concept of place enables one to depict the context – to speak specifically about sensory urbanism – in and through which the multimodal qualities of urban space are experienced.

By contrast space tends to refer to larger territorial units including regions and nations. For scholars including David Harvey and Henri Lefebvre space is implicated in the production and consumption of wider social relations. In his history of space Lefebvre (1991) implies that conceiving (designing) space as absolute reinforces the reproduction of revitalised abstract space (i.e. the space of capitalism). In other words, space that emerges under urbanisation is intimately linked to the city building process that in turn has implications for associated sensory experiences (both perceived and lived). In sum, spaces are not places but neither can places be spaces (see Hubbard, 2005).

As the call for papers illustrates, sensory urbanism has given more emphasis on 'space'

– both in terms of its relative location, and its experiential components. In seeking to further clarify the terminology deployed and also as a starting point for greater discussion over the nature of space:place relations in opening new avenues for research, we offer here a brief resume of how, from a geographical perspective, different notions of space and place have emerged. It is the approach of Henri Lefebvre thinking – that is one that we wish to highlight today. This approach has oft been cited as representative of the neo-Marxist accounts of space:place relations. Under this ontology, 'abstract space' has colonised social life through spatial practices and representations of space and it is through resistance and (re-)capturing of such spaces in opposition to the colonising tendencies of capitalism that place (concrete space) can be signified. Let's explore this further.

5. Theoretical framework: A Lefebvrian approach

In this section we suggest that Lefebvre's idea of the city as a 'place of encounter' offers a useful launch pad from which to ask critical questions about sensory urbanism and the multimodal qualities associated with the actual design of city spaces. For us, a Lefebvrian approach does not simply involve delving into the hidden abode of space itself but rather goes beyond the fetishisms of observable appearances (the visual) to trace the inner dynamics of sensory urbanism.

The work of French theorist Henri Lefebvre (1901-1991) and his reading of Marxism have been picked up and popularized right across the social sciences (see Gottdiener, 1993; 2000; Merrifield, 1993; McCann, 1999; Unwin, 2000). In his seminal text The Production of Space Lefebvre (1991) defines 'sensory-sensual space' defined as 'an "un-

consciously" dramatized interplay of relay points and obstacles, reflections, references, mirrors and echoes…' (p. 210). He goes on to suggest that the perceptual relations of 'sensory-sensual space' circumvent social relations proper in the relations of production. On the basis of this circumvention, Lefebvre subsequently argues that there is a need to decode 'sensory sensual space' as 'one layer or element in the stratification and interpenetration of social spaces' (p. 212).

As a means of decoding 'sensory-sensual space' Lefebvre (1991) proposes a conceptual triad (see below) that we suggest may also be useful for critically engaging with multimodal qualities of the urban design process. Lefebvre suggests that because 'sensory-sensual space' tends to establish itself within the 'visible-readable sphere', it '…promotes the misapprehension of aspects, indeed the dominant aspects, of social practice: labour, the division of labour, the organization of labour and so on' (p. 211). However, by the same token if 'sensory-sensual space' does not recognize its own non-visual sphere then other representations of the multimodal qualities of urban space may not be achieved during the design process (see Raimbault and Dubois, 2005; Zhang and Kang, 2007). Notwithstanding, we want to suggest at this stage that Lefebvre's conceptual triad is potentially instructive for deepening our understanding of sensory urbanism:

Representations of space – associated with the 'order' that defines the relations of production, including planners, bureaucrats and architects. This space is always abstract since it is conceived rather than directly lived. What is of particular relevance to sensory urbanism here is the ways in which the design of 'public' spaces has the potential to but doesn't always satisfy

Representational space – space that is di-

rectly lived: 'it is experienced through the complex symbols of its inhabitants and users' (Lefebvre 1991 p. 33). Representational spaces are linked to the clandestine or underground side of social life through the works of artists, filmmakers and others who have the potential to construct counter discourses thus opening up the possibility to think differently about space (see also McCann, 1999).

Spatial practice – everyday routines and experiences that 'secrete' their own social spaces. These routines and routines and experiences could also be non-visual as in the case of soundscapes (Smith, 1994). The key to understanding spatial practices is to recognise that while planners and architects designate urban spaces to be used in particular ways, individuals' perceptions may induce them to use the very same urban spaces in different ways.

We suggest that Lefebvre's (1991) conceptual triad above offers a theoretical starting point for the analysis in the field of sensory urbanism. In identifying the built environment as a (separate) second circuit of capital - the primary circuit being the industrial production commodities and marketing - , Lefebvre's conceptual triad contains elements of both structure and agency (see Gottdiener, 2000) meaning that sensory experiences in the city can be analysed along with the design and planning of urban space itself. We contend therefore that Lefebvre (whether implicitly or explicitly) offers one way to represent the multimodal qualities to be achieved during the design process. On a more general level sensory urbanism might be represented by the interaction (and conflicts) between 'imagined' representations of space (global) and 'lived' representational spaces (local).

6. Moral geographies and sensescapes

Notwithstanding the influence of Lefebvre's conceptual triad he was a protean character who was often criticised for inconsistencies in his terminology and, a lack of concern for racial and gendered relations in the city (see McCann 1999; Gottdiener, 2000; Merrifield 2000; Unwin 2000). In view of these criticisms Thus in the remainder of this paper, we tentatively offer some further discussion of what moral geographies and Lefebvrian thinking can bring to sensory urbanism.

At its heart, moral geography can be expressed simply as "the idea that certain people, things and practices belong in certain spaces, places and landscapes and not in others" (Cresswell, 2005, p128). We suggest that moral geographies reveal three key areas:

In the geographical and sociological debates, particular social groups deemed to be 'out of place' include children (Valentine, 1997), the homeless (Creswell, 1999) and disabled (Kitchin, 1998). Moral geographies assist through the ways in which such production of dissonance is imagined spatially.

At the heart of much of geographical research in that area is about "the way that visions of landscape are connected with ideas of appropriate behaviour that constitute 'citizenship'. A moral geography begets moral citizens" (Cresswell, 2005, p129). In other words it is not sufficient to know what is noise, and the level of such noise which makes the sound 'annoying', but also how such sounds are shaping (positively and negatively) the sense of moral acceptance/ disruption.

Who defines morality? Analysis of social and spatial justice has expose the 'moral'

to be a particular set of suppositions about people and place that serves some form of vested interest and through this any genuinely moral geography is constantly subverted for particular purposes and groups.

7. Moving forward the research agenda

What then can a moral geography approach and Lefebvrian conceptualisation of spatial representation add to our understanding of sensory urbanism? We offer a number of possible avenues and research questions; each of which we see as starting points for further cross disciplinary dialogue.

First, these approaches challenge the notion of a 'singularity' to the positive sensescape and caution against the search for the identification of desirable sensory components. Just as there is a diversity of representations on 'noise' and what contributes positive attributes of a sound ambient environment, there remains a risk across all sensory urbanism research of an underlying assumption that either a suitable balance can be achieved between such perceptions or that a judgement can be made on what is acceptable. In focussing on moral geographies and spatial practices, the search for such a singular position is questionable. Further, such approaches open up spaces to explore what is absent from (rather than the unwanted presences of) sensescapes – and also highlight the (often marginalised) views of citizens.

Second, we suggest that by eliding Lefebvrian and moral geographical spatial notions emphasise needs to be placed on the interrelatedness of sensescapes with other non-auditory dimensions of space and place and in turn raises fundamental questions for future sensory urbanism. These include:

a) What are the codes (and in turn the design codes) which capture the sensory representations of place and what are the relationships with other sensory components? Whilst soundscape research, for example, has offered a corrective to the imbalance in the past on visual aspects of place, it has also created new boundaries in its analysis. In particular the focus on 'noise' (and especially its negative connotations and association with traffic) has unhelpfully constrained analysis.

whose morality, and whose sensory notions are privileged? Such questioning includes asking about the basis of the search for an apparently rigorous system of measurement of sound (noise) to give credence to the (moral) judgement of being unacceptable and an annoyance, and then justification for the interventions made by others . Further, should communities have inputs to the designing process – and if so does this reinforce existing prejudices (eg. divisions on basis of religious sensory symbols, age).

how can space be represented at a general level and what methods of capture can be employed to assist our understanding of these dimensions of space? And embedded in this is a deeper question of which the privileging of the 'urban scale' appropriate.

Together, these reinforce the potential richness of viewing the city through multiple sensory nodalities, but at the same time highlight the journey still to be taken.

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Biographies

Dr Gareth Rice, Lecturer in Human Geography, recently completed his doctoral research on the production and consumption of new retail environments examined through the lens of the Buchanan Galleries Shopping Centre in Glasgow. His research interests include role of music and film in defining place and space, as well as conducting research on urban economic regeneration.

Dr Robert Rogerson, Senior Lecturer in Human Geography, conducts research on sustainable communities. He is currently leading the ESRC programme of 'skills and training in sustainable communities' and is a leading expert on the role of voluntary sector and community building. He has been involved with the regeneration and renewal of the Gorbals in Glasgow, and has been advisor to Scottish Parliament, Scottish Enterprise and city councils.

Physical Scores for Engagement:
Aerial (Brass) & Object Scores

Kirsty Stansfield

Duncan of Jordanstone, University of Dundee

1. Introduction

This paper proposes that a discussion of the representation of the "multimodal" qualities of urban space be replaced with a study of the performativity of these same "multimodal" factors. Enacted mediation, or the performativity of multi-sensory space is outlined as a more appropriate approach to consider what takes place when people engage with space based on a more sensory form of engagement.

Representation is the re-presentation of material or an artefact outside of its original context. In politics this is the act of speaking on behalf of somebody else, or in visual art it is the representation of a scene or artefact rather than the scene or artefact itself. Performativity is the presentation of this material through action, it re-iterates its context rather than re-creating or describing it. Representation presents somebody else's perspective, whereas performativity is the thing itself, which presents itself and exists in that moment.

"aerial (brass)" and "Object Scores" are two interactive sound installations which establish tangible propositions to an audience by inviting them to create sound by their movement within the installations. This examples are used to demonstrate how sensory engagement can be performed rather than represented. The performativity of these spaces is achieved not only by the spatial qualities of those environments, but also by the interpersonal relationships which evolve in the shared experience established in the installations, each person's movement effects the sounds created by someone else. The art works presented are thus considered as physical scores for engagement. This model of a physical score will be addressed in a moment, but first performativity as an alternative to the representation of physical space will be outlined in more detail.

2. Representation v Performativity

In terms of the design or creation of multimodal space, the act of representation and its removal from its original context, risks being a form of disengagement. It is a step away from dialogue between the people involved, those designing spaces and those that the spaces are being designed for. Performativity, on the other hand, and its constituent need to act in the present moment encourages engagement. In other words it can promote a more participatory and dialogic approach to the design of space.

A study of the performativity of multi-sensory spaces is thus shaped by the people that perform or inhabit these situations themselves. The close interconnection of context and behaviour of the 'audience' when considering how a space operates affords the more lateral associations of multi-sensory experience. In place of representation, a study of the performativity of space and our sensory experience of it could provide alternative insights into how the senses can help mediate people's engagement with space.

3. Performativity

Performativity is used here, not only in a theatrical sense, as people implicitly 'perform' in a more conventional way in the installation work discussed here; but also performative in that it speaks of its wider social and political context. Take the example of the act of listening, for example. Unlike the optic sense we have no ear lids, "we are condemned to listen" (Schafer 2003), yet not everyone's ears are open to true listening. Hearing is a cognitive and unconscious activity whereas listening is the conscious attention given to hearing. We must consciously focus on some sounds and not on others or else there would be cacophony. This is a performative act, it engenders the present moment and reflects the wider physical and social context of the person who is listening.

In addition, a discussion of the performativity of a situation or an occurrence "as" performance, establishes a line of questioning in which we can ask who is performing, how does this differ from their normal course of behaviour, what factors effect this performance, is anyone directing the performance, who is the audience for this performance, and what are they performing? (Schechner 2006) In contrast, with regards to representation, a similar line of questioning would concern issues of framing, composition and perspective. It is proposed, therefore, that a study of the performativity of the multi-sensory aspects of space, rather than a study of its representation, more suitably reflects the multi- and trans- dimensionality of sensory experience. No experience of the senses exists in isolation. The effectiveness of the multi-modalities of space lies within the experience of those who participate, and indeed those who shape and form those very experiences. In the examples presented in this paper the performative exploration of the sonic sense brings a number of factors to the fore regarding the improvised, participatory nature and sociality of space.

4. A Physical Score

The model of the "physical score" is similar in concept to the graphic or visual scores used within avant-garde musical improvisation from the mid to late 20th century, including the work of composers such as Earle Brown, Cornelius Cardew, and The Scratch Orchestra, for example. Their graphic scores are intentionally open to interpretation by the musicians performing the works meaning each will differ with every performance of the work.

Earle Brown describes his scores as:

> "a "synergistic" interaction of the composer's concept, the graphic score, the performer's realisation, and the audience." (Brown 2004 p190)

5. Score as Analytical Model

Considering the environment as a physical score for the creation of sound suggests a

different form of engagement with our urban and domestic spaces - one which affords a more exploratory, interpretative and active way of inhabiting the built environment.

A conventional musical score represents a predefined musical event which is fixed in advance to some degree by the composer. Of course musicians may still interpret some elements of how the piece is played, but what is played is defined in advance. This more conventional type of score can be considered a kind of blueprint which has the end result inscribed within its form. This is analogous to an architectural blueprint, which while responding to its context and brief, and being open to negotiation between a client and the architect, it nonetheless defines an "expert" and somewhat singular vision in advance of being placed in its final context.

A visual or graphic score, on the other hand, defines a context for the event to be performatively realised. It requires the musician to interpret the material provided by the composer. The 'structure' might be provided by visual stimuli, such as a collage or drawing, or a more clearly methodological system for the musicians to apply, such as is the case with John Zorn's piece Cobra. While the composer's ideas are represented in some form, the nature of those forms is deliberately open, either as in The Scratch Orchestra's "scratch books" which comprise collages, drawings, text etc, or, as John Zorn's Game Pieces which use filing cards comprising scenes, sounds and instructions. A graphic score is essentially interpretative and sets a more dialogical process in action – a conversation, in fact, between the original intention of the composer, the musician, between the musicians themselves and between the musicians and the audience, and of course between the musicians and the space in which they are performing. The interpretation of that material evolves over time in response to a particular space

or context, group of musicians etc, and will therefore never be the same twice. Indeed, John Zorn states he wants to work with the experiences that people bring to the situation, and by creating an appropriate and interpretative system for engagement - a set of parameters in effect, the rest will follow (Zorn 2004). The more politicised Cardew "rejected the traditional score for supporting a hierarchical division of labour that required performers to subject themselves to the will of the composer" (Cox and Warner 2004). Both Zorn and Cardew proposed that the process of rehearsal familiar in musical performance be replaced by one of training, which implies the process of preparing for something which is not entirely known.

While the graphic score is representative of a musical or sonic idea in the first instance, its output can be said to be distributed through the relations it establishes within the physical and social setting in which it finally exists. In short, its final form evolves through the deeper and active engagement of the people involved in its creation through a process of improvisation. This improvisatory process dissolves the notion of a singular author (Bailey 1992) as it becomes a shared and communal experience which is reliant on a heightened awareness of others, and a heightened auditory sense.

A parallel form of practice within architecture which is based on relations rather than form is Christopher Alexander's Pattern Language (Alexander, Isihikawa et al. 1977). Alexander's Pattern Language encourages a type of active and participatory engagement involving a process in which people can be directly involved in designing the environment in which they will live and work. The language has been developed out of local building traditions and provides a framework which people can shape and adapt to their own situation.

6. Aerial (brass) & Object Scores

Aerial (brass) & Object Scores demonstrate how relations between people, and between people and their environment can be enlivened in an aesthetic and creative manner through the creation of sound.

The two interactive sound installations require an audience in order for the work to be realised. The space is silent without an audience. People generate and create sound while moving around the installation space. As more than one person moves around the space, their movement effects the sounds being created by another person. This implicit performance is realised through a process of non-verbal communication, as people collaborate and improvise together both sonically and spatially.

Their mediation is tempered by distinct spatial and social factors, such as counterbalance, shifts in weight, a heightened sense of listening and an awareness of others. In other words, the physicality of these environments is represented through active sensory engagement and through a process of non-verbal communication. People chose not to speak in these environments. The shared and intuitive generation of sound established an intuitive process of non-verbal communication and collaboration between the people engaging with the installation.

The installation Object Scores developed out of a participatory project working with frail elderly people living in a continuing care ward in a hospital in Glasgow. A series of studies were carried out with participants to explore how sound can mediate people's relations to each other and in response to intimate physical form. A prototype suite of interactive sonic sculptures, or "sound objects" were made which when moved, exposed to light or had applied pressure, controlled sound samples held on a computer. Studies were carried out with participants and a choreographer to explore the performative creation of sound within the hybrid domestic and institutional space of a hospital. These studies were introduced to the participants as a conversation without using words, and very quickly the participant began to engage with the sonic sculptures on a number of levels – through the physicality of visually arranging the objects like a still-life, through the manipulation of the objects to control and create sound, and finally what transpired to be the overriding motivation for engagement was the sociality this process afforded between the participant and the choreographer. The tacit experience of doing, the performativity of non-verbal communication, and the shared process of interpreting physical objects by creating sound meant other relations were established and deepened.

In response to this work with elderly people, the installation Object Scores was developed. This focused on hand movements around an oversized table structure which acted as a bridge similar to that of a cello, to two piano wires stretched through its surface. This installation was a further exploration of how sound can mediate people's relationship to physical form.

7. Conclusion

The installations outlined here present physical propositions to an "audience" - a physical score, similar in intention to the graphic scores employed by The Scratch Orchestra or Earle Brown. These physical propositions intentionally present interpretative situations, not only in an aesthetic sense, as all art is considered interpretative at least at the point of reception, but in a more dialogic sense in which the objects themselves are not the intended end result. Instead the relationships generated within these environment are the desired outcome.

The performativity of these relations encourages a move away from a singular author of a situation, requiring a more participatory approach similar to that carried out with the elderly people living in the hospital ward. In this way, consideration of the performativity of multi-modal space accommodates the key concerns of how physical space shapes human relations while simultaneously taking into consideration how human relations shape those same physical spaces.

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Biography

Kirsty Stansfield is PhD researcher at the School of Television and Imaging, Duncan of Jordanstone College of Art & Design, University of Dundee.

Stockholm, Slowly, Still

Naomi Stead

University of Technology, Sydney

The urban tourist has a quite particular sensibility, mode of behaviour, and way of seeing and sensing the city. This is often the result of mediation and negotiation between tourist media, specifically the tourist map, and the actual lived terrain. But this gap - between an abstract cartographic representation, and an embodied sensory experience - is not the void or lacunae it is sometimes made out to be. In fact it is sketched through and mediated in a number of ways - through the taking of photographic records, through the commercialised regulation of the tourist gaze, and through the materiality of the map itself, as an artefact, one which tears, smudges, frays, and becomes worn with use.

This paper proposes to use experimental writing practices to attempt a new mode of representing and narrativising urban experience, between map and territory. Written from the point of view of an embodied, reflexive tourist, it will also be an experiential and impressionist observation of tourist behaviour in practice. Using both the writerly form and scholarly content of Eeva Jokinen and Soile Veijola's seminal essay, 'The Body in Tourism,' as a point of departure, and drawing upon the author's own experiences as a tourist in the city of Stockholm, the paper will attempt to bridge between the theoretical discipline of tourism studies, and recent innovations in writing space, place, and experience, in testing a new mode of representing the city.

It is nine o'clock in the morning on Saturday the fifteenth of December, 2007. The location is Stockholm. The temperature is zero degrees centigrade, which I know because you have just excitedly pointed it out, on the thermometer mounted outside the dining room window. It would be possible to specify the barometric pressure as well, and the wind speed, but that would be pushing the point, as though this technical detail could convey a certain facticity, as though specificity itself offered truth, veracity, verisimilitude. But of course that's not what we are about here, not at all.

I am feeling delicate. We were up talking late into the night, catching up, and since we haven't seen one another for a long time the conversation was rollicking, kaleidoscopic; we were delighted with being here, in this strange cold place, now. I was drinking red wine. We talked about Sydney, our hometown, about its reputation as a beautiful, superficial, libertine city, well suited to the mores of international tourism. We talked about how hot it is there now, how people will be engaging in the minor transgression of minor taboos – excessive drinking, sex, shopping. We know a number of

people from here who are on holiday there right now, including the colleague whose apartment we are borrowing for the weekend. It's obvious what they are doing there: escaping the cold, they have gone to expose and revel in their own bodies, to be tourists in a place where there is less of a discrepancy between the comfort of the flesh and the condition of the world.

You were more moderate than me last night, and now you are as full of beans as I am feeling blurry. I swallow some painkillers and we talk about how to spend the day. The point of meeting here in Stockholm is to discuss this paper we have agreed to write together, to give in Glasgow in January; to plan it out and talk it through, but also to walk around and be tourists ourselves in the city that is its subject. I plod into the bathroom.

While I brush my teeth you are poking through the bookshelves, pulling things out and reading at random. You quote Alexis Pontvik,

The ability of cities to speak to the senses varies. Stockholm's frigid beauty is well preserved. The missing sensuality reveals a materialistic mentality. Built form in Sweden is for the most part seen as "property," a question of so many square metres [1].

But, you ask loudly over my tooth scrubbing, is there really a 'missing sensuality' here? Isn't it a bit too easy to equate cold with frigidity, with a lack of sensation, feeling, desire, just as it is too easy to equate heat with rampant hedonism? I emerge, clean-mouthed, and am pondering a response when I am stopped short by the sight of your suitcase, lying open on the floor, next to the couch where your sheets are still scrunched. This suitcase is stuffed full of the books you have brought to inform our thinking: theoretical texts and cultural analyses, urban studies and sociology and tourism theory. I feel a queasy lurch of anxiety just

looking at them. But for today we are leaving the books in the bag, we are going out to walk and talk and be tourists ourselves. We are taking just one essay with us: Veijola and Jokinen's 'The Body in Tourism', heavily annotated and underlined, dog-eared and beginning to escape from its staples, it is the touchstone for what we want to do here, and thus something to be kept close, used as another kind of guidebook and map for the day's rambling discussions.

In their paper Veijola and Jokinen imagine taking their scholarly texts with them to Mallorca, destination for a particularly Scandinavian ritual of package tourism, taking the texts there, 'to see what they would tell us in the time and space of tourism, instead of here, in the time and space of sociological discourse [2].' I had an idea that we might reverse their trajectory, going from a beachy summer in Sydney to the winter urbanism of Stockholm, to reinscribe the touristic body and its senses in the city. Admittedly this does not seem too promising, on the face of it, in this climate – swaddled and wrapped, we might seem to be exactly the mobile eye on a stalk that tourism theory supposes. The principle of prophylaxis, installing a barrier between the (vulnerable, warm) body and the (harsh, cold) world would seem to bring a level of numbness, of literal anaesthesia, the loss of sensation. But I am enthusiastic about a phenomenology of cold, of the ice and frost that is so novel and exciting to us both. You tuck Veijola and Jokinen's essay into one coat pocket and the tourist map into the other, and we prepare to leave the apartment.

The sky is a dull low grey, the light dim. There is no sign of sun, or of snow. Stepping out of the lobby we are suddenly and shockingly submerged in cold. It is strangely intimate, its chilly fingers reaching down the neck and through the folds of your coat. It doesn't seem enough to say it is cold, the abstraction of that, its bald lack of evoca-

tion. And anyway, to the Swedes this doesn't even rate, zero is quite warm. But for me it is a shock, this cold which is so much more enveloping than you could ever suspect from looking out through the window of a warm and tightly insulated apartment, the strange double-glazed silence of which gives a feeling of absolute distanciation from the world. To someone from another climate, it seems like such cold should be something you could see from afar, or smell, or taste, not the strangely abstract quality that you know by looking up the weather forecast on the internet. My nose immediately begins to run.

We start to walk, turning right on Asogatan towards the area south of Folkunsgatan known as SoFo.

I notice that the cars sound different here – they are fitted with tyres that will grip on ice, which make a continuous clicking, crushing sound as each small metal stud hits the road surface. We cross Gotgatan and pass vendors setting up a stall to sell Christmas trees, and through a farmers market, smoked meats, bread, cabbages.

I have prepared a self-conscious little speech for you about my preliminary ideas for the paper, and begin haltingly: it seems to me there is a hinge between the deliberately constructed subjectivity of feminist writing practice, the rise of an 'agency of mapping' in critical cartography, and the thread of tourism theory which focuses on embodiment, both of people doing tourism and people observing and theorising them. My idea for our project is to reinsert and re-present the sensory elements that official cartography, and tourism theory, both tend to omit, but which remain in traces in both tourist maps, and in experimental ficto-critical writing. My speech peters out; it's too early for this kind of talk. But you are nodding encouragingly, and add that we could think about questions of form and genre in

written representation, about the conventions of academic writing as themselves an object of examination. We could seize the first person pronoun, attempt to render the scholarly text opaque and explicitly constructed, rather than the (supposedly) transparent, unmediated and universal voice of the third person monologue text. But I have fallen silent. This is new work for me and I'm nervous, it seems that there are so many ways to get it wrong: too self-consciously clever or cute, too contrived or too fictitious, too fruity or too trivial.

We pass a young father wheeling a child completely wrapped up in a puffy red suit, only the face visible, and that face is also red, and emits a piercing wail. I think about the vertiginous feeling I suddenly had yesterday when a colleague referred to her 'winter coat.' Where I come from that is a tautology; every coat is a winter coat. It was disorienting to realise that here there is a whole gradation of coats, a phenomenology of gloves and mittens, distinctions between 'good' hats and 'bad;' a culture of cold that is strange to us.

I am wearing two jumpers, a jacket, and a long woollen coat, as much clothing as I have ever worn in my life. I feel like a deep-sea diver, or an astronaut. Fine motor skills are lost and small tasks become clumsy. I have to turn my whole torso to see whether a car is coming, or to speak to you, walking beside me. Bodily gestures are exaggerated. But I also enjoy the monastic aspect, of walking, hooded; the bowed head, the clasped hands. The many layers do not always prevent sensation – for instance the feeling of the thermal leggings beneath my jeans has a strangely prosthetic effect, as though I have a new layer of hypersensitive fabric skin. While some of the faculties tend to be muffled – it is hard to really smell the city in this climate – others are intensified. So is my attention to the sensory organs themselves - I have never been so aware of

my nostrils, for instance, or the tops of my ears. The fingers come to seem like delicate fleshy anemones that could snap off in an instant. I shoot a sidelong glance at you, so muffled that you are almost unrecognisable. You have tucked your neck down into your scarf like a roosting chicken, but your eyes are still visible, and they look startled.

I see that, like me, you have dressed up for the day's activities – we are conscious that our usual casual-scruffy clothing would immediately mark us out here as tourists, and without admitting it have each attempted camouflage. We have avoided certain sartorial giveaways: hiking boots, gore-tex jackets, backpacks. Your camera is slipped unobtrusively into your pocket. I try out a provocation, quoting Jody Berland, '[l]ike everyone, I have travelled, and like everyone, I hate tourists [3].' You don't miss a beat, retorting immediately with: '[t]he tourist is an unenviable figure: ugly, inauthentic, desperately out of synch [4]'. I try a sucker punch with Chris Rojek and John Urry, that 'the mere sightseer has come to be universally denigrated, as someone who is necessarily superficial in their appreciation of peoples and places [5]'. You snort. We agree to move slowly, in deference to my sore head, and to look for a café where we can have a coffee and consult the tourist map.

We are both feeling a little dislocated, through the simple mechanics of turning the seasons upside down, cars driving on the other side of the road, jetlag, being surrounded by a language we don't understand. We pause for a moment to situate ourselves, to plot out the coordinates of our subject positions. You go first: you are middle class and educated; you know some of the streams and bayous of theory, you lean towards the analytic and the deconstructive, you know the scholarly conventions well enough to risk trying to bend them. You also have a roving eye. I follow on from this: I

like to read tourism theory, but I also like to be a tourist, to do tourist things in all their grotesquery and commodification. I am not only distanced and detached; I am also an enthusiastic amateur. I like postcards and snow-domes, and not just ironically, for their value as jokey kitsch. You nod, and add: we are both women (we ponder how strange and radical is it to actually specify this). We are both also architects, trained in a primarily visual mode of representing the world, a strictly disciplined regime of aesthetic taste.

We begin to climb the long hill at the Eastern end of Sodermalm, between five storey apartment buildings, advent candles in every window. We turn right up a set of slippery timber steps towards the Sofia Kyrka and its surrounding park. There is frost on the oak leaves on the ground, a thin lichen tinges the tree trunks an extraordinary shade of bright green. Everything is still, there is not a bird, not a squirrel to be seen; we find ourselves lowering our voices. The trees are stark black linear patterns against the sky, with the occasional darker knot of a nest. We compare the silhouettes of the different tree species – the birch has the finest linework, the greatest contrast between branch and twig. We wander around the park for a while, watching people with their dogs. A woman in a pink furry hat talks to her ridgeback in Swedish. You find a frozen puddle and stand on its surface with a look of glee, bouncing lightly to hear it crack, to see the bubbles move beneath the surface.

A piece of paper blows past in the wind, and I stop it with a stamp of my foot. On it is written a passage by Jane Rendell, which I cite:

There is a kind of thinking that corresponds to walking, one that follows an itinerary, keeps up a certain pace and remains in constant motion, moving from one thing to another, engaging only in passing; the external world acts as a series of prompts for more

philosophical musings. The spatial story acts as a theoretical device that allows us to understand the urban fabric in terms of narrative relationships between spaces, times, and subjects. The notion of 'spatial stories' can be connected to surrealist wanderings, to the situationist derive as well as to more recent theoretical ideas about nomadology [6].

This sounds pretty good to us both, so we take our spatial story along a winding path through the old quarter of cobbled streets and timber houses, painted in the distinctive Swedish red oxide. One of the windows overhead opens and a woman leans out, shaking a white sheepskin rug vigorously from side to side, then disappearing inside again. We are walking carefully on the rough cobbles, wary of twisted ankles. You stop to pat a cat, which regards you with grave suspicion. You ask me about the question of tense, whether we should be present, as though we are actually here, now; or past, dawdling behind ourselves, hanging on our own coat-tails; or even projected forward, so we pursue our future-perfect selves, following our own trail of breadcrumbs through the city. Is it happening, you ask? Did it happen? Might it happen? Is this based on a true story, or what? I can't answer these questions. I am thinking of the peculiar space of academic conferences, how it couldn't be further from the world of tourism. The conference exists in a kind of timeless no-place of ghostly and bodiless minds, wafted together, in spite of the actual effects of halitosis, bad coffee and rumbling stomachs. This condition is usually only reversed at the conference dinner, under the influence of alcohol, when bodies intrude again. Time passes. We keep walking.

We come across a café and enter, both of us temporarily immobilised as our glasses fog up in the warm interior. You go to the counter to order while I spread out the 'Welcome to Stockholm Map' on the table, feel-ing gauche and embarrassed, wishing it was less conspicuous, thinking about my sheepishness in using a map in public. It should indicate autonomy, being orientated, plotting a confident path in time and space. But really it just seems to advertise vulnerability, that you are unanchored, that you don't know where you are. My thermal leggings begin to feel hot and itchy in the warmth.

A passing waitress looks over my shoulder at my map and, balancing a pile of plates in one hand and a stack of glasses in the other, observes that it is now commonplace to assert that maps are not neutral artefacts. They direct and persuade, she says, they advertise and cajole. But, she continues, shifting her weight casually to one hip, who would ever expect a tourist map to be entirely comprehensive, entirely 'truthful' or unbiased? Implicit in the tourist map is the idea of an edited view, that it does not show 'all' of the possible places or routes, but only the 'best' or 'most interesting' ones, as defined by tourist operators with clearly and evidently vested interests. I am staring at her, impressed. She goes on, arguing that tourist maps provide a valuable case of a knowingly and acceptedly subjective map – if it is true that '[m]aps simplify the world somewhat in the way a heavy snowfall does [7],' she cites Robert Harbison, then a tourist map shows the world after a particularly heavy fall – highly abstracted, simplified, with all of the extraneous detail of the lived city blanketed over. She concludes: in tourist maps it is not interesting to work at revealing omissions or 'lies', since that is the very stuff of which such maps are made. What is far more revealing is to understand what exactly is at stake in their partiality. With this she retrieves a precariously balanced teaspoon and waltzes back to the kitchen.

I return to contemplating the map, and notice that you have already started to annotate it with dots and crosses and cryptic acronyms. You come back with the coffee

and a pair of ciabattas, chevre and walnut and honey; you know my taste. You suggest that we take it away, eat as we walk, since the pace of the argument is dragging, slowing the pace of the narrative here. I have begun to perk up, the painkillers are beginning to work. But as you lay a finger on the map and begin to trace the 'sights' you have planned for us today, I slide immediately back into lethargy. My sluggishness has a perversely liberating effect – I throw aside my customary touristic conscientiousness, my sense of obligation to the must-see list. I don't want to see the sights today, I say, even if Lippard is right in saying that 'anxiety is a basic condition of tourism, for there can never be as many minutes in the day as there are sights to be taken in. The turns not taken may haunt us to the point of casting a pall over the whole trip. We will probably never be back; there are no second chances [8].' What about working against that, I ask – what could be more radical than a boring account of an aimless tourist experience? You look sulky, but we agree to head in the general direction of the centre, and see what happens. That is enough of a destination, enough of a narrative impetus. We struggle back into our outer layers and sidle out the door.

You are navigating, consulting the map, while I am happy to follow vaguely along, looking around, eating my sandwich. We are overtaken by a woman dressed in high black boots, walking purposefully, towing a wheeled suitcase that makes a complex percussive music as it crosses the cracks and the seams of the footpath. An old man walks slowly on the other side of the road, carrying a plastic bag of walnuts. I begin to wonder why there is such a lack of scholarly work on urban tourism. Is it because the city is such a complex and layered entity, that it is hard to distinguish the tourists from the locals, that the boundaries between them tend to blur in the crowd? I try out some rhetorical questions on you. What is the difference between the sensory experience of an urban tourist and a local, and why has the local experience of the city been so privileged? You seem to take this as a cue, and dutifully quote Walter Benjamin, 'The superficial inducement, the exotic, the picturesque has an effect only on the foreigner. To portray a city, a native must have other, deeper motives – motives of one who travels into the past instead of into the distance [9].' But that's a case in point! I say excitedly, waving my coffee in a gloved hand. The 'native' occupant is seen to have access to the true and real place, beyond appearances, because of their haptic attention to it over time, and especially through a distraction that renders the place familiar on the level of bodily experience. The tourist, on the other hand, has neither time nor distraction. But why does that mean that the literature has deprived the tourist of having a body at all? And anyway, I splutter, what's so wrong with the 'superficial inducement'?

You whip out the 'Body in Tourism' essay and answer through Veijola and Jokinen: that the literature of tourism theory has placed a large emphasis on vision, on technologies of sight such as photography, and on the notion of the tourist gaze as appropriative and consuming. But, as you argue that they argue, this often occurs at the expense of the other senses, and of the body as the site and locus of these senses. On the one hand this exclusion of the lived body is highly counterintuitive, given that the point of much (perhaps even most) actual tourist activity is precisely the pleasures of the flesh. But then, at the same time, it is not at all surprising, given the general banishment of the body (in its apparently specific, 'feminine' corporeal materiality) from academic discourse, in favour of the abstract, supposedly 'masculine' universal intellectual faculties of the mind. You argue that tourism theory has tended to skip over the actual subjects and objects (and especially the bodies) of tourists, engaging in a classically dry treatment of the

topic in the name of rigour and scholarship. To approach tourist practices, behaviours, and theory from the point of view of those who are actually doing it, then, is a radical project. Veijola and Jokinen are assisted in this by gender theory, one of the few established fields in which the body is not excluded or ignored, but is made central, in its relation to identity, existential phenomenology, sexuality, and affect. So, I say slowly, in light of that, and after Judith Butler, perhaps we might think of tourism, like gender, as 'a corporeal style, an "act," as it were, which is both intentional and performative, where "performative" suggests a dramatic and contingent construction of meaning [10]'? You shrug. We continue to walk. Time passes.

We emerge from the residential quarter onto a high terrace overlooking the distant islands of Skeppsholmen and Djurgard. There is a fine layer of tiny stick-like ice crystals on the benches, we spend some time examining it, wondering if this might be a falling frost. A ferry slides slowly by across the water. Two other women are already there, looking at the view, and as we pass by I overhear one of them remark that she has been reading Carol Crawshaw and John Urry, that

Sometimes tourism seems to be understood as little more than the collection of disparate and unconnected sights which are given an objectified form in travel brochures, postcards and photographs. Furthermore, the promotion and practice of collecting sights can dominate the very pattern of travel, which is often organised to facilitate fleeting views of spectacular scapes [11].

She seems to know what she's talking about. I glance covertly to see your reaction, but you are fiddling with your own camera, oblivious. It is windy up this high, and as we start down the long slope towards Slussen the cold is coming up through my shoes. My hands feel very dry inside my gloves, my fingertips playing idly with the small pills of wool forming inside. Since you keep stopping to take photographs I take the 'Body in Tourism' from you and walk ahead, striding down the hill.

I read as I walk, not looking where I am going. The essay is structured around a brilliant artifice, that after the authors have travelled to Mallorca they find there, on vacation, a whole panoply of tourism researchers, watching each other watching the tourists, but also engaging in the classic rituals of this kind of package holiday – sunbathing (and getting sunburnt), drinking (and getting drunk), flirting (and being flirted with). Veijola and Jokinen, in their ficto-critical narrative, engage in a number of conversations (not to say altercations) with the assembled scholars, taking issue with various aspects of their work, and exposing in particular the thing that is glaringly missing from the literature: an account of actual corporeal bodily experience. I look back and see that you are amusing yourself with your foggy breath – blowing long plumes of it into the air. The digital temperature gauge on the Gondola reads minus two degrees. A lot of people are wearing very tight jeans, slung low, and slim-fitting jackets. I feel a shudder of empathetic cold just looking at them. My nose is running again. A cold tear slides unnoticed, half way down my nose, before I brush it away.

I ponder why I am so charmed by this essay, its self-deprecating tone, and the intimacy of the conversation between its two author protagonists. It skips between genres – now a diary, now a travelogue, now an argument, now a gossipy chat in a bar. I like the way it collapses distinctions between 'high' abstract theory and 'low' corporeal embodiment, between incisive analysis and the trivial moments, the 'social dressage' of actual tourist experience – the sunburn, the hangover, the faux pas, the flirtation, the dance. It wields the sharpest of critical sensibilities, but with a touch as deft and light as a pickpocket's.

I linger on the bridge, looking over. The water is black, and highly reflective. It is impossible to tell how deep it might be. Glancing back I see that you are jogging to catch up with me. The light has become perceptibly duller, the mud is laced with a white crust. Sometimes you can only tell there is ice on the footpath because the surface changes from matte to gloss. You catch up and point out the powerful atmospheric effect of the seagulls' cries. We only know European birdsong from films, where it is deliberately to evoke a particular type of atmospheric mood – black birds are aural shorthand for threat, sea gulls signify loneliness and desolation. It all feels very portentous when you come across such a soundtrack in real life, and we look around warily.

We enter Gamla Stan, the old town, and walk up and down the crooked back alleys, peering surreptitiously into the windows. My telephone rings and it is my father, calling from a warm late evening in Adelaide, to ask me about Christmas presents. Really I would like a methodology for Christmas, but I don't say that. We wander through the streets until we find a market and watch the pony rides, a fat little Shetland stamping grumpily along in a wild cloud of mane and forelock. Two women walk along swinging a small boy between them, laughing with delight. I buy us each a cup of glogg, loading them up with extra sultanas and cinnamon, and we drink this exceptionally sweet and alcoholic mix standing up at a high table, watching the people. Swilling the last slurry around the bottom of my glass, I dare to say that it all seems rather authentic. I notice that your cheeks are pinker than usual, but whether from my dangerous statement or the alcohol I don't know. We leave the markets and walk on.

The main drag of Drottninggatan is thronged with crowds, and you say irritably that tourists don't seem to know, or care about, the patterns of urban pedestrian etiquette – they move too slowly, they stop often and unpredictably, they walk on the wrong side of the footpath and stand on the wrong side of the escalator. They get in the way. Tourism seems to bring out the misanthropist in you.

You are looking up, above eye level, like the well-trained architect that you are. I am tired and cold now, and walk looking downward like a beachcomber, as though 'botanizing on the asphalt [12]'. Apart from the usual cigarette butts and dog turds the footpath is strewn with small tea-bag-like sachets of snus, a peculiarly Scandinavian way of taking nicotine, where you tuck the little packet of tobacco up against the gum beneath your top lip. Presumably then when it is finished you toss it on the ground, and now that I come to look at it there is a lot of spit down there too, and a lot of the small-calibre gravel they use here to stop you slipping when it is icy. It is a canvas of detritus and grit, formlessness, of matter out of place. You follow my gaze downwards, and ask me whether it is a specific anti-aesthetic sensibility that finds pleasure in a picturesque dilapidation and decay, or is it that the ugly and banal have come to seem more authentic than the spectacular and beautiful? I say that in any case these days it seems an embarrassing cliché to be seen photographing a sewer access pipe cover, even more than a 'legitimate' sight, as though caught trying to sneak into the house of authenticity through the back door.

We reach Sergels Torg and the House of Culture. It is packed with people, playing chess and reading newspapers, sociably, in the warmth. It is impossible to tell who is a tourist and whom a local. We travel up the escalators, somewhat melancholy, climbing to the top floor to look out over the city. The light has faded into a dim blue twilight, even though it is only 3 o'clock in the afternoon. We stand close to the glass, looking down at the city. I ask aloud what we're actually going to do for this paper, whether we are

any closer than we were when we started, what is the plan and the point of it all. I say that I'm not sure the category of 'tourist' is even useful in an urban context, or perhaps whether everyone exists on a scale of being a stranger. The things we have done here today – walk around, take photographs, drink coffee – are very similar to the things we do in Sydney all the time. I wonder whether this is why urban tourism studies is itself a kind of terrain vague within the broader discourse of tourism, an ill-defined gap in the wider field, since in the city tourists are almost indistinguishable from everyone else. There is a pause. We are both silent, looking down. You pull out and unfold the tourist map, which is frayed now, starting to tear from the edges, rupture at the corners. I think to myself that, in use, maps are not really so flat. They are scrunched and folded and refolded and written over. They make a new origami city every time they are refolded into a new configuration. You gather up this delicate concertina and we turn to descend the escalator and go home.

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Biography

Dr Naomi Stead is a Senior Lecturer in Architecture at the University of Technology Sydney. She is presently undertaking a post-doctoral fellowship at the Advanced Cultural Studies Institute of Sweden, with a project on architectural criticism. Her research interests include the history and theory of museums, intersections between art and architecture, and experimental writing practices in architecture. Recent essays have been published in the anthology Critical Architecture, ed. Jane Rendell at al, Routledge, London, 2007, and the anthology Architecture and Authorship: Studies in Disciplinary Remediation, ed. Katja Grillner, Rolfe Hughes and Tim Anstey, Black Dog, London, 2007.

Nothing More than Feelings:
abstract memorials

Quentin Stevens

Bartlett School of Architecture

Introduction

This paper examines large-scale abstract public memorials where visitors' experience is focused on senses other than vision. It centres on visitors' behaviour at two contemporary public memorials: the Lady Diana memorial fountain in London's Hyde Park (fig. 1), and Berlin's Memorial to the Murdered Jews of Europe (fig. 2). The Lady Diana Memorial is a ring-shaped fountain approximately 60m across, set in an inclined lawn landscape. The water flows down from the highest point around both sides of the ring within a low concrete channel (ankle-to knee-high), in a stream varying between 10cm and 3m in width, to a wider pool at the bottom, from where the water is pumped back to the top. The Memorial to the Murdered Jews of Europe in Berlin (hereafter MMJE) is an unfenced two-hectare field of 2711 grey concrete stelae (thick rectangular columns) of varying heights set in closely-spaced rows on an undulating paved ground plane.

These visually abstract memorials are very different to memorials of earlier decades, in their form and also in terms of how people experience them. Much writing about public memorials focuses on their symbolism. A majority of memorials have 'spectacular' forms. Viewers' feelings are affected primar-ily through relatively passive, distant reception of, and reflection upon, visual representations: depictions of the victims and the tragic events, and symbolism which represents feelings and attitudes toward them. This study focuses instead on the varied ways that visitors physically engage with the memorial objects. The abstract forms of the Diana memorial and the MMJE shift the focus of attention from the representational to the sensory content of landscape, and from the artwork to the visitor. At most memorials, visitors' behaviour is respectfully limited to slow walking, standing, kneeling and laying tributes. In contrast, a very wide range of activities occur at these two sites, some of which are quite unexpected. Rather than feelings of loss, grief, mourning, or guilt - feelings which are connected to a person or event being commemorated - people's actions at these two memorials appear to respond to feelings such as curiosity, fear, delight, comfort, and excitement. These feelings are themselves stimulated by a wide range of physiological sensations afforded by these settings.

In these two abstract memorials, the visual message is intentionally reduced to almost nothing, and the designs carefully manipulate visitors' senses of hearing, touch, temperature and kinaesthesia. The intensity and variety of sensory stimuli presented by these

memorials have two important consequences for visitors' experience and their feelings. Firstly, the experience is not as carefully composed as with memorials that are predominantly visual. These settings provide the body with continuous and varied sensory distractions, rather than framing focused, static and protracted ocular attention. Secondly, sensations other than vision, being relatively unmediated, are experienced directly as either pleasurable or unpleasurable, but not interpreted reflexively. Most visitors' actions appear hedonistic rather than mournful. However, the physical qualities of the MMJE, combined with its lack of representational detail, also create physiological feelings of discomfort, confinement, disorientation, isolation, deprivation and instability which are intended to produce a sense of apprehension. The remainder of the paper will explore in detail these two themes of distraction and performativity.

Distraction

The Diana memorial and MMJE lack the careful spatial ordering which is common for memorials that are predominantly visual, where symbols are presented in specific, conscious hierarchies, sequences and other spatial and graphical relationships. People become aware of these memorial objects in different ways.

Incidental Sensation

These two memorials are open, public landscapes which many people come across incidentally and unexpectedly. The memorials are not tall, or located on key, dramatic, axial sites. Both frontality and vision shape people's movement and their sense of purpose (Tuan 1977, Goffman 1959); these relations help visually prominent memorials to gain prominence in the public imagination and to thereby shape society's values. In these two cases, many people do not even notice they are at a memorial. The MMJE has no boundary. The memorial spreads out into the surrounding streetscape. The stelae around the site perimeter are flat, level with the footpath, effectively 'underneath' it. Passers-by thus initially walk over the memorial; everyday public space overlaps sacred space. As people move further into the site, the ground slopes downward and the stelae become taller; visitors' bodies gradually become more immersed within the mass of the object. The Diana memorial sits within a continuous park landscape. In contrast to the nearby Albert memorial, it is not set apart as an obvious object of reverence. The Diana memorial has a low physical profile, and does not draw attention to itself.

Richness of Stimuli

The Diana memorial fountain's concrete channel has a lot of geometric variation along its length: its depth, width, slope, angle, complexity of surface, and texture. This sculpts the water flow into many different shapes and speeds: hard, soft, fast, slow, smooth, rough, splashing upwards. The changes in the water's flow also create a wide range of stimulating sounds: water bubbling, cascading, eddying and rippling. The memorial's design allows visitors to easily move close and touch the fountain with various parts of their bodies. The wide, flat

concrete edge invites sitting and walking into the fountain. People immerse their bodies to feel the water's coolness. They enjoy feeling their own body moving in the water, whether walking, or sitting and dipping their hands or kicking their legs. Visitors playfully explore the water's various material properties by feeling the current, splashing friends (fig. 3), trying to hold back its flow, carrying and pouring it with containers, and even tasting it.

Visitors' bodies are also constantly receiving a richness of multisensory stimuli at the MMJE. The site's undulating topography and fragmented ground surface make visitors aware of their bodily motion, forcing them to actively manage their stride. Inside the memorial, views and sounds of the surrounding cityscape grow fainter as one moves deeper and lower between the concrete masses. Visitors often yell loudly to test the memorial's reverberation or sound absorbency, or slap the stelae with their hands: they produce audible perceptions for themselves and others. Memorial imagery, by contrast, is typically fixed and designed only for reception. The surrounding concrete mass of the MMJE stimulates a haptic sense of enclosure, from a slight increase in air pressure against the skin. The stelae also radiate and absorb a lot of heat. This is a property felt unconsciously on the skin of visitors, but their awareness is displayed by inquisitive touching of the stelae, and most obviously by the many people who lie sunbathing on top of warm stelae, or sit in their deep cool shadows on hot days.

Latham (1999) provides a useful critique of the limits of vision in design, by examining Benjamin's writings on the tactility of urban experience. Latham explores how people perceive objects and meanings differently through touch, identifying five distinctive aspects of touch and illustrating them by contrast to the dominant sense, vision:

Vision tends to comprehend the world as complete, fixed images. Tactile sensations remain fleeting, spontaneous and partial: harder to control, and less focused. The body is constantly exploring new feelings of touch.

The gaze keeps the world at a distance, and this tends toward abstraction and spectacularisation. Touch is spatially and temporally immediate, richly detailed and intense.

Touch constantly perceives in a state of distraction. This can lead to shock experiences which may stimulate a wide variety of desires.

Touch is embodied: to touch is to be touched. Being physically close to the environment and to other people leads to high levels of involvement.

More than just perception, touch is also a form of action which can transform the actor, the setting, and the meanings of objects. Vision remains passive.

For all these reasons, touch is profane; it escapes socialised frames of reference and reverence. The first three of these characteristics of sensation – ephemerality and dynamism; closeness; distractedness and capacity to shock - apply not just to touch, but also to other senses, especially hearing. Such ways of feeling have a very different relation to memory, and thus drastically alter a memorial object's prospects for commemoration.

At traditional memorials where experience is mostly visual, visitors are generally very passive and distant. They slow down and try to 'make sense of' images, connect them together into a logical narrative, by reflecting upon complex chains of meanings. Sound, smell, touch, and the haptic sense provide less of this spatial and intellectual distance, and there is much less fixity and clarity in the impressions conveyed. These sensations

are more likely to operate below consciousness; and impact the emotions more directly. The Diana memorial and MMJE provide the body with continuous and varied sensory distractions which affect visitors without them necessarily 'thinking' about it. They react spontaneously. People visiting these memorials appear to explore the variety of feelings available, rather than concentrating on one 'obvious' perception or action. For these reasons, visitors are more likely to come away with different impressions. Because of the visual abstraction of these two settings, people are often unaware of their significance, so the managers of each site installed signs that clarify the purpose as well as prohibited actions. At the Diana memorial managers also installed a fence.

Fried (1967) provides a useful framework for understanding how people engage with these memorials, through his critique of minimalist sculpture. Because an abstract artwork (in these cases, simple concrete shapes) offers nothing to look at, visitors become more aware of the context surrounding the artwork, their own physical relation to the artwork, their other sensory experiences, their own actions, and the actions of other visitors. People reflect on themselves and what they are doing, what they feel in the moment, rather than privileging seeing and understanding the thing. These two memorials heighten the visitor's awareness of physical space, particularly because the memorials are large and permeable, so people move through and inside the artwork.

Performance

The forms of the Diana memorial and MMJE are experienced up close by moving, acting bodies. The importance of touch and movement in these two settings emphasises that perceptions are not only passively received from these memorial objects. Visitors themselves are the main producers of sounds and smells at these memorials, both consciously and unconsciously. Visitor's own actions produce feelings which are directly, physiologically pleasant or unpleasant. As Thrift (1997) suggests, the human body is perceptive and receptive, but it is also expressive and affective, creating its own possibilities of feeling.

Feeling the Meanings

These two memorials are visually very abstract, far less legible than most memorials. These examples reflect a second major component of Fried's (1967) definition of Minimalism: they show the artists' retreat from representation. Abstract memorials highlight a lack of desire to provide detailed and accurate depiction or explanation of the people, events and feelings which are meant to be commemorated. But it is only visually that these sculptures are minimal. The art appears (i.e., visually) to use a minimum of material and technique. The solidity and geometric simplicity of these sculptural forms prevents the viewer from becoming psychologically absorbed in pictorial content. The formal restraint of these two memorials and the many ways of moving through them also make visitors' actions highly visible to each other. Unusually for memorials, which traditionally prompt introspection, visitors spend much of their time at these sites looking at other people, rather than at the memorials.

For the Diana memorial, the designer Kath-

ryn Gustafson did not want Diana to be remembered as "an icon that you can only look at" (BBC News 2002). The fountain does not 'illustrate' Diana through representation or symbolism, but was designed to communicate something of Diana's personality to visitors by analogy: along the fountain's course, the shape and flow of the water is varied and changeable: sometimes 'bubbly', at other times calm, quiet and gentle; the fountain is also inclusive and accessible, like Diana. To reflect Diana's own affection for children, this fountain seeks to continue to make children happy, by supporting their play, rather than sombre mourning. The memorial is intended to have the same effect Diana herself had on children. Rather than a symbol of joy, this fountain is a device that produces sensory enjoyment. The many children who play here are thus not 'overlooking' this memorial's purpose.

With the MMJE, the architect Eisenman was not trying to represent the Holocaust: he believes this is impossible, because the Holocaust is unfathomable, and representations trivialise it (Eisenman 2005). Figural Holocaust memorials, such as the one at Sachsenhausen concentration camp near Berlin which depicts emaciated, suffering victims, communicate that the viewer should definitely react by feeling sad. Instead, Eisenman wanted to induce in visitors physiological feelings like those the Holocaust victims experienced. He placed the rows of dark, tall, stelae at the MMJE close together, so people walking between them would feel claustrophobic, trapped and confined. Some large, heavy stelae tilt out over the visitor, to make them feel weak and insignificant. The gradually-sinking ground plane draws people downward; long tight rows of stelae restrict views out, so visitors become disoriented in the field of seemingly repetitive and endless stelae. The stelae's mass also attenuates surrounding city sounds. The aisles between the stelae are intentionally too narrow for two people to walk abreast, so people forced to walk in separate rows might feel alienated and alone, with only fleeting views of their companions. The ground plane is uneven and slopes in several different directions, so visitors feel unsteady, destabilised. This memorial communicates with the visitor's body directly through environmental cues, rather than mediation through symbols. Meaning is meant to be conveyed through an analogous bodily experience. These effects are difficult to communicate to the reader through images. People are supposed to feel this memorial's purpose rather than see or think it. These unpleasant, uncomfortable physical feelings are intended to stimulate emotional ones; to produce a sense of apprehension and confusion which might lead visitors to then reflect on why the space they are in is making them feel this way.

At these sites, the designers' efforts to make people reflect on historical tragedies through abstract metaphors and perceptual analogies seem to be at odds with visitors' observed responses to the sensory stimuli. People act according to their perceptions of a range of pleasurable behavioural affordances in these memorial landscapes.

Feeling the functionality

Observations reveal a fantastic variety of ways that people position themselves in relation to these two built environments. Visitors enter into these landscapes and move

through them. They explore possibilities of location, posture and movement. They move around to see the full complexity of the settings and to photograph them, but they are also 'feeling' their way around the sites, and listening to different parts.

The ring shape of the Diana memorial brings people 'inside' it. The site's sloping topography provides an enjoyable awareness of kinaesthesia - the body's own motion - at varying speeds. People walk circuits from the entry gate up and around to the top of the memorial, where they have the best overview, and back down again. Young children enjoy running down a grassy embankment on one side of the ring. People also enjoy rolling on inline skates and scooters down the smooth slope of the memorial's paved paths. The fountain channel has been carefully scaled in relation to the human body. People walking around the perimeter path can bend down to touch the water. The low height and ample width of the concrete edge invite sitting with one's feet in the water, walking along the edge or stretching out to lie down. The watercourse is also scaled to human action. The variations in its current allow people to play different games with its flow. The channel is narrow enough for people to step across the water, yet also wide enough for people to walk along in the channel itself. Visitors experience a wide range of sensations through all these interactive performances with the sculptural form.

Similarly at the MMJE, people explore the diversity and the challenge of various spatial relations to the sculpture. The stelae's incremental changes in height facilitate stepping up onto the upper plane of the field. The stelae's close spacing allows people to walk or jump between their tops. Low stelae near the periphery are ideal for sit on. The stelae have a similar shape and size to people, they stand on the ground; they are freestanding objects which people can interact with. The stelae rows are closely spaced in reach

of outstretched hands, and people walking between them test their temperature, hardness and smoothness. People engage with the stelae's inertial mass when they wedge themselves between pairs of stelae as a way of climbing up (fig. 4). Being able to perceive the properties and arrangements of these objects in close three-dimensional detail emphasises possible relations of action and use, and not just perception.

Conclusion

The MMJE is a sublime landscape. Those who wish to mourn for Jewish Holocaust victims may be expecting a memorial that interprets this tragedy and that makes visitors think sad thoughts. But these concrete shapes are mute. The difficulty of comprehending this memorial is intended to fill visitors with an existential dread which is appropriate to the memorialisation of enormous loss. 'Nothingness' - the invisible and unspeakable - is the message; the nothingness of this setting is intended to overwhelm

visitors. The Diana memorial also explains nothing about Diana's life, how she died, or the public's attitudes toward her. But what this memorial does achieve is making people happy.

These abstract memorials, lacking denotative or connotative symbols, offer the visitor nothing more than feelings, by which I mean sensations. People's immediate sensory responses and reactions to these two memorial settings are the memorials' intended effects. There is no need for interpretation or mental reflection; there is nothing more.

Like all abstract memorials, the Diana memorial and MMJE do not 'tell people what to think' (Carney 1993). But the kinds of playful, indulgent, sensuous activities observed at both sites raise the question of whether these designs encourage visitors to think at all, or, rather, only to perceive, to move, to act. Constant and diverse distraction of the sensing body means that visitors to these memorials are distracted from reflecting upon the victims, the tragedies or the wider society. This can be contrasted with the asceticism and control of ritual behaviours that often become associated with commemoration, for example one minute's silence, standing still, lest we forget. The body is taught about tragedy through focused, disciplined performances, not uninhibited, exploratory ones.

At these two memorials, people's performances actively interpret a rich scope of potential interrelations between various sensory perceptions, spatial conditions, possibilities for bodily action, and emotional states. These relations are unmediated by the kinds of strong representational cues which are typical features of public memorials. People's actions lead to the discovery of new possible interrelations. Various forms of play observed in these settings highlight people's active role as they 'feel their way around' the landscape, 'sniff out' opportuni-

ties, and 'sound out' possibilities.

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Acknowledgements

Biography

Quentin Stevens is a senior lecturer in urban design. He has a PhD in urban design and degrees in architecture and urban planning. His other research interests include waterfront leisure precincts, urban festivals, and architecture and planning in Antarctica. He recently published The Ludic City: Exploring the Potential of Public Spaces and, with Karen Franck, edited the collection Loose Space: Possibility and Diversity in Urban Life (both Routledge 2007).

Materials in Architectural Design:
from abstract to objective material information

Lisa Wastiels & Ine Wouters

Vrije Universiteit Brussel

1. Introduction

Materials are the physical substances out of which things are made. In architecture, the materials a building is made out of do not only determine what can be built, but also contribute to the overall experience of an environment. Different materials or material applications will thus also influence a project differently. In the housing project by MVRDV in Ypenburg (www.mvrdv.nl), terracotta tiles, metal sheeting, and wooden shingles are used among other materials to cover houses of the same form and volume. Even though this is a very extreme example – and perhaps not the most material sensitive design – it illustrates how materials influence the appearance and experience of a project, house or space.

Designing is more than meeting some functional needs; we also design for an experience. When an architect chooses materials, performance aspects are factored in, but also aspects related to the experience and sensorial stimulation take part. An architect can create the atmosphere he has in mind by defining space or lighting conditions but he can also express it through the materials applied. Similar spaces with similar lighting conditions can lead to different impressions when different materials are used.

In this paper we explore the information that is available on materials and discuss the different types of information that would be useful to architects. This study reveals that the needs of architects in terms of material information are different from what is provided to them now. A framework of material information is presented that provides a comprehensive overview of the different material aspects important to the architect.

2. Material Information in Architecture

The most general information that is available on materials in architecture is represented in material data sheets. These data sheets are mostly provided by the manufacturers or material suppliers and contain technical data, like the density, the modulus of elasticity, the elongation, the hardness, the service temperature, the combustibility, and so forth. Very little attention is given to the aesthetics, however. Information on the available colors, or maybe the degree of glossiness can be included, but most manufacturers do not take it any further.

To get an idea of the appearance of products or materials, architects use material

samples or they look at example projects. Some firms, like Material ConneXion®, the Nordic Innovatèque®, MatériO and Materia, offer material sample libraries to their clients: they provide physical samples as well as technical data sheets, so designers can combine two types of information. The use of material samples partially helps architects with the information on aesthetics and experiences but they are mostly a fragmented visual aid with little attention for the multimodal experience the material will contribute to. Moreover, these consultancy firms or libraries mainly aim to bring product designers and architects into contact with new materials, rather than providing them with comprehensive information on materials.

Accompanying the images of the materials, Materia provides technical information as well as sensorial information in their online database 'materialexplorer.'1 Glossiness, translucency, texture, hardness, temperature, and acoustics are specified in the datasheet. Even though these aspects seem to be described rather informal, we believe that providing such 'sensorial' information in the standard material data sheet can be very helpful to architects during their material selection process. Providing better structured and more comprehensive information on materials will facilitate the process of comparing different materials based on more objective information.

In order to create some clarity in the enormous amount of materials that is made available to architects nowadays, it is important to define which characteristics of materials would be desirable information for architects. Here, the word 'desirable' does not necessarily refer to information on "the aspects they like," but to the information on aspects they consider throughout the design process – consciously or unconsciously. Desirable information for architects thus contains the aspects that actually lead to certain decisions during their material selection process. Can we provide more structured and comprehensive material information to architects in order to take more abstract experience aspects into consideration in a more conscious way?

3. Attributing Properties to Materials

Through in-depth interviews, architects were questioned about the materials that were used for their projects, how these materials influenced the projects, and how the choice for different materials would have altered the project. A qualitative analysis of the interviews, which is extensively described in (Wastiels et al, 2007), revealed that architects use similar descriptions for materials, elements, and spaces. Example descriptions of materials are 'colored plaster,' 'metal with a certain texture,' 'material that was very hard,' where the attributes are linked directly to the materials. When talking about elements such as beams, walls or ceilings; the architects used material attributes to describe these elements: 'it's a hard floor,' 'it is an opaque wall,' 'a fragile element'. Finally, the vocabulary used to describe the spaces was also analyzed: 'the room is very sunny in its color,' 'the art buildings are extremely tough,' or 'it is a formal but progressive place'.

Certain attributes like 'hardness' or 'friendliness' were found to be used to describe materials, elements, as well as spaces: a hard material, a hard floor, and a hard space; or a friendly material and a friendly space. This illustrates that, in terms of descriptive vocabulary, it does not really matter whether architects are naming materials, elements or spaces.
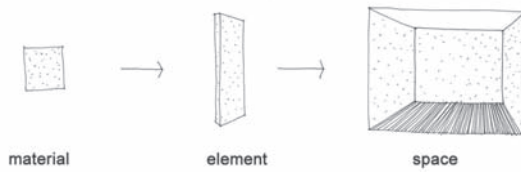
Figure 1: Traditional hierarchy of materials, elements, and spaces reflecting the construction industry.

4. Framework of Material Information

In order to guide architects during their material selection process, it would be useful to provide material information on the different aspects considered during the design and material selection process. Based on the framework of material considerations (Wastiels and Wouters, 2008) and the analysis of the vocabulary used to describe materials, a framework of material information is presented here (figure 2). The different dimensions of materials contributing to the overall project are presented in increasing order of abstraction.

The traditional hierarchy as represented in figure 1 – going from materials to elements to spaces – reflects the construction industry. Construction workers and manufacturers need materials to make elements and they use these elements to create spaces. The design industry, however, does only partially rely on this traditional hierarchy. Architects do not select materials for their projects in terms of this hierarchy but in terms of the preconditions formed by the context, in combination with the considerations concerning the manufacturing process, the physical aspects and the evoked experience (Wastiels and Wouters, 2008). Because their thought process does not always follow the logic of going from a material, to an element, to a space, architects need supplemental or other information during their design process in order to make justifiable material choices.

Van Kesteren (2008) found that product designers think in material solutions and do not really consider the material properties while selecting materials, which makes their material choices very conservative. The analysis of the interviews revealed that architects also have trouble with mastering the properties of materials, and more specifically the description or meaning of the properties of materials. Providing a framework with structured material information might help them in understanding the different nuances between materials without solely relying on their gut feeling. Guiding them through the material selection process based on such a framework, might lead to more conscious material choices, different from traditional applications.

Figure 2: Framework of material information useful to architects.

(1) Manufacturing aspects

The manufacturing aspects refer to the production, assembly or finishing technique. The choice for a specific technique depends on the project context but also on the material's form and physical behavior. Descriptions of manufacturing aspects include sheet-rolled, hand-formed, poured, polished, varnished etc.

(2) Physical aspects

The physical aspects of a material de-

scribe the mechanical, technical, physical, optical, and thermal behavior of the material. This information is included in the standard material data sheets available from manufacturers and material databases. They are quantifiable and can be measured. Examples are the compression strength, the density, the thermal conductivity, etc.

(3) Sensorial aspects

The sensorial aspects of a material describe the interaction with the human senses and can therefore be divided into visual, tactile, auditory, olfactory, and taste aspects. The visual aspects include the color, gloss, and texture of a material; examples of tactile aspects are roughness, and warmth; auditory aspects include dampness, and pitch. Most of the sensorial aspects can be described based on a combination of technical parameters. Tactile warmth, for example, can be described by the contact temperature Tc, which relies on the density, the thermal conductivity, the specific heat, and the temperature of the material sample (Myers, 1971).

(4) Perceptive aspects

Perception is the result of interpreting what is observed (Ashby & Johnson, 2002). Karana and van Kesteren (2006) define perceptive parameters based on what we think of materials after the sensation. In this respect, perceptive aspects such as formal, though or friendly, describe the meaning that we attribute to materials after sensing them. A distinction can be made between material characteristics or human characteristics when describing perception. Human characteristics, such as informal, trendy, or friendly, are concepts that refer to a person's personality which is transposed onto materials. Material characteristics, such as tough, warm, or rough, also refer to a personality but in the form of material characteristics (note

that we also use these terms to describe people's personality). A material can be perceived 'warm' without the material actually being warm according to the technical (at high temperature) or sensorial (tactile warmth) definition.

(5) Associative aspects

Associations are defined by Ashby and Johnson (2002) as making a connection to a time, place, event or person. For materials, associative aspects relate to the common uses of a material in a specific culture or context. Similarly to the associations considered for a project, associative descriptions of materials refer to the personal memory: associations to things people know from the past or from experience. Bricks might be associated with tradition, while metals have industrial associations.

(6) Emotive aspects

According to Desmet and Hekkert (2007) emotions are elicited by an evaluation of an event as potentially beneficial or harmful. In this respect, emotive descriptions of materials refer to the observer's subjective response towards a material; they describe how a material makes you feel. A material can be scary, pleasant, or beautiful.

5. Relation between the elements of the framework

Within this scheme the different levels of material descriptions can be linked to each other. For example, a perception aspect such as 'warm' will depend on a sensory interpretation of warmth (tactile warmth and visual warmth) which itself is influenced by technical or physical material aspects such as the average roughness, the thermal capac-

ity, the density, the color, the thickness, the texture… Moreover, aspects like the texture or the roughness can be influenced by the manufacturing process (like being polished) or the color can be influence by the material being stained.

An architect wanting to create a warm and informal space, might reason back to the material properties (sensorial and physical) and manufacturing techniques that can contribute to it. Moving up the framework, going from most abstract to least abstract properties, a reasoning relation is identified. On the other hand, the physical and sensorial properties of a material applied in a building will affect the perceptive, associative and emotive interpretations of the building's material. Moving down the framework, thus represents a causal relation.

The framework allows to draw relations between the different levels and allows to create links between measurable material information and perception aspects. A more thorough description of the experience aspects of materials and a definition of their relation to the material technical aspects can lead to more thoughtful and well-considered material choices.

6. Conclusion and discussion

To conclude, we found in the previous study that architects do not explicitly think in terms of the traditional hierarchy of materials, elements and spaces. They select materials according to a set of preconditions and several considerations concerning the manufacturing process, physical aspects and experience aspects.

A framework of material information was presented here, which provides a comprehensive overview of information that might be useful to the architect during the design process. In this framework we find six types of material information, going from least abstract to most abstract: manufacturing aspects, physical aspects, sensorial aspects, perceptive aspects, associative aspects, and emotive aspects. This framework allows to draw the relationship between more abstract material information and measurable objective material information.

6.1 Approaches to framework

The framework can help architects in choosing materials or taking design decisions through different approaches: starting from a given material or starting from a desired material experience. The first option would be to start with the specific technical properties of a given material. The given set of properties like the density, color, thickness, etc. leads to a specific sensory interpretation and perception. More general, when choosing to work with a specific material without specifying all the physical aspects, the set of properties could also be a range. For example, one could choose to work with plaster without specifying the color or roughness upfront. The range of possible physical properties leads to the extreme values that could be achieved for the sensory interpretation and perception of plaster (figure 3). Through the framework, the designer can mold the final experience by choosing the physical aspects accordingly. To go with plaster might thus lead to different experiences of e.g. softness or warmth based on the chosen physical variables.

Another option would be to start from a desired perception and track what kind of parameters can be altered to achieve this perception. In this case, the framework of material information helps in 'educating' the architect. Multiple paths are possible to alter the perception. There is no determinate relation going up the framework,
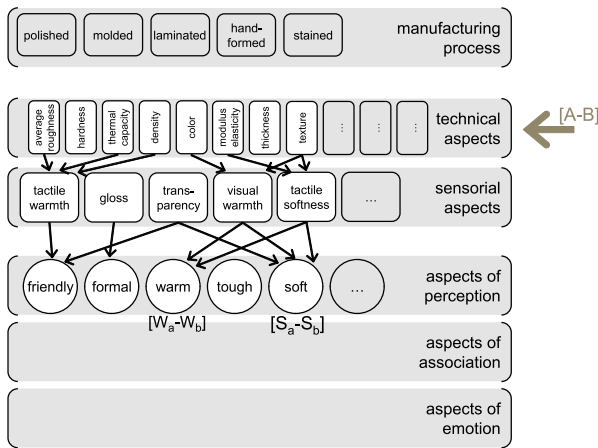
Figure 3: Use of the framework starting from a set of material properties.
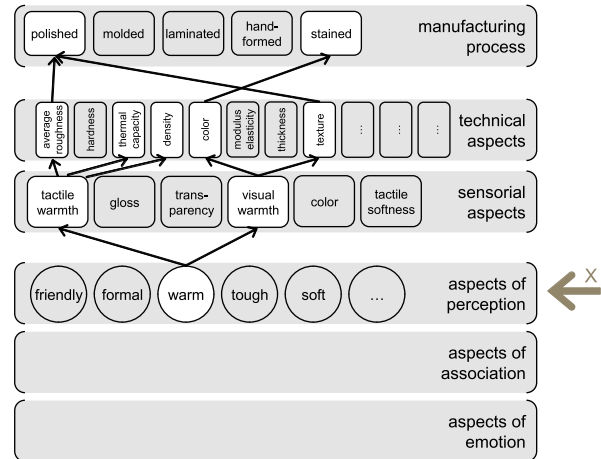

Figure 4: Use of the framework starting from a desired aspect of perception.

which represents the possible reasoning processes of the architect (figure 4). As an example, starting from a warm experience, moving up the framework one can achieve warmth through altering the tactile warmth (eg choosing for wood) or the visual warmth (eg specifying the color). This bottom-up approach actually allows to see how one can coordinate certain material experiences.

6.2 Quantifying descriptions for better selection

Even though the three experience descriptions (perceptions, associations and emotions) can be clearly separated conceptually, they overlap at several points and a clear difference between the different groups can be hard to distinguish in practice. For the most subjective descriptions (emotions and associations), it is rather hard to formulate definitions for the different aspects. However, for the less abstract aspects (sensorial descriptions, and even perceptions) we believe a quantifiable descriptions can be provided that allows architects to make more considerate material choices. A description of the intangible aspects of materials important to architects and designers, can help in bridging the gap between architects and engineers/material scientists.

Further research will focus on the definition of the interaction between the different material descriptions. We will focus on one perception aspect and describe this based on the physical and technical aspects of the material. The aim is to describe the relationship between objective measurable technical information and the sensory or perception level of information in more detail.

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Acknowledgements

Biographies

ir. arch. Lisa Wastiels is a PhD researcher at the VUB – Vrije Universiteit Brussel, investigating the impact of materials on the architectural experience. Her research is funded by the Research Foundation Flanders (FWO) and aims to describe the relation between experience aspects and the material properties. During a one-year stay at the Massachusetts Institute of Technology she worked on the PhD in collaboration with John E. Fernandez, associate professor in Building Technology. In 2005 she completed the Master in Design Studies at Harvard University, after finishing her Architectural Engineering studies at the VUB - Vrije Universiteit Brussel in 2004.

dr. ir. arch. Ine Wouters is a professor, teaching building materials, building technology, timber constructions and renovation techniques at the VUB - Vrije Universiteit Brussel, Belgium. Her research focuses on the redesign, rehabilitation and re-use of existing buildings and structures. She is chairwoman of the Research Lab for Architectural Engineering (ae-lab) at VUB. Her current research focuses on the metals used in the 19th century.

Sensory Experiences of Home:

the construction of home in high density housing context

Anna Wieczorek & Magali Paris

Architectural and Urban Ambiances Research Center (CRESSON-UMR CNRS 1563 Grenoble) & Environmental Research Unit at Psychology Department (Warsaw University, Poland)

1. Introduction

Our research takes place in the context of the dense city by wondering how is it possible to dwell together–today–in high density housing contexts . More precisely, we wonder how is it possible to reconcile, on the one hand, the willing of having its own "Home-paradise" and, on the other hand, the unavoidable condition of dwelling in cities as close to each other in a "huis-clos".

In the first part of our paper, we propose to explore briefly the concept of dwelling through a pluridisciplinary literature review (human geography, sociology, environmental psychology and philosophy).

In the second part, we describe the phenomenological and ethnological methodology we have used and consecutive parts of the works we have implemented in situ.

In the results section, we present four different dwelling attitudes more or less oriented to the self or to the outside environment. We propose for each attitude one behavioural and/or material construction that engages one or more senses and satisfy particular motivations. We also describe the consequences of these constructions at the community scale.

Finally, in the last part, we propose critical discussion of the project: its strengths, its limits, and the future direction we can give to these research. The presented study should be regarded as an exploratory project based on interdiciplinary theory and methodology in the field of sensory urbanism.

2. Theoretical Background

According to Martin Heidegger (1954), dwelling is a way to exist in the world by acting on it. Human condition is directed by the vocation of the goddess Cura: we can not exist in the world if we have nothing to take care of, nothing to be devoted to (Harrison, 2007). Day by day, with little gestures that could have–but not necessarily–material impacts, residents make their house become "dwellable" (Breviglieri, 2006).

Following these concepts, we define dwelling as the process of making a place of existence a Home by taking care of the human, natural and built environment that surrounds us. Residents have in common the skill of adorning the surroundings of their house (Raymond, 1984). Gardening empowers the residents to adorn these surroundings and to take care of it in a special way. Gardening is "a close at hand form of leisure ac-

tivity" (Kaplan, 1973). Gardening consists of modelling soil and branches and taking care of flowers, leaves and fruits. It consists of modelling sensorial materials: perfumes, textures, colours and shapes (Laroze 1990). Moreover, Gardening contributes to the modelling and the care of Self and of neighbourhood relationships. Psychologists such as Rachel and Stephen Kaplan (1990) and Clare Cooper Marcus (2005) have demonstrated that gardening and the perception of the garden plays a major role in the construction of the self and the idea of Home. Moreover, according to numerous experiments of community gardens, gardening not only consists of manipulating raw materials but also of modelling human relationships (Lewis, 1924, Bass, 1987; Morton, Harrison,2007).

Dwelling consists of becoming familiar with a place (Tuan, 1977). The familiarity process takes time. It requires satisfying some psychological primary needs as security, privacy, permanence, control, freedom and self-expression (Gunter, 2000). It permits to create some reciprocal affective bonds with social and physical familiar environment (Seamon, 1980; Prohansky, 1978; Tuan, 1977) and consists of constructing conceptual and material layers of familiarity. These layers of familiarity can be referred to the concentric static shells around the self (Moles, 1992) and also to dynamic distances between Self and the others that shape social interaction (Hall, 1966). In our study, we want to make a one step further by describing, on micro-level, according to the "microspherology" concept of Sloterdijk (1998), different multi-sensorial strategies implemented by people in order to build their layers of familiarity.

Our research focuses on the surroundings of the house, located between the private sphere and the common or public sphere. The surroundings of the house can tell the story of material and conceptual home

construction by sheltering behavioural and material features. According to Jay Appleton (1990), The "house façade" offers prospect and refuge perspective, and these two qualities combined ease the construction of home.

In this sense, therefore, we theorize that residents "construct sensorially" their home in order to protect the integrity of their self and to shape their relationships with neighbours.

3. Methodology

The aim of this paper is to present the importance of senses in everyday experience of Home by investigating different multi-sensorial (or inter-sensorial) strategies implemented by residents. These strategies are different ways, for the residents, to experiment and create their own environment. We claim that dwelling modern cities is a multi-modal experience (Augoyard, 1991; Bromberger, 2007; Sansot, 2006). The multi-modal perception of the dwelling environment, the everyday production and reception of sensorial signals through familiar activities and the sensory modelling of its own environment play a major role in the double movement between the inside and the outside that lead to make a place of existence a home.

To define the empirical frames of the study we assumed that human beings construct sensorially their home in two ways: materially and conceptually. First, residents construct materially the sensory environment they live in trough action on and shaping it with their daily activities. Second, residents construct conceptually their home: they have memories, fantasies and expectations of their sensorial experiences that contribute to a subjective representation of their living environment.

Taking into account these assumptions, our research has been implemented through an interdisciplinary phenomenological perspective. In reference to Seamon (1980), the notion of immersion into the world and of world experience are crucial concepts for this study as a researcher's attitude questioning the in situ and as a way to understand residents' experience.

We have adopted the grounded theory approach to work on the topic (Strauss & Corbin, 1990) that consists to extract hypothesis from the collected research material and permits to work toward a dynamical approach. Our evolutive methodology proposition consisted of more than one in situ visit and of constant feedback between data collection and analytical work in order to find the best fitting tools to work on multisensorial, everyday experience of Home.

We have proposed tools and techniques issued from social sciences. These tools and techniques could be suitable for the observation and the description of Home construction process. Semi-structured interviews were conducted on each site. During our first visit, the interviews were focused on general features of the place and on the relations that residents have developed with their place. During second and further visits, the interviews were oriented towards description of multi-sensorial strategies of Home construction, their motivations and their impacts at the community scale. We assumed residents may have difficulties in speaking about daily life, expressing feelings and fantasies about their place, therefore we have used some techniques referring to the projective mechanism in order to facilitate this type of discourse. These projective techniques were oriented first to in situ perception (commented garden tours), second to spatial place representation (mental mapping, seasonal sensory images of the garden, visual reactivation upon pictures of the place) and social place representation (sociability circles).

Then we proceeded with a content qualitative analysis of the gathered materials by using Nvivo 7.0 software.

4. Results

We revealed, throughout our analysis, different inter-sensory strategies of home construction. In high-density housing contexts, we observed that building home consists of shaping it and behaving within it according to the way we would like to be related to neighbours. We organized these intersensory strategies in 4 groups: 4 dwelling attitudes more or less oriented to Self or to the world: first "Turned on to Self", second "Opened to the world", third "Within the community" and last "On the limits...".
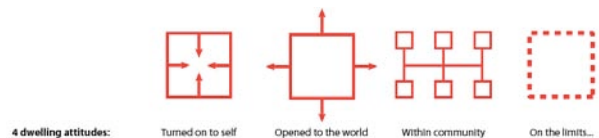

Figure 1: Dwelling attitudes.

Shapes of the house surroundings and behaviours adopted by residents within it constitute a living and unstable landscape, a "sensoryscape", where sensorial signals– produced and received–are circulating. We present 4 situations involving the senses, each one is related to one of the four dwelling attitudes. Either the situation was observed or/and it has been told to us by the residents. We describe them answering the following questions: which senses do the residents involve while acting? Why did they act this way, what motivates them to act this way? What are the consequences of their action at the community scale, how neighbours perceive their action and how do they act back?

By answering these questions, we de-

scribe design process of home construction implemented by residents through their behaviours and the manner they shape their house surroundings. This manner of talking about how residents dwell sensorially could be the sketch of an interdisciplinary tool that get disciplines oriented to the individual and disciplines oriented to the space to enter into dialogue. We show that senses are mobilised by residents in order to satisfy basic psychological needs. Moreover the reception and the production of senses are embedded in the management of neighbourhood relationships. Finally, the sensory way residents feel, act and interact transforms the common conception of a place, far beyond its spatiality.

time, anchored in the middle of his terrace, sensorially isolated from his environment, Arnaud creates his own soundscape. Each member of the community understands the code "iPod listening" that Arnaud created to mean he want to be alone. Residents could also isolate themselves by avoiding to come into visual contact or by adopting a "not to get caught" behaviour by hiding behind and remaining silent. The shaping of the garden could also be the support of different closure process that involve touch and sight and sometimes smell sense.

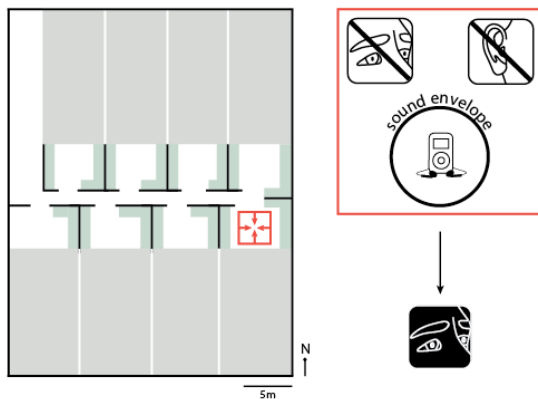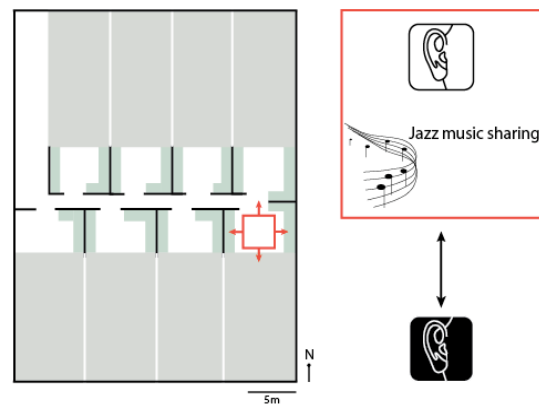Figure 3: Being "opened to the world".

Figure 2: Being "turned on to self".

The dwelling attitude of being "Turned on to Self" could be illustrated with closure to outer sensorialities. Sometimes, Arnaud is staying alone and according to him in tranquillity in the middle of his terrace whereas every neighbour could come to him as there is no door closing his terrace and every neighbour could partially see him as gardens are separated from each other's with semi-permeable bamboo hedges. He could be there in tranquillity since he is listening to his iPod. Therefore, he is less receptive to sound and visual signals and show to the others by wearing his headphones that he does not want to communicate with them, that he wants to be outside the social world for a while. During this intimate

At a different time, Arnaud adopts another dwelling attitude: he is "Opened to the world". Being "Opened to the world" consists of being sensorially receptive to neighbours and willing to get caught by them. Arnaud is very found of jazz music, in common with 2 of his neighbours. A jazz drummer lives and practices there. When Arnaud is in the mood of exchanging with neighbours, he puts jazz music on, quite loud so as it to be understood, to invite neighbours to share it with him and to come to see him. Reciprocally, Arnaud could be sound receptive for listening to jazz music. Arnaud described his dwelling place as a place where personal worlds circulate. This circulation leads to the construction of common preferences. To make its music being heard is often a feature of the spatially introverted places we studied. The residents want to

show their preferences and share them with neighbours. The house surroundings shelter limits very permeable to senses. On the façade of the house–through curtains, windows and doors–and through different spatial sequences of the garden, residents could adopt behavioural codes mainly related to sound and sight in order to communicate and to share moments.

By learning how to dwell together, the residents build community rules based on the behaviours that should be adopted and shape their personal gardens and the common spaces according to a community spirit. The attitude of being "Within the community" consists of influencing each other's on lifestyle and garden shaping, of taking common decisions and of acting together according to common motivations. Arnaud and his wife decided to light their garden, mainly composed of 3 bamboo hedges on each of its sides, with hangings–called PodLens–hooked in the bamboo. PodLens are quite expensive hangings, created by a famous designer. They make reference in the socio-professional world of Arnaud's community. Seeing the lighting in the bamboo that the PodLens created and after talking together about it, 5 others neighbours chose to buy the same hangings. Therefore, 6 neighbours out of 8 have set up the same garden lighting. According to them, this lighting is important as a part of community identity, it creates a kind of continuity between the different houses visually and mentally as it is a shared choice. For the residents, the bamboo and its lighting is the main sensory feature of their dwelling place. The spatial common choices often concern the garden separation and therefore often conditioned the closure and the opening of the garden.
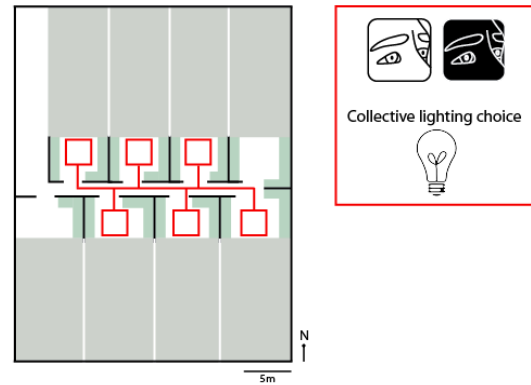

Figure 4: Being "Within the Community".

The behavioural codes are adopted in order to avoid to trouble. Behavioural codes are a set of rules adopted for the community comfort.

Finally, we bring to the fore the dwelling attitude that is "On the limits...". In some contexts, behavioural codes are not systematically understood and private and common surroundings could be more or less definite. Furthermore, having control over the home limits is a psychological basic need. Therefore, residents could focus their attention in-between their home and outside by shaping its limits.

Josette (figure 5) is dwelling in a ground floor apartment totally different spatially and socially from Arnaud's one. The 15-storey building is opened to the public space. Josette reaches her home through a little garden she set up on her doorstep and stairs and on a small public path that reaches the street. Her garden is accessible from the public space and more or less respected by the passer-by. Josette sets up a "to be seen garden" that is always changing according to seasons and special events as Christmas, and she has to pay an everyday attention, she has to be there, to control that what she did is not being damaged by people and domestic animals. By coupling sight and touch senses, Josette try to signal her presence and

to give intimacy to her home surroundings. Her "on the limits…" dwelling attitude consists of distancing others from her home by investing continuously the space. Even if limits are more defined, like they are in Arnaud's dwelling place, limits are always prospect places from where it is possible to observe and control. Private places could always be invaded, with glances, objects, sounds and smells, even if their limits are impassable. Limits are places of tension. Each resident shapes their limits and behaves around them in a very personal way, that's there, on the limits, that the affordances of a place are strongly revealed.
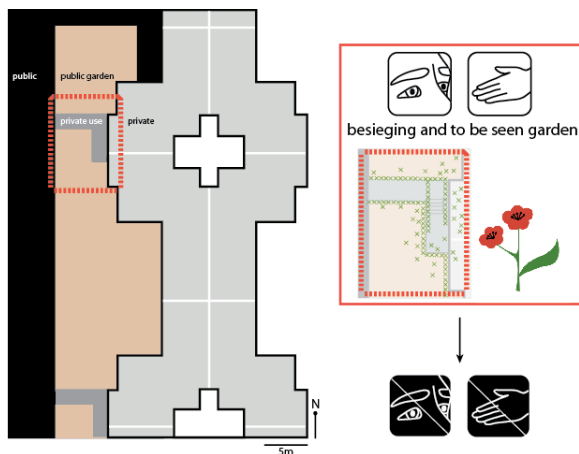

Figure 5: Josette's Apartment.

5 Discussion

The present results describe the process of multi-sensory construction of Home. We have assumed that residents construct sensorially their Home to protect the integrity of their self while shaping their relationships with neighbours. Therefore our research has been focused on the interactions between residents and their dwelling environment to make their place a Home. We have described 4 dwelling attitudes illustrated by behavioural and place shaping actions. These actions involve different senses, they are led by personal and collective motivations and they have consequences on the community scale, on inter-personal relationships and on the community organization.

We presented each dwelling attitude through one example. Each dwelling attitude could be incarnated in very different situation according to the space organization, to the sensory properties of the dwelling place, to the social composition and to the dwelling times. The described dwelling attitudes characterise the affordances of a place, a scope of possibilities that the residents can seize to build their Home.

The evolving methodology, we proposed for the study, permits to follow the changes of places and people and to define some stakes of the conception based on evidences of usage. We have demonstrated that a process of home construction goes beyond the construction of the building. Residents make their place a Home by adaptive and creative actions. This is the way they produce unique, multi-sensory ambiances in their dwelling place. These studies reveal the competencies developed by the residents through dwelling and permits to think space as an evolving place.

By making the sensorialities the key concept of our study, we gathered and described very subtle, often ephemeral, strategies that facilitate the relations with and to the world. These strategies, observed on very different, individual or community level, provide the feeling of security, control over the environment and continuity, therefore permit to call a place Home.

The results demonstrate also that the management of "dwelling together" in the dense, urban housing context pass more by multi-sensory strategies of coping than is based on static space limitations proposed at the beginning of the project. Therefore for further dense buildings, it should be worthy of investigation, with observation of inhabitants actions in order to learn from the process.

We hope some of the presented evidences

may serve to reconsider some assumptions of conception. Moreover, these results lead us to think about the positive consequences of the residents' actions. By giving residents control over their place and giving them freedom of "project's expression", attachment to place could be facilitated.

The main limits of the present study are due to its exploratory character and time limitation. The budget and the duration of the study on intimacy (one year) only made possible punctual meetings with residents, the lack of feedback from residents resulted in the need and the danger of the subjective interpretation of the data abuse. The long-term, qualitative evaluation of housing operations could make possible to follow the experience of home construction through a long-term immersion within the community.

We are also conscious that there is a need for further work to make theses results useful for design. The language of usages and the evolving way of thinking about the project is still unusual. Therefore there is a need for an interdisciplinary work over the vocabulary to make it understandable and useful for architects. A more comparative and collaborative approach can lead us to more useful and universal results, that might be used as a tool for designers.

In this paper we propose an exploratory study on the sensory experience in a pluri-disciplinary context. We think that getting the user-centred disciplines (psychology, anthropology, sociology) and the site-centred disciplines (architecture, landscape, urbanism) can be an effective way to work on the ambiances field and place shaping problematic.

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Biographies

Anna Wieczorek. Research Assistant and PhD Program at the Environmental Research Unit at Psychology Department (Warsaw University, Poland) and at Architectural and Urban Ambiances Research Center (CRESSON-UMR CNRS 1563), Grenoble-France. Her PhD discusses the psychological aspects of NIMBY syndrome referring to urban public spaces.

Magali Paris. Research Assistant and PhD Program at the Architectural and Urban Ambiances Research Center (CRESSON-UMR CNRS 1563).Grenoble-France. She realizes her PhD in sociology and architecture, she participates and leads researches on the links between dwelling and urban environment.