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Table of Contents

Preface by Chief Editor

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In this first number of the second volume of *Architectural Research in Finland,* several authors will discuss the theme of the 8th Annual Symposium of Architectural Research, ARCHITECTURE AND EXPERIENCE NOW. Although the concept of experience has always had a central position in architecture, it is also a challenging concept. It can refer to the subjective experiences that encountering with architecture will produce, or to a generalized form of human existence. But since architecture is also material culture, architectural research also needs to address the preconditions and possibilities of its production that will enable the experience. These are more and more confronted with the challenges of sustainability, in terms of local materials and cultures, in terms of ecological solutions in landscape design, or in terms of communication. Changes of scale also bring new perspectives to research: even though individual buildings and their structures can still be objects under the authority of an individual designer, urban planning and design bring with them social and political processes, as well as communication and conflict resolution.

The tasks of architecture are thus multi-faceted, and this is also reflected in research and architectural education. As universities are generally committed to research-based education, schools of architecture need to balance this with practical relevance and artistic ambitions. One can ask whether the different perspectives of interdisciplinary art and research are complementary, or whether they also challenge each other. The articles in this issue point to both directions. Individual approaches may seem distinct and even exclusive, but highlighting the different priorities in their setting of questions will help to create 'trading zones' for interdisciplinary research. Architecture is no longer clearly contained in today's world, and consequently architectural research must address the everyday life as well as distinctive artworks, and communication as well as authority.

Editorial Introduction

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In an ontological sense, architecture can be seen to exist in two ways, experience and material construction. On the one hand, we humans live in a physical world; and on the other hand, we live in a world of experiences. Architecture plays a role in both these spheres of existence. This does not mean dualism, however; architecture as experience and as material construction are two interdependent aspects of the same phenomenon. The experience of architecture arises from the built environment and the built environment is developed on the basis of the experienced and the lived. Man and the environment are engaged.

Architecture appears differently in different cultures. Time, place, and general environmental and social factors affect both the design and the experience of architecture. Today's architecture is very different from the architecture of a hundred, or even ten years ago. Architecture, as well as society and culture, is constantly changing.

The aim of the 8th Annual Symposium of Architectural Research: ARCHITECTURE AND EXPERIENCE NOW[1] − from which all the keynote speeches and articles of this issue are taken − was to discuss architecture and experience in today's cultural situation. Annual symposia offer a forum open to all researchers. The events have specific themes, but the symposium is a forum for debate, so all points of view are welcome. This time, most of the articles discuss the main topic by dealing with the current phenomena of designing, experiencing and teaching architecture and the planning of urban environments.

We begin with three keynote speeches. In the first of them, **Juhani Pallasmaa** sums up some central features of architecture as experience. According to him, architecture is not primarily material constructions but exists as experiences that arise at the interface between the outer world and the inner realm of the self. Architecture should be encountered, lived and felt, rather than analysed intellectually. Architecture is thus more an art than a science. Although Pallasmaa acknowledges that the various aspects of architecture can and should be approached scientifically, he emphasizes that design is not just a smooth rational process of problem-solving. Juhani echoes Aalto when he states that a “harmony [of conflicting elements] cannot be achieved by any other means than art”. In an artistic process, experience and intuition are more important than rational thinking.

In the second keynote speech, **Heikki Uimonen** gives a music scholar’s view on the topic of how man and the environment are intertwined. There is no such thing as universal listening but all music is historically, culturally, technologically and spatially defined. Because of mechanical reproduction and the modern transmission of sound, music is now playing everywhere. This poses a new challenge for architecture; how to design public ‘sonic environments’. Uimonen has studied commercial radio and urban public spaces, and has concluded that neither radio-industry professionals nor architects and urban planners have paid

[1] Held in Tampere University of Technology (TUT), Finland on 27−28 October 2016. Organised by Tampere University of Technology, School of Architecture.

enough attention to the relationship between a radio station's music policies and the sonic environments of public spaces; the spaces in which we all live, and listen.

The article written by **Saija Hollmén**, **Jenni Reuter** and **Helena Sandman** is based on Reuter's keynote speech at our symposium. Re-emerging interest in discourse regarding the possibility of a social and humanitarian architecture is a phenomenon of the current architectural scene. Among the early initiators of this discourse was the office of Hollmén Reuter Sandman Architects. After completing their first project, the Women's Centre in Rufisque, Senegal (2001), they founded a non-governmental organization named Ukumbi in 2007. Ukumbi is distinct from other comparable organizations through its focus on architectural quality. These architects do not believe in a global architecture. Instead, their starting point is always the local culture and the local experience. The ultimate objective of their projects is to enhance the self-esteem of the end-user.

In the first peer-reviewed article, **Jani Tartia** discusses the everyday experience of driving a car in the urban environment. He challenges the common perception of mobility as transport in favour of a more complex approach. Using a 'rhythmanalytical' framework, the article examines what kind of temporal relations, experiences and meanings are produced between the driver and the environment in the context of habitual everyday driving routes. The data of the study consists of in-car interviews, participant-produced visual material and recorded videos of their journeys.

The next three articles deal with aesthetic issues in urban planning. First, **Helena Teräväinen** discusses the meaning of experience and the role of beauty in her discourse on cultural heritage. She states that since the recession of the 1990s, soft and aesthetic arguments have been superceded by mostly economic values, which seem to be accepted in public discussions and political decision-making. Based on two case-studies of cultural heritage from the town of Lapua in Finland, Teräväinen seeks to show that aesthetic experiences do, however, still exist behind the discourses, even though aesthetic issues may not appear to be present in the argumentation of the cases. Second, **Vesa Vihanninjoki** discusses the role of aesthetics in present-day collaborative urban planning processes. Especially in urban infill projects, the residents' experiential- and locally-based values are often in conflict with the views of planning officials and commercial actors. The author introduces his idea of "urban aesthetics as a trading zone", which refers to the possibility of a pragmatic, 'thin' consensus on the aesthetic issues in a project. Vihanninjoki illustrates his argument with the Koivusaari case in Helsinki. Third, **Hanna Mattila** discusses the dispute between consensus-oriented communicative planning theorists and what she terms 'dissensus-oriented' agonist planning theorists. Rather than emphasising the differences, the author drafts potential realms for a fruitful interplay between these two approaches. According to Mattila, the common ground can be found from the so-called "aesthetic turn" in planning theory, which refers to the increasing popularity of such theoretical ideas that draw on the tradition of philosophical aesthetics. The article ends with some suggestions on how to improve the Finnish planning system through the appropriate application of the two approaches.

In their article, written in Finnish, **Raine Mäntysalo** and **Kaj Nyman** outline the theory of architecture as well-being.[2] By commenting on Christopher Alexander's theory, they start by noting that well-being occurs in environments that contain a "quality without a name". But what could that quality be? Quality avoids conceptualization but it can be recognized by living − or as the authors state, by

[2] A title of the article in English: *Architecture as Well-Being. Searching for the "Quality without a Name".*

dwellers 'meta-communicating'− in the built environment. According to Mäntysalo and Nyman, the quality of the environment − for example an apartment block − manifests itself as a feeling of cosiness. The term 'cosiness' is given an ecological meaning in the article: people should thrive in their built environments as animals do in their natural ones.

The following two articles focus on architectural design and construction. The first one, written by **Satu Huuhka**, looks for tectonic design solutions for the architectural reuse of salvaged wood. The article is based on a literature review of the tectonic possibilities of recycled wood and a simulation that was carried out with students on a specialised timber architecture course. Huuhka concludes her article with ten design principles that are intended to serve as practical guidelines for architects working with reclaimed timber. The second article, by **Yrsa Cronhjort**, deals with evaluation tools for facade retrofits in renovation projects. The article starts with a literature review of existing building assessment methodologies. After that, the author makes her own proposal for evaluation criteria and demonstrates it by evaluating three different approaches to facade retrofits of residential buildings. According to Cronhjort's criteria, qualitative improvements and added value for the end-user are the main objectives of the process.

The article by **Meri Louekari** takes a look at current waterfront developments along New York's East River. Because of their industrial use and all the docks, many waterfronts had been closed off to the public for decades. However, recently the city of New York has opened up access to some of these areas. Based on earlier research, the architectural plans, and two case-studies, the author discusses the existing activities and the future possibilities and challenges for the East River banks. Louekari concludes by identifying ten approaches to revitalizing the waterfront and creating urban experiences in the area.

In her technical article, **Outi Tahvonen** explores the specification of impervious surfaces in Finnish single-family plots. Impervious surfaces have an impact on both the local management of stormwater and the creation of privately-owned urban green spaces. The formation of impervious coverage is measured from data taken from single-family house sites at three different Finnish housing fairs, as well as the landscaping plans presented in the fair directories. Tahvonen concludes that by defining the maximum allowable square footage for roofs and other impervious surface areas, and by setting guidelines for the extent of green area in the plots, statutory land-use planning has the potential to regulate the natural absorption of stormwater at the municipal level.

Finally, **Edward Becker** explores cognitive biases in the digital design process in architectural studio pedagogy. The article draws on cognitive psychology related to cognitive bias and the current pedagogy of digital design. The author sees architectural design as an iterative decision-making process, which is always prone to non-normative behavior, irrationality, and biases. The main objective of the article is to study how cognitive biases influence students' decision-making and how certain cognitive biases may be mitigated or augmented in the digital-design environment. According to Becker, digital media offers a unique opportunity to de-personalize the design process by decoupling the traditional, direct designer-to-design-artifact connection via digital logic, which in turn provides a new strategic way to reduce certain kinds of cognitive biases.

In May 2018, *Architectural Research in Finland* was ranked at Level 1 (basic) in the Finnish Publication Forum classification system. Thus, we are happy to release this first issue of the journal under its new status. Enjoy reading!

EDITORIAL INTRODUCTION

Architecture as Experience

The fusion of the world and the self

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Abstract

The complex phenomenon of architecture consists of too many irreconcilable and conflicting categories of thought, intention, emotion, interaction and action to be condensed into the framework of a single theory of architecture. Besides, art and architecture are constituted in their mental encounter and experience instead of the material works themselves. Works of architecture and art are encountered and lived rather than understood intellectually.

Architecture is commonly understood, taught, practiced and evaluated primarily as a visual art form. However, we encounter buildings and environments through our entire sense of being. Perceptions interact with memory and imagination to constitute an experience with meaning and temporal duration. Art and architecture are essentially relational phenomena as they express our being in the world instead of themselves or their authors. The interest in architecture as experience also directs our attention to such diffuse and neglected experiences as atmospheres, ambiences, feelings, moods and attunements.

Keywords: experience, existential sense, relational phenomena.

Introduction

Modern architectural theory, education and practice have regarded architecture as visually aestheticised spaces and material structures, and primarily studied their historical, functional, technical and formal characteristics. The analyses have focused on architecture as physical objects and spaces and their geometric and compositional qualities, as well as the representation of these properties in drawings. As architecture does not possess a comprehensive theory of its own, the point of view and method of research have usually been borrowed from other disciplines in accordance with changing interests and fashions; often the applicability of the chosen theoretical frameworks have been highly questionable in the specific reality of architecture.

Architecture and scientific criteria

Already at this early point in my presentation, I venture to question the feasibility of a comprehensive theory of architecture, due to the inherent internal complexities, contradictions and irreconcilabilities of this phenomenon. Through their relative artistic autonomy, the arts are less complex and contradictory in their ontological grounding than architecture. The inherent internal complexity of architectural projects was the implied view of Alvar Aalto's inaugural lecture as member of the Academy of Finland in 1955. "Whatever our task , whether large or small […] In every case, opposites must be reconciled […] Almost every formal assignment involves dozens, often hundreds, sometimes thousands of conflicting elements that can be forced into functional harmony only by an act of will. This

harmony cannot be achieved by any other means than art. The final value of individual technical and mechanical elements can only be assessed afterwards. A harmonious result cannot be achieved with mathematics, statistics, or probability calculus" (Aalto 1997a, 174). Aalto's declaration, sixty years ago, of the supremacy of art over science, was a courageous statement considering the fact that some of the most authoritative thinkers and scientists in Finland were in the audience. Aalto's view of the integrating power of art has recently been supported by Vittorio Gallese, one of the discoverers of the mirror neurons: "From a certain point of view, art is more powerful than science. With much less expensive tools and with greater power of synthesis, artistic intuitions show us who we are, probably in a much more exhaustive way with respect to the objectifying approach of the natural sciences. Being human squares with the ability to ask ourselves who we are. Since the beginning of mankind, artistic creativity has expressed such ability in its purest and highest form" (Gallese & Di Dio 2012, 693).

The inherently unscientific nature of architecture arises from the fact that its practice fuses facts and dreams, knowledge and beliefs, rational deduction and emotion, technology and art, intelligence and intuition, as well as the temporal dimensions of past, present and future. Besides, it is simultaneously the means and the end; a means because of its utilitarian task, and an end as a manifestation of art, that mediates experiential, cultural, mental and emotional values. In short, architecture is conceptually too "impure" or "messy" as a phenomenon and human activity to be logically structured within a single theory. A theory of architecture sounds to me as impossible and ultimately as useless as a theory of life. As a consequence of its complexity, architecture is bound to arise from an iterative and embodied action, that fuses rationality and emotion, knowledge and intuition, rather than from theory. There can well be theory-based and fully rational aspects in the design process, but in its entirety, the process is iteratively synthetic. Architectural design is guided by a subjective "self-piloting" action, and an immersive embodied identification with the concrete task, that fuses rationality and emotion, knowledge and intuition, rather than the application of a theory-based rational, methodical and predictable procedure. The design process is not a rational path, as it consists of numerous repeated deviations, dead-ends, new beginnings, hesitations, temporary certainties, and a gradual emergence of an acceptable goal as the result of the process itself. Due to the essential existential content of architecture, its design cannot be a smooth rational problem-solving process. In architectural design, questions and answers arise simultaneously.

The poetic and phenomenological approach

On the other hand, the phenomenon of architecture has also been approached through subjective and personal encounters in a poetic, aphoristic and essayistic manner, as in the writings of many of the leading architects from Frank Lloyd Wright to Alvar Aalto, and Louis Kahn to Steven Holl and Peter Zumthor. In these writings, architecture is approached in a poetic, philosophical and metaphorical manner, without any qualifications as scientific research. These writings usually arise from personal experiences, observations and beliefs. I must confess that these personal and often confessional accounts have valorized the holistic and poetic essence of architecture to me more than the theoretical or empirical studies that claim to satisfy the criteria of science. The experiential and existential core of architecture has to be encountered, lived and felt rather than understood and analyzed intellectually. There are surely numerous aspects in construction, in its performance, structural essence as well as formal and dimensional properties that can be studied "scientifically", but the experiential and mental meaning of the entity can only be existentially encountered and experienced.

During the past few decades, an experiential approach, based on phenomenological encounters and first person experiences of buildings and settings, has gained ground. This thinking is initially based on the philosophies of Edmund Husserl, Martin Heidegger, Maurice Merleau-Ponty, Gaston Bachelard and many contemporary philosophical writers. The experiential and phenomenological approach, which also acknowledges the significant role of embodiment, was introduced in the architectural context by such writers as Steen Eileer Rasmussen, Christian Norberg-Schulz, Charles Moore, David Seamon, Robert Mugerauer, and Karsten Harries. I also believe that the book *Questions of Perception* of 1994 by Steven Holl, Alberto Pérez-Gómez and myself, has helped to spread this manner of thinking especially in schools of architecture internationally.

The meaning of experience

The poetic dimension of architecture is a mental quality, and the artistic and mental essence of architecture emerges in the individual experience of the work. In the beginning of his seminal book *Art As Experience* of 1934 John Dewey, the visionary American pragmatist philosopher argues: “In common conception, the work of art is often identified with the building, book, painting, or statue in its existence apart from human experience. Since the actual work of art is what the product does with and in experience, the result is not favorable to understanding. […] When artistic objects are separated from both conditions of origin and operation in experience, a wall is built around them that renders almost opaque their general significance, with which esthetic theory deals” (Dewey 1934, 4). Here Dewey connects the condition of making a piece of art and its later encounter by someone else, as in both cases the mental and experiential reality dominates and the work exists “nakedly” as a human experience. The philosopher suggests that the difficulties in understanding artistic phenomena arise from the tradition of studying them as material objects outside of human experience and consciousness. Dewey writes further: “By common consent, the Parthenon is a great work of art. Yet, it has esthetic standing only as the work becomes an experience for a human being […] Art is always the product in experience of an interaction of human beings with their environment. Architecture is a notable instance of the reciprocity of the results in this interaction […] The reshaping of subsequent experience by architectural works is more direct and more extensive than in the case of any other art […] They not only influence the future, but they record and convey the past” (Dewey 1934, 4, 231). Here Dewey even assigns an actively conditioning role to architecture in relation to the nature of experience itself as well as to our understanding the passing of time and history. I have formulated this view with the argument that architecture creates frames and horizons for perception, experience, meaning and understanding, and consequently, instead of being the end product, it has essentially a mediating role.

Time in architectural experience

The significance of the time dimension and temporal experience has not usually been sufficiently acknowledged in studies of architecture. Karsten Harries’ statement on the mental meaning of time in architecture is significant: “Architecture is not only about domesticating space, it is also a deep defense against the terror of time. The language of beauty is essentially the language of timeless reality” (Harries 1982). Since Sigfried Giedion’s *Space, Time and Architecture* (1941) the art of building has been theorized in terms of the space-time continuum as defined in modern physics but in the human lived reality the two dimensions have different essences and the dimension of time has also its independent mental role in our experience of architecture. We have a deep existential need to feel rooted in time as much as in space; we need to dwell in time and duration as well as in space and place.

The significance of experience has not been understood in relation to such material and utilitarian objects as buildings and larger environments. Couple of years ago, Robert Mc Carter and I chose the above mentioned quote from Dewey concerning the Parthenon as an art work as the motto of our book which we had entitled *Architecture as Experience* to honor the philosopher's seminal book. We ended up arguing two years about the title with the publisher, who finally used his contractual right and named the book *Understanding Architecture* (McCarter & Pallasmaa 2012), which is, of course, a totally different subject matter and not in the interest of our book at all. Besides, this title sounds rather pretentious. This is a concrete example of the stubborn rejection, even today, of the experiential and mental dimension of architecture, and the continued emphases on rationality and intellectualization, "understanding" over experience.

Encountering architecture

The experiential approach focuses on the encounter of the true architectural reality and the experiencing person and mind, and in accordance with Dewey's view, this actualizes the architectural dimension. The phenomenological method attempts to approach phenomena without preconceptions, and to identify with sensitivity the emergence of emotion and meaning in the unique personal encounter. Beyond its constitution in experience, architecture mediates between the outer world and the inner realm of the self, creating distinct frames of perception and understanding. This interchange is necessarily an exchange: as I enter a space, the space enters me and changes me, my experience, and my self-understanding. Mediation is essential in all art, and Maurice Merleau-Ponty states firmly: "We come to see not the work of art, but the world according to the work" (Merleau-Ponty cited in McGilchrist 2010, 409). The philosopher's view rejects the regrettably common understanding of art and architecture as self-expressions. This is an essential point: the meaning of art and architecture is outside of the work itself, as it always reaches beyond itself. A fundamental starting point in the experiential approach to art and architecture is the fusion or continuum of the physical and the mental, the outer and the inner realms, without categoric boundaries. Rainer Maria Rilke used the beautiful notion *Weltinnenraum*, the inner, mentally experienced space of the world (Rilke 1997, 8). Or, as Merleau-Ponty suggests somewhat enigmatically: "The world is wholly inside, and I am wholly outside of myself" (Merleau-Ponty 1962, 407). The photographer points at the continuum of material and mental, outer and inner realities.

Intuiting architecture

Profound architects have always intuitively understood that buildings structure, re-orient and attune our mental realities. The fact that artists have intuited mental and neural phenomena, often decades before psychology or neuroscience has identified them, is the subject matter of Jonah Lehrer's thought-provoking book *Proust was a Neuroscientist* (Lehrer 2008). In his pioneering book *Survival through Design* (1954), published more than six decades ago, Richard Neutra acknowledges the biological and neurological realities, which are emerging in today's architectural discourse, and makes a surprising suggestion: "Our time is characterized by a systematic rise of the biological sciences and is turning away from oversimplified and mechanistic views of the 18th and 19th centuries, without belittling in any way the temporary good such views may have once delivered. An important result of this new way of regarding this business of living may be to bare and raise appropriate working principles and criteria for design" (Neutra 1954, 18). Later he even professed: "Today design may exert a far-reaching influence on the nervous make-up of generations" (Neutra 1954, 7). Also Alvar Aalto intuited the biological ground of architecture in his statement: "I would like to add my personal, emotional view, that architecture and its details are in some way all part of biology" (Aalto 1997b, 108). The direct impact of settings on the

human nervous system and brain has been proven by research in today's neuroscience. "While the brain controls our behaviour and genes control the blueprint for the design and structure of the brain, the environment can modulate the function of the genes, and, ultimately, the structure of the brain. Changes in the environments change the brain, and therefore they change our behaviour. In planning the environments in which we live, architectural design changes our brain and our behavior" (Gage cited in Eberhard 2015, 135). This statement by Fred Gage, neuroscientist and one of the initiators of the ANFA Academy of Neuroscience for Architecture, leads to the most crucial realization: when designing physical reality, we are in fact, also designing neural, experiential and mental realities. This realization heightens the human responsibility in the architect's work. I myself used to see buildings as aestheticised objects, but for couple of decades now, architectural images have been primarily mental images or images of the human condition and mind for me. I have also gradually understood the significance of the designer's empathic capacity, the gift to simulate and empathize with the experience of "the little man", to use Aalto's compassionate notion (Aalto 1997a, 176).

This interface between the material and the mental worlds is so fundamental that philosophers and neuroscientists, such as Alva Noë, increasingly see this continuum to constitute even the human consciousness. Dewey argued thoughtprovokingly: "the mind is a verb" (Dewey cited in Robinson 2015, 363). I wish to argue that architecture is also a verb, as its true essence is always an invitation to action. It is this verb-like tendency towards active search and exploration that unites architecture and the human mind. Architecture is always also a promise, an offer of human order, predictability and security.

Vision and the existential sense

Until recently, architecture has primarily been seen as a visual art form experienced and judged by vision. This view is expressed most notably by Le Corbusier in his credo: "Architecture is the masterly, correct and magnificent play of masses brought together in light" (Le Corbusier 1959, 31). During the past decades, the hegemony of vision has been pointed out by a number of contemporary thinkers, such as David Michael Levin and Martin Jay. I have also written extensively on the dominance of vision in the western industrial and consumerist culture (Pallasmaa 2005), and argued that the directional sense of vision makes us observers and outsiders, whereas the omni-directional, embracing senses of hearing, touch, smell, and even taste, turn us into insiders and participants. We can also suspect that, the unfocused, peripheral vision is more important than focused vision for the experience of being in space. Already Walter Benjamin argued that architecture along with cinema is primarily a tactile art form (Benjamin 1986). Merleau-Ponty, finally, brought all the senses together in his understanding of sensory perception: "My perception is [therefore] not a sum of visual, tactile, and audible givens: I perceive in a total way with my whole being: I grasp a unique structure of the things, a unique way of being, which speaks to all my senses at once" (Merleau-Ponty 1964b, 19).

After having investigated the phenomenon of architecture for fifty years as an architect, writer and teacher, I have no hesitation in argueing today that the most important sense in architectural experience is not vision, but our existential sense. Architecture is primarily an experience of our embodied sense of being and self, of the experience of being in the world, rather than merely of vision or any other of the five Aristotelian senses. In Merleau-Ponty's statement above, his expression "I perceive with my whole being" also seems to suggest an embodied existential experience.

Couple of years ago I talked with a French artist who had totally lost his eye sight two decades earlier in a brutally violent attack in New York. Yet, he had just

directed a ballet in Warsaw, and was on his way alone to Greenland. As I asked him, "how can you do such things without vision?", he answered, "I see with my whole body".[1] It is becoming evident that we encounter and judge environments and architecture through our most synthetic sense, our sense of being and self. Merleau-Ponty's notion of "the flesh of the world" (Merleau-Ponty 1964b) makes this view understandable: "Our own body is in the world as the heart is in the organism: it keeps the visible spectacle constantly alive, it breaths life into it and sustains it inwardly, and with it forms a system" (Merleau-Ponty 1962, 203). We exist in this flesh of the world and grasp our existence through being part of that very flesh. Merleau-Ponty suggests poetically that Paul Cézanne's paintings "make us feel how the world touches us" (Merleau-Ponty 1964a, 19). I would add that architecture goes even a step further, as it enables us to dwell in the flesh of the world itself. Architecture gives us our domicile in this existential flesh, both physically and mentally.

Architecture also activates and strengthens our sense of self, as its experience is always individual and unique. Architecture seems to be always addressing each one of us individually. Besides, if I am unable to project meaning into my encounter with a place, space or building, there is hardly any architecture, just the physical construction of settings. As Jean-Paul Sartre argues, that when I am reading Dostoyevsky´s *Crime and Punishment,* I project my own sense of frustrated waiting on the character of Raskolnikov (Sartre, J-P. 1978). The imaginative experience of the spaces and events experienced when reading a novel is a most impressive capacity of the human mind. This capacity of literature to evoke and mediate experiences of spaces, places and situations, has been recently studied by Elaine Scarry: "In order to achieve the 'vivacity' of the material world, the verbal arts must somehow also imitate its 'persistence' and, most crucially, its quality of 'givenness'. It seems almost certainly the case that it is the 'instructional' character of the verbal arts that fulfils this mimetic requirement for givenness" (Scarry 2001, 30). When I feel a deep and moving melancholy in Michelangelo's Laurentian Library, it is my own sense of melancholy that I am confronting, released and amplified by the embodied gestural language of the great architect. I can even say that I feel through the muscles of Michelangelo, as his buildings, shapes and profiles secretly gesture as if they were parts of a human body, my own body. The great gift of art is that we can momentarily experience and feel the world and ourselves as articulated through the sensitivity of a great artist.

Perception, experience and imagination

Perceptions are not experiences, as they are mere registrations of stimuli without contextualization, judgement and meaning. Sense perceptions interact with memory and imagination to constitute a full-integrated experience with distinct connections and values. In architectural design work, the most demanding and valuable skill is to intuite or simulate the experience of the physically non-existent entity. Again, intuiting the experience of a single form or object is relatively easy, whereas imagining the entire atmosphere or feeling of a wide and complex spatial entity calls for an extraordinary imaginative skill. The imaginative and intuited experience also calls for the capacity of empathy. The notion of empathy was introduced in the aesthetic theories of the late 19th century, but it has been bypassed during the entire modern era. However, along with the current interest in experience, also the interest in empathy is now emerging

It has taken so long to realize how we actually experience the world, and architecture as a part of it, because we have been misguided by the view of our five separate senses, as defined by Aristotle. We can point an organic, physiological sense organ for each one of our five classical senses, whereas we

[1] Conversation with Hugues de Montalembert in January 2014 in Sydney, Australia.

cannot point an organ for our existential sense, or sense of being, as they arise from a synthetic understanding of being in the world. Even the blind and the deaf are able to experience their full-embodied existence. However, Steinerian philosophy categorizes twelve senses (Soesman 1998), and one of them is the ego sense, the sense of self. Steinerian thinking also identifies a life sense, and a self-movement sense, and, in my view, these three non-Aristotelian senses together constitute the existential sense through which architecture is primarily experienced. Besides, the received understanding of the functioning of the senses seems too simplistic and in the light of recent knowledge, often entirely wrong, but discussing this subject would take me too far from the focus of my topic. It suffices here to just mention that philosopher Alva Noë presents the dramatic question "*Is the Visual World a Grand Illusion?"* in the very title of a book he has edited (Noë 2002). This is a shocking question for us architects to think about.

Relational phenomena

This gradual expansion of our understanding of the senses, their functioning and interactions, and the consequent changes in our understanding of experience, reminds me of the problem of localizing human consciousness. In his book *Out of Our Heads*: *Why You Are Not Your Brains, and Other Lessons from the Biology of Consciousness* (Noë 2009), Alva Noë argues that scientists have not succeeded in localizing human consciousness, because they have been searching its location in a wrong place – inside the brain. In Noë's view – and I believe he is right – consciousness cannot be localized at all, because it is not a thing, but a relational phenomenon emerging between the human mind and the world.

I suggest that artistic experience is similarly a relational phenomenon between the poetic object and the experiencing mind. Atmospheric experience is also a "difficult" phenomenon, because it is a relational experience, not a definable , namable and measurable object or "thing". It is a "quasi-thing" as Tonino Griffero suggests (Griffero 2017). It also arises from relations and interactions of numerous irreconcilable factors, such as scale, materiality, tactility, illumination, temperature, humidity, sound, color, smell etc., which together constitute the "atmosphere", or actually, our experience of it. We must confess now that all artistic and poetic experiences are similarly relational experiences, and their essences, meanings and emotive characteristics arise from a dynamic interaction of numerous factors and qualities with the human neural system and consciousness, in order to constitute an experience. Poetic and artistic experience also activates our deepest collective and biological memories. Our experiences resonate with our personal and biological histories.

An interest in the phenomena of atmospheres, ambiences, feelings, moods, and attunements, as well as in the understanding of the real multi-sensory and simultaneous nature of perception is emerging. This new interest in experience is shifting research from form and formal structures to emotive and dynamic experiences and mental processes. It is evident that when the focus shifts from the physical reality and form to the mental reality and emotion, also the methodology of the study is bound to change. In the study of the experiential essence of art and architecture, relevant philosophical perspectives, as well as an understanding and intuiting of perceptual and mental phenomena, memory and imagination, are called for.

In order to understand human experience, we must shift from the quasi-scientific processes of measuring to the courage and desire to live and encounter architecture directly through our very act of living.

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KEYNOTE SPEECH

Hits and Misses

Music and the sonic construction of place

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Abstract

This paper deals with ontological and epistemological questions about how music, listening and public spaces are intertwined. It introduces selected studies on environmental sounds including Soundscape Studies initiated in Vancouver and its relation to the Bauhaus art movement. Other research traditions presented here are based on the concept of how sound sensations, experiences and memories construct a place. They also state that when examining the relationship between urban sounds and spaces, a researcher should pay attention to the fact that no sound event can be isolated from the spatial and temporal conditions out of which the physical signal is propagated.

Furthermore, the paper introduces the concept of transphonia, which refers to the mechanical, electro-acoustic and digital storage, moulding, reproduction and transmission of sound, and how this phenomenon constructs shared urban environments. When applied in public soundscapes, the sound-producing equipment, its applications and its musical content become political, and therefore negotiable. Thus, centripetal and centrifugal sounds which have been selected to attract certain consumer segments whilst repelling others are increasingly becoming the subject of scholarly interest because of their highly political nature. Such sounds are not only musical, but encompass other liked and disliked sounds.

A case study on commercial radio and urban public spaces is used to shed light on different aspects of transphonia. It shows that radio music in urban public spaces is largely a side-issue for any the radio stations' music policy, as their music is not selected with these spaces in mind. Nevertheless, it is evident that radio stations are relatively influential in constructing the sonic environments of shared spaces. This construction is in the hands of a few radio professionals, although it should be noted that these individuals' positions are far from being monolithic, as they are subject to constantly changing economic, legislative and cultural circumstances. This suggests that a space composed of electro-acoustic sounds would be in constant transformation, too, and it would be a target of constant negotiation and struggle regarding its nature, e.g. in relation to the gender, class, age and socioeconomic status of its users.

Keywords: acoustic design, environment, music, radio, soundscape.

Introduction

Thank you for giving me the opportunity to come and present this keynote speech. It has been a pleasure listening to your papers, so I'm happy to contribute to this discussion by giving you a music scholar's view of the topic.

All music is historically, culturally, technologically and spatially defined.

We will begin by visiting Halberstadt, a small town in Germany, approximately two hours' train-ride from Berlin. In Halberstadt we find the Burhardi church where composer John Cage's work Organ²/ASLSP (As SLow aS Possible) is currently being performed.

What makes this composition a bit special is that it lasts for 639 years. The performance began in 2001, so after some elementary mathematics we can conclude that it will end in 2640. The composition started on September 5th, which was Cage's 89th birthday, with a pause that lasted seventeen months. The first chord marked in the score of the composition lasted five months. In the actual organ, there are two massive bellows, operated by electric power, which deliver the air pressure required to operate the organ. In case of a power cut, the instrument can also be operated manually.

Halberstadt is a memorable experience in a number of ways. It is thought-provoking, solemn and yet peculiarly humorous – a quality, which is often present in Cage's compositions. It might remind you of mortality, when you realize than far in the future, when yet another chord from the same work is being played, you may have already joined the 'choir invisible', as the Monty Python's sketch-writers Cleese and Chapman would have so elegantly phrased it (YouTube 2016).

Halberstadt raises quite a few ontological and epistemological questions about music and listening. What do we understand by these activities? How do they relate to different spaces? Is a three-minute song heard on a radio in a public space identical to the same song listened to in a concert hall? Is a symphony heard on the car radio the same piece of music when it is listened to attentively through your top-notch speakers at home?

According to Cage, the answer is no. His composition seems to remind us that all music is historically, culturally, technologically and spatially defined. This means that we also need to know how different spaces are constructed, who constructed the space, and what were their motives in doing so? Perhaps most importantly, how can we approach the problem of music and space through scholarly research?

Although such intriguing questions cannot all be answered within the length of one speech, I hope to shed some light on them by dividing this talk into four parts. First, I am going to provide some background information by introducing assorted research traditions on environmental sound that you architects might find interesting in your work. This will be followed by a short description of the theoretical concept of transphonia and how it relates to music in public spaces. After this historical and theoretical introduction, I am going to present a fairly detailed case study which will give you an example of how contemporary urban spaces are constructed and what different interests are at play in the environmental and musical sounds we hear or listen to in our everyday lives. Finally, I will present my own conclusions about what this study can tell us[1].

Selected studies on environmental sounds

Soundscape Studies were initiated in the latter half of the 1960s by the Canadian composer and professor of communication studies, R. Murray Schafer. Schafer was influenced by the Bauhaus school of art, which flourished in Weimar Germany from 1919 to 1932. The initial idea was that the Bauhaus concept of Industrial Design (Industrielle Gestaltung) should be applied to the acoustic environment. Multidisciplinary *Acoustic Design* was

[1] Section Commercial Radio and Urban Public Spaces is taken from the article "Transphonic sounds. Commercial radio music in a shared urban environment" published in *Etnomusikologian vuosikirja 2015.*

intended to bring together various scholars such as musicologists, acousticians, psychologists and sociologists who would form a school for studying sound in all its different forms. (Schafer 1977, 4; Uimonen 2005.)

The teaching philosophy in Bauhaus was founded by the German architect Walter Gropius, and was heavily influenced by different art forms including painting and sculpture. The paradigms of Gropius, which were based on paintings, were transformed into musical compositions by Schafer. As Schafer himself put it, "is the soundscape of the world an indeterminate composition over which we have no control, or are *we* its composers and performers, responsible for giving it form and beauty?" (Schafer 1977, 4–5).

In her article *Bauhaus and Soundscape Studies,* Schafer's co-researcher, the composer and soundscape scholar Hildegard Westerkamp, states that her colleague was intrigued by the multidisciplinarity of Bauhaus and how professionalism, artistic production, functionalism and creativity were bound together. This was evident in the *World Soundscape Project* (*WSP*) launched in the early 1970s. According to Westerkamp "Rather than staying marginalized by producing inaccessible and abstract art music for small exclusive audiences, we thought of the composer as a valuable contributor towards dealing with issues of soundscape. Composers could become the socially conscious, 'sonic-architects' or 'acoustic designers' of our cities, buildings, and villages." (Westerkamp 2002, 1–2.) Drawing on this, it is not difficult to understand that the sonic environment was also evaluated qualitatively, with analytical listening as one of the research methods.

Like Bauhaus, the World Soundscape Project's actions consisted of the application of a number of different research and pedagogical methods. Research projects combined quantitative and qualitative research methodologies, including decibel measurements, traffic counts, interviews and archive work dealing with the soundscape history of a given area (Schafer 1977). The WSP also documented soundscapes, edited radio programmes, published academic research and educational booklets, and organised workshops on sound education.

Schafer pulled his ideas together in his seminal book *Tuning of the World* (1977). This book is a highly ambitious presentation of a wide variety of sound-related topics, such as historical, rural and urban soundscapes, changes caused by the industrial and electronic revolutions, auditory perception, soundscape compositions, and documenting and researching soundscapes. Although *The Tuning of the World* is indeed inspiring, it lacked a sufficiently analytical and consistent theory and methodology to analyse sonic phenomena in a truly scholarly fashion. Despite that – or maybe because of that – it led Barry Truax to further refine the methodology for soundscape research and to develop it into a recognised academic discipline, now known as *Acoustic Communication*. There are currently a number of active research and artistic communities operating in Finland and other Nordic Countries, Central Europe, and Japan. These researchers are developing the discipline's methodology through a variety of research projects. (See e.g. Augoyard & Torgue 2008; Hedfors 2003; Hiramatsu 2013; Järviluoma et al 2009.)

It has been pointed out that in the context of environmental sounds, politicians and urban planners tend to concentrate on the bad qualities – *diagnostiquer le mal* – and to combat these negative perceptions of sound by building barriers that insulate people from unwanted noise. However, urban planners should also try to diagnose the good qualities of sound – *diagnostiquer le bien* – in order to investigate and promote favourable urban sound space conditions (Hellström 2003, 11). Strategic and operative actions for the policy makers should also be included in this process. This maxim echoes the views

of the WSP on how the sonic environment could be improved with more appropriate and competent acoustic design.

Quantitative sonic measurements were first taken in the 1920s (Thompson 2002, 148) to provide data for the analysis of acoustic environments. However, the qualitative perception of sound is as old as humanity, and thus qualifies for inclusion in any such research. Although some everyday sounds go unnoticed, they always mean something to their listeners. Sound studies therefore concentrate not only on the physical and acoustical properties of environmental sounds but also on their social and cultural contexts, including the "tacit knowledge that people have about the structure of environmental sounds", which Truax has referred to as 'soundscape competence' (Truax, 2001, 57–8).

Soundscape competence resonates with notions of the relationship between sound, place and listening. The term 'acoustemology' (Feld 1996, 97) is used to refer to an exploration of sonic sensibilities, i.e. how sound sensations, experiences and memories construct place. As soundscape competence includes both communal and the individual's relationships with environmental sounds, an acoustemological viewpoint stresses that experience and memories are inextricably related to sounds and places (Uimonen 2011).

When examining the relationship between urban sounds and spaces, one should pay attention to the fact that no sound event can be isolated from the spatial and temporal conditions surrounding the propagation of its physical signal. It has also been asserted that sound is shaped subjectively by the auditory capacity, attitude, psychology and culture of the listener. There is no such thing as a universal approach to listening; every individual, every group and every culture listens in its own way (Augoyard & Torgue 2008, 4).

Another parallel concept is that of ambiance. This can be characterized as something related to how people sense and feel a place. Every ambiance has its own specific mood expressed in the material presence of things and embodied in the everyday life of city dwellers. Thus, ambiance is both subjective and objective: it involves the lived experience of people as well as the built environment of a particular place. (Thibaud 2003.)

This necessarily brief introduction to Soundscape Studies, Acoustic Communication, Acoustemology and Ambiance has been included to give you some rudimentary information about their scholarly legacy, and to demonstrate the background to current research into how an individual or a community interprets, constructs and gives cultural meanings to their sonic environment. Researchers on the topic of sound come from a wide variety of scholarly and artistic backgrounds ranging from composing, communication research, anthropology and architecture. Finally, the term originally invented in the early 1960s in Canada was given an ISO-standardised definition in Europe, too (Kang 2013).

Transphonia

Rene Magritte painted a picture of a pipe and named it "*Ceci n'est pas une pipe*" ("This is not a pipe"). This somewhat simplified example underlines the difference between a *picture* of a pipe and the actual device meant for smoking tobacco. The same point can be said to be true of the difference between a sound and a *recorded* sound. Recorded sounds are now taken for granted, but they have changed not only our perception of music, but also how we describe music linguistically. In reality, different mechanical and electroacoustic music platforms do not actually play the Beatles, or any other recording artist. All they can do is

reproduce musical and non-musical sounds. This phenomenon is called Transphonia.

Transphonia refers to the mechanical, electroacoustic and digital storing, moulding, reproducing and transmitting of sounds.

Transphonia refers to the mechanical, electroacoustic and digital storage, moulding, reproduction and transmission of sounds. Most importantly, it pays scholarly attention to past and current music performance practices in the light of multiple individual and social meanings compared to the original contexts of the sounds. Thus, compared to the pre-phonographic era, music today can have multiple meanings, depending on where one listens to it. Transphonia underlines the processual nature of restated sounds, particularly when the reception of music is being studied. (Uimonen 2005, 63.)

The use of transphonic equipment permits different kinds of listening than were possible in the pre-phonographic era. Phonographs, gramophones, radios, compact cassette players, transistor radios, and more recently digital recordings and playback devices have all enabled music to be listened to in an increasingly wide variety of spaces. As a result, whereas listening to music was once confined by technological limitations, nowadays, both background and foreground music have become part of the contemporary urban and rural sonic environment, which includes commercial environments.

This has not gone unnoticed by scholars, who have presented a number of studies on the effects of music on consumer behaviour. The topics of these studies range from the influence of in-store music on wine selections to the effects music can have on a consumer's choice between two competing foods or even between competing brands of petrol. There has also been a study of the effect background music can have on the taste of wine, and another one on the congruence between background music and the goods in a florist's shop, appropriately titled "Love is in the Air". (North, Hargreaves & McKendrick 1999; Yeoh & North 2011; North 2012; Jacob *et al* 2009.)

However, when operating in public soundscapes, sound-producing equipment and its applications includes the content of the music, which means that it is political and negotiable. Centripetal and centrifugal sounds are selected, respectively, to attract given consumer segments and to keep other groups of people away. Centrifugal sounds are of particular interest to scholars because of their highly political nature. The use of these sounds begs the question, who has the right to define what segments of the population are undesirable and how should sound be used to keep them away? In my home town of Tampere, a few years ago the local police advised a shopping mall to air classical music and install bright lights to calm down the area around the back entrance to the mall (Uimonen 2004).

A device called Mosquito has been utilised for the same purpose. This small electronic device produces a very annoying high-pitched noise, which is mostly only audible to young people because of their non-deteriorated hearing. According to the manufacturer's website, "Moving Sound Technologies has been marketing and selling the Mosquito throughout North America. Many cities, municipalities, school districts, and parks boards use the Mosquito to combat vandalism. The patented Mosquito is a small speaker that produces a high frequency sound much like the buzzing of the insect it is named after. This high frequency can be heard by young people 13 to 25 years old". (MST 2016.)

In the UK, the use of such devices led to a national campaign arguing that "even if the devices cause no damage to hearing they are an unfair attack on people's human rights" (Campbell 2008). The company's response was to introduce the Mark 4, which allows the user to lower the frequency, so people of any age can hear the sound. Furthermore, the company claims that a hotel chain in Canada has reported the successful use of the device to keep homeless people out of

their hotels' car parks. It has also been reported in the Canadian press that Vancouver schools "fight vandalism with teen-repelling sound device" (Campbell 2008; Hopper 2012). Moving Sound Technologies also produces royalty-free classical music or 'chill-out' music for the same purpose.

Commercial radio and urban public spaces

Some of the most novel ways of consuming musical sounds are closely related to the concept of ubiquitous listening, and how music is connected to genre-normative ways of listening. Modes of listening, listening situations and music styles have a reciprocal effect on each other. Most of the music that we hear in our daily lives is intended to be listened to inattentively, in addition to which, it is often selected by someone other than ourselves. This poses a challenge to music research: if contemplative listening has created a canon of Western classical music, are there other canons and repertoires created by other modes of listening? (Kassabian 2002, 131–135.)

Switching the background music of the gym with that of a fine-dining restaurant would most likely lead to undesired results for both locations.

One answer to this question can be found in the detailed study of the music policies of commercial radio stations. The everyday music content of the station is not supposed to annoy radio listeners, but at the same time, it must be interesting enough to create a comforting background for the performance of daily household chores or repetitive work tasks. If a station does not succeed in meeting these expectations, it is assumed that the audience will switch to another station. So, when they are creating their music canons, radio stations first test out their musical offerings before broadcasting it to make sure it conforms to the taste and expectations of their target audience. This fact has to be taken into consideration when studying radio music culture, which has been defined as all the practices that have an effect on the music broadcast on the radio, including the process of acquiring the music, compiling a playlist, and anything else which governs the playing of music on the radio. (Uimonen 2011, 18–19, 23.)

To some extent, the cultural conventions and ideas about how classical music, or any music, is supposed to be appreciated (do you listen to it, do you dance to it, do you sing along?) have lost their significance in the context of ubiquitous music. Although almost any music genre can be classified as ubiquitous music, that is not to say that ubiquitous music can be any kind of music, or that its selection would be an indifferent act. On the contrary, switching the background music of a gym with that of a fine-dining restaurant would most likely lead to undesired results for both locations (see also Boschi, Kassabian & Quinones 2013).

In addition, consuming ubiquitous music requires contextual listening skills and the competence to act in various acoustic environments. A musical work can be listened to attentively in a concert hall, but it is understood that the same contemplative attention given to a piece of music on the car radio or through headphones might pose a safety risk for the listeners and their fellow road-users.

Commercial radio stations construct playlists in accordance with their musical culture, and then make these playlists available to anyone who wants to take advantage of this ready-made product, be they at home, in the workplace or in any other acoustic environment. Commercial radio has had a profound effect on moulding diverse public environments, both in Finland and around the world. The Finnish Composers' Copyright Society, Teosto, has carried out studies on to what extent background music is now being used, in what environments and under what circumstances. The diversity of such spaces is impressive, and includes accommodation facilities, buses, coaches, customer premises, outdoor spaces, restaurants, cafes, sports halls and tracks, staff premises, taxis, gyms, exercise classes, telephones (holding music) and so on. In 2012, Teosto identified nearly

30 000 customers who were consistently using background music (Uimonen 2009, 61; Teosto 2013).

Annual surveys have provided us with detailed data about the music used, including listener preferences. According to a survey conducted in 2016, over 72 per cent of enterprises were using the radio for background music, and almost nine out of ten used commercial radio stations. Radio is usually preferred by hairdressers, barbers, shops and taxis, whereas restaurants preferred other sources of music. In addition, 50 per cent of the respondents considered background music to be important. It covered the uneasy silences and the hums of the machinery and enabled confidential discussions. (Uimonen 2009; Teosto 2012; Teosto 2016.)

However, it should be noted that it is not only radio music that is used in different public spaces. Some enterprises have specifically tailored background music compilations. This alternative is often chosen when companies want their customers to stay at their premises for a relatively long time, such as in a luxury car showroom. Another reason for choosing this option is that companies may not want to expose their customers to radio advertisements from competing businesses. In addition, music is found to be more desirable than radio talk. (Uimonen 2009, 69.) It is interesting to note that the feedback on people's reactions to background music might well include a wish for the repetition of one particular song – a wish that is clearly encouraged by commercial radio stations' music policies, which broadcast current hit tunes repeatedly and have changed the norms regarding how contemporary foreground music should sound.

As the urban environment becomes increasingly composed of electroacoustic musical sounds, this raises questions about what are the criteria for music to be regarded as ubiquitous and, more precisely, who is responsible for defining these criteria and in the end making the actual music selection. Contemporary radio music selection is carried out according to established standards and procedures, which involve the completion of several discrete tasks before the music is actually broadcast. The result of this automated process is a playlist, which is targeted at the radio station's listeners.

Unlike in Europe, where there are many well-supported public service radio stations, in the USA commercial radio is predominantly built on advertising and music. Nevertheless, it is not the advertised consumables or services that are being sold to listeners, rather, it is the listeners who are sold to advertisers as prospective audiences, quantified in the form of audience ratings. Most format radios use selected music genres to attract their audience and maintain them as loyal listeners of the station. The success or failure of a station is measured by its ability to fulfil the genre expectations of a given type of radio listener.

To meet the listener's expectations and to select the right kind of music, commercial radio consultants launched the concept of auditorium music testing in the 1990s. Later, these tests have been supported by data supplied through Internet questionnaires. During auditorium music testing, less that ten-second samples of familiar music are played to an audience consisting of 200 listeners, who belong to the target demographic of the station. Up to 600 individual samples can be evaluated in this way in one session. After these tests, music programming software is used to select, classify and place the individual songs on a radio playlist. The locations and the time of day are considered crucial when selecting the songs to be played; the listening rates are highest in passenger cars during the rush hours, and at the work place in the morning and in the afternoons (Uimonen 2011; ARH 2015).

The transformation of the soundscape is also influenced by changes in a radio station's ownership, for example when a station is merged with a larger unit, or

perhaps a small, independent station is swallowed up in a corporate acquisition. Naturally, these changes in ownership also affect the station's music policies. As a result, the individual music selection process carried out in a specific place for a limited number of listeners may be extended to cover several towns and cities. A radio station founded in Tampere serves as an interesting illustration of this process.

This station was founded as Radio 957 by students at Tampere university in 1981. Later, it was taken over by a major media company and was eventually renamed Radio City. In 2005, Radio 957 was targeting its content at males between 30 and 45 years old. The target group was personified by an imaginary listener, "Masa kolkytkuus vee" (36-year old Masa), whose family, personal history, hobbies, line of work and musical taste were carefully constructed with the help of market research. Another radio channel owned by the same conglomerate is Voice radio, which is targeted at Anne, a twenty-three-year-old single woman living in Lauttasaari (a suburb of Helsinki). Another station, Iskelmä, is aimed at forty-seven year-old Maija and her husband Matti, while Radio Nova is for Noora and Valtteri, who are 35-year-old suburbanites with two kids and two cars (Yol 2009). Such 'model' virtual listeners have also been used also by public service radio stations, such as the BBC's "Dave & Sue". Nevertheless, this practice has received quite a lot of criticism because the same songs end up being played by many different stations, all of whom are targeting the same demographic group (see Uimonen 2010, 11).

So, what was 36-year old Masa listening to, in January, 1985? On Tuesday, 18th January 2005, Radio 957 was broadcasting mostly rock, adult contemporary/pop and suomirock (Finnish rock-schlager), followed by blues, soul, rhythm & blues, country, iskelmä (Finnish schlager) and dance (hip hop, electronic dance music). The overall sound of Radio 957 was characterised by rock, adult contemporary/pop and suomirock as these genres comprised 80 per cent of their musical content. Classical music, religious music, folk and jazz were not aired.

Random sampling shows that the music targeted at Masa has changed remarkably little over the years. On Tuesday, 13th September 2005, the artists who dominated the soundwaves were much the same as they had been five years earlier, on 10th January, 2000. Go back five years before that, to 13th January, 1995, and Radio 957 was still broadcasting mainly the same well-known artists and their hits (Uimonen 2009, 77–80). Over a period of 15 years, the records (excuse the pun) show that the rock music of the 1960s and 1970s was mainly represented by the hits of the Beatles, Dire Straits, Creedence Clearwater Revival, The Rolling Stones, Marvin Gaye and Sam Cooke; that of the 1980s and 1990s was represented by Bon Jovi, Guns 'n' Roses, Queen, Red Hot Chili Peppers, Bruce Springsteen and Toto; while adult contemporary and pop were represented by Abba, Madonna, The Rubettes and Bonnie Tyler. In addition, about a third of the station's music content was performed in Finnish by Finnish artists recorded in Finland.

It will probably come as no surprise to learn that the playlist of Radio 957 (now Radio City) on 13 January, 2015 (20 years later) still consisted largely of familiar songs from familiar artists, such as The Beatles, Dire Straits, Creedence Clearwater Revival and The Rolling Stones, etc. (Uimonen 2009, 77–80). However, it seems that Radio City's music policy had finally changed. On Tuesday 25 October 2016 their prime time music content was not composed of recurring artists or songs, although according to their website's somewhat adolescent advertisement, their target group has stayed the same.

KEYNOTE SPEECH

Concluding remarks

Transphonic sounds in general and radio music in particular are constructing shared urban environments.

The radio music encountered in urban public spaces is a largely unplanned consequence of various radio stations' music policies, as their playlists are not compiled with these places in mind. A bus driver might belong to a radio station's target group, but it is unlikely that all the passengers will do. Although it is pretty obvious that radio stations are a major influence on the sonic environments of shared spaces, the music that they broadcast is in the hands of a few radio-industry professionals. It should be noted that these people's positions are far from monolithic, and are subject to constantly changing economic, legislative and cultural circumstances. This suggests that a sonic space composed of electroacoustic sounds should be in a state of constant transformation, too, and should be the target of constant negotiations and struggles regarding its nature, e.g. in relation to the gender, class, age and socioeconomic status of its users.

The sonic environment in many shared public spaces that urban dwellers are exposed to still consists of 36-year-old Masa's alleged music preferences, although it remains unclear to what extent Masa himself uses these public spaces. Radio City's website suggests that we are also sharing the same public place with a group of people who are willing to talk not only about music, sports and technology, but also about their toilet training, since the channel claims to be aimed at males who "urinate standing".

The case study of Radio 957 shows the consolidating effects that the radio industry has had on canonised ubiquitous music and its dissemination. Originally limited to the immediate locality of its transmitter, the music content in question has gradually changed the sonic environment in several urban areas in different parts of the country. This fact should be considered when conducting any research into the nature and design of urban public spaces. Such studies should include historical and contemporary changes in the economy, music culture and, hopefully, urban planning, too.

If we accept that transphonic sounds in general, and radio music in particular, are part of our shared urban environments, it is reasonable to call for urban planners to take the electroacoustic design of a space into account, as they would do for any other acoustic design feature, especially now, when contemporary media and the technological environment have enabled such diverse and multifaceted opportunities for designing and changing soundscapes.

Soundscapes, and the research into them, are in constant transformation. The latest research projects in this field are tackling these contemporary topics and diverse challenges with a multidisciplinary toolbox. These include new digital-age requirements set for public and semi-public spaces such as libraries, which are now re-designing their premises for the needs of new target groups. Another project is concentrating on restaurants and supermarkets, and how local cultural heritage, traditional music and natural sounds could be utilised in modern acoustic design. (Kontukoski & Uimonen 2016; SAES 2016.)

Thank you for your attention.

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KEYNOTE SPEECH

Equality Quality

Architectural planning for underprivileged groups

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Abstract

A successful architectural project will eventually encourage countless people to work for change. Hollmén Reuter Sandman Architects and Ukumbi NGO strives to use architecture as a tool to improve the living conditions of underprivileged communities. The impacts of a successful building project in a low-resource setting can be seen as twofold, consisting of on-site and off-site effects. The architect's ability to combine his or her expertise and experience with that of the locals is an important aspect for the success of the project. To employ local building traditions in the poorest countries of the world is not just a matter a justice, it is also a way to find different paths to our own future. It is usually not very difficult to introduce a new technology or new building developments; the challenging part is getting the new ideas to survive and take root in the long term.

Keywords: humane architecture, impact, locality, participation, developing countries

Activism from the front

The architects Saija Hollmén, Jenni Reuter and Helena Sandman began their work with humanitarian architecture almost twenty years ago. Since then, socially engaged architecture has moved from the margin towards the "front line", as suggested by the theme of this year's (2016) Venice Biennale, "Reporting from the Front", although it can hardly be called mainstream as yet. It is therefore remarkable that Alejandro Aravena, the curator of the exhibition, has elevated the humane aspects of architecture to international discussion and shifted it to the centre of our attention.

This discussion has also brought the work of Hollmén Reuter Sandman Architects into the on-going architectural debate. During the last decade, a growing interest has emerged in architectural discourse regarding the possibility of a social and humanitarian re-engagement of the discipline. The issue faded from the debate after the 1970s but seems to now be back on the scene.

KEYNOTE SPEECH

In an article for *El Croquis 187*, Alejandro Zaera-Polo discusses how he has been inspired by Charles Jencks's famous diagram that appeared in *Architecture 2000* to present a synchronic political map of contemporary emerging architectural practices. In the *Global Architecture Political Compass* (Figure 1), 181 emerging practices are ranked in categories named after such movements as Techno-critical, Technocratic, Cosmopolitical, Austerity-chic, Constitutionalists, Historicists, Revisionists, Skeptics and Populists. Hollmén Reuter Sandman Architects finds itself in the category of Activists, close to the border of Material Fundamentalists. When being placed at the far Activist edge you can find practices such as BIG (Bjarke Ingels Group) on the opposite Populist side. The compass indeed shows how the world sees the work.

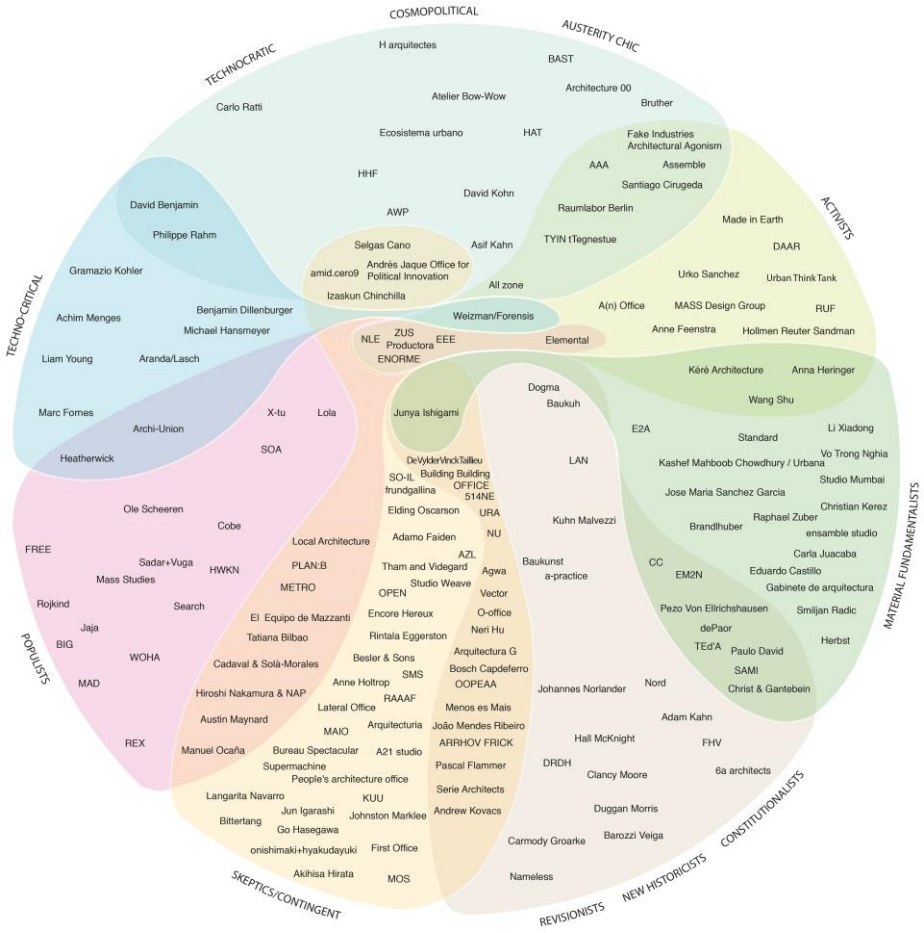

Figure 1. The Global Architecture Political Compass.
Made by Alejandro Zaera-Polo and Guillermo Fernandez-Abascal and published in *El Croquis 187.*

In the explanation of the compass, the activists were described as follows:

> *There are now quite a few practices where the rejection of the customary processes of architectural procurement is driving a return to development, self-building, or community-building as an act of resistance against the rote commodification of architecture. Drawing resources sometimes from arts grants, academic research, community funding, and, on occasion, entrepreneurial devices, some of these practices have become engaged with direct-action practices formerly associated with political agitation, while occupying a space between social activism, art installation, and architecture. These practices bypass traditional forms of commissioning buildings through direct engagement with the community and the construction process, as collective acts of resistance to the reduction of architecture to "rentable" commodity. On the other hand, there are also groups who operate largely within the academic environment, where political engagement occurs on a more theoretical*

> *level through competitions, publications, exhibitions, and lectures. For these practices, the discipline itself becomes the crucial tool for resistance.* (Zaera-Polo 2016, 252–288)

The explanation seems quite relevant, particularly as it contains several familiar components, such as the fundraising and grant aspect, as well as the connection to academic research. It is intriguing to see the work of Hollmén Reuter Sandman in this broader context.

Figure 2. The Women's Centre in Rufisque, Senegal.
Executed in 2001.
Photo Helena Sandman.

Realistic idealism

After the first executed project, the Women's Centre in Rufisque, Senegal (Figure 2), Hollmén Reuter Sandman founded a non-governmental organization named Ukumbi in 2007. In the course of the first project, Hollmén Reuter Sandman had realized that culturally knowledgeable and skilfully designed architecture is a tool that can be used to improve the living conditions of communities, strengthen gender equality and mitigate poverty. The women's centre attracted a great deal of attention and became a model for similar projects around the world.

Saija Hollmén, Jenni Reuter and Helena Sandman had known each other since they were students at the architecture department in Helsinki University of Technology (nowadays Aalto University) and shared the ambition to do something more with their expertise, rather than just work for those with the most resources. They had grown up with the interest in and engagement with Africa, both through their families and because of the long-standing Scandinavian commitment to foreign aid and development work.

Engagement with what some still call the Third World was a global extension of the welfare state they enjoyed at home. Among the countries that had stayed out of colonial politics there existed a strong sense of solidarity with countries that had paid for our prosperity with their own poverty. Many Scandinavians observed, with justifiable outrage, the continuation through post-colonial structures of what they regarded as violation of developing countries by the West.

The theme is complex. Quoting the Irish architect Kilian Doherty, who has been working with projects in Rwanda:

> *How can Western practice outrun the ghosts of the postcolonial and come closer to a modern African architecture? As interests between local (African) government, international NGOs and architects are inextricably linked, is that contemporary mode of practice simply the newest face of neo-colonialism?* (Lokko 2014, 14–15)

This concern has led many Scandinavian architectural programs to place strong emphasis on the world outside of Europe. In some cases, their commitment has also resulted in executed buildings, cases in point including a leprosy hospital in India designed by architects Jensen & Skodvin from Norway in 1983–85 or a few projects in Guinea designed by the well-established Finnish firm of Heikkinen & Komonen, all of which have received international recognition. However, the Women's Centre in Rufisque achieved a unique position: the architects didn't just design the building, but as a response to local grassroots needs, they also took the initiative for getting the project underway and even did the fundraising themselves. The project began with a course at the Helsinki University of Technology but was executed entirely independent of the school.

After their first executed building, the architects returned to their alma mater to teach. This provided an opportunity to put their experiences working abroad to even broader use. They inspired the younger generation and established Ukumbi as a non-commercial platform. Its non-profit status made fundraising easier but also helped define the contours of their work. The more firms joined the organization, the greater the need became to distinguish between the time and money spent on for-profit and not-for-profit activities. There are other, much larger organizations that also have a mission to help people improve their own circumstances through building construction. Ukumbi distinguishes itself through its focus on architectural quality – for Ukumbi, the human need for self-affirmation through the built environment is a fundamental aspect of human nature, not merely a privilege for the affluent. Ukumbi's mission is to offer architectural planning and design to underprivileged groups. Often such groups include women, children or young people whose opportunities for participation in society are limited.

The goal of Ukumbi is to ensure that the buildings designed by Finnish architects in the world's impoverished countries are adapted to the local conditions so well that they continue to function as designed long after the architects have gone home. Ukumbi's network serves as a kind of quality control mechanism, gathering experiences from each project to benefit the next. At the same time, the need for sharing knowledge extends far beyond Helsinki. For many years, the core members of Ukumbi have been sharing their extensive experience through exhibitions, workshops and lectures. Today several groups of architects work through Ukumbi with projects throughout the global south.

Ukumbi is a Swahili word. It can mean a meeting place, a living room, a hall or a forum. In other words, there is in the dominant language of sub-Saharan Africa a specific term for that part of a house where private life and public life come together. The existence of the term also suggests that, for someone who comes from outside and tries to introduce new qualities to the many building cultures of Africa, it is very important to be able to distinguish the essential from the extraneous. Although it seems obvious that the purpose of introducing alternative technologies and expertise is to improve people's chances for development, the risk of making culture-blinded mistakes has to be a significant concern. It is usually not very difficult to introduce a new technology or new building developments; the challenging part is getting the new ideas to survive and take root in the long term.

KEYNOTE SPEECH

Figure 3. The KWIECO Shelter House, Moshi, Tanzania.
Executed in 2016.
Photo Juha Ilonen.

Ukumbi's projects to date could only be completed through trial and error. Conditions may differ from Cambodia to Egypt (Figure 4), from Tanzania (Figure 3) to Senegal, but the attitude of the dedicated architect remains the same. When one's work, as well as its means, aim to promote people's sense of self, even an architect flown in to assist must be humble. That humility must be founded on secure confidence in one's own competence. There is a great deal of professional expertise to be gained from Ukumbi's experiences but more importantly a valuable perspective as well.

Whether or not a project is robust enough to be built and to provide lasting benefits depends, to a great extent, on realistic idealism. For example, efforts to help women and children are among those that have a profound effect in any culture. Ukumbi's practice requires a heavy commitment to working locally, which means that a great deal of the design must be done on site. Otherwise, there is no way to achieve the degree of participatory planning that is critical to giving a building a long and fruitful life.

Impact

Ukumbi's architecture is usually low-tech, inexpensive and custom-made on site. Regardless of whether the project is located in Asia or Africa, the architects' experiences are often the same. When problems like water, sanitation, foundation or ventilation need to be solved with manual technologies, the solutions tend to share many similar principles. As in any meticulously designed work of architecture, it is a matter of making the most effective use possible of available resources. When resources are scarce, restraint is a necessity; as the budget expands, thrift is only possible with practiced discipline. In this regard, vernacular architecture, which is usually overlooked by the media, has proven to be an outstanding source of knowledge. The ability to shift one's perspective and to discover and employ local architecture in the poorest countries of the world is not just a matter a justice, it is also a way to find different paths to our own future.

A building can be an island of stability in a turbulent world. The buildings that Ukumbi designs are intended to fulfil that need. The need for stability influences their siting, their structural demands, their functionality and their appearance.

A building can be an island of stability in a turbulent world. The buildings that Ukumbi designs are intended to fulfil that need. The need for stability influences their siting, their structural demands, their functionality and their appearance.

The impacts of a successful building project in a low-resource setting can be seen as twofold, consisting of on-site and off-site effects. On site, the building can make a difference in social, technological, economic and cultural terms. Its impact also differs from one phase of the project to the next. A successful planning process involves the local community. In so doing, it influences a small but important group that may include politicians, chiefs, users, planners or builders. The process of planning, design, and participation is most likely new to the community in question. The architect's ability to combine his or her expertise and experience with that of the locals is an important aspect of the project. This aspect of the process can be successful even when the project is not ultimately constructed. In the planning phase of an orphanage in Tanzania that was never realized, Hollmén Reuter Sandman introduced a sustainable perspective on construction and maintenance that the local architect would use in his other projects as well. The planning process can also affect on-site property management.

The building's next impact arises from the construction process. By building with locals rather than for them, the construction process can be an education in sustainable technologies. Building construction in the developing world is not a matter of assembly but of turning recycled or recyclable materials into structural elements. This part of the process involves many more people than the planning, and it creates a number of new jobs. In Senegal, ultimately hundreds of people were involved. So many husbands and sons were employed in the construction that their shifts had to be shared. The work began with vocational training, which had effects on the local building culture in general. The large number of people involved in the construction gave a considerable boost to the use of local materials.

Small projects actually have the greatest potential for producing change. It is the small projects that usually engage the locals most deeply. The greatest impact is in the actual construction process, where the number affected can be in the thousands. The activities taking place at the Red House in Senegal, and the income they produce, would not exist without the building: the building is used for the production of food items prepared in traditional, nearly forgotten ways with local cereals. The house also serves as a place of childcare.

The broadest but least tangible effects of the building are off-site. A successful project will eventually encourage countless people to work for change. The house in Senegal had a profound impact on the entire genre of "aid buildings". However, global attention awakened by success can also have an impact among the locals. A building rooted in local culture creates a sense of pride that extends beyond the local community. The architects got some indication of this from some Senegalese street vendors they met in Florence, Italy, who spoke with great pride of their Red House back home.

While it is important for architects to present their work to colleagues and even more important to present it to laymen such as public aid administrators, one must remember that change can only be measured locally. For Hollmén Reuter Sandman, this is crucial: they do not believe in a global architecture. The ultimate objective is to enhance the self-esteem of the end user. For the designer, a self-serving approach can be counter-productive.

This article is based on the keynote lecture by Jenni Reuter at the 8th Annual Symposium of Architectural Research 2016, Architecture and Experience Now, October 27 in Tampere.

KEYNOTE SPEECH

Acknowledgements

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Figure 4. A model of the APE Learning Centre in Cairo, Egypt. Photo Helena Sandman.

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Driving in/between Places: Rhythms, Urban Spaces and Everyday Driving Routes

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Abstract
The use of the private car is one of the key factors that have shaped the contemporary urban milieu and daily life in the city. The paper examines what kind of temporal relations are produced between the driver and the environment in the context of habitual everyday driving routes. The data – utilizing go-along interviews, participant-produced visual material and recorded videos of drives – is examined by focusing on the temporal character of the routes by utilizing a 'rhythmanalytical' framework. The analysis examines ways in which spatial rhythms are produced and interacted with in and beyond the car-space. Focusing on the rhythmicities of everyday driving routes – as sites of everyday life and contexts for the urban experience – uncovers relations, experiences and meanings embedded in these mobile spaces and practices.

Keywords: rhythm, mobility, driving, place-making, everyday life, rhythmanalysis

Introduction: everyday mobilities
This paper builds on the simple premise that mobility is a way to produce meaning and interact with the material and social environment. Nowadays discourses of *life on the move* (Elliott & Urry 2010) are common-place and the contemporary city is seen as consisting of "fragmented and disconnected spatial and temporal connections" (Green 2002, 282). To produce these connections, people move from one site to another – and while doing so, meanings, experiences and relations are produced.

Mobility is, though, often understood as the process of uprooting and displacement (see e.g. Relph 1976), that might break, or at least change, the meaningful relations people have with their environments, with different meaningful *places* (Adey 2010, 53–55; see also Cresswell 2011). However, urban mobility should be considered as "an important everyday life practice that produces meaning and culture", as Jensen (2013, 140) writes, instead of thinking movement only as means of transit (or as "dead time" as noted by Sheller & Urry 2006; see also similarly Miciukiewicz & Vigar 2013). The paper challenges the common notion of mobility as *transport* in favour of a more complex approach, situating itself along the lines of mobility research where emphasis on the study of mobile phenomena is geared towards the experiences and meanings of being on the move, recently framed as the "new mobilities paradigm*"* (Sheller & Urry 2006; see also Cresswell 2011). The paper examines what kind of meanings and experiences are produced in the urban environment through everyday mobilities – which is the mode in which many contemporary urban spaces are "dwelled" in (Urry 2006; 2007).

PEER-REVIEWED ARTICLE

The paper is interested in one particular mode of everyday mobilities: car driving. The use of the private car has been one of the most influential, transformative and polarizing aspects of modern societies. Cars have put people in motion from the beginning of the 20th century, and by doing so, the usage of cars has shaped and transformed spaces in both global and local scales through processes of urban and transportation planning, and by producing specific requirements for material uses and social activities, with varying results. (See Sheller & Urry 2000; Urry 2007; Sieverts 1997/2003; Amin & Thrift 2002; Jacobs 1961/2011.) "Much of what many people now think of as 'social life' could not be undertaken without the flexibilities of the car and its availability 24 hours a day", as Urry (2006, 19) writes. The car is "interwoven into the tissue of contemporary society" (Beckmann 2001, 593).

Everyday mobilities are here examined from a phenomenological perspective. What it means to be on the move and what kind of experiences and relations are formed and (re)produced between the body and the material and social environment in everyday mobility? The research leans towards "postphenomenological" orientations (Ihde 2012) by putting emphasis on the relations between the material world and embodied practices, along with (inter)subjective meanings and social relations. Examining driving as a mode of temporally dwelling in public urban space provides deeper understanding of the urban space as a complex site of various intentions, possibilities, meanings and experiences that often might retain contradictory or even conflicting characteristics. Especially it brings to the front the various *rhythms* of everyday urban spaces.

In this paper, the outlook on driving is limited to car use in urban central areas. I am not here interested in examining car travel as a whole, or the various road spaces traversed with cars, but to examine driving and the use of the private car as a way to inhabit and dwell in urban areas, as a mode of living urban space in motion. The streets are sites of multiple uses, meanings and relations (Crouch 1998) and driving is one of the most common modes of using space in contemporary cities. Driving, as an event, also involves various passengers (for the practices and experiences of *passengering* see Laurier 2011; Adey, Bissell, McCormack & Merriman 2012) but here the outlook is fixed on the driver: the focus is on the driver's practicing body, habitual and routine-like interaction with the material and social environment in and beyond the car-space, experiences, the processes of shared and subjective place-making, and the interplay between various spatial rhythms. The paper thus aims to inspect everyday driving routes as sites where meanings and relations between the body and the city are produced, rather than as only modes of transitioning from one place to another. The paper comes to examine if driving could be understood as happening *in* rather than *between* places, as the title of the paper inquires.

In the following sections, I will first briefly introduce the theoretical framework, discussing driving as an embodied practice and the character of urban rhythms; second, introduce the empirical research: the methods, the data sets and the research sites; and third, concentrate on the analysis of urban rhythms on the everyday driving routes. The paper is then concluded with a brief discussion on the results.

City in motion: habitual driving practices and rhythm

The use of the private car encompasses everyday life, daily routines and material and social structures of contemporary cities thoroughly (Thrift 2004, 46). Automobility takes many shapes: urban spaces are designed for driving, enforcing the modernistic ideals of speed, rationality and efficiency (Hubbard & Lilley 2004), and including/excluding other uses of space (Beckmann 2001); daily timetables and possibilities of movement are considered within the framework of

driving, which provides both the possibility and the necessity for movement between various locations (Sheller & Urry 2000; Sieverts 1997/2003); cars as material objects produce distinctive sceneries, events, sounds and even smells (Merriman 2011; Dant 2004); car as a material object produces various material cultures (Miller 2001), symbolic meanings and economic industries (Edensor 2004), and various affective relations (Sheller 2003; Steg 2004). The private car is both the topic of critique and admiration, politicized thoroughly.

In this paper, I will not discuss further the different (dis-)advantages that automobility has on lived urban spaces, the natural environment, sustainable resource use, social interaction, its role in the unevenly distributed possibilities of mobility, or its various possible future paths (such as self-driving vehicles) (for these and other discussions see e.g. Böhm, Jones, Land & Paterson 2006; Sheller & Urry 2000; Urry 2006; Beckmann 2001; Thrift 2004). Rather, I will examine automobility as it is *now,* and how driving as an embodied practice, and the car-space as a material context, produces experiences in urban public space. The fact is that many contemporary (semi)public urban spaces are experienced from within the private car. It is this everyday embodied and habitual practice that is in closer examination here, and the various rhythms that are both produced and interacted with in the public urban arena.

Driving: the body, the machine and the "assemblage"

Driving is an embodied practice that is performed in cultural contexts, and is, as any form of embodied movement, also a mode of communication (Edensor 2004; Kalanti 1998, 8–13). Driving is not altogether an active or conscious practice but resides somewhere between being actively present in the moment (and engaging in activities such as observing and assessing traffic) and habitual and embodied routine, as Thrift (2004) suggests.

Driving occurs in various places that are designed for automobility (for renown approaches, see e.g. Appleyard, Lynch & Myer 1964; Venturi, Scott Brown & Izenour 1977). All places are inscribed with various scripts and practices, habitual and routine-like ways of being and acting in space that produce relations between the environment and the body. These habits are created *in* places, not in isolation in the body/subject: "Milieu is not a passive backdrop, but a vital performative agent in the ongoing constitution of the human, suing experience and cultivating habits in myriad ways." (Dewsbury & Bissell 2015, 26). Habit is a process through which knowledge and understanding is produced, and places performed. (Ibid.; see also Hynes & Sharpe 2015.)

Dant (2004) writes that the relation between the car and the body should be considered as an "assemblage": "The driver-car is neither a thing nor a person; it is an assembled social being that takes on properties of both and cannot exist without both." (74). For Dant, the driver-car assemblage is a specific form of embodied relations with the environment, producing possibilities and networks: "The assemblage of the driver-car produces the possibility of action that, once it becomes routine, habitual and ubiquitous, becomes an ordinary form of embodied social action." (ibid.). The paper examines how this distinctive driver-car assemblage as a mode of dwelling produces meanings in the environment.

On assemblages, Dovey (2010, 16) similarly notes that "All places are assemblages": a street is not a thing or a collection of things, but it is the connections between the things and how they come to interact with each other that matters. Everyday mobilities (and spaces as assemblages) are made often invisible by their mundane character (Spinney 2010, 113), but still those activities are there and constitute the urban space as (momentarily) lived and experienced place. Jensen (2009, 140) writes: "People not only observe the city whilst moving through it, rather they constitute the city by practicing mobility." Everyday travel does not necessarily have to entail boredom and frustration, nor does it need to

In order to better understand everyday mobilities in urban spaces, it is important to examine the repetitions and routines that make these everyday mobilities precisely everyday. The temporal and spatial patterns that these habits, routines and repetitions produce – rhythms – come to be of interest.

be celebrated as something more meaningful than it might be. The everyday often *just is* in our experiences (but not as designed and produced materialities and synchronized routines, see Jensen 2013), and it is this *just is*-ness that produces our relations with the environment we inhabit and dwell in on a day-to-day basis, and what makes these relations interesting and worth of inquiry. In other words, the everyday is taken here as granted in how people inhabit the world but not as a focus of research. In order to better understand everyday mobilities in urban spaces, it is important to examine the repetitions and routines that make these everyday mobilities precisely *everyday*. The temporal and spatial patterns that these habits, routines and repetitions produce – *rhythms* – come to be of interest.

Rhythm: spatial and temporal practices and relations

It is quite difficult to think about urban space without the idea of rhythm, if examining the lived social and material space. Common imagery of urban space is one made of *repetitions* and *sequences*, such as the continuous flows of people moving around and following rigidly the natural day-cycle and various shared/individual timetables. Time-lapse videos are a popular medium to present the living characteristics of public spaces and social events, and the interplay between the static and the moving parts of the urban milieu.

Adey writes, that “Mobilities usually synchronize in rhythmic patterns” (2010, 28-29). These rhythms might not always be unique or provoke great interest by being mundane, far from extraordinary and making up the daily *grind*. *Rhythmanalysis* – the study of urban rhythms – as introduced by Henri Lefebvre, gives focus to the different natural and social rhythms – the interaction between space, time and energy/action. These interactions and connections make the everyday and present the city as a rhythmic ensemble of intersecting and overlapping rhythms that produce the cacophony of urban life: the various material and social movements, encounters and interactions. This urban *polyrhythm* plays out like a musical symphony, resulting in complex urban life that never ceases to pulse. (Lefebvre, 1992/2013.)

Rhythms can be perceived in a two-fold manner: cyclical and linear. Cyclical rhythms refer to natural recurrences – such as the awake/sleep, day/night, growth/decay cycles – and linear rhythms to social activities that are produced (which often take cyclical forms as routines and habits) – such as the daily working hours. However, Lefebvre stresses that even though rhythm refers to repetition, there is always the possibility of change and transformation, as these rhythms occur not only as repeats but also as part of the progressive time. (Lefebvre 1992/2013). Adam (1994, 87) similarly notes on natural rhythms that ”it is in the very nature of those rhythmic processes to differ in their recurrence.”

Spatial rhythms can be perceived, produced and interacted with but for Lefebvre, urban rhythms are always relational to the body, which comes to define them as fast/slow, frequent/infrequent, intense/loose or the like. People produce rhythm, but spatial rhythms are found both in the spaces that bodies traverse in and in the spaces of the body. The body is itself made of rhythms that together constitute the body as a living entity. (Lefebvre 1992/2013.) Meyer clarifies on Lefebvre that “The body is, so to speak, his metronome” that measures rhythm (2008, 149).

The brief overlook on rhythm above gives some insight to the concept but *rhythm* as such, though, is difficult to narrow down empirically and analytically as it appears in many forms, referring generally to the recurrence and change of (any) things. Lefebvre provides a framework for the analysis of urban rhythms but as Koch and Sand (2010, 68) note, there remains a need for “the development of methods to map, document, represent and present rhythm”, in order to fully develop Lefebvre’s rhythmanalysis as a proper mode of research (see also Amin & Thrift 2002, 16–21). Meyer writes that Lefebvre’s “rhythmanalyst is more

receptive to time than to space … He tries to hear the music that the city plays and to understand its composition*"* (Meyer 2008, 156). How to do this remains to be developed, and this paper aims to contribute partly to its investigation. Here, the focus on rhythms is set towards the materialized social practices and experiences and relations that come to the fore in understanding how space is always changing and moving – *becoming* (Massey 2005) – but still though somewhat fixed and structured as a site of everyday life; or examining rhythm as "an element of dynamic stability" (Mareggi 2013, 5).

The analysis of spatial rhythms here makes use of Jensen's (2013) argument that mobilities are "staged" from the *below* and from the *above*: people stage their everyday mobilities through their own embodied practices; simultaneously, subject's mobility is staged by environmental feedback and various social factors, such as urban planning and laws and regulations. Partly following de Certeau's (1984) famous formulation of everyday "strategies" and "tactics", Jensen argues that mobility is both regulated from the top and acted out from the below, formed *in situ* in the meeting point of social interactions, material spaces and embodied performances. This conceptualization provides insightful cues in building a framework for the analysis of urban rhythms in the context of everyday mobilities. It helps to understand how mobilities (and the various rhythms related to mobilities) are produced through embodied spatiotemporal practices in the local and immediate scale (that could here be regarded as staging), and the ways in which social rhythms are imposed on the body, often ranging between the micro-level "place-specific" rhythms (Wunderlich 2013) to more macro-level societal and cultural rhythms, such as shared timetables (see Edensor 2010) (that could here be regarded as staged). Incorporating micro-temporalities and rhythms of the urban scene and mobilities, these notions could perhaps be further formulated into notions of *pacing* and *paced* (referring to temporalities and rhythms, developing on Jensen's conceptualizations of staging/staged) practices, socialities and materialities. These notions will be further examined in the everyday driving route -context below.

On a drive: research methods and data

Empirical research was conducted to examine the rhythms at play on the everyday driving routes. *Mobile methods* refer to various methods of empirical research and analysis that aim to grasp the fleeting and momentary character of mobility (Spinney 2015; Jirón 2011; Murray 2009). Following Kusenbach's (2003) formulation of "go-along interviews" as part of the study of street phenomenology, the study here utilizes similar interview approach (applied to a driving setting), supported by various visual data, to examine the experiences of being on the move in the city.

Different email lists of local organizations and social media were utilized to find informants who in their everyday life drive repeatedly a route that is set partially/fully in the urban centres of Tampere or Turku. Ten (10) interviews were conducted in total, half in each of the two cities that are the largest by population (approx. 220 000 and 180 000 inhabitants respectively) in Finland after the capital Helsinki metropolitan area, and roughly similar size. Conducting interviews in two different cities was done to prevent city-specific details or traits from gaining the upper hand in the data as the outlook on routes is generalizing by focusing on routine and habitual practices and experiences.

The research material comprises of three parts. (1) Thematic interviews were conducted in the car, whilst driving on the everyday route of the informant. A small wide-lens *action camera* was pointed outwards to record video material of the vistas and events that were taking place in front of the car for the duration of the drive. (2) The video – "footage as record" (see Garrett 2010, 525–528) – was then watched together with the informant during a video elicitation interview

following the drive, to provide another look to the route, events and environments without the need for the active practice of driving, the video working as a trigger for discussion (the video here taking partially the form of a "participatory video" (ibid)). The informants also picked points of interest in the video, regarding to the environment, route and events taking place there, which were then saved as screen captures for further reference. (3) The informants were asked to draw a map of their route in advance of the interviews. These maps were examined as part of the elicitation interview *with the informant* to provide deeper insight to the route and the various meanings embedded in these spaces. These maps, although are *visual* by character, and produce an *image*, were discussed as multisensory objects, aiming to bring forward the various affective experiences. (For the use of maps in research, see Lynch 1960; Gould & White 1986.)

The driven routes were ordinary commutes (4), trips to run errands (3) or trips to the places of hobbies (3) (either their own or their children that were given a lift) that are all travelled roughly at least once a week, some on a daily basis. The drives are usually set during the morning, day or late afternoon. The informants were both male and female and aged from their mid-twenties to mid-sixties. The interviews were conducted between late 2015–early 2016. The interviews were conducted in Finnish: all transcript translations further below are done by the author.

The focus of the analysis is set towards car travel in urban centres, although many of these routes partially took place in areas that were further away from the quite compact centres (that are even walkable in distance) of the two cities. The routes, except one, either began/ended in the city centre areas, one route being more of a drive-through route (with possible occasional stops in the centre by combining the commute to running errands).

Content analysis – based on the rhythmanalytical framework described above – focused on the temporal material and social interactions, sequences and (inter)subjective meanings that relate to moving in the environment. Aspects of the interviews that deal with temporality, routine or habit came to be of interest. The overall research approach is not to be taken as fully encompassing experiences of being on the move but rather understand that the data can only provide snapshots of these aspects that are always "partial, incomplete, in process, becoming" and thus difficult, or even impossible, to attain fully (Jirón 2011, 36). Vannini (2014) calls for new methods that might take *non-representational* forms to approach the study of complex lifeworlds, such as urban life. Although the practical research data utilized in the study still consists of various forms of representations – interviews, videos and maps – the study leans towards non-representational approaches by utilizing rhythmanalysis as a mode of inquiry (see Lefebvre 1992/2013; Koch & Sand 2010, 63–65) and by noting the challenges and limits of grasping experiences and affective relations through representations and communication.

Rhythms on urban driving routes

Building on the notion of rhythmanalysis, and the driver-car assemblage as a mode of dwelling in urban space, the paper next examines the empirical data gathered on the driving routes. The analysis focuses on two larger themes: first, how rhythms – in a driving context – are staged both from the *below* and from the *above* (following Jensen 2013), and second, how temporal social interactions take place on the routes. The role of the private car-space in the public urban space, (temporal) route knowledges, driving practice and its regulation, physical spaces and boundaries, and choreographies between different mobile bodies, are discussed.

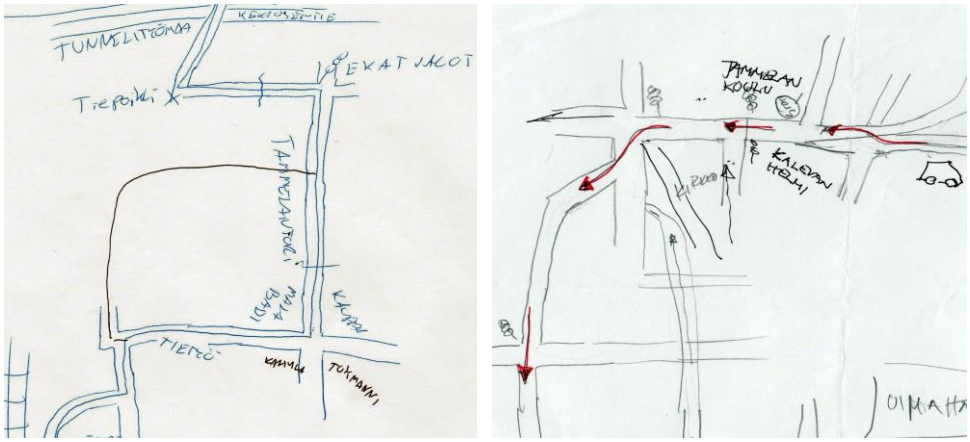

Figure 1. Route blueprints. The route maps present the script, or the process of events, for the route. In most cases, only the streets and intersections relevant to the route were marked in the maps, highlighting the route as a specific mobile site. The maps also included notions such as "*cut-off street*" and "*first* [traffic] *lights*" (left figure) that highlight the dynamics and the linear form of the route. Excerpts from the informants' route maps.

Embedding and perceiving rhythms on the move

Rhythms as staging: knowledge, embodiment and habit

The informants noted that a key reason for them to use the car is either the ease and freedom it provides, or the requirements of various everyday needs that necessitates its use. The private car provides possibilities to organize one's life, whether through *necessity* or *choice*, and car use is reasoned through these notions (for similar observations, see Maxwell 2001). Most informants also used other modes of transport to move around in the city (such as walking, cycling and public transport) but for these specific routes the car was often the preferred choice. The seasons also have an effect: the weather of the cold and wet winter months (when the interviews were conducted) was preferably met with the car rather than, for example, on a bicycle that was often preferred during the spring and summer seasons.

The routes that the informants introduced are quite fixed between the point A and the point B, both in the form of used pathways and timeframes, and any detours or other stops (such as going to the supermarket on the way to home from work, or to run other errands) are often part of the *route plan* – or the 'episode' (Aura 1993) – the routes having a clear blueprint that is embedded into space. This is though not to say that the routes are meticulously planned but rather that these routes have become habitual and routine-like. The informants brought up how some of their driving routes are almost fully automatized. The informants often referred to the car as a living being here: it was the car that *knew* where they were going and drove them to the destination if one was not actively thinking about where to go (see similarly Laurier 2011, 70). Also, driving itself was automatized as an embodied practice. Some of the informants, though, brought up their earlier anxieties about driving, and recollected past occurrences in the traffic, but for most, driving, as a practice, was more or less automatized. One informant (Female, 26) noted jokingly that she probably would sooner forget how to walk than to drive.

Part of staging is the way how the environment is traversed (Jensen 2013): the skills and knowledge that are required to navigate through the space and to make it known (Figure 1). This knowledge often relates to the understanding of how different mobile trajectories meet and interact with one another in specific points of the route, and how these trajectories change and transform in cycles through the day, as well as other temporalities. Traffic congestions, rush-hours, intervals of traffic light changes, slippery parts of the road (during winter season) and potential encounters on the crosswalks are all examples of the knowledge regarding the *choreographies* (Merriman 2011) of the various trajectories of the street that were often brought up in the interviews. This knowledge transcends also into traffic regulation: the speed limits, one-way streets and other regulations are known – and embodied – and not actively investigated on every drive, as are

sharp turns and small unevenness in the surface of smaller streets and other drivers' movements anticipated (more on these in the next section).

The knowledge of the route's spatial and temporal structure often condensed in specific locations or parts of the route: one informant (F55) notes the multitude of the different pathways she could take to reach her destination, but how she usually comes to use the same route; another (Male, 42) talks of the smaller streets he drives around the central railway station as something like a secret route that not all drivers know about. All the informants brought up different notes on temporalities: how the roads usually jam up during certain times of the day and how they set often their own travelling accordingly (if possible) by delaying their departure for a few minutes or running errands on the weekends rather than during the week. Also, the various pathways used for other routes in other mobile contexts, were brought up. These are all examples of the small skills of navigating and moving in the urban space, of knowing the routes and the locations from a movement perspective. These staging "tactics" (Certeau 1984; Jensen 2013) are here habitually utilized in the *rhythmic* and *temporal* urban space.

As the route is known, so is the car-space itself. Driving is often accompanied with managed soundscapes: many informants noted that they usually listen to music (often through music streaming services) or to the radio while driving. Bull (2004) notes how sound becomes part of the driving practice: selecting what to listen is a way to exercise power and to privatize the inner car-space in the otherwise public arena, to "produce a seamless web of experiences from door to door" (247), or mobile "surrogate homes" (251). Rhythm, in addition to physical movement and trajectories, is also produced in other ways, such as through utilizing technologies, such as the car stereo here, to augment the sensed auditory space, or to connect to other (virtual) spaces through various digital connections.

The car is also a space of social interaction when travelled in company. Aside from the interaction between the driver and the passengers (see e.g. Adey et al. 2012), Barker (2009) notes that the car-space has become one of the most frequently inhabitant spaces for children in contemporary cities, and the car is turned into a space of everyday family interaction. This was also evident in those three interviews that took place on routes that were driven because of children: the informants brought up how the route is a moment to interact and discuss, even regarded as a *break* in the daily schedule. One informant (F36) talked how the twice-a-week trip to the hobby of her eldest child is a rare moment when they can have a chat just between the two, as younger children at home require more attention and care – although the use of a mobile phone or a set of headphones from the child's part might prevent these chats from taking place.

All these notions above present the driving route as a specific place in motion: as a set of mobile practices, ordered and synchronized to the rest of the private everyday life through timing, wayfinding, automatized driving practices and interaction inside the car-space. These notions bring up the (habitual) ways people set rhythm to space through their embodied (everyday) mobility. The above shows how people build knowledge around the various limitations and possibilities car travel entails, and produce knowledge of the spatial, and especially *temporal*, order of various mobile trajectories on the specific route. This knowledge is embodied into habits and routines as the city is navigated. These staging practices – both the habitual and the intended – show temporal relevance, as practices of *pacing* the urban space.

These practices though do not operate in separation from the environment. How the car-space, driving practices and the route itself relate and extend to the environment (and vice versa) are examined below.

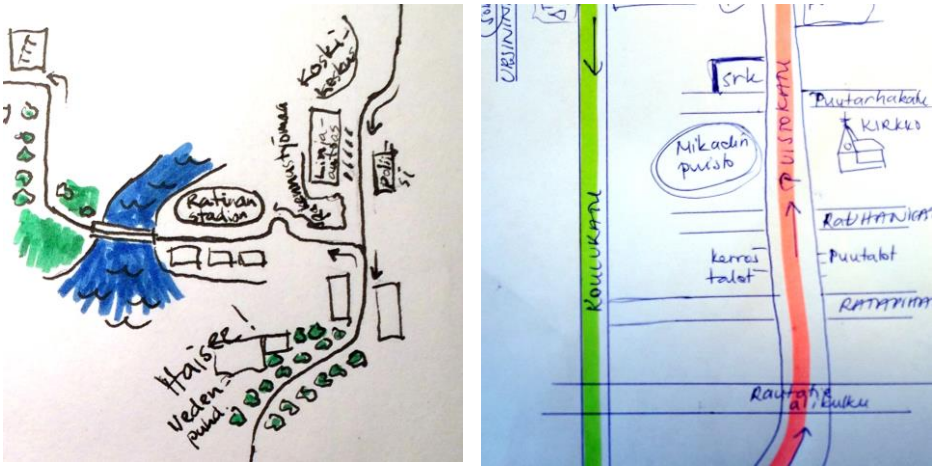

Figure 2. Driven landscapes. The maps provide insight to the various distinctive landmarks and areas that characterize the route – such as specific buildings and park areas – with both shared and subjective meanings. Mostly the maps convey the visual aspects – which are prominent in the driving practice – but also other sensory observations are possible, such as the "*Stinks!"* remark next to a water treatment plant suggests (left). These observations, though, are easily damped by the enclosing character of the car. Excerpts from the informants' maps.

Rhythms as staged: landscape, observation and affect

Driving as a mode of mobility is heavily regulated, *staged* from the start (Jensen 2013). Many sites (such as parking lots and highway ramps) and signs in the build environment are there for the purposes of car-use (Thrift 2004). Streets and roads are *choreographed* for automobility from the get-go (Merriman 2011) and they are also tightly governed and managed as how these spaces are used by non-motorists (Urry 2007, 117). These various regulations of car traffic are part of the routine driving practices in the environment, and not necessarily actively observed. In the interviews, the various driving regulations were usually only noted when reaching a certain portion of the route, such as during a transition from a highway to an urban central area, where a new set of rules for the movement, such as lower speed limits, come into place.

The interviews show that staging of mobilities also takes other than regulatory forms, such as urban landscapes (Figure 2). Activities in cities are not only about movement: different events and happenings, of both *everyday* and *special* character, take place in urban public spaces, and these events and happenings are occasionally investigated briefly while driving by in the everyday route -context. Many informants emphasized, however, that the car is first and foremost a mode of transport for them, and that usually their drive is done in a state of mind that is not the most analytical towards the everyday (mundane and familiar) surroundings. The drives' functional form was emphasised: functionality of the movement was often intended but the driving situation also set certain limits to what was possible on the route. One informant (F37) noted, for example, that usually on her morning drive to work it is still dark outside so that "there is not much you can look other than the taillights of the car in front of you".

Driving, as a mode, comprises of movements and stops. It was these various *stops* that came up in the interviews as moments when the surroundings could be most attuned to. Stopping at the red lights, for example, provided possibilities for people-watching: the material interaction with regulatory sings produces possibilities and restrictions for other activities to take place inside the car. It was evident in the interview situation that the stops often provided also a clear break from the driving practices and helped the informants to refocus and make notions about the environment. Driving, as a practice that requires bodily coordination and concentration, was not seen as a limiting factor towards perceiving the environment as such but the informants noted that their environmental attention often steered towards issues relating to traffic when in motion (see next section).

The interview situation seemed to direct the informants to present the environment in a detailed way. Discussion rose around the perceived landscapes, which is not surprising as driving heavily emphasises the visual

sense (see Appleyard, Lynch & Myer 1964; Venturi, Scott Brown & Izenour 1977; Kalanti 1998). Only few non-visual or non-movement types of sensory remarks were made. The informants often pointed out (un)enjoyed vistas, sites where something once was (such as demolished buildings), sites of personal relations and memories (such as previous homes and places of study) and sites of ongoing changes in the environment (such as construction sites and recently finished buildings, or road infrastructures that were not only perceived but which also had an effect on the travel by reconfiguring the route). In driving, the landscape is experienced in motion: as sets of openings, turnings and closings of perspectives (Appleyard, Lynch & Myer 1964). In the interviews, though, the notions on landscape were more-or-less *static* in nature. One informant (M64), for example, talked in detail of the various planned construction projects in the local area, which he followed closely; another (F48) talked in detail of her earlier memories of living in the area, and noted how "All these corners bring up some memories, every intersection". These affective aspects of the route came most evidently visible in the elicitation interview. The video (and the pausing and rewinding of it) provided possibilities for these recollections and memories to emerge (Figure 3).

These observations concerning landscapes are not necessarily part of the daily travel, examined analytically again and again during the drives. Still, they bring forward how the environment is connected to in and beyond the particular driving route, and how various contexts overlap and merge on the everyday drives. Many informants noted how they perceive spaces differently depending on whether they are travelled by car, on foot, by using the bus or by bike. In many cases, the discussion that revolved around the more detailed issues of the landscape, such as material details, specific buildings and their uses, or various temporary uses of specific spaces, were often *learned* about through other means than driving, such as by reading about it in the media or engaging with the space in an (mobile) activity other than driving. The spaces along the investigated routes that are only engaged through the car were thus often only briefly discussed in the interviews (sometimes noted that "there is nothing here" (F54)), were examined mostly through their visual characteristics (how something looked like) or through the amount of traffic. Urry (2006, 23) notes that the speeds of car travel make one lose the ability to perceive local detail, which even in the central urban areas, where speeds are often limited to 30–40kmph, plays a key role in the possible engagements with the environment. The driving route provides a specific context to engage with the space – framed by the regulated movement and the timing and organization of the everyday life – which often seem to result in fleeting engagements with the landscape that other contexts support and augment.

Figure 3. Affective scenes. Various landscapes dot the route that wake occasional interest on the way, and act also as potential triggers for discussion and interaction inside the car if driven in company. "*Cinematic*" apartment buildings and the various everyday social events taking place in the doorways (upper left); riverside restaurant boats that pulse life during the warmer seasons (upper right); a park next to the main library (left) with occasional social events and happenings (below left); an old freight station (left) and an open culture house (right) as current topics of urban renewal (below right). Excerpts from the videos by the informants.

What the above brings forward is how everyday mobilities are shaped and influenced by various spatial rhythms that are interpreted and engaged with on the move. Driving practices are *paced* by various spatial rhythms of which others

are more collectively shared (such as driving regulations) and others more personal and subjective (such as affective relations to landscapes). The traffic regulations and other social, cultural and material *place-specific* rhythms (Wunderlich 2013) of passed by places provide a frame for the various staged rhythms to play out in and beyond the car-space but these aspects did not come forward strongly in the communicated experiences in the interviews.

Above I have examined how mobilities and rhythms are staged by the collective embodied/spatial practices, materialities and socialities. One key question is then what happens when these different embodied staging practices meet and connect as collective and momentary relations, as assemblages.

On the beats: interaction, encounter and collective choreography

To move is to interact, both materially and socially. The street is a limited space and the interaction between drivers is unavoidable as cars move in a regulated and linear form (Urry 2007, 123). Interaction between the driver and the other users of the space came up in the interviews mostly in the context of traffic and movement. Streets are sites of multiple uses, as already noted above, but in the case of driving experiences, the street seems to be foremost a site of traffic. The traffic is not only noted but used as practical knowledges by anticipating the trajectories of others or increasing one's attention in specific locations on the route where multiple intersecting trajectories often means some kind of interaction. These interactions are the result of multiple individual staging practices meeting in the staged mobile spaces.

In regards to other motor vehicles, the flow of traffic was often discussed in the interviews and many remarks were made of the events relating to it: the slow/fast parts of the route, the perceived tightness/roominess of the driving space, the number of other users, the particular locations with identifiable characteristics that affect the way people move there, and the overall variations in the driving styles of other motorists. One informant (F55) noted of a particular intersection consisting of multiple lines, in the outskirts of the city centre, that the drivers who are used to driving there (the locals) and the ones who are not (the nonlocals, tourists) are clearly identifiable by how they managed their driving in it. Edensor notes that driving as a practice includes practical norms that are embodied, but which are also under constant observation from other drivers and their "disciplinary gaze" over the driving performance: "These collective performances engender mundane choreographies of the road and everyday motoring knowledge" (Edensor 2004, 112). Rhythms can be contested by different actors (Allen, 1999) which here, in the case of driving routes, often means the various material trajectories and how they blend together.

Figure 4. Flow of traffic as a mode of interaction. The interaction between the inside car-space and the environment is limited. Interactions with the different users of space comes through most evidently as micro-level events in traffic, where various trajectories meet and cross in various ways: lane changes and different velocities (upper left); crosswalks and pedestrians (upper right); cars joining or departing from the flow of movement (below left); traffic lights and street crossings (below right). Excerpts from the videos by the author.

These micro-relations in traffic also include interactions with non-motorized movements. Often, the interactions were related to specific locations where

encounters between different modes of mobility could be anticipated, such as crosswalks, light guided intersections, certain long stretches of streets where crossings were made in multiple points (other than the appointed crosswalks) and the nearby areas of schools (and the unpredictable behaviour of children) during mornings and afternoons. The locations were *part of the route,* and the interaction, similarly to the interaction with the motor traffic, was routine-like.

Thrift notes that driving as a mode of interacting with the outside and other users of the space (beyond the (semi)private car-space) is quite limited. The car as an extension of the body renders much of body language impossible to read. The language of the car is distilled into velocity (and its changes, such as speeding up or braking), horns, lights and hand gestures. (Thrift 2004.) In the interviews, the notes on various interactions were based on the visual sense, and often relating to velocity. The mobility rhythms were thus often considered from a movement perspective, the act of moving being the most important method of communication between people (Figure 4). These signs are habitually read and interpreted in various mobile situations, such as ordinary street crossings. These material and social encounters take either “eurhythmic” or “arrhythmic” (Lefebvre 1992/2013) forms – either producing harmonious interactions or frictional encounters where the different rhythms meet disruptively.

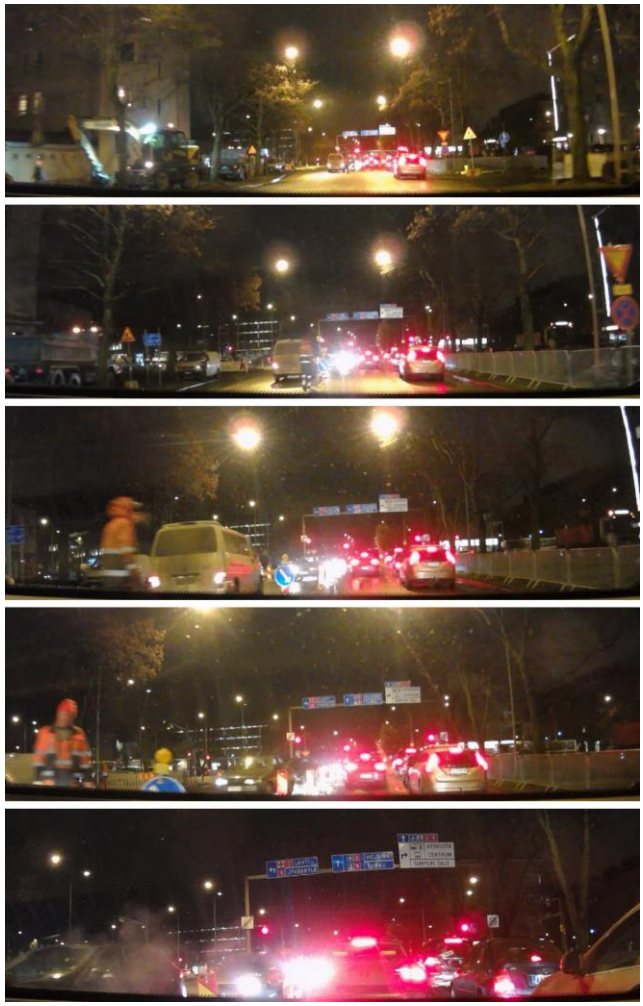

Figure 5. Material and social encounters. Unexpectedly encountering a street maintenance site during an early evening drive. The routes are not fixed scripts that repeat unchanged but small reformations produce new micro-events of material and social interaction. A fifteen second sequence from a drive-along video, excerpts by the author.

Adey writes that “It is often when rhythms break down that we become aware of the scale and scope of these mobilities” (Adey 2010, 28–29). Interrupting the predictability of the route produces moments that break the accustomed and routine practices. Various construction sites were noted as producing much of

the changes and surprises in the otherwise known pathways and (mostly) automatized driving practices. Encountering a construction site often also resulted into a reconfiguration of the aforementioned blueprint of the route as certain streets were closed and others opened (Figure 5). This, again, is not to suggest that people have a finished, ready-made script in their head, which they just act out, but that people have come to expect certain issues in certain physical sites through repetitious engagement with the space, and the route is seen as a more-or-less stable choice of pathways.

Various collective driving activities, such as rush hours and traffic jams – ”when everyone else is going too” (M45) – are often attempted to avoid by managing own time and movement. As Edensor (2010) notes, many everyday rhythms, like the ones produced through everyday commutes, are partly made of actions that are organized collectively and shared between subjects. One informant (M64), talking about his route to a weekly morning sports event for male seniors, noted how “five hundred guys, all arriving with their own cars” not only has an effect on the availability of parking space at the sports arena (the route’s destination) but also on the congestion of traffic in certain parts of the city. The individual pacing processes come to interact in a collective mode, producing individual-and-shared rhythms.

The relations between the individual and the environment are not necessarily always intimate, actively engaging or reflective – as the informants’ narratives here bring forward – but are still crucial in the formation of our relations with the daily lived spaces, whether these spaces are traversed through or dwelled in for a longer period of time.

Together the staging practices produce habitual and routine-like interaction and relations between the body and the everyday urban environment. The routes are repeated as part of the daily life – and thus known from a movement perspective – but the changing landscapes and street networks constantly shape the experiences of everyday mobilities. Spaces are paced through staging practices of embodied mobility, which in turn are paced by the spaces traversed through, producing a complex assemblage of various trajectories and movements. The route provides momentary possibilities to connect to the surroundings even though the functional character of the drive comes to the fore in the communicated experiences.

Conclusion: embedding/perceiving/moving in rhythm

Driving produces specific rhythmic temporalities in urban spaces, in the form of materialities, interactions and embodied driving practices. Urban spaces are routinely experienced through this setting that comes to produce specific relations with the environment. Understanding everyday mobilities as meaningful sites of everyday life gives insight to how urban spaces are lived and experienced, and how the embodied context in which the environment is engaged in comes to shape these experiences. The relations between the individual and the environment are not necessarily always intimate, *actively* engaging or reflective – as the informants’ narratives here bring forward – but are still crucial in the formation of our relations with the daily lived spaces, whether these spaces are traversed through or dwelled in for a longer period of time.

The paper, by developing another take on the rhythmanalysis framework, set out by Lefebvre and others, introduces a perspective to everyday mobilities and urban spaces on the move that focuses on rhythms as pacing/paced, and the interactions between. Rhythms are produced by the driver-car assemblage through movement, and the place-specific rhythms provide a local framework in which these rhythms play out. The barrier -like character of the car presents the temporal relations between the body and the city as tightly managed and scrutinized but, still, as the informants’ stories bring forward, incorporates a set of micro-skills/knowledges/relations that are embedded in these mobilities. Even if on the everyday driving route the environment is sped by, it is a site where people set momentarily their own pace into the shared urban space through routine and habitual embodied practices, and are in turn paced by their surroundings, and interact with others embedding their own pace in it.

The future developments in automated driving technologies, such as self-driving vehicles, might change the character of driving (as an embodied practice and context for body-environment relations) in the coming years, shifting the role of the driver towards the one of a passenger. This, though, does not change the fundamental character of the use of the personal car that separates it as a specific mode of mobility in the urban environment: the personal and personified inside space of the car in the public arena, and the possibilities and necessities of movement in the organisation of everyday life. Changing urban planning paradigms – that put emphasis on walking and the use of public transport – and urban densification might, though, be changing forces in how built environments are lived and engaged on the move in profound ways.

Still, car driving is something that happens in the contemporary city. On one hand, it impacts greatly on the overall character of urban milieu, and on the other, it is a common mode of inhabiting daily urban spaces, creating a distinctive set of relations between the subject and the city. Mapping the various rhythms that are produced and interacted with in everyday driving practices, reveal connections and structures between spaces, temporalities and activities. Examining these rhythms of everyday mobilities, that often might be regarded as mere trajectories in time-lapse videos (as noted in the beginning of this text), come to partially explain what kind of contexts they actually provide for the experience of the material, social and subjective spaces. The city is rhythmic, but the rhythms work in different ways depending on whether examined from within the practices and spaces they are engaged in or from afar, driving – as an embodied context – being one piece in the overall puzzle. Further study is thus required to connect these notes of rhythmic spaces from *within* driving practices to other notions of spatial rhythms. This will perhaps provide a more encompassing understanding of urban rhythms in general that will reveal everyday urban spaces not only as spatial but also as temporal sites, enabling us to draw concrete cues for planning and design processes and to deepen our understanding of our daily lived environments.

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The Experience and Beauty in the Cultural Heritage Discourse

Reflections from two case studies

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Abstract

The cultural heritage in the built environment is developing discursively, and the concept is today exposed more variously than a decade ago when I explained in the doctoral dissertation through a case study how the place, the process and the experience were arising in the Foucaldian discourses. My on-going research on the change of the cultural heritage discourse (kulttuuriympäristö) is showing how the designations are changing and the concepts re-defined. The national strategy on the cultural heritage (2014) is emphasizing everybody's right on the good cultural heritage environment and also the responsibilities to take care of that. When we now share the idea that the cultural heritage in the built environment is belonging to all of us, the places and experiences of all are also important.

Nevertheless, in the end is the experience or the aesthetic experience exactly, really important when opinions are contradictory and the crucial decision has to be made: to preserve or to dismantle the building? The absence of aesthetics in decision-making has been extremely explicit since the recession of the 1990s and public discussions and political decision-making seem to involve mostly economic arguments.

Architects are using the experience, meaning the aesthetic, bodily experience or referring to art, in their professional speech but to speak about "the beauty experience" or able to emphasize the meaning of beauty in architecture, and also in the environment is usually left outside the discussions. The experience, together with reflection, following Dewey, is very important in the speech of teaching architects. In the cultural heritage discourse, narratives, experiences and local stories from bottom-up are arising but do we talk about the aesthetics or the experiences of beauty in the built environment?

In this paper, the aim is to discuss about the meaning of experiences and the role of beauty in cultural heritage discourse.

In this paper, the aim is to discuss about the meaning of experiences and the role of beauty in cultural heritage discourse. The method used here is the case study research, and two local cases from different decades will be introduced to demonstrate how miniscule or completely absent aesthetic argumentation in decision making processes can remain, and how different the solutions ended up, though both cases concerned the question of built cultural heritage. The central question in my on-going research project on the changing cultural heritage discourse is: How "the aesthetic experience" is appearing today in the cultural heritage discourses? This paper aims to cast light on that and tries to answer especially this: How did the cultural heritage discourse evolve from different experiences; and how did ugliness become important rather than beauty in the case studies?

Keywords: aesthetics, cultural heritage, discourse, experience, beauty, case study

PEER-REVIEWED ARTICLE

Introduction

This paper is linked with the author's on-going research about the changing discourses in Finland around the cultural heritage discourse (kulttuuriympäristö), and the term "Cultural Heritage" is as the umbrella concept, because of its relevance in the international research literature. This includes the cultural landscape, the cultural heritage in built environment, the archaeological heritage, and the most important thing: also the narratives, meanings and interpretations attached to them all.

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The administrative nature of the concept, the use of words, the discourses, are committed strongly to their premises, and "Environment" is more connected to the land use, and "Heritage" has a strong position in cultural and educational sectors. Ministry of Environment, Ministry of Education and The Finnish National Board of Antiquities (NBA) have 2016 set up a service in the internet[1], which is spreading information about the subject and a part of the implementation of the Cultural Environment Strategy. NBA is also using "Cultural Environment" in its English text, but divides it into Built Heritage and Archaeological Heritage, which in Finnish are "rakennettu kulttuuriympäristö" and "arkeologinen kulttuuriperintö" This is emerging also from the discourse used by UNESCO: the concept "Cultural Heritage" in tangible and in intangible cultural heritage. Looking at "European Heritage Network" reveals that "kulttuuriympäristö" is translated as "Cultural Landscape" and "kulttuuriperintö" is in English "Heritage". From 1992 Finland has also promoted "European Heritage Days" and that has been translated in Finnish as "Euroopan kulttuuriympäristöpäivät".

The cultural heritage in all levels has been the author's long lasting research subject. The starting point for the doctoral studies and research was the frustration with the municipal decision-making in the 1990s, explicit during the recession, when soft and aesthetic arguments were outstripped and mostly economic values seem to be accepted in public discussions and political decision-making. In the 1990s the author held the office of city architect for Lapua, and tried to promote in this position good design and architecture. Additionally to economics, the empowerment of aesthetic and cultural values became essential when Lapua was forced to buy an old industrial area, as a responsibility for the corporation to hold the jobs in the municipality. (Teräväinen 2006)

The design and decision-making process was a real endeavour for the city organization. Speaking on history, architecture, and also beauty were the mission of the architect during the process. Later, my doctoral dissertation (2006) demonstrated the discursive formation of the cultural heritage and the importance of the place and the process, but actually no traces of talk about beauty experiences. This left the author in constant searching after the beauty in discussions, with professionals and in public alike.

Following recent years' public media discussions on land use and on new building projects brought an outcome, that it was very hard to find notions of beauty or aesthetic argumentation even when architecture or cultural heritage seem to be involved. There are discussions on architecture in three Finnish architecture schools and naturally in Finnish Architectural Review *Arkkitehti* and in a couple of other professional magazines on the built environment, but in the public discussions or municipal decision-making, aesthetics and beauty mostly seem to be missing. The arguments are expected to be based more on quantitative than qualitative reasoning and beauty is obviously seen insomuch subjective that it is left out of the matter.

The public enthusiasm arises when the so-called architectural wow-impact occurs, but usually questions about economics and decision-making in the town planning overrode everything else. The capital city Helsinki is obviously a target for very hard scrutiny and the neo-classical, iconic Senate Square one of the most

[1] See www.kulttuuriymparistomme.fi

In general, the author believes in the communication and understandable argumentation also in questions of beauty and aesthetic, that involves both the discourse of architecture as well as the cultural heritage discourse.

important cultural heritage places in the country because its political and historical impacts. The place is seen so valuable that many new projects in the vicinity have ended up without result. The first unrealised initiative was ARMI House, a common building for Architecture and Design (Architectural Competition 2001). The second case was in 2008 when a Norwegian businessman Arthur Buchardt[2] wanted to build a Waterfront Hotel in the area, designed by Herzog & de Meuron. The initiative failed to clear the Helsinki City Council in 2010, after generating long public discussions in the media. In 2011, the Helsinki Art Museum started to negotiate with Solomon R. Guggenheim Foundation, but the project fell through in May 2012, again failing to gain support from the Helsinki City Council after heavy political discussions.[3] Now there is a new project rising on the shore line, but astonishingly the Allas Sea Pool by Architects Huttunen-Lipasti-Pakkanen seems not to be rising up in discussions, even no mentions of its suitability neither its impropriety in the place, and so of course nothing about the architecture or its beauty. The reason for the silence might be the impermanence of the project, so not even the land use was questioned.

In the public debates the architecture or cultural heritage, or *beauty* — in spite of the famous names around it – does not seem to have any role, obviously questions about economics and decision-making in the town planning override everything else. Senate Square and the Helsinki Dome are part of the national cultural heritage and the image-like city silhouette is seen far from the sea.

These examples occurred in one of the most significant cultural environments in Finland and were reiterated here to indicate not only the general situation in Finland but also the author's continuous interest on the cultural heritage and the attempt to find notions of beauty or aesthetic in the public discussions on the architecture.

In the author's on-going research "The Change of the Cultural Heritage: The Concept, the Landscape and Seers"[4] (2015-2018), the subject is wider but following the doctoral dissertation. The post doc research inspired the author to re-visit the case of Old Paukku and the other coincidental case of bus station with a lot of documented material in her local environment. Re-reading the material, including many hours of interviews for the dissertation, and also author's own text, these two cases turned out to give suitable data for trying to respond to the questions presented in this paper.

The dissertation *Old Paukku in Lapua, Re-Built and Re-Spoken, Discursive Formation of Cultural Heritage in a Case Study* was completed 2006 and is presented here as the first case. There was pointed out the importance of the place as well as processes involved in the formation of cultural heritage. In the cultural heritage discourse, beauty did not play a very significant role but instead different, aesthetic experiences arose, and the aim here is to show discursive connections between them. People may not talk about beauty or uggliness, but they have experienced the place and are sharing in their discussions notions of aesthetic experiences and memories.

The issues of Foucauldian power analysis which were studied thoroughly in the dissertation are not the main concern in this paper, though they were important also in the second case, the bus station in Lapua administrative center. The modernist bus station was built in the 1960s but its architecture was obviously not highly appreciated in the town, and it was threatened by the demolition. These

[2] Arthur Buchardt later found another place for his hotel, and 2016 Hotel Clarion was opened near Helsinki Western Harbour, in Jätkäsaari. The hotel is designed by Architects Davidsson & Tarkela.
[3] The so far latest act of the Guggenheim Helsinki was played 2014-2015, a little further of the Senate Square but still in the historic center and on the shoreline, when a huge international architectural competition was organised and the winner was Moreau Kusunoki Architects – but in the end city of Helsinki did not accept the enterprise to be materialised.
[4] In Finnish: Kulttuuriympäristön muutos: käsite, maisema ja näkijät.

cases outline how beauty is missing in the discussions and even how the opposite is discussed more eagerly, i.e. ugliness.

How did the cultural heritage discourse evolve from different experiences; and how did ugliness become important rather than beauty in the case studies?

The author aims to use two case studies to show that aesthetic experience exists, even if the aesthetics seems not to be present in the argumentation of the cases.

The central question in the on-going research project on the changing cultural heritage discourse is: How "the aesthetic experience" is appearing today in the cultural heritage discourses? This paper aims to cast light on that and tries to answer especially this: How did the cultural heritage discourse evolve from different experiences; and how did ugliness become important rather than beauty in the case studies?

Theoretical background and research methods

Case study research

The research method here is the case study research, and the aim has been to deal it in the most rigorously way, using two comparative cases which share the context and the time period. Case study is the preferred method in situations like these when in the beginning the main research questions are "How?" and "Why?" and the researcher has little or no control over behavioural events and the focus is on a contemporary (as opposed to an entirely historical) phenomenon, in its real-world context (Yin 1989/2014).

A case can be an individual: a group, or a class, or an office, it can be an institution, a factory or another building waiting for the reuse, like Old Paukku and bus station in this paper. A case could also be a large-scale community, like an industry, a profession or a town. It can handle also multiple cases in the same context like here. A case study investigates the subject to answer research questions that may in the beginning be fairly loose, and which seeks a range of different kinds of evidence, which lie there in the case setting. No one kind or source of evidence is sufficient or sufficiently valid on its own. The use of multiple sources of evidence, each with its strengths and weaknesses, is a key characteristic of case study research. Another characteristic is that in the beginning there are no a priori theoretical notions, whether derived from the literature or not, because until the data is there and the context understood, it is impossible to know what theories or explanations would work best or make the most sense. (Gilham 2000)

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We can think basically, a case study is an in depth study of a particular situation and to delve in some cases profoundly and to research them from different viewpoints (Shuttleworth 2008). This heartened the author to catch and apply herself also to the second case, which actually was sharing the situation and happening in the same place and time as the first, inclusively documented and explained case. The aim was to describe the phenomena and make new perceptions, not so much to generalize or to find typical features, because usually this method is said not to be able to generalize. On the other hand, the highly recognized researcher Bent Flyvbjerg has pronounced that view to be one of the five misunderstandings about case study research (2006). He argues that it is possible also to generalize on the basis of an individual case, and therefore, the case study can also contribute to scientific development.

The author has been involved in both cases as an actor, which does not make her unable to function, quite on the contrary in this kind of case study, which reminds action study, one can say the actor's or participant's knowledge is very useful and can reveal issues with so called inside-knowledge.

Discourse analysis and power

The primary aim in case 1, Old Paukku (the doctoral dissertation 2006) was to understand other actors' subjective intentions and to obtain hermeneutic interpretations of them, which in the end came out as collective structures of meanings, i.e. discourses, allowing for a Foucauldian power analysis to be carried out. According to Foucault the discourse is not merely what is said, it handles also who is doing the speaking, how they have done it, in what context, in reaction to what, and so on (Foucault 1980; 1997; 1998).

Discourse analytic research is described as a triangle, whose corners are meanings, communications and culture. Discourse analysis leans on the whole triangle and the sharp edges intertwine each other. Discourse analysis is based on cultural meanings, which are constructed, maintained or changed through human actions: the communication includes speech, discussions, writings, and pictures, as well as symbolic actions. (Jokinen et al 1999, 55; Teräväinen 2006, 85)

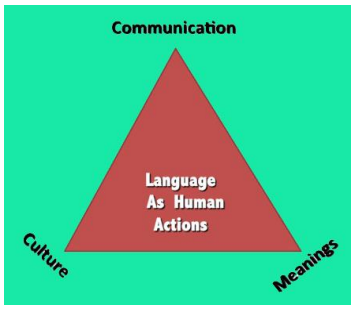

Figure 1. Discourse analytic research can be described as a triangle, its corners depicting meanings, communications and culture. Diagram according Jokinen et al, remodelled by H.Teräväinen.

According to the methodical dimensions of Foucauldian discourse analysis, it is possible to research knowledge in textual form, and the discourses are seen as independent in time and in law, regulated through autonomic formations (Suoranta 1991). In today's mechanically renewed culture of voices and pictures, all products of signification are understood as text; of course in spoken and written language, the relationship of the signifier and signified is conventional and easier to interpret. Pictures on the other hand are rather able to mean (signify) something about which they are reminding, the thing that they are signs of (Teräväinen 2006; 2010).

Discursive rules are strongly linked to the exercise of power: discourse itself is both constituted by and ensures the reproduction of the social system, through forms of selection, exclusion and domination. As Foucault asserts, in every society the production of discourse is at once controlled, selected, organized and redistributed by a great number of procedures. Foucault is involved in a concerted attempt to restore materiality and power, which in the Anglo-American tradition has remained a largely linguistic concept of discourse; it is equally clear that he wants to centre the analysis of discourse within the field of political action. (Hook 2002)

The reason for leaning on Foucauldian discourse analysis in the case studies is due to the extremely centred role of political decision-making in both of the cases. Foucault's discursive practices work both in inhibitive and productive ways, implying a play of prescriptions that designate both exclusions and choices. The data accessible to the discourse analysis has been diverse: for both cases there were a lot of municipal records and planning documents, and also almost 130 contemporary newspaper articles were listed for the case of Old Paukku, which was the focus in my doctoral dissertation. Key actors in the case were interviewed over 10 hours and this produced more than 200 pages transcribed text, which was now read again, as well as the author's own text in the dissertation was scrutinised. For second case "bus station" no special interviews were produced, but all municipal records and a lot of co-actor's knowledge in the process were at disposal, as the author had been able to follow the destiny of Lapua bus station first as an office-holder and planner, later with an association dedicated to value the local cultural heritage. The cultural association Nurkkakivi ry has collected the records and decisions around the bus station on its webpage[5]

How to talk about beauty and aesthetic experience?

The question about beauty in architecture or generally in the environment is difficult to handle, although legislation already obliges us to protect the beauty of the built environment. In Finland the Land Use and Building Act (132/1999,

[5]http://www.netikka.net/nurkkakivi/laa.html

amendment 222/2003 included) references already in the first chapter culturaldemands[6] for the environment, and beauty[7] is mentioned in the fifth section. Despite this legislation, beauty is very seldom used in architectural argumentation. Rather than written qualifications or explicit instructions, the legislator has trust in expert knowledge, but neither inside the profession (architecture) nor in public discussions is beauty typically a subject. Usually the main difficulty is whether beauty is an objective feature of beautiful things or whether it is subjective; it is so often said that beauty is "located in the eye of the beholder", and this has ended many discussions before anything has been said. Often the discussion is ended by saying how useless it is to argue about matters of taste, "about taste there is no disputing"[8].

In the eighteenth century the philosophers David Hume and Immanuel Kant were convinced something very important would be lost if beauty were treated merely as a subjective state.

In the eighteenth century the philosophers David Hume and Immanuel Kant[9] were convinced something very important would be lost if beauty were treated merely as a subjective state. When controversies arise about the beauty of works of art and literature, it is possible to give convincing reasons. If beauty would be completely relative to individual experiencers, it ceases to be an important value, or even recognizable as a value at all. Nevertheless, people do frequently discuss matters of taste and some persons are held up as exemplars of good taste or of tastelessness. Hume and Kant end up treating judgments of beauty neither precisely as purely subjective nor precisely as something objective, but as something inter-subjective, or as having a social and cultural aspect, or as conceptually entailing an inter-subjective claim to validity. (Sartwell 2014)

The Western conception of beauty is classical: beauty consists of an arrangement of integral parts into a coherent whole, according to proportion, harmony, symmetry, and similar notions, and this has been embodied at least in classical and neo-classical architecture. Like Aristotle says in Metaphysics: "The chief forms of beauty are order and symmetry and definiteness, which the mathematical sciences demonstrate in a special degree" (Aristotle *Metaphysics*, here according Sartwell 2014). The gaze of an educated architect can easily distinguish for example a mathematical formula such as the golden section, but classical beauty was not seen in such strict terms in Antiquity and neither is it today. (Sartwell 2014)

In Antiquity, in the first century BCE Vitruvius defines in his book *On Architecture*, three epithets for architecture: Venustas (beauty), Firmitas (strength) and Utilitas (functionality). For beauty, he gives a wide characterization of the classical conception,[10] both in its complexities and in its unity. He writes how architecture consists of order and arrangement, and of proportion and symmetry as well as of decor and distribution. Order is needed for the balanced adjustment of the details, and, as to the whole, the arrangement of the proportions is done with a view to a

[6] "The objective of this Act is to ensure that the use of land and water areas and building activities on them create preconditions for a favourable living environment and promote ecologically, economically, socially and culturally sustainable development."

[7] "The objective in land use planning is to promote the following through interactive planning and sufficient assessment of impact: […] 3) protection of the beauty of the built environment and of cultural values […]"

[8] *de gustibus non disputandum est*

[9] Hume's "Of the standard of taste" in *Four Dissertations* (1757) and Kant's *Critique of Judgment* (*Kritik der Urteilskraft, 1790*).

[10] *Architecture consists of Order, which in Greek is called taxis, and arrangement, which the Greeks name diathesis, and of Proportion and Symmetry and Decor and Distribution, which in the Greeks called oeconomia. Order is the balanced adjustment of the details of the work separately, and as to the whole, the arrangement of the proportion with a view to a symmetrical result.*
Proportion implies a graceful semblance: the suitable display of details in their context. This is attained when the details of the work are of a height suitable to their breadth, of a breadth suitable to their length; in a word, when everything has a symmetrical correspondence.
Symmetry is also the appropriate harmony arising out of the details of the work itself: the correspondence of each given detail to the form of the design as a whole. As in the human body, from cubit, foot, palm, inch and other small parts come the symmetric quality of eurhythmy. (Vitruvius, *On Architecture*, 26–27.)

symmetrical result. The result shall be beauty and good architecture, but of course, these concepts would need professional discussions.

Thus, there is no actual standard of beauty that would set out the qualities of something to be beautiful, but it is possible to describe the qualities of a good critic or a tasteful person. Then the long-run consensus of such persons is the practical standard for taste and the means of justifying judgments about beauty. Beauty needs somebody to perceive it, while also important are the history and condition of the observer who makes the judgment of taste, which imply that taste and beauty can be seen as culturally constructed concepts, and can be discussed.

To experience art, beauty, architecture, place or space etc., one needs senses. Arnold Berleant took aesthetics back in its etymological origins by emphasizing the priority of sense perception. Sense experience and perception itself are reconfigured to recognize the mutual participation of all the sensory modalities, including kinaesthetic and somatic sensibility. The aesthetic experience is involvement and engagement in the environment, one's active and constructive operations, in which the environment is inviting him. (Berleant 1991; 1992.)

The aesthetic experience can be approached also from the viewpoint of perceiving. The aesthetic experience and perception stand so close to each other that cognitive premises like words, knowledge, and perception are closely connected. There is "a traditional or general" understanding about the specific form of the aesthetic perception, which enables one to observe the object by taking mental distance or an aesthetic attitude towards it (Rantala 2002; Teräväinen 2006).

In the architectural discourse and teaching at architectural schools in Finland, education greatly appreciates experience and reflection, in the way John Dewey presents it in *Art as Experience* (1934). We speak of "the architectural experience", an aesthetic, whole and full-bodily experience involving all senses.

Dewey explained perception and enjoyment of art to have a lot in common with the creative act. He aimed to find the combining link between the act of production and the act of appreciation of art and how to understand the connection between the productive and appreciative aspects of art one has to see the conscious experience as "doing and undergoing". Thus, "aesthetic" is seen to refer to experience as both appreciative and perceptive. In aesthetics, there is the side of the consumer and yet, production and consumption are not to be seen as separate actions. According to Dewey the product can be aesthetic only if the doing and undergoing are related to form a perceptual whole, and this can happen in imagination as well as in observation. The artist needs to build up a coherent experience continuously through constant change. Everything is made for public consumption: an author's text is public as well as the architect's work is in the medium, while doings and perceptions interact and mutually affect each other in imagination. The experience of the perceiver is comparable to that of the creator – both experiences are important and are parts of the mutual process. (Dewey1934, 35-57; Dewey 1950)

Beauty needs somebody to perceive it, while also important are the history and condition of the observer who makes the judgment of taste, which imply that taste and beauty can be seen as culturally constructed concepts, and can be discussed.

Following Dewey we can see the structure of "an experience" that is special. The subject undergoes some properties, which determine her doing something, and the process continues until the self and the object are ending with a sensation of harmony, and this, I assume, enables the beauty to be perceived. When the doing and undergoing are joined in perception they gain meaning and this in turn, is given depth through incorporating past experience. An excess of doing or undergoing can interfere with experience and, for example, desire for action may lead to treating resistance as a mere obstacle and not as a moment for reflection. A balance is required between doing and undergoing to achieve an experience. (Dewey 1934, 35-57; Dewey 1950)

Researching the lack of aesthetic argumentation in two cases

Next follows an attempt to answer the research question by reviewing two research cases. How “the aesthetic experience” is appearing today in the cultural heritage discourses? Both cases appeared in the same town, approximately the same time period and in both cases the writer has been involved first as an active planner, recognized as an actor, and as a reflecting observer.

First case: Old Paukku

The first case has been thoroughly described and examined previously in my doctoral dissertation (Teräväinen 2006). The subject of the thesis was the planning and decision-making process for Old Paukku[11] during the period 1993–2003 and the discursive formation of cultural heritage during the period.

In 1992, Lapua town was economically forced to acquire the area of the old State Cartridge Factory, with the aim of preserving jobs by affording a new building to the company as part of the compensation. In the subsequent decade, the old industrial buildings were renovated for cultural and commercial use.

Figure 2. Old Paukku seen from the south bank of Lapua river. Paukku Factory’s facilities (1923-1993) were moved to another place. Town municipalities had to buy the abandoned factory area, and after a long process, the town decided to renovate it into a library and culture center. Photo: Jussi Tiainen 1998.

The case offered a unique theme for me as a researcher because I had been involved in the project as the city architect and planner and thus possessed a co-player‘s knowledge of the case. The research aimed to deepen the conceptual knowledge of the cultural heritage, with especial importance given to shedding light on the role of cultural heritage in the municipal planning and decision-making process. A discourse analysis was carried out on data derived from interviews with the key actors, planning and decision-making documents, reports, newspaper materials, and photographs (from the 1910s until the present).

Fifteen years of work in the small town had led to distraction, because the aesthetic values were repeatedly almost brushed off in municipal decision-making and this was the compelling drive to start the doctoral dissertation. As the architect in the case, the author had somehow tried to emphasize the softer values – as revealed in a new reading of all materials gathered for the thesis. The aesthetic discourse was absent in the municipal decisions but it did come out in

[11] Paukku means in English Explosive Charge

the author's own speech and in the dissertation text, offering 26 mentions of beauty[12] and 50 mentions of aesthetic.

> *The aim in the beginning was to maintain in the town plan this most apparent and prominent milieu which according my opinion was locally significant as a cultural heritage environment. "How does it appear" or does a certain place or subject have aesthetic value, "beauty" – this can always arise suddenly in the speech of the politicians and citizens. This can end very quickly as the final solution, that is, the buildings being demolished, and after that there would be nothing to discuss or experience in the milieu. The easiest argument to use and understand seemed to be the time or the age: many times, it was heard in public that "it isn't even very old- so it can't be valuable".* (Teräväinen 2006, 31; own translation)

Fifteen years of work in the small town had led to distraction, because the aesthetic values were repeatedly almost brushed off in municipal decision-making and this was the compelling drive to start the doctoral dissertation.

The fragment tells about the lack of any mention of beauty in the argumentation and decision-making, and the author (town architect) seems to be almost afraid of the consequences of the sudden mention of beauty – and the inadequate age of the buildings.

> *In greatest danger of being pulled down was the wooden Canteen, designed by architect Onni Tarjanne. It is a beautiful building representing the neoclassic style from the 1920s; it is almost in its original appearance, a two-storey high building, but the weak spot according to the decision-makers has been the building material. The wooden building was suddenly − according to some "taste" or viewpoint − not suitable in the factory area where most of the buildings are built of brick; even if it has already stood there for eight decades.* (Teräväinen 2006, 63; own translation)

Here the author is defending the beauty of the wooden building, using 'neoclassicism', because the classical beauty is more easily accepted without counterclaims, and in the town, the dome represents the neoclassicism of the 1800s and the town hall the 1920s classicism and both buildings obviously are highly respected in public opinion.

> *The chrome plating building (building no 7), which was designed by architect Onni Tarjanne, gave the strongest impression with its beautiful, classical pediment. When this will be opened as the Art Museum in October 2006, which architect Juha Leiviskä has designed, it will certainly be the most beautiful building in the area.* (Teräväinen 2006, 262; own translation)

In this extract, the writer is proclaiming one neo-classic building to be beautiful and then finally dares to foretell the renovated building to be beautiful as a museum, because of its famous architect, who is the most honourable living Finnish architect today, the academician Juha Leiviskä.

[12] As the designing architect in the project, I had certain rules about aesthetics in my working group but somehow it might as well have been the "aesthetics of ugliness" than *beauty*. The factory area and most of the buildings there had been heavily used for many decades and the signs of work in the walls and forgotten things on the courtyard were seen as evidence of this. The main design concern was how to conserve the spirit of the place when bringing all the new activities and materials there. We decided that the renovation and repair works should not change the old buildings to become too clean or too "pretty" - *"beauty"* was not discussed, but the architects had their own opinion, inherited from Architect School: The form follows the function and the simplicity of the plan is the guarantee of *beauty* (or the ornament is a crime).

Figure 3. The blue Chapel's (formerly a forge, originally a gas plant) classicist 1920's architecture by architect Onni Tarjanne was noted beautiful already before the renovation. Photo: H. Teräväinen 2012.

Originally, in the decision-making process of Old Paukku, neither beauty nor aesthetic values were emerging in the discourses. In the beginning the project was characterized by strong conflicts between private enterprise and cultural factions. In the theoretical framework, culture (including different explanations) was seen as the network of currents where meanings and discourses arise and periodically establish their own position (Fornäs, 1998).

Old Paukku became conceptually a "cultural environment" little by little through human speech, as the discourses embraced the history of the place, the collective memory, and the new experiences in the process. The renovation process created an open forum where, in addition to the re-use of the old factory, other issues were also dealt with. From the multifaceted variety of speech there evolved two main discourses. The Place Discourse was named with the sentence: "Now we have this kind of place", containing not only the idea of the past and memories, but also issues relating to current identity and the current cultural usage of the place.

The design project was, at least for a moment, the base-camp of the knowledge-power, as Foucault describes in The Will to Knowledge (1976, 1998), the changing relations by the rules of immanence.

The Process Discourse was described with the sentence: "Where did they learn those models?" and it refers to changing power relationships: While before the project the main actors in the field were politicians and municipal officials, now also active cultural and citizen organizations became involved within the process, and they became significant also in other planning and decision-making processes. The design project was, at least for a moment, the base-camp of the knowledge-power, as Foucault describes in *The Will to Knowledge* (1976/1998), the changing relations by the rules of immanence.

In the Process Discourse, mainly about decision-making, the argumentation was aimed at being seen as rational and economic, with no talk about senses, aesthetics or other softness. The Place discourse was loaded with experiences of an aesthetic nature or aesthetic phenomena; like experiences of place, memory or identity of the place, image and town marketing. Nevertheless, as mentioned earlier, there was no talk in the interviews about beauty, it was an old industrial area and the buildings were in a bad condition, so no experiences of beauty were arising.

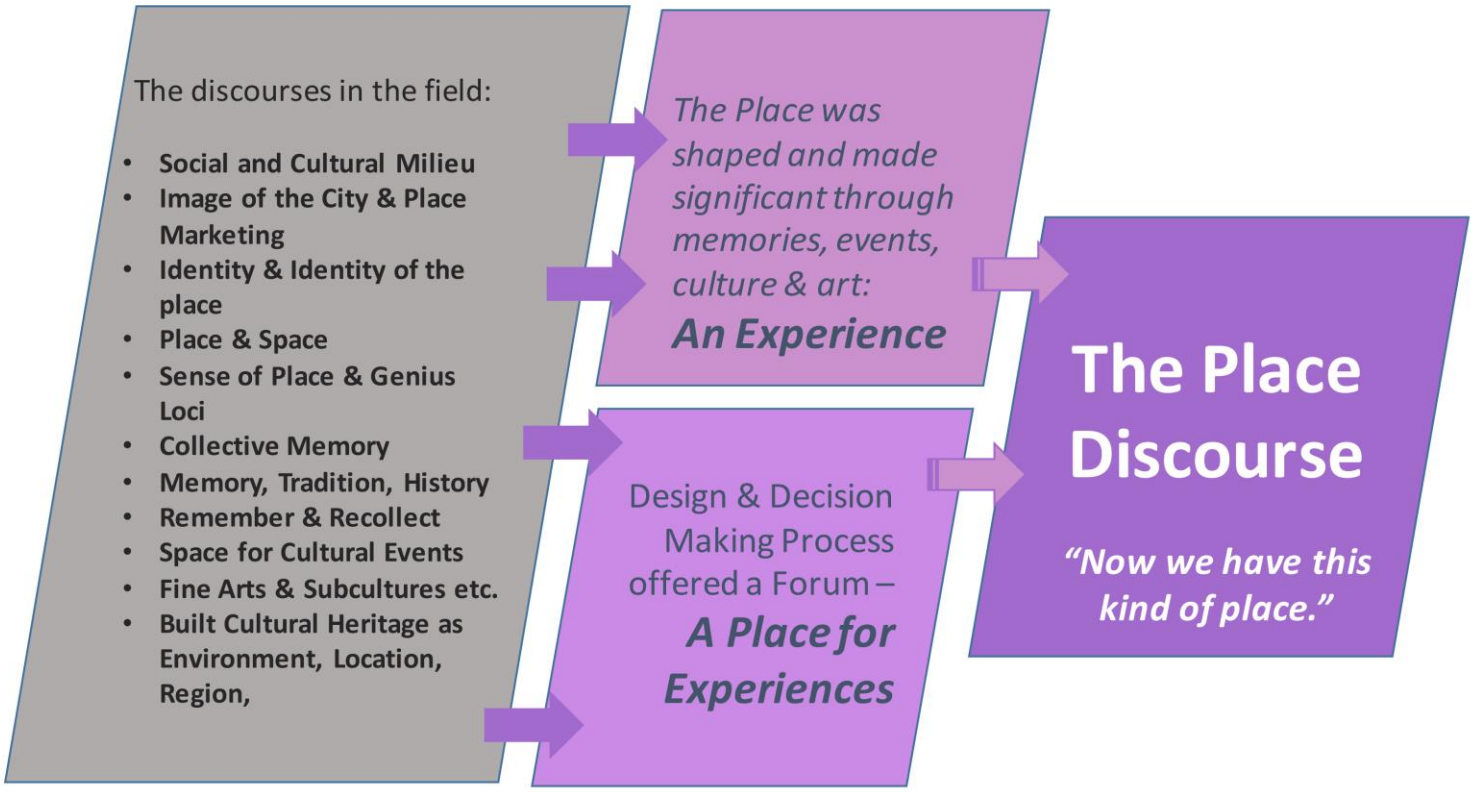

Figure 4. The Place Discourse was constructed through sayings loaded with experiences of aesthetic nature or aesthetic phenomena; like experiences of place, memory or identity of the place. Drawing by H. Teräväinen.

In the end, Old Paukku as an object of cultural heritage, was not heard in the discourses (interviews 2002), at least not until 2009, when the National Board of Antiquities listed it as a nationally valued heritage place. Obviously the governmental discourse has to cope a lot before the adsorption into the local administration, but as a culture centre Old Paukku has ended up to be accepted and well-liked. The new cultural use is constructing also the awareness of the cultural heritage values

Figure 5. The former bus station, Matkahuolto in Lapua. The white building of bus station on the right, and behind it the town hall. In summer 1998, the parking area and market square were green, almost like a park. Photo: H. Teräväinen 1998.

Second case: bus station

The second case introduces another public building, a bus station, which in the late 1960s was described in decision records as 'the last completing part of the townscape in the monumental municipal centre of Lapua town' and mentioned as one the three most important buildings in Lapua in an architectural guide book (Salokorpi 1979). The destiny of this building differs radically from the first case, but has also similarities, with relation to discourses of cultural heritage and "beauty". This building was designed to act as remarkable architecture, but obviously, it started to lose its charm in the public eye very early. Perhaps the modernist style of architecture was too odd to be admired in a small town; Lapua has only 15 000 inhabitants and is located in the Ostrobothnian countryside, appearing more like a village settlement than an urban area.

In the 1960s (1964–1976), the Architects' Office of Erik Kråkström & Ahti Korhonen from Helsinki carried out the master plan and town plan in Lapua, both likely to have been done for the first time ever in the town. Architect Korhonen had in 1965 also been commissioned to counterpoint the municipal centre with a new bus station and commerce building. This would be situated in the vicinity of the old town hall, which had already been there for four decades and represented the neoclassicism from the 1920s. The megalomaniac talk about "the municipal and monumental centre" can be said to have followed the ideals coming from Seinäjoki town centre, which had been under construction since 1959. That centre was designed by Alvar Aalto and was soon after set to be a world famous architectural attraction.

At the end of the 1990s, Lapua bus station was caught up in a planning altercation. Lapua town made the decision to replace the bus station and the nearby marketplace with a huge super market. The grand commercial dreams were typical of urban development in the 1990s; the previous decade's enthusiasm with the pedestrian precinct would have integrated smoother into the built environment.

The aesthetic values of the town hall were already accepted; though it was at risk of being demolished in 1960s, thereafter it was carefully renovated, and now its style of architecture – classicism — was recognized. But the bus station's architecture did not have any relevance to the public. Only the professional, that is to say, architects' gaze was sympathetic and approving of the simple beauty of the building. In town planning concerned with new uses for built areas, the cultural heritage values include beauty, but the leading roles are taken by age and history.

Figure 6. The white concrete building of Lapua bus station. A public building, which was described by its construction time in the late 1960s as "the last completing part of the townscape in the monumental municipal centre of Lapua town". The building was demolished in 2015, and the place has been empty ever since, in spite of many plans. Photo: H. Teräväinen 2011.

In the town plan modification process and discussions around the bus station, it was clear that a modern building was not suited to the realm of cultural heritage. It was not old enough and it was perhaps not beautiful enough. In the discourse around cultural heritage, age was still the strongest argument and ca. 30 years seem to be not enough to qualify. The issue of beauty was also edged out in professional speech, since the leading tendency was to think of beauty as very subjective and also culturally relative, since the aesthetic experience wasn't opened enough in discussions. Yet in the political discussions, many statements about the building came out – rather than being beautiful, it was said to be very ugly.

The reactions opposed to conservation in this case were so strong that the question was even asked: "Is it possible to hate modern architecture?" What could be reason for the unpleasant experience: the flat roof, which is very disliked in Finland or the social dimensions of the place, with shady characters hanging around or the concrete walls without any decorative details? Was it so disliked only because of the modern architecture or was it seen as an obstacle for the new supermarket plan and irrelevant arguments were chosen because of that?

"When you know the philosophy and ideas behind the name, it is easier to accept these buildings as a part of the townscape and even to learn to love them." Anthony Vidler described in his keynote lecture in DoCoMoMo 2012 in Espoo.

Figure 7. Lapua bus station. 'The Bus Station in Lapua represents very well the concrete architecture of the 1960s and also highlights the current topic of how to cherish the traffic architecture. The building is Lapua's own example today of the already widely appreciated "concrete brutalism". NBA's statement about the town plan, 19 April 1999. Photo: H.Teräväinen 2011.

In 1999, the NBA did not demand the conservation of the station but did submit statements that the town municipalities would very seriously contemplate the possibilities to maintain the building. In the first statement 19 February 1999, the building was described to be typical to 1960's functionalism but the use of the term "brutalism" in the second statement two months later was received with satisfaction among those who wanted the bus station to be pulled down. It was misinterpreted to be a classification for ugliness – and not understood as a certain description for a tendency to make the Modern Movement even more pure and idealistic, as architecture critic Reyner Banham had stated (Banham 1955/2010). It is not common knowledge that the name "brutalism" was given by the architects themselves, first by the English architect couple Alison and Peter Smithson, and not by critics. "Brutalism is not concerned with the material as such but rather the quality of the material that is with the question: what can it do? And by analogy: there is a way of handling gold in a Brutalist manner, and it does not mean rough and cheap, it means: what is its raw quality?" as Peter Smithson himself described (Spellman & Umglaub 2004). There was perhaps not a program to follow, only a certain community of interests, a tendency to look toward Le Corbusier, and to be aware of something called "le beton brut", pure concrete. But this (mis)understanding of "brutalism" has really not been merely a local issue; all over world there are serious disagreements about buildings from the same era.

> *"When you know the philosophy and ideas behind the name, it is easier to accept these buildings as a part of the townscape and even to learn to love them."* Anthony Vidler (2012) described in his keynote lecture in DoCoMoMo 2012 in Espoo.

Yet what happened to the bus station, which obviously was not old enough or beautiful enough (but ugly) to be conserved? The alteration of the town plan in the centre of Lapua was under process during the period 1998–2002 and ended with a proposal to build a supermarket in place of the bus station and the public market square. Before the planning process had even begun, the town council had approved a preliminary agreement regarding the site with the retailer company about the use and the new floor space. A short citation of the text in the renewed town plan in 1999:

> *Relative to the cultural heritage in the built environment both the market square with planted trees and also the bus station would deserve*

> *conservation but that would be inappropriate under the premises of the new plan and the preliminary agreement made between the town councils and the commercial enterprise – the conservation marks for the bus station would prevent the construction of the new super market.* (Translation by the author) Lapuan kaupunki, Keskusta 1.kaupunginosa, korttelit 122, 123, 124 ja 126 etc. tori-, puisto-, liikenne- ja katualueet. Asemakaavanmuutos 2.helmikuuta 1999, p.28.

A group of almost 2000 citizens was against the new super market plan, mostly because of the cultural heritage value of the nearby town hall and the very much loved marketplace, which would be transformed into a parking lot. The politicians were extremely anxious, since they were not ready for this kind of citizen participation: obviously people were very affected regarding the public spaces. In the end, the new plan was confirmed after such a long process, that the new supermarket was already built elsewhere, on a more spacious plot.[13]

Since the bus station was not confirmed as a cultural heritage site by the town plan, the technical section tried to have the building torn down. The local culture association Nurkkakivi complained and after a long administrative process, permission was denied. In 2009, the NBA issued a new announcement about the cultural and environmental value of the bus station and suggested it be protected by the town plan, which is the normal procedure with cultural heritage buildings. The town did not initiate any new planning process, but on the other hand, it anticipated through the master plan sketches and unofficial illustrations that the market square would be moved and the bus station replaced with tall apartment buildings.

In March 2012, the bus station facilities were situated near the railway station, and the old building stayed empty. The town had actively been trying to find an investor and business developer for the plot without any success.

The town again initiated the demolition process and again the local culture association Nurkkakivi complained and the matter was taken all the way to the Supreme Administrative Court. It was at this point in process that the cultural heritage and architectural value was admitted at all levels and the decision was again that the bus station should be conserved by regulations laid out in the renewed town plan. There were, however, holes in the bureaucracy: when The Regional Administrative Court was asking about the town plan being up-to-date, the town administration insisted the 13-year-old plan was up-to-date, even though it was with the useless supermarket plot and without cultural heritage protection. Since the plan was proclaimed as up-to-date, the town received permission to demolish the building, which had nevertheless everywhere been accepted as having value as cultural heritage. The end of this process was widely described not only in newspapers but also in a professional journal by a legal expert Lauri Jääskeläinen (Jääskeläinen 2015). The bus station was pulled down in autumn 2015.

Public opinion in the town municipalities seemed to be that the building was not valuable or suitable for any new use; and people were used to think it was simply ugly. The local cultural society, a group of professionals, were demanding it be preserved, as well as the state-level authorities who had validated the value of this representative of modern architecture.

[13] This is carefully reported on http://www.netikka.net/jalava/historia.html

Figure 8. **Lapua bus station.** In this second case, the subject (building) was empty several years and without any plans or ideas for the re-use. Photo: H. Teräväinen 2011.

A very interesting public discussion arose in the summer of 2014. At the time, Lapua was trying to get permission for the demolition of the building and the Mayor Arto Lepistö decided to participate in the public discussion and wrote his opinion in the local journal:

> *[…] The bus station is in the article characterised as "a uniquely fine representative of late modernism". There are two kinds of buildings in the world: there are beautiful ones and then there the architect's beautiful ones. The bus station represents the second one. […].* (*Lapuan Sanomat* 14.8.2014; translated by H. Teräväinen)

The text also contained further economic arguments for the demolition of the old buildings. The reasoning took on emotional features when he wrote that cost of maintenance for a year was the same as a nurse's salary for a year.

In the next issue of the newspaper came a response claiming the town is embracing a third kind of beauty, which is embodied by the developers and actually favouring corruption. In this response were also arguments for the philosophy of the aesthetic and the skill of the architects presented by writer and publisher Anssi Sinnemäki from Helsinki (*Lapuan Sanomat* 19.8.2014).

At the same time, the author of this paper arranged an exhibition in Old Paukku. Among others were pictures of the old bus station and also the poster "When does a modern building become suited for the realm of the cultural heritage? Discussions about the built environment and town planning around a case study" which had been presented in Docomomo 2012 conference. The local journal published an interview and wrote how discussions about architecture and cultural heritage are important. The bus station was once more endorsed for its architecture and beauty.

However, in this case, the discussions were not fruitful enough and the cultural heritage discourse did not make it in time – and the bus station vanishes next year. Now the value of the building is a matter solely for history, as something embedded in people's memories and experiences, waiting for somebody to recollect and represent the stories.

Discussion

The initial aim for this paper, as written in the introduction, was the concern about the absence of aesthetic experiences in the planning and decision-making processes - and also with relation to cultural heritage (including architecture). Instead of wide quantitative surveys, I decided to revisit the case of Old Paukku, which I have studied earlier comprehensively for my dissertation and in addition to take along another case that I was involved from the same surroundings. The goal of the case study research is not to produce any generally valid model but to deepen the conceptual knowledge of the research subject and to understand different views. In the chosen cases especially important was the position of the cultural heritage and discourses around it in the planning processes.

Do people not experience modern buildings inviting or *are the professionals just unable to open up the discourse of modern architecture?*

Within architectural education, the discourse on architecture requires an experience, as Dewey (1934) explained by way of continuous doing and undergoing and multisensory perception, but this discourse clearly has not landed in public conversations.

In the cultural heritage discourse, the leading role is not given to beauty or to aesthetic values. More importance is given to historic values, which Alois Riegl explains as age value,[14] connected to time and age, reflecting history and the relations between different values in a certain culture (Boyer 1996; Teräväinen 2006). The meanings of place and the memories of the people and their experience of the place came up in the first case study. These experiences or frame of mind are referred to in the previous description about "the experience" in this paper. The experience of the place came up significantly in the interviews, and in the discourses around both Place as well as Process, which were seen combined in the cultural heritage discourse. Also according to Kupiainen (1997), such aesthetic experiences exist even when experiences of beauty and ugliness have not been possible, or when not interpreted in words.

In discourse analysis, the researcher is more interested in HOW people talk rather than with WHAT people are saying, and so there was a possibility to find beauty (and aesthetics) in the discourses even if people were not mentioning it directly. The text is produced in discourses and the discourses have their own rules – they are producing their own representation of reality. The discourses regulate the thoughts and how they are connected together: what is the reason for some consequences and what is the consequence of some cause?

The conclusion in the case of Old Paukku is to accept the aesthetic experiences of actors to be unveiled in the interviews, and to be discovered as important for them, even though there was actually no mention of beauty. In the case, the old building was accepted as a favourable living environment and somehow it was affording aesthetic experiences within the Place discourse (Fig.4.), because people learned to use and value the factory area, which had not been appreciated at all earlier. The key factor was the open cultural use of the place.

[14] Age seems still to be a remarkable factor in cultural values – and the time scale runs very quickly. In the 1980s, it was almost understandable to say that a dignified house (for protection or conservation) should be at least 40 years old, because that meant the building was constructed before the World War II. But the boundary mark seems to be still the same and now "public opinion" finds only houses older than 70 years to be agreeable for conservation.

Figure 9. Scenery in the Factory Museum of Old Paukku. In the cultural heritage discourse, the leading role is not any way given to the beauty – or to the aesthetic values – more important are the historic values. Photo: H.Teräväinen 2010.

In the second case the subject (building) was not handled as an enabling target in the planning process, it was seen as obstacle for the development (the new super market). Now the modernist bus station is gone and only stories and memories still exist. It is difficult to believe that the real reason for the unsolved situation is modern architecture, which people could not experience as inviting or pleasant. Of course, the reasons are more complicated and linked to the economics of the town, but anyway it would be useful to develop the way we are discussing modern architecture and architectural experiences.

It is proved to be possible to discuss a place becoming cultural heritage in the first case. Could it also have been possible to discuss a building being beautiful – instead of ugliness ("brutal") in the second case? Yet, it was not only because of "brutalism" – there may be something missing in the modernism, which could have given people an experience of the place and make them love it. Architects know "functionalism" – because that is the way, many generations have already been brought through architecture school: pure materials and simple forms are beautiful. But how to explain these pertinent requirements to the layperson? Theodor Adorno writes about how music and architecture are concentrating strictly on expression and construction, while both strive to efface all ornaments. Architecture here refers to Adolf Loos and Bauhaus, known to be totally against ornaments. According to Loos, an artwork need not appeal to anyone, but a house is responsible to each and every one. Adorno wants to correct Loos's thesis and argues the question of functionalism as not coinciding with the question of practical function. Adorno says that purpose-free and purpose-full arts (architecture) need not form such a radical opposition as imputed, while the difference between the necessary and superfluous is inherent in a work, and is

not defined by the work's relationship – or the lack of it – to something outside itself. (Leach 2002)

Following Foucauldian discourse analysis: second case did not offer any base-camp for cultural heritage discourse, not for beauty nor aesthetics.

Adorno's judgement of art's authenticity embodies its autonomy and uniqueness, and this bears unsolved tensions that society is unable to combine. This makes art renew itself according to historical processes continuously and also act against previous ideals. Culture is changing continuously, it is the network of currents, where meanings and discourses arise and establish their own position for the time being. Modernism is trying so hard to renew itself and be more modern that people have not time to be familiar with the discourse or to experience it. In the second case, there was no organized ongoing design and planning process; in the almost 20-year period, people read in the newspapers or heard somewhere only about decisions to demolish and appeals against them; there were no plans or options for how to re-use the bus station or the exhibition space there, only negative things. Following Foucauldian discourse analysis: second case did not offer any base-camp for cultural heritage discourse, not for beauty nor aesthetics. Not even any architectural discourse had any chances to born; before the super market initiatives, in 1994 the author (as town architect) had organised a photo exhibition about modern architecture, where the bus station of course was included, but there was no space for talks about architecture or beauty when the planning process started in 1998.

Conclusions

The two case studies discussed in this paper are proving how little – or not at all - beauty is concerned in some planning processes. Instead of beauty in architecture, there can be questions about cultural heritage and within that concept, for example, the experience of the place etc. can emerge. These cases show that the discussions on some kind of aesthetic experience are possible - even when the cases seem to totally lack of aesthetic argumentation. Moreover, sometimes instead of beauty people end up talking about ugliness, which seems to be quite convenient expression for them but is not a decent or adequate word for architects.

According Hume and Kant it is possible to discuss critically about beauty, but architects have lost (or they have not reached that?) their position as environmental experts or their rights to justify good taste. Architecture is explained to be a whole, multisensory experience in the educational discourse but this has not landed in public conversation, and of course not in political decision-making. Instead of just to define the subject (a building, an environment) to be beautiful – or ugly —we talk about environmental experiences with all senses, and this discourse should be made more known in public. At first, however, the professionals have to start to discuss critically, using adequate argumentation and also communicate using words, not only in drawings and pictures. Endorsing aesthetic experiences in planning and decision-making process could open better communication and shared values among people. Actually, architects and planners are commanded also to talk about beauty: Land Use and Building Act emphasizes citizen's participation and communication, furthermore it even urges to protect beauty and cultural values. The legislators are aiming at more satisfactory and beautiful living environment when advising people to extended communication.

The two cases here have shown two different outcomes in design and planning when the already built environment – possible cultural heritage –is concerned. Not only good and successful examples are worthy of description, also failures or demolished beauty are evolving the architectural discussion and clarify the discourses. Even if the town municipalities would not invite or allow discussions around the planning and design processes, the architects have to meet the users (inhabitants, citizens) and develop their professional discourse to be understood and suitable also for public and social media discussions, not only among other professionals.

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Urban Aesthetics as a Trading Zone

The conditions for deliberative planning and cooperation in the context of urban infill development

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Abstract

Due to a multitude of reasons, the prevailing conceptions regarding the aesthetic values and the principles of aesthetic evaluation of different urban environments are significantly varying, and there may not be a wide-spread consensus even about the general meaning of aesthetic issues in urban environments. That is to say, when discussing the aesthetics and aesthetic values of urban environments, the aesthetic concepts may refer to a variety of phenomena, and, further, the relationship between the aesthetic dimension and other key aspects constituting the urban experience is rather ambiguous. Moreover, aesthetic issues comprise a considerable part of urban planning, and yet it is not evident, how and on what grounds the diverse questions involving aesthetics are or should be solved in practice. If aesthetic questions are to be resolved collectively and by the means of rational argumentation, it is reasonable to ask for the necessary preconditions of such "aesthetic cooperation" and its coordination.

The question regarding the preconditions may be addressed using the concept of *trading zone*. Such an approach highlights the importance of defining the relevant actors taking part in the cooperation (i.e. the "trade") and their motivation to work cooperatively. The basis for motivation lies in recognizing achievable benefits and pursuing them by the means of trade. There may, however, be a lack of motivation if there are more straightforward and effortless alternatives available, or if the possibilities for achieving the benefits appear negligible or nonexistent. For example, if the outcomes of the official participatory planning process are continuously considered inappropriate and unjust from the viewpoint of certain stakeholders, the process may eventually lose its status as a genuine trading zone. This, in turn, may result in purposeless objections and appeals aiming at merely paralyzing the entire process.

Present-day planning processes ignore experiential and thus qualitative arguments rather easily, which is a major source of experienced injustice. Hence, there is a demand for certain "thin interpretations" summarizing the most essential values and meanings of different stakeholders without requiring a thorough explication of related lifeworlds. Experiential and qualitative arguments are essential also with regard to aesthetics, and the notion of "urban aesthetics as a trading zone" refers to thin interpretations of aesthetic issues, implying that though there could be some kind of consensus about the general and large-scale meaning of urban aesthetics despite significant and wide-spread disagreements about particular aesthetic values.

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Aesthetic issues are of particular weight in the context of urban infill development – mainly due to the fact that infill development plans usually aim at changing an environment in which many locally bound networks of experiential meanings and values already exist – and empirical studies suggest that the questions of aesthetics may even be decisive when it comes to approving and disapproving potential infill plans. “Urban aesthetics as a trading zone” clarifies 1) why the infill plans are so often contested, 2) which are the fundamental values that the stakeholders eventually defend or oppose, and 3) why the encountered resistance may convert into a complete denial of cooperation so easily.

Keywords: aesthetics, consensus, infill development, urban environment, urban planning, trading zone

Introduction

In present-day collaborative urban planning processes the status of experiential and locally based qualitative arguments is somewhat controversial and problematic: from the viewpoint of residents and other local stakeholders preserving the concrete values and meanings of nearby environment is crucial, whereas the planning officials and commercial actors often regard such local interests as a mere hindrance to common-good land use projects and to achieving important strategical goals and large-scale benefits. In the context of urban infill development, the situation is particularly challenging, as the fierce opposition and numerous appeals by locals are seriously hindering and even paralyzing various infill projects. Thus in many cases there seems to be a dead-end ahead, resulting both from the incompatible interests and the apparent shortcomings in the means of conflict management.

In this article, I ask whether the described tangled confrontations could be managed via an alternative or complementary way to comprehend the complex and conflict sensitive circumstances of planning projects. The proposed approach is based the concept of “*trading zone*” by Peter Galison. Taking certain potential deficiencies and limitations of Galison’s view into account, I proceed by developing further applications of the concept in the field of urban planning, particularly with regard to a distinct branch of experiential arguments – the questions of environmental and urban aesthetics. My proposal concerning the possibility of specific planning-related “aesthetic trading zone” aims at outlining the necessary prerequisites for mutually meaningful collaboration that would enable the handling of controversial yet significant aesthetic issues without the demand for a deep consensus about every particular environmental aesthetic value and meaning.

Such idea of “urban aesthetics as a trading zone” refers to the possibility of a thin consensus, which can be interpreted as a common agreement about the general or large-scale meaning of aesthetic issues. As such, the thin consensus means acknowledging the disagreements and a certain value pluralism, while at the same time paying respect to the viewpoints of the others and, above all, treating them as legitimate trading partners. The act of acknowledgement is in itself likely to be of remarkable significance, not least because it is precisely the experience of injustice that has been identified as a major reason for people to object plans by appealing. I conclude my examination with a further scrutinization of urban infill related problematics (see Figure 1), aiming at concretizing and making comprehensible the role that the idea of “urban aesthetics as a trading zone” might have from the broader perspective of collaborative urban planning and related conflict management.

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Figure 1. The struggle between abstract strategic goals and concrete local values. Promoting urban infill often means densifying the relatively loose urban structure, which may result in losses of open space or natural-state recreational areas in the urban neighborhood.

Trading zones and the conditions for collaboration

The concept of "trading zone" originates in the work of Peter Galison (1997), who had studied the possibility of meaningful interaction between different groups of scientists – theorists, experimentalists and instrumentalists in particle physics – whose practices and conceptual schemes seemed to form more or less autonomous subcultures. Despite their divergent conceptions, methodologies and aims, the subcultures were still able to promote a certain common goal: taking part in and further developing "the story of physics"[1]. The story of physics is not, however, written in a single uniform language of science that everyone would understand equally and comprehensively; there was thus an evident mismatch between the observed locality of action and the presumed globality of scientific language (Galison 2010).

Galison's groundbreaking conclusion was that the communication between scientific subcultures takes place piecemeal and locally, implying that both the ideal of fixed global scientific language and the presumed necessity of thorough and full translation between subcultures' idiosyncratic languages are misleading. More precisely, the coordination of action between different subcultures occurs via intentionally created contact languages or interlanguages that serve the practical purposes at hand. (Galison 1997.)

It is crucial to notice that the interlanguages are characterized by their change over time and by their locality (Galison 2010). Indeed, it is the relative stability – or in Galison's terms quasi-stability – that marks not only the interlanguages but also the subcultures themselves. In general, it is clear that no culture or subculture remains exactly the same over time, but yet it is possible and entirely sensible to speak about cultural and subcultural identities, whereas quasi-stability means that "the changes in a given period are small relative to that which stays roughly the same" (Galison 2010, 29). Thus the essential question is, how "quasi-stable scientific subcultures (roughly shared ways of handling practices with their attendant values, symbols, and meanings) […] connect to each other, to the surrounding world, and to change" (Galison 2010, 30) – that is, how the quasi-stable, yet distinct subcultures eventually manage to collaborate.

According to Galison's view, the possibility of collaboration does not entail the merging of subcultural identities into a homogenous entity: the different groups do maintain their distinctness (Galison 1997). Thus the idea of trading zone lies exactly in the *thinness of consensus* between the collaborating parties: there has to be merely just enough consensus to establish the trade – that is, consensus

[1] Galison himself does not explicitly speak about "the story of physics", but the idea of such story is not entirely unfamiliar to him; cf. Galison (1997, 815–816): "There was a *physically based story* to be told (…), and everyone involved wanted, however partially, to contribute to it" (emphasis altered).

"about the procedure of exchange, about the mechanisms to determine when goods are 'equal' to one another" (Galison 1997, 803).

The cultural aspects of trade: trade as a form of cultural activity

Despite the relative independence of collaborating groups, they do in a way interact more deeply than on the mere level of "exchanged goods", as the trade cannot after all actualize in a "cultural vacuum". However, Galison himself is not very explicit – or consistent – when discussing the interconnections and relations between the subcultures and the "larger culture"[2]. On the one hand, he acknowledges the existence of larger cultural context and the potential meaning it may have on the trade between subcultures: for example, securing the existence of one's culture is a very powerful and compelling incentive to trade (Galison 1997).

On the other hand, Galison treats the trade as a quite self-sufficient and autonomous form of action, which has practically no connotations or other connections to larger cultural practices. Consider, for example, the following:

> *The key concept here is incomplete coordination. I hand you a salt shaker and in exchange you pass to me a statuette. We may agree to the trade – we do not in any sense have to agree to the ultimate use, signification, or even further exchange value of the objects given. The only thing we have to come to accord about is their exchangeability. While for me the statuette may be a religious object, for you it could be a purely aesthetic or functional one – on this we do not have to agree. We strip away meaning and memory when we pass the object to a trading zone.* (Galison 2010, 32.)

Incompleteness may be a key concept with regard to the concrete trade action itself – the traders do not know, or do not need to know, what the other one thinks about the exact value and meaning of the particular traded object – but the situation is not the same concerning the prerequisites of the trade as a form of cultural encounter. Surely one has to know *something* about the trading companion and his/hers preferences in order to facilitate the exchange – to make relevant offers, to bring forth meaningful bargain, etc. (see Mäntysalo et al. 2011).

There is always a cultural setting for the trade, but if one concentrates merely on the concrete action of trade – "the exchange of this and that object" – such settings may remain unnoticed. However, it is indeed *easier* and often *more profitable* to trade with someone whose principles of valuation one knows, even on a very coarse level. For example, if I know that someone values old and worn-out, some might say shabby, decorative sculptures aesthetically – perhaps due to a certain patina – I definitively would not try to sell a modest bronze statue to this person as a bulk of recyclable metal. In this particular case, my knowledge would most likely affect the trading situation notably, and thus be very valuable to me.

[2] The larger culture is – like the subcultures – quasi-stable, but the time span of change is understandably much longer.

The knowledge of the larger cultural settings may not, strictly speaking, be a necessary condition for the trade and the establishment of trading zone, but it certainly does matter in the real world of trade.

It is true that such knowledge of the larger cultural settings may not, strictly speaking, be a necessary condition for the trade and the establishment of trading zone, but it certainly does matter in the real world of trade. Therefore, it be might said that Galison presents an abstract and rather strongly idealized model of trade, which cannot address many of the concrete issues related to the cultural context of trade – such as the culture-specific incentives or obstacles for trade, the overall meaning of collaboration for the emergence and evolvement of subcultural identities, and the apparent yet complex interconnections between distinct subcultural identities and larger cultural ideals (e.g. common values and goals).

The idiosyncrasies of aesthetics and the possibility of "aesthetic trading zone"

In the preceding section I have postulated a rather compact account of the idea of trading zone, while trying to remain faithful to the exact formulations that Galison himself has originally used. The formulations are in many ways ingenious, but they also give rise to certain criticism and further questions. For example, there is a temptation to ask, what might be the eventual role of aesthetics in the trade and in the establishment of trading zones? It seems that the answer is two-fold, mainly due to the wide scope of aesthetics and the fact that various phenomena are aesthetically relevant – at least to some extent.

On the one hand, in the light of previously mentioned examples, it is clear that certain objects of trade may have specific aesthetic value – that is, they may be valued aesthetically by one or more participants of the trade. On the other hand, the trade itself – as a form of cultural activity – may involve certain aesthetic aspects: in other words, different forms and dimensions of trade can be experienced and valued aesthetically, and the realization of trade (i.e. the establishment of a trading zone) may even be aesthetically conditioned.

Due to the limited space, the more general aesthetic aspects of the trade as cultural activity cannot be examined here more thoroughly, and the focus will be on such forms of trade that concern objects with prominent aesthetics qualities. As mentioned above, the Galisonian account of trade concentrates on the mere exchangeability, leaving the other possible dimensions of traded items aside. Could it be, still, possible to widen or redefine the theoretical framework of trading zone, so that it would allow addressing separately specific and more precisely limited kinds of trade – for example, the trade in aesthetics or, to be more precise, trade in aesthetically valued objects and entities?

Such an "aesthetic trading zone" could be, then, regarded as a subsection or even as a component of the more general trade and the corresponding general trading zone. To be more exact, though the aesthetic trade may follow a specific internal logic that differentiates it from other forms of trade, there are obvious and inevitable connections and interplay between the aesthetic trade and other forms of trade, and the aesthetic trade does not have to – and usually cannot – exist entirely autonomously.[3]

The trading of aesthetics would, undoubtedly, involve certain idiosyncrasies and restrictions, since aesthetic valuation is generally regarded as a very exceptional and also rather problematic case of valuation.[4] Though aesthetic values and the

[3] The potential and alleged primacies and hierarchies between different forms of trade (and the corresponding types of values – for example, ecological or aesthetic values) cannot be addressed here, as the focus is on the possibility of trade *within* the sphere of aesthetic phenomena.

[4] In addition, the notion of "aesthetics" is in itself very disputed, as the examined phenomenon seems to be very multifaceted and diverse, thus escaping the scope of any strictly limited definitions.

As the presence of aesthetic values or qualities cannot often be purely rationally and conceptually justified, they have to be the proved ostensively – by showing and pointing out the relevant aspects.

ability to value different phenomena aesthetically have traditionally been associated with a claim of certain universality – endorsing the idea of aesthetic consensus – more recent theoretical approaches recognize the inevitable and profound impact of both intra- and intersubjective experiential history on aesthetic matters (see e.g. Berleant 1992; von Bonsdorff 1998; Forss 2010; Haapala 2000; Mattila 2007). In short, personal memories and shared cultural traditions influence essentially the experiencing and valuing different aspects of reality aesthetically, implying that the idea of some kind of "universal aesthetics" is rather implausible and somewhat dubious. Despite this, there are more or less shared aesthetic values, particularly among socio-culturally closely related individuals and groups of people.

Certain particularity and case-specificity are essential features with regard to aesthetic valuations and judgments; especially, in the context of environmental aesthetics, the significance of place-related issues – *genius loci*, attachment to place, etc. – appears to be rather remarkable. This might have something do to with the bearing that aesthetics has on the questions of identity: the uniqueness and authenticity of both people and places are, not solely but notably, aesthetic phenomena (see von Bonsdorff 1998; Forss 2010; Forss & Rannisto 2013; Haapala 1998; 2000; 2003 & 2005). As the presence of aesthetic values or qualities cannot often be purely rationally and conceptually justified, they have to be the proved ostensively – by showing and pointing out the relevant aspects. For example, the aesthetic experience of a place cannot be comprehensively and exhaustively described by any means of conceptual explanation or story-telling, even though some pieces of literature may, undeniably, capture the essence of a place rather vividly.

Due to these characteristic features of aesthetic valuation, the conditions for large-scale and systematic trade in aesthetics appear rather limited. The main obstacle for such trade would seem to be the fact that the grounds for aesthetic valuation are simply too fragmentary, and thus there is not enough consensus about the basis of aesthetic values. However, when examining the prerequisites for a trading zone, Galison has emphasized that there does not need to be any kind of universal currency of rationality or value; what is needed is a narrow or thin consensus about the exchangeability and the exchange value, not a wide consensus about the full signification of the traded object.

When applied to the particular form of trade – namely the trade in aesthetics – this could mean that there should still be a thin consensus about the mere existence of aesthetic value of the object in question, not a wide consensus about the details concerning the basis of the possible values.[5] The thin consensus about the aesthetic value corresponds well to the idea of "interpretive thinness" that Galison (2010) regards as a decisive feature of traded items; in short, the "thin interpretations" summarize the most essential values and meanings of different parties from the communicative and trading point of view, without requiring a thorough explication of related lifeworlds.

Regardless of this, there *does exist* a rather vague and coarse culture-specific conception of aesthetics, which allows us to discuss aesthetic issues in the first place (see e.g. von Bonsdorff 1998).

[5] In other words, the traders may have to agree on the fact that certain objects most likely do have some aesthetic value to most participants of trade, whereas they do not have to agree on the exact reasons why or how the particular objects actually gain their aesthetic value.

The trading zone approach to aesthetics treats the "first-hand" and "second-hand" aesthetic experience separately, implying that it is possible to recognize and appreciate certain aesthetic phenomena and their meaning to other people, even though one may not comprehensively understand the phenomena and their full aesthetic signification.

The thin consensus can also be interpreted as an agreement about the general or large-scale meaning of aesthetic issues: it is possible to acknowledge the disagreements and a certain value pluralism, while at the same time paying respect to the viewpoints of the others and, above all, treating them as legitimate trading partners. The trading zone approach to aesthetics thus treats the "first-hand" and "second-hand" aesthetic experience separately, implying that it is possible to recognize and appreciate certain aesthetic phenomena and their meaning to other people, even though one may not comprehensively understand the phenomena and their full aesthetic signification.

From the practical point of view, establishing an aesthetic trading zone might benefit from recognizing certain *boundary objects* – a concept originally developed by Star and Griesemer (1989) – that typically have a notable role as facilitators of the exchange in the trading zone (see Kanninen et al. 2013). In general, boundary objects "are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites, [and] they have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable" (Star & Griesemer 1989, 393).[6]

Without getting too deeply involved in the discussion about the relationship between boundary objects and trading zones (see Galison 2010; Mäntysalo & Kanninen 2013), it is possible to further develop the idea of specific kinds of boundary objects which facilitate the trade in aesthetics. Generally acknowledged aesthetically relevant entities can thus be treated as *aesthetic boundary objects* – that is, as items that adapt to the local and varying interpretations about the basis and the details of the aesthetic value, but yet maintain a common-level identity as mere aesthetically valued objects.[7] In short, the aesthetic boundary objects facilitate the aesthetic trade by structuring and clarifying the aesthetic discourse, and the related – often tacit – preconditions and preconceptions.

Aesthetic trading zones in the context of urban planning

The idea of trading zones has quite recently been applied also in the context of urban planning (e.g. Balducci & Mäntysalo 2013, Fuller 2006, Mäntysalo et al. 2011), where the concept is approached mainly as a tool in organizing local platforms and support systems for planning participation, knowledge production, decision making and local conflict management. The trading zone approach to urban planning and collaborative planning processes highlights the importance of defining the relevant actors and stakeholders taking part in the cooperation (i.e. the "trade") and their motivation to work cooperatively. In general, the basis for motivation lies in recognizing achievable benefits and pursuing them by the means of trade; there may, however, be a lack of motivation if there are more straightforward and effortless alternatives available, or if the possibilities for achieving the benefits via the trade are perceived negligible or nonexistent (Kanninen et al. 2013).

In addition to such general accounts of collaborative urban planning and its prerequisites, the concept of trading zone may be useful also when assessing certain sub-topics or dimensions of urban planning, with a narrower and further specialized scope of interest. For example, the examination of aesthetic issues in the field of urban planning is a rather complex and sometimes controversial project, to which the introduction of such a general level concept might bring

[6] As such, the boundary objects "allow the use and exchange of information between different communities despite the fact that these communities do not share the same systems of meaning, values or strategies" (Mäntysalo et al. 2011, 263).

[7] In other words, the information about the "general" aesthetic value is shared across the boundaries of different parties, even though the exact "system" of aesthetic valuation is not shared.

certain clarity. Let us thus consider further the idea of "urban aesthetics as a trading zone".

To be sure, aesthetic issues comprise a considerable part of urban planning, and yet it is not evident, how and on what grounds the diverse questions involving aesthetics are or should be solved in practice. If the aesthetic questions are to be resolved collectively and by the means of rational argumentation, it is reasonable to ask for the necessary preconditions of such "aesthetic cooperation" and its coordination.[8]

Planning related aesthetic issues can be viewed from a practice-oriented standpoint, highlighting the wholeness of human experience and the interconnections between experiential values and meanings and more broad ethico-existential aims and conditions. The focus of the proposed stance is thus on the entirety of *urban aesthetics*[9], which is regarded as a constitutive part of urban life-form (see e.g. Berleant 2007 & 2012). As such, urban aesthetics comprise a continuum, covering the aesthetic values both in the urban environments and in the socio-cultural practices related to urban life-worlds.

Consequently, urban aesthetics is inherent in urban planning in multiple ways. For example, urban planning as a socio-cultural activity certainly deals with the aesthetic values and features of urban environment, but, furthermore, it can also be seen as an aesthetic or aesthetically oriented practice, following particular aesthetic principles or aesthetically defined guidelines in itself – thus being a part of certain urban life-form. Urban aesthetics does not, hereby, involve merely the issues related to architectural form-giving and design, though the questions of design do have a remarkable aesthetic undertone.

Urban aesthetics is, indeed, embedded in all *urban design*, which often overlaps with urban planning, having yet somewhat different emphasis compared to the entirety of planning. Urban design is best understood as a part of the contemporary "culture of design", which basically means a holistic design-based approach to post-industrial urban development, binding together the cultural, social and economic perspectives (see, e.g. Bell & Jayne 2003). Such multidimensionality of urban design highlights the prevailing interconnections between aesthetic and other issues, thus potentially endorsing the suggested trading zone approach that treats the aesthetic trade as an integral subsection or component of the more general trade.

The meaning of aesthetics may, however, sometimes be understood in an overly narrow sense in the framework of urban design, and in design-based approaches altogether. For example, when examining the rather diverse undertakings of "design-led urban regeneration", David Bell and Mark Jayne (2003) point out that with regard to developing urban environments by design, it is the flagship buildings, high-quality residential and commercial developments, as well as polishing the public spaces that seem to have the priority.

Even though the questions related to social and environmental sustainability have admittedly gained some attention, it appears that the "design-led urbanism" treats aesthetics primarily as a means to control the image of the city and to improve its

[8] However, due to the idiosyncrasy of aesthetics – experiential and qualitative arguments are essential with regard to aesthetics – it is not entirely clear what the "rationality of argumentation" means in this case, and what kind of limitations to the "rationality" of pursued solution there might be (see Mattila 2003 & 2007). At least the particular conception of rationality which identifies rationality with pursuing and achieving large-scale consensus about matters (see Rescher 1993) appears rather problematic, as the relevant valuation principles seem to alter remarkably, undermining the plausibility of the aesthetic consensus.

[9] Additionally, the term "urban aesthetics" may be used to denote a particular *branch of philosophical aesthetics*, concentrating on the questions of aesthetic values and meanings in urban environments (see e.g. the introduction in Berleant & Carlson 2007). However, this is *not* my intended use.

Figure 2. The confrontation of nature and culture is often vivid in urban environments. Urban parks can be considered as hybrids, where elements of the planned and intentionally built as well as the unplanned and naturally developed are both prominently present.

attractiveness to "mobile post-industrial employers, middle-class citizens and tourists" (Bell & Jayne 2003, 124) – thus practically ignoring the prominent pluralism of aesthetic valuation, and the related questions justness and equality. Due to such emphasis inherent in many design-based approaches, the idea of "urban aesthetics as a trading zone" has to be founded on a more comprehensive conception of aesthetics – a conception that does justice to the diversity and the complexity of the aesthetic phenomena.

Despite the apparent demand for a holistic view, certain distinctions still have to be made in order to gain relevant and applicable information about the issue. From the viewpoint of philosophical aesthetics, for instance, the intertwined dimensions of urban aesthetics do involve somewhat divergent structures of values and meanings; hence, the practice-related and the environmental questions may be addressed separately and by using different concepts and methods. Providing a stipulative definition for the purposes of this article, the notion "urban aesthetics" is, from now on, used to refer primarily to the aesthetics of urban *environments*.

Many of the features and characteristics of "general level" aesthetic trading zones apply rather directly also to the urban aesthetics and the field of urban planning, but certain peculiarities demand further scrutinization. Above all, the planning institution as a whole is regulated by the law: the most important objectives and the formal definitions of the planning procedures and methods are thus given "from above". This goes for the aesthetic dimension as well, even though the formulations are very abstract and ambiguous, leaving plenty of room for interpretation.[10]

In addition to this, there is the question about the aesthetic boundary objects[11] in urban environments: what exactly are or could be such objects, and how to define and pick the most relevant ones? As a starting point, it must be understood that there is not – or cannot be – a universal definition of relevant boundary objects: certain entities gain their identity as boundary objects via the *practices* of different local social worlds and their interactions, and the concept is indeed very practice-oriented (Star & Griesemer 1989; Star 2010; see also Leino 2008).

[10] The complexity of urban aesthetic issues is inherent also in the Finnish planning legislation and the national planning system, as the aesthetically relevant regulations rarely address aesthetic matters directly, but rather have numerous interconnections to other and usually larger structures of values and meanings – such as those related to culture, cultural and art history, as well as artistic values (Vihanninjoki 2015).

[11] The "objectness" of aesthetic boundary objects is, though, a rather vague and even dubious feature particularly with regard to urban environmental aesthetics, since the aesthetically experienced and valued environment may not always be divided into sharp and definite object-like entities, but the aesthetically valued entity is often something rather abstract and even implicit in the experience as a whole (see e.g. Berleant 1992; von Bonsdorff 1998). This is not, however, a real problem, as the original definition of boundary objects is fairly loose and pragmatic, allowing them to be either "abstract or concrete" (Star & Griesemer 1989, 393).

The boundary objects may thus be of rather diverse scales: for example, the structure and the layout of the city itself can be aesthetically valued, whereas also a single tree may carry a remarkable amount of locally bound aesthetic meanings and values. The entities can also be representatives of either the planned and intentionally built or the unplanned and naturally developed – or the hybrids of these two, as it seems to be in rather many cases: consider, for instance, urban parks or ruins, which combine the natural and the cultural and thus manifest their character as deeply and necessarily but also forcedly and violently intertwined counterparts (von Bonsdorff 1998; Kummala 2013, see Figure 2).

Analogously to the "general" aesthetic trade, the boundary objects in urban environments aim at pointing out such environmental entities that are central to the *discourse of urban aesthetics*, providing some clarity and certain points of reference to the pluralistic and often ambiguous "aesthetic communication" between different groupings and subcultures. Indeed, the subcultures of environmental aesthetics – that is, those related to the aesthetic appreciation and valuation of diverse environments – have themselves remained rather unstructured and undeveloped; this has in part led to a situation, in which certain established approaches to environmental aesthetics have gained unquestionable and nearly hegemonic status (see Sepänmaa 2002). For instance, an art-theory inspired and objectivistic architectural discourse has largely defined the framework for assessing aesthetics of built and urban environments, whereas a stance highlighting the value of untouched and "pure" nature has typically set the standard with regard to unbuilt and natural environments.

The subcultures of environmental aesthetics have remained rather unstructured and undeveloped; this has in part led to a situation, in which certain established approaches have gained unquestionable and nearly hegemonic status.

The present situation poses a major challenge for further elaborating the discourse of urban aesthetics, but only by acknowledging the pluralism and dispute about aesthetic valuation and by letting the different subcultures of urban aesthetics coexist, it is possible to promote long-term social sustainability in urban environments.[12] Thus there is a genuine demand for mediating conceptual frameworks – the Galisonian *interlanguages* – that allow the subcultures interact and cooperate constructively; this is the proper scope of the presented trading zone approach to urban aesthetics.

Real-life aesthetic boundary object: case Koivusaari

As the interlanguages of urban aesthetics are, typically, in a close relation to the aesthetic boundary objects, the overall problematics regarding the aesthetic discourse may be easier to conceive by briefly examining a concrete case. The coastline of Helsinki and its characteristics serve as a practical level example of aesthetic boundary objects in urban environments. The coastline and its future development has been very topical issue for some time, and major controversies are involved: the proximity of the sea attracts builders and developers, whereas the same areas are essential to certain restorative and leisure activities.

However, it is not this particular function-related disagreement – whether or not the coasts may be built and to what extent – that forms the core of the aesthetic debate, but the arguments used for and against each alternative, and especially their relation and relevance to the urban aesthetic discourse. For example, in the case of Koivusaari, in addition to economic and traffic-related arguments, numerous relevant points with aesthetic basis have been presented: particularly the potential effects of large-scale building on the coastal landscape and its uniqueness seem to worry local people.

[12] For example, when assessing the "environmental culture" of aesthetics and the related aesthetic discourse, Yrjö Sepänmaa (2002, 44) writes: "A culture of discussion, which exists in the areas of art, is only just beginning in environmental culture, except for architecture and industrial design. Discussion provides the justification for bringing *dispute* into environmental culture." (Emphasis added.)

Figure 3. "The landscape can tolerate new elements without losing its characteristic features." The original caption of this illustrative picture – provided by the City Planning Department – involves a rather bold and straightforward statement about the characteristics of the coastal landscape; the statement relies primarily on a viewpoint of particular landscape analysis, thus maintaining the hegemony of expertize-based and very abstract argumentation. Photo source: Rodriguez 2007.

The question about the coastal landscape and the related controversies are, in this case, central to the overall structure of the environmental aesthetic discourse. The local stakeholders claim rather uniformly that the proposed alterations would ruin the existing landscape, whereas the City Planning Department officials seem to have a two-fold stance: on the one hand, they have stated that despite major changes, the characteristic features of the landscape may remain unaltered (see Figure 3); on the other hand, they see the building project as an opportunity to further develop the values and the meanings of coastal landscapes in Helsinki.[13] In short, the locals seem to have a preservation-oriented view – highlighting the *existent* aesthetic features of the current, near natural-state landscape – while the planning officials perhaps somewhat understate the local significance of the forthcoming transformation by treating the landscape primarily as a stage of *processual changes* that naturally occur in urban environments.

The situation is thus rather polarized, and achieving a mutually satisfactory agreement about the future development of coastal landscape in the case of Koivusaari appears unlikely. To provide some insight into the seemingly unresolvable debate, let us take a closer look on certain particularly puzzling themes that have notable aesthetic relevance. First, the demand of preservation based on the inherent natural values is fairly problematic – at least regarding the landscape – since the visible environment is currently far from stagnant natural-state landscape: marinas and related courts largely dominate the view, and human interest and intentions are very distinct. Hence it is clear that here we have a cultural and primarily urban landscape, which has to be evaluated as such.

Second, it is not obvious at all that the proposed alterations would not influence the characteristics of the landscape. Such a conclusion may, at best, be justified from the viewpoint of particular landscape analysis – focusing on rather abstract features of the landscape, such as visual patterns and structures. This is not, however, the only truth about the issue, as there is always a variety of experiential factors affecting the evaluation and the interpretation of a landscape. The planning officials have, indeed, already revised their view on this matter: in the impact assessment of the local master plan, the starting point is that coastal cityscape would change rather significantly; but, again, this does not seem to cause any hindrance to the implementation of the plans, as also the characteristic visual features are regarded as subjects to transformations and renewals.

Summarizing the lesson of the case study, the coastal landscape clearly awakens diverse and conflicting aesthetic affections and aspirations; it is thus a real-life functioning aesthetic boundary object that 1) has a *common identity* as an aesthetically significant entity, and 2) adapts simultaneously to the *various*

[13] Due to limited space, merely rough outlines of the particular case may be examined here. However, the setting involves confrontation of local stakeholders – represented by community association – and the planning officials, during the preparation of a local master plan. For more details, see Helsingin kaupunkisuunnitteluviraston yleissuunnitteluosasto 2014, Lauttasaari-Seura 2014 and Rodriguez 2007.

Figure 4. The presence of urban nature enhances possibilities for recreation and a variety of activities, such as small-scale community gardening. Even rather small areas of unplanned and unbuilt urban environment may be remarkably rich sources of local values and meanings, which is why people are often very keen to protect and preserve them.

interpretations about the essence of aesthetic value in different social worlds or subcultures. The communication – or the common ground that enables the communication – between the subcultures, in turn, is apparently deficient, as they conceive the status of urban landscape's aesthetic characteristics somewhat differently. The locals emphasize stability as a basis for local-level identity, while the planning officials promote enabling and creating new values that, in part, will be forming the identity of urban Helsinki. The case thus illustrates that the coastal landscape has become an "object" of *aesthetic* evaluation on various bases; the proposed trading zone approach, in turn, provides a way to understand and further analyze these differing and typically tacit aesthetically-relevant presuppositions concerning urban environments.

The challenge of urban infill

The notion of "urban aesthetics as a trading zone" refers to the possibility of a pragmatic-level consensus about the general and large-scale meaning of urban aesthetics – about its significance to people and the quality of their everyday life. Achieving such a consensus would, however, require paying further attention to the discourse of urban aesthetics and the communicative connections between the relevant aesthetic subcultures. The following example, concerning the context of urban infill, aims at concretizing the role that the trading zone based approach to urban aesthetics might have from the broader perspective of collaborative urban planning and the related conflict management.

On a very general and abstract level, urban infill refers to a set of policies and practices in urban areas, aiming for more sustainable and more economically efficient urban structure. Urban infill can, however, be defined in various ways, and the exact meaning of the concept depends widely on the context and the scale in question. For example, infill is often regarded a as building process leaning on existing urban structure and infrastructure, but it can also be seen as a small-scale process including mainly single buildings or blocks. Despite these ambiguities, infill projects typically involve more actors and stakeholders with divergent and often conflicting motives and goals compared to usual greenfield building projects, and, in particular, there are more residents around to participate the planning process. (Puustinen 2015 & 2016.)

Indeed, the large number of different actors and stakeholders is of notable significance with regard to the infill planning process and its manageability, and, due to the remarkable possibility of conflicting values, the situation can easily become very challenging, sometimes resulting in overreactions and frustration. Though the confrontations of interests and values may be manifest and undisputed, the overall setting is yet rather complicated, so let us take a closer look at the structure and logic of such conflictual circumstances.

In general, promoting urban infill seems to be an irrefutably worthwhile and virtuous enterprise on a theoretical and abstract level, fulfilling the ideals of sustainability and resource efficiency (see e.g. Hartiala 2012; Santaoja 2004). However, a noteworthy problem with such abstract concepts is that their meanings are equivocal and to a great degree context-dependent, and thus the concepts remain rather vague until operationalized via concrete applications and practices (see e.g. Williams et al. 2000). Indeed, when trying to discover and develop practical and concrete applications of large-scale urban infill within the controversial realm of land use planning, severe difficulties and conflicts are inevitable.

The encountered difficulties and conflicts do not, anyhow, necessarily indicate shortcomings or flaws in the highly abstract theoretical frame, but they primarily manifest the divergence of possible points of view: when examined on a highly abstract level, urban infill is almost solely beneficial – that is, producing benefits

to nearly all participants – whereas on the concrete level the situation is not so ideal, as there are both winners and losers. For the local residents the realization of the infill project could, for example, mean a loss of an open space or natural-state recreational area in the neighborhood (see Figure 4), while the same outcome simultaneously represents both ecologically and economically smart growth for the planning officials. In other words, there is an obvious confrontation of abstract benefits and concrete costs, and as the concrete costs are typically very local by nature, it is usually the residents of certain restricted area that have to bear the burden (McConnell & Wiley 2010).

Now, it might seem questionable to force the local stakeholders to accept the infill plans and the related costs without some kind of compensation, and, above all, without a right to challenge the justness of the proposal and the underlying arguments. Notwithstanding, the validity and weight of concrete and locally based environmental values is quite easily questioned by both planning officials and commercial actors, and advocating such values is often deemed even as undesirable and detrimental to the sustainable development of urban community as a whole. This applies particularly well to the context of urban infill.

For example, according to a survey (Uudenmaan liitto 2015) addressing the views of a number of representatives from real estate and building sectors (mainly consultants, developers and construction companies), fierce opposition and numerous appeals are seriously hindering and even paralyzing various infill projects – and this is mainly because the current residents and other locals are acting selfishly and thinking narrow-mindedly. Accusations of selfishness and narrow-mindedness indicate that the locals are rather generally thought to represent a NIMBY (*not in my back yard*) attitude; however, labeling the residents' and other locals' activities as a mere form of NIMBYism is not fruitful or recommendable, since it polarizes the conflict by disregarding the real, case-specific and more general or structural reasons and arguments behind the issue (see e.g. Peltonen 2008).

In order to enable and enhance the realization of urban infill projects in a large scale, there are basically two alternative paths to proceed. The first option is to reduce or limit the local actors' possibilities to influence the infill planning process by narrowing down the amount of relevant stakeholders (*interested parties* in legal terms) and by questioning their right to appeal. The second option is to further improve the quality of communication and interaction between different parties by developing new and open-minded methods of cooperation and collaboration.

Promoting the first alternative would, at least in the case of Finland, demand a revision of legislation – i.e. the Land Use and Building Act (1999/132) – and it quite straightforwardly opposes the prevailing spirit of communicative planning ideals, which have remarkably influenced the current Finnish planning legislation. The main problem with this view is that it does not, at least primarily, take into account the undisputed and urgent need for positive motivators to promote infill processes. Such motivators are, however, essential for the emergence of spontaneous infill projects, initiated and advocated by local actors – such as private housing companies – without external pressure.

The second alternative would, more or less, mean following the footprints of communicative planning tradition. This does not, however, necessarily imply any kind of naïve trust in the force of collaboration; rather, the task at hand is all about developing new frameworks, methods and conceptualizations in order to understand more comprehensively the stakeholders' idiosyncratic points of view and the underlying structures of meanings and values, so that the potential shortcomings and sheer misconceptions in current policies and procedures could be identified and acknowledged. For example, the experience of injustice has

already been identified as a major reason for people to appeal (Peltonen et al. 2008), and if the currently latent sources of such experiences were tracked down and eliminated, the conditions for collaboration could improve significantly.

Unwinding the tangled confrontations: urban aesthetics as a trading zone

Most of the current research and especially more practically oriented investigations have focused on economic and infrastructure-related incentives to promote infill projects (e.g. Nykänen et al. 2013; RAKLI 2015; Uudenmaan liitto 2014), whereas the questions concerning the concrete environmental issues – such as the quality of nearby environment, local identity, aesthetic affairs, etc. – have thus far escaped more detailed examination. They surely have been recognized as a relevant factor affecting the willingness to accept infill, but no thorough accounts of people's manifold relation to their nearby environment in potential infill areas are available.[14]

Empirics imply that it is exactly the locality-related and aesthetic issues that seem to have most weight when it comes to approving or disapproving infill.

This is perhaps a little surprising, especially since empirics (Arvola 2014; Arvola & Pennanen 2014; see also Arvola et al. 2010) imply that it is exactly the *locality-related* and *aesthetic* issues[15] that seem to have most weight when it comes to approving or disapproving infill: "the results suggest that one of the key factors explaining residents' resistance to infill relate to their beliefs and values concerning the unique character and identity of their neighborhood; they believed that it will not remain the same after infill and they would feel less at home there than previously" (Arvola & Pennanen 2014, 8).

Thus there seems to be a certain discrepancy between the goals of the planning strategies and policies promoting infill, and the features that people actually value in their nearby environment. In short, locally bound identity-related issues really matter to people – people are usually willing to use considerable amounts of money and other resources to cherish and protect their habitat – whereas the official strategies and policies focus on the technical and economic rationality of the infill plans.

Such distortion has naturally implications also for the discussion about the obstacles and incentives to infill projects; for example, the confrontation of the potential costs and benefits for locals is usually formulated like this: "Local inhabitants often feel that they lose something when infill happens – they might lose their view or their piece of forest etc.; [i]t would make infill processes more acceptable if inhabitants would also gain something concrete: for instance better services, a new bus stop or children's playground." (Puustinen 2015). These are, of course, relevant remarks, but in the light of the above-mentioned empirical studies the most important question seems to remain unasked. That question could be something like: "How could the realization of an infill project leave unaltered – or perhaps enhance – the matters of local values and identity, the feelings of home and belonging, and the general experiential quality of environment?"

This is undeniably a very tricky question, not least because of the vague and equivocal nature of certain central concepts. What are, for example, the values and meanings behind the local identity in a particular case, and who eventually has the right and the ability to define them? Moreover, what does "the feeling of

[14] Academic studies have, though, provided some exceptions; see e.g. Heininen-Blomstedt 2013 and Koponen 2006.
[15] E.g. unique identity of the neighborhood, pleasantness of the architecture, preservation of historical features, and the extent to which residents can feel the area as their own.

How could the realization of an infill project leave unaltered – or perhaps enhance – the matters of local values and identity, the feelings of home and belonging, and the general experiential quality of environment?

home and belonging" actually mean, and, above all, how the planner could grasp such an abstract idea so comprehensively that (s)he could include it in a concrete design? The experiential quality of environment, in turn, has been addressed in recent planning research (see e.g. Kyttä et al. 2011 & 2013), but the concept – and the phenomenon itself – is far from clear, so that the potential applications in the realm of land use planning are still rather rare and case-specific.

Though the above mentioned problems are not solely aesthetic by nature, it is noteworthy that environmental aesthetics is a very valuable tool in understanding such experiential dimensions of people's relation to their environment. Moreover, from the perspective of present-day environmental aesthetics, the phenomena related to locality and local identity have significant interconnections to the aesthetic experiencing and valuation of the environment. Thus the concepts and methods of environmental aesthetics might be helpful in unwinding the tangled situation concerning the obstacles and incentives to urban infill.

Above all, taking the idea of "urban aesthetics as a trading zone" seriously might have a favorable impact on the conditions for deliberative planning and cooperation in the context of urban infill development. As the idea is all about acknowledging the general and large-scale meaning of urban aesthetic issues by further elaborating the discourse or urban aesthetics, there is no need for a thick consensus about the *basis* and the *details* of aesthetic meanings and values – merely a thin consensus about the *existence* of aesthetically valuable urban environments and certain environmental entities is required.

Such an acknowledgement would at least bring visibility and also certain justification the people's concerns about their nearby environment: though the concerns and their detailed backgrounds are not always generalizable, they still are real for the people and thus do affect people's behavior and decisions – also their willingness to attend to cooperate. After all, it is this simple: if people perceive their possibilities to gain something from cooperation negligible or nonexistent, they will not cooperate – if the current "standard form" of cooperation systematically ignores certain values that are important to people, they will not cooperate, but merely question the legitimation of such cooperation by numerous objections and appeals. And *vice versa*, if the cooperative process allows people to state their idiosyncratic concerns in a recognizable way, there is at least a slight possibility to settle the issues together, in the spirit of meaningful and mutually satisfying collaboration – but yet without the overshadowing demand for a comprehensive and all-inclusive consensus.

Conclusions

It is clear that promoting urban infill development has undeniable large-scale advantages – primarily related to sustainability and resource efficiency – and that it is a very common strategic goal for a good reason. It is, though, equally clear that people are often rather deeply attached to their nearby environments, and that people are willing preserve and protect the valued features of their habitat. The discrepancy between the goals of the official planning strategies and policies, and the *de facto* values of residents and other local stakeholders has led to a clash that remarkably hinders various infill projects, eventually making the realization of extensive infill development quite impossible.

What is most important, the evident confrontation cannot most likely be overcome by the means of mere technical and economic rationality, because the lay stakeholders' arguments are usually experiential and qualitative by nature – concerning the questions of locality, identity, and aesthetics. Thus there seems to be a genuine need for a planning procedure or framework that acknowledges the existence of experiential values and meanings, and hence at least on a theoretical level allows participants to settle and resolve related disagreements

and confrontations relatively efficiently and, above all, in a civilized manner – not by the means of frustrated and aimless appeals or by refusing to act cooperatively in the first place.

In this article I have introduced the idea of "urban aesthetics as a trading zone", which underlines the possibility to prefer a pragmatic thin consensus about the general and large scale-meaning of urban aesthetic issues by elaborating the discourse or urban aesthetics. Such a thin consensus seems particularly useful in the context of urban planning, where time and other resources are often very limited, and where the numerous aesthetics-related issues still have to be resolved adequately enough.

Yet it must be emphasized that the presented idea is not meant to be any kind of ready-made solution. Rather, it is more like a proposal for a conceptual framework that aims at pointing out the most salient problematics and shortcomings within the current course of action – and at indicating a potential direction for further development of both planning theory and practice.

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The "Aesthetic Turn" as a Bridge between Communicative and Agonist Planning Theories

Exploring the interplay of "consensus" and "dissensus" with a view on its implications for Finnish planning

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Abstract

This paper discusses the dispute between consensus-oriented communicative planning theorists and dissensus-oriented agonist planning theorists. The paper starts from the observation that a number of advocates of agonism have followed the so-called "aesthetic turn" in political thought. They have emphasised, in particular, the politically progressive potential of the mode of reason that Kant introduced in his aesthetics, a mode that deviates from the Kantian theoretical and practical modes of reason, and one that has generally been marginalised in modern societies. While the proponents of agonism wish to make use of this mode of reason when attempting to challenge hegemonic projects and give voice to marginalised groups in society, Habermas has been generally taken to be one of those philosophers who marginalize the aesthetic mode of reason. Yet, also Habermas has found inspiration from Kant's aesthetics, including the notions of consensus and *sensus communis*. Hence, the paper revisits Kantian aesthetics to search for a common ground between Habermasian and agonist views of politics and planning. It ends up arguing that the notions of consensus and dissensus do not stand for mutually exclusive orientations in planning, but both of these orientations have their places in planning systems and practices. The paper takes a look at some recent case studies that have charted potential places for productive agonist confrontations in the British development control based planning system. Having done so, the paper ends with some suggestions as to where would be the appropriate places for respective approaches in the context of Finnish planning.

Keywords: agonism, communicative planning, consensus, dissensus, Habermas

Introduction

In the recent planning-theoretical discourse, the debate between advocates of consensus-oriented communicative planning and advocates of confrontation-oriented agonist planning has been intense. The communicative planning theory that emerged in the 1980s and 1990s was originally largely based on Jürgen Habermas's philosophy (see especially Forester 1989; 1993; Healey 1992; 1997; Innes 1996; Sager 1994). Agonist planning theories, the aim of which has been to challenge communicative planning theory and to make more room for "agonist dissensus" in planning, have found their inspiration from the work of political

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theorists such as Chantal Mouffe (see Hillier 2002a; 2002b; Pløger 2004; Purcell 2009; McClymont 2011; Allmendinger and Haughton 2012) and Jacques Rancière (see Dikeç 2005; Swyngedouw 2009; Allmendinger and Haughton 2012; Metzger et al. 2014). Some of the theorists of agonism have also gone back to Hannah Arendt (Hillier 2002b; 2003; Gunder 2003; Dikeç 2013), who was among the first modern theorists to introduce the Greek concept of *agon* to political thought.

Theoretical differences between the proponents of communicative and agonist planning theories boil down to differences in axiological views, differences that have their bearings also on the political theories of the respective parties. In this paper, my focus is on one particular difference: the Habermasian theory of politics highlights the role of moral norms, which can be discussed, according to Habermas, within a horizon of rationally motivated consensus (Habermas 1984; 1996). In Habermas's political theory, there is also a place for "ethical" questions concerning the "good life", questions that do not hold such a prospect of consensus or universal agreement, but remain relative to a certain particular cultural context (Habermas 1996). However, Habermas differentiates these questions strictly from moral questions and lumps them together with aesthetic questions, which are bound (just as ethical questions are) to their particular contexts (Warnke 1995). Moral questions, then, seem to enjoy a position of privilege in Habermas's political philosophy (Habermas 1996). The proponents of agonist political philosophy, by contrast, often follow the so-called aesthetic turn in political thought (see Kompridis 2014), prioritizing aesthetic-ethical points of view and highlighting deep and irreconcilable differences in our views concerning the good and the valuable. For them, consensus always entails exclusion (Mouffe 2013; see also Hillier 2003; Purcell 2009). The pursuit of consensus therefore violates the plurality that characterizes cotemporary societies and affirms the existing hegemonic orders in society (Mouffe 2013). Hence, agonists argue that instead of searching for consensus, we should celebrate dissensus and its potential in confronting hegemonic projects in cities and societies.

What then is specifically aesthetic in the aesthetic turn of political thought or planning theory? As it may have already become clear, the aesthetic turn does not only (or perhaps even primarily) mean that we should direct our attention to the political relevance of art and other aesthetic objects or to artistic and aesthetic aspects of the built environment. Rather, the aesthetic turn refers more generally to the increasing popularity of such theoretical ideas concerning reason, experience, meaning and political agency that draw on the tradition of philosophical aesthetics (Kompridis 2014, xvi). Quite often, the followers of the aesthetic turn have based their political theories on ideas derived from Immanuel Kant's aesthetics, formulated in Kant's third Critique (Kompridis 2014; see also Cascardi 1999), that is, *Critique of Judgement* (Kant 1952, referred hereafter as CJ). Those modes of rationality that Kant handled under the titles of theoretical reason and practical reason in his first and second Critiques have arguably been highly influential in the process of modernisation in western societies. However, at the same time, as the theorists of the aesthetic turn maintain, the aesthetic, "residual" modes of reason that Kant gives an account of in his third Critique have been marginalised in our public practices of reasoning (cf. Cascardi 1999). Theorists of agonist politics – and agonist planning – often turn to these modes of reason when they wish to give a voice to marginalised groups in society and to challenge hegemonic projects and discourses in cities and societies.

The main theoretical research question in this paper concerns the nature of the aesthetic turn in planning theory. The question is, more precisely, whether this turn should be seen only as a division line between Habermasian and agonist approaches, or could it be portrayed as an intersection from where continuities and interplays between these two approaches are to be found. Although Habermas's political theory has been generally regarded as quite hostile – or at

best indifferent – to the themes related to aesthetics (see, e.g., Dahlberg 2005, 116, n. 22), Habermas has interestingly also indicated Kant's aesthetics, including the notions of aesthetic *sensus communis* and consensus, at least an indirect source of inspiration for his theory of rationally motivated consensus (Cascardi 1999, 13; see also Habermas 1980, 130–131). This being the case, my paper sets out to investigate the agonist notion of dissensus, on one hand, and the Habermasian notion of consensus, on the other hand, against the background of Kantian aesthetics. My conclusion in this paper is that rather than underline the differences between consensus-oriented and dissensus-oriented approaches in planning and politics, it would be worthwhile to chart potential realms for a fruitful interplay between these two approaches.

The practical research question in this paper concerns the implications of communicative and agonist planning theories for planning practice. Whereas communicative planning theory has had a considerable impact on planning practices all over the world, agonist planning theory has so far remained quite abstract and distant from practice (see, e.g., Mouat et al. 2013, 164). It has not been clear what kind of planning practices the agonist theory would imply and which kind of planning situations the agonist approaches would suit the best. Recently, some case studies have suggested that agonism could and should challenge consensus-oriented approaches, especially at the level of detailed planning, and more precisely, in concrete disputes concerning case-specific projects (McClymont 2011; Mouat et al. 2013; cf. Pløger 2004). Even if planning projects often start from some kind of shared understanding of the norms and principles that should guide planning, it is not unusual that consensuses fall apart when people come up with their differing ideas concerning appropriate ways of concretizing the norms and principles. From the viewpoint of "the aesthetic turn", it is interesting that at this stage of planning processes the aesthetic dimension of our relation to the environment often comes to the fore.

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Katie McClymont (2011) has interestingly discussed case-specific agonist confrontations in the context of British development control, arguing that although planning theorists very seldom give credit to the project-based approach typical in development control, this approach has its merits seen from the agonist point of view: development control typically establishes legitimate arenas for alternative interpretations concerning meanings of places as well as judgments concerning appropriate planning solutions.

Finnish detailed planning, by contrast, is based on holistic and comprehensive plans (see Krokfors 2016). Furthermore, especially after the latest reform of Finnish planning law at the end of the 1990s, Habermasian communicative ideals were introduced to Finnish planning systems, and the consensus-oriented approach was regarded as relevant in particular for detailed planning (see, e.g., Syrjänen 2005). Nonetheless, various case studies have shown that it is difficult to form a lasting consensus on questions concerning meanings and interpretations of particular sites, as well as on ideas concerning their physical design. Recent research has indicated that it is not only the citizen stakeholders who are likely to express their discontent concerning ratified plans at the implementation stage, but also building companies and the architects who work for them would often like to see changes in the plans (Staffans et al. 2015; Krokfors 2016). Developers and building companies can apply for permits to deviate from existing ratified plans, and they are increasingly making use of this possibility (ibid.). Through deviations, the project-oriented approach is making its way into Finnish detailed planning. Nonetheless, this kind of ad hoc project orientation has not so far brought about legitimate arenas of agonist confrontations between different interpretations of sites at this stage of a process.

Given this, my paper ends up asking whether Finnish detailed planning could learn something first from agonist planning theory, and secondly from

development control based systems in what comes to constructive uses of dissensus and disagreements in planning.

From consensus-oriented planning to agonist confrontations

Communicative planning theory made its breakthrough in the end of 1980s and early 1990s, after the publication of Jürgen Habermas's *The Theory of Communicative Action* (Habermas 1984; 1987). Drawing from Habermas's idea of "unconstrained, unifying, consensus-bringing force of argumentative speech" (Habermas 1984, 10), theorists such as John Forester (1989; 1993), Patsy Healey (1992; 1997), Judith Innes (1996) and Tore Sager (1994) formed their own versions of communicative planning. In order to make planning more legitimate and more open to the ideas and views of stakeholders, the advocates of communicative planning wished to turn planning processes into processes of inclusive consensus-building.

One of the key ideas of Habermas's theory of communicative action is that the horizon of shared understanding characterizes not only the ways in which we discuss facts, but also our disputes concerning the validity of norms (Habermas 1984). This being the case, he also claims that communication and rational argumentation can form a basis for coordination of our collective action (Habermas 1984; 1987). Communicative planning theorists take urban planning to be one of those forms of action for which Habermas's theory could be relevant (Forester 1989; 1993; Healey 1992; 1997; Innes 1996; Sager 1994). For Habermas (1984), orientation to consensus is something that the speakers must always already presuppose when they engage in rational communication. Consensus is, then, neither an abstract philosophical construct nor an empirical fact that could be observed in our everyday communications – and in fact, Habermas well recognises that in empirical reality, speakers are often not oriented to understanding. Still, his reconstructive theory of necessary presuppositions of communication has the practical implication that if we think that someone is not speaking the truth, following legitimate rules in society or being sincere, we can and most likely will expect that he or she is willing to enter into an argumentative process where his or her claims can be rationally refuted or vindicated (Habermas 1984, 17–18).

Although Habermas's view is largely based on the 20th century philosophy of language, Kant's influence is also present in his theory. When it comes to vindication of moral norms, Habermas follows Kant's idea that the candidates for norms must be tested from the point of view of their universalizability. Whereas in Kant's theory of practical reason, the idea is that each and every one of us can test the generalizability of a norm by leaning on his or her reason only, Habermas insists that this testing of the generalizability of a norm must be based on open, public and rational discussion with others (Habermas 1987, 93). Given this, Habermas has also been argued to be indebted not only to Kant's practical philosophy but also to Kant's aesthetics (Cascardi 1999, 13, 154). For Kant, aesthetic judgement is a judgement within which we publicly judge something to be beautiful and expect that others will concur with our judgement (CJ, Part 1, § 8, and passim; see also Blaug 1999, 96–97). The peculiarity of aesthetic judgements is, however, that they cannot be validated by arguments. They are grounded on subjective feeling rather than concepts, but in such a way that they raise an expectation of universal assent, a *con*sensus (cf. CJ, Part 1, § 22). And yet Kant makes it clear that the universal non-conceptual communicability of feeling in an aesthetic judgement does not mean that this consensus would exist as an empirical fact (CJ, Part 1, § 22).

The reason for the fact that aesthetic judgements cannot be proved by arguments is that in an aesthetic judgement, we judge things as particulars in their

particularity. We are not interested in whether they meet the criteria of a certain universal category of objects or in whether they serve some definable purposes or moral ends (CJ, Part 1, §§ 1–6). In an aesthetic judgement, the human "faculties" operate in a way that differs from other types of judgements. When we approach an object with an interest in acquiring knowledge of it, the faculty of imagination produces a representation of the object, and the faculty of understanding subsumes the representation under a concept. However, in the case of aesthetic judgement, we have only the free play of understanding and imagination, a spontaneous harmony between the two faculties (CJ, Part 1, § 6). There are no pre-given universals or concepts under which the particular could be subsumed; there is only a feeling of harmony and freedom. For Kant, aesthetic judgements are therefore not determinant judgements, but reflective judgements, where the universal is derived from the particular (see, e.g., Blaug 1999, 96–97).

In discussing the way in which aesthetic judgments raise an expectation of universal assent, Kant introduces his complex and convoluted notion of *sensus communis*. It is the "common sense" that we need to presuppose in order to make aesthetic judgments at all (CJ, Part 1, §§ 20–21). Aesthetic judgements are then described as "examples of the judgement of common sense", judgements that have "exemplary validity" (CJ, Part 1, § 22).

Let us now return to Habermas, who has been argued to have turned Kant's *sensus communis aestheticus* into *sensus communis logicus*, as he has found the prospect of consensus from the realm of argumentative speech. He has been often criticised because of this move (Cornell 1999, 131; Cascardi 1999, 13), a move that also the advocates of agonism strongly oppose (see, e.g., Mouffe 2013; Hillier 2003; Purcell 2009). Although not all agonists are straightforwardly against the idea of consensus, they are against Habermas's prioritization of argumentative speech in the formation of consensus. Yet many agonists include in the canon of agonist political philosophers such a consensus-oriented philosopher as Hannah Arendt, to whom Habermas has also made references when developing his theory of the role of public, deliberative processes in collective action-coordination (see especially Habermas 1980; 1996).

Arendt (1992) introduced Kant's idea of *sensus communis aestheticus* to the realm of political thought already in the 1970s in her *Lectures on Kant's Political Philosophy*. Yet it still remains questionable whether Kant himself would have approved of the use of reflective judgements and sensus communis in the realm of political thought. As the proponents of agonist politics and planning often note, Arendt's point of departure was the Greek notion of *agon*, and the idea of public space as "space in which one competes for recognition, precedence, and acclaim" (Benhabib 1992, 78; see also Hillier 2003, 41). However, she also relied on the "associational" or consensual view of public space, a space that appears when "men act together in concert" (Benhabib 1992, 78). Although individuals can take initiatives and begin something new on their own in the public space, they can, according to Arendt (1998), complete their initiatives and have power only when acting together with others. Although Habermas (1983) finds much to criticise in Arendt's conception of the public space or public sphere, his theory of deliberative democracy owes much to Arendt's ideas of discoursing and acting together in the public sphere (see Habermas 1980; 1996).

For Arendt (1992, 42–43), Kantian aesthetic judgements provide a model for political judgements because they involve an impartial and disinterested way of judging and are based on "enlarged thinking", a way of thinking that takes into account the perspectives of other people and tests judgements "in contact with other people's thinking". Hence, Arendt's Kantian-inspired political judgements are simultaneously particular, context-bound judgements, and inclusive of an aspect of generalizability. Here, Arendt adverts to Kantian sensus communis, which she – following Kant – describes not only as a precondition of comparing

our judgements with other people's possible judgements but also as a precondition for communication (ibid., 70–71). In Arendt's theory, sensus communis is translated into a community sense, a sense "that fits us into a community" (ibid.).

Contemporary agonists have credited Arendt with defining the terrain of politically relevant communication far more broadly than Habermas (Mouffe 2007, 4; 2013, 11). For Arendt, political communication does not primarily consist of argumentative speech, but consensus can be sought also by means of the aesthetic or rhetoric modes of communication, of persuasion and impressing others (Arendt 1992). Yet, for Chantal Mouffe (2007, 4) – one of the leading contemporary theorists of agonist politics – Arendt's ideas of agonist persuasion are not yet sufficient to make her a proper agonist. As Mouffe argues, Arendt's enlarged thinking is, even with its respect for the plurality of perspectives, "agonism without antagonism" (Mouffe 2007, 4; 2013, 10). Mouffe's agonist pluralism, by contrast, sets out from the hypothesis that antagonism is ineradicable in the domain of the political (see, e.g., Mouffe 2013, xii, 2).

Mouffe (2013) criticises all forms of liberal political theory for negating the antagonistic dimension of the political. The Habermasian presupposition concerning the possibility of universal rational consensus is her main target of criticism, whereas Arendt is partly relieved from this criticism as she does not rely on purely cognitive methods in the handling of moral problems (Mouffe, 2013, 3; cf. Habermas 1983). As Mouffe (2013, 4) argues, liberal political theorists, in their trust in rationality, are incapable of explaining why passions cannot be rationally controlled and why there is violence in contemporary societies. Instead of categorizing passions as a phenomenon belonging to the "archaic past", as Habermas seems to do, a theory of democratic politics should, by Mouffe's (2013) account, encounter the passions and put them in the service of vibrant democratic culture. It is true that Habermas has often condemned the use of passionate, aesthetic-affective modes of communication in the political realm (see, e.g., Dahlberg 2005, 116, n. 22). However, it has also been noted that Habermas's ideals of rational communication do not straightforwardly exclude aesthetic-affective modes of speech. For instance, Habermas's ideas concerning reflexivity can well be taken to also include "aesthetic reflexivity", a notion with which Scott Lash (1993) has referred to as hermeneutic self-interpretation (Dahlberg 2005, 116–117; cf. Mattila 2016b). These kinds of self-interpretations can contribute positively to moral and political discourses carried out in the public sphere (Johnson 2006, 163). Habermas's theory, furthermore, welcomes passions and desires into public discourses as long as they are expressed and vindicated in an understanding-oriented manner, and not used as a method of manipulative persuasion that bypasses the force of reason (Baynes 1994, 317; see also Dahlberg 2005).

Whether Mouffe's accusations are justified or not, she herself assumes the task of emphasising the role of passions in political communication in her model of agonist politics or "agonist pluralism", as she calls it. In so doing, her intention is to turn "antagonisms" in society to "agonism" (Mouffe 2013, 7). Whereas antagonisms are about "struggles between enemies", agonism is about "struggles between adversaries" (ibid.). "Adversary", in turn, is for Mouffe an opponent, someone "with whom one shares a common allegiance to the democratic principles of 'liberty and equality for all', while disagreeing about their interpretation" (ibid.).

In her model of agonist pluralism, Mouffe (2007, 3; 2013, 92) dedicates a special place for artistic practices in urban space, practices which have the potential to confront and unsettle dominant hegemonies, though without a horizon of a final resolution. According to her, artistic activism cannot directly change existing orders, but it can give "a voice for all those who are silenced within the framework

of the existing hegemony" (Mouffe 2007, 5; see also 2013, 99). This voicing is possible due to the ability of artistic practices to grasp "the role that affect plays in the process of identification" as well as "the role of passionate attachments in the constitution of political identities" (Mouffe 2013, 96). Art and aesthetics thus take us to those dimensions of the political that lie beyond reason and rational arguments.

Agonist theory	Habermasian theory
Focus on ethics/aesthetics (questions concerning the good life)	Main focus on morality (questions concerning justice)
Emphasis on dissensus/disagreement, or "conflictual consensus"	Orientation towards consensus
Emphasis on aesthetic-affective modes of communication	Emphasis on rational and argumentative modes of communication

Table 1. The main characteristics of agonist and Habermasian theories.

Mouffe of course also acknowledges the fact that artistic and aesthetic activities do not always appear as counter-hegemonic activities, but they can also serve neo-liberal planning and economic interests. That this might increasingly be the case is a fear that Mouffe shares with the first-generation critical theorists Horkheimer and Adorno, who already in the first half of the 20th century were concerned with the "culture industry" and the ways in which it destroyed the reflective and critical nature of aesthetic reception (see Mouffe 2013, 85–86).

To defend the critical potential of artistic practices, Mouffe (2007, 4) – just as many other contemporary theorists of art – turns from the aesthetics of beauty to the Kantian aesthetics of the sublime. Her particular interest is in Jean-François Lyotard's (1988) interpretation of the sublime, an interpretation reflected in Lyotard's version of dissensus, "the differend". Sublime, for Kant, refers to a crisis encountered by the faculty of imagination when it fails to represent something of a sheer magnitude or immensity, or something that lacks form or finality (CJ, Part 1, §§ 25–26). Instead of the pleasurable free play of faculties, the sublime involves an element of pain. This results from the incommensurability of the faculties, or disagreement between them, as Lyotard would put it. Nonetheless, in the case of the sublime, there is also a moment of pleasure involved. This moment is due to human reason and its ideas, which bring about the ability to comprehend things that cannot be represented (CJ, Part 1, § 26), or alternatively, to a recognition of our supremacy over nature "even in its immeasurability" (CJ, Part 1, § 28). Whereas the Kantian aesthetics of the beautiful is connected to the notion of sensus communis, Lyotard (1985, 15) finds it important to note that this does not seem to be the case with the sublime.

Proceeding from the Kantian notion of the sublime, Lyotard (1988) discusses different dimensions of the differend. To start with, this notion is central in his portrayal of the agonist nature of communication. The differend refers to incommensurabilities and collisions between different kinds of language games (Lyotard 1988, xi). In Lyotard's Wittgenstein-inspired idea of differentiated and isolated language games, there is no place for universal principles that could govern such disputes where incommensurable language games collide (Lyotard 1988; see also Pløger 2004). Lyotard (1988), therefore, turns to Kantian reflective

judgment to find ways to regulate these kinds of disputes in a manner that does justice to the plurality of language games. However, Lyotard's (1988, xi) concern also is that, in practice, disputes are typically solved in terms of some specific language game only. For him, then, the differend also refers to "the wrong" that is suffered by those who do not share that language game. The sublime has an indispensable role in these kinds of disputes, as it can sensitize us to abysses and silences around our efforts to represent what cannot be represented (Lyotard 1994). The function of the differend, then, is also to refer indirectly to the voice belonging to those sufferings that are silenced in society (ibid.).

Lyotard maintains that art – in this case avant-garde art – can have critical potential in society, as long as it witnesses the collisions between faculties and aims at representing what cannot be represented (see, e.g., Lyotard 1985). Chantal Mouffe (2007) follows this Lyotardian view, relating the critical potential of artistic activities in urban space to the notion of the differend. She does not seem to be interested in the harmony typical of the beautiful, but rather insists that "critical art is art that foments dissensus, that makes visible what the dominant consensus tends to obscure and obliterate" (Mouffe 2007, 4). Mouffe also gives various examples of artistic activism that has successfully brought about ruptures in current neo-liberal urban realities.

But what if people living under neo-liberal urban conditions would need harmony more than ruptures? Do not global capitalism and neo-liberalization already bring enough sublime ruptures into contemporary urban experience (cf. Jameson 2003)? The question remains whether agonist politics could also make room for such aesthetic and artistic activities that would not only take the form of reactive protests, but also put forward constructive alternative urban imaginaries in the manner that Arendt (1998) envisioned. Would the constructive and positive elements lead us back to the beauty and harmony that are suspect of affirming existing hegemonic projects (cf. Mouffe 2007, 3–4)?

Before trying to answer this question, I will briefly introduce still one more agonist interpretation of the aesthetic dimensions of the political, and the political dimensions of the aesthetic. It is the interpretation given by Jacques Rancière, who has been, alongside Mouffe, one of the most important sources of inspiration for agonist planning theory (see, e.g., Dikeç 2005; Swyngedouw 2009; Allmendinger and Haughton 2012; McClymont 2011; Metzger et al. 2014). Rancière's agonism is founded on the differentiation between "politics" and "police", where "police" refers to the "symbolic constitution of the social" and to "a certain way of dividing up the sensible" (Rancière 2010, 36; see also McClymont 2011, 244; Metzger et al. 2014, 11). It differentiates between what can be seen or heard and what cannot – or what can be voiced and by whom and what cannot (Rancière 2010, 36, see also Metzger et al. 2014, 11). Politics, then, always works against the police and its symbolic constitutions (Rancière 2010, 36). Here the concept of dissensus enters into the picture. Rancière's "dissensus" does not refer to conflicts of opinions or interests, but to the demonstration of "the gap in the sensible" (ibid., 38).

For Rancière (2014, 263), the connection between aesthetics and politics is unavoidable, since both are about the distribution of the sensible. Not surprisingly, Rancière finds it necessary to revisit Kant to analyse the nature of this distribution. Rancière (2014), unlike Lyotard, does not start from the Kantian sublime, but from the judgement of beauty, though he interprets beauty itself to contain elements of the sublime. Rancière is highly critical of Lyotard's use of the Kantian sublime and of Lyotard's theory of art that seems to deny the emancipatory potential of art altogether, leaving art with a role to "testify to a disaster" (Rancière 2005, 22; see also 2012, 198). Rancière does not directly shun the concept of beauty, nor does he hold the aesthetics of the beautiful to be suspect of affirming existing hegemonies. To start with, this is because in the

Kantian judgement of beauty, we can find “a distribution of the sensible that escapes the hierarchical relationship between a high faculty and low faculty” (Rancière 2014, 264). Going further back in history to Plato, he discusses how the hierarchy of the faculties has been reflected in social hierarchies, and more precisely how the sensation, represented by the lower classes in society, has been subjected to intelligence, represented by the ruling class (ibid., 264–265). According to him, in a Kantian aesthetic judgement, this distribution is both revealed and neutralized, resulting in “dissensus” (ibid., 265). Neutralization of the opposition between faculties does not mean pacification, but “a more radical way of seeing the conflict” (ibid.).

Thus it can be concluded that Rancière’s agonism does not imply that only disruptive, avant-gardist artistic activities would have progressive and emancipatory potential in urban space. In fact, also Chantal Mouffe (2013, 104) has recently revised her view of artistic strategies related to the sublime. She now sees these kinds of strategies as requiring “a total break with the existing state of affairs”, a requirement that leads in turn to an impasse for critical art in practice (ibid.). However, both Rancière’s and Mouffe’s projects of agonist aesthetics leave us with the question as to what agonism would mean in practice. Especially the implications that Rancière’s metapolitical project might have for everyday politics are difficult to envision, let alone its bearings for planning practice.

As the aesthetic dimension is strongly present in both Mouffe’s and Rancière’s agonist theories, one might expect that urban planning – a discipline that is related in many respects to our aesthetic encounters with the environment – could have a function in putting agonism into practice. It could make us “see things in a different way” and “perceive new possibilities” (Mouffe 2013, 97). Furthermore, it could perhaps even facilitate revealing “the gap in the sensible” and challenging the existing ways of “dividing up the sensible”. Has agonist planning theory, then, been able to concretize these theoretical endeavours of agonist (meta)politics?

Putting agonist planning theory into practice

Agonist planning theory has so far mainly focused on unseating and disposing of communicative, consensus-oriented planning, a form of planning that advocates of agonism regard as the prevailing, hegemonic planning paradigm (Purcell 2009; Gunder 2010). Relatively little effort has been made in developing such constructive agonist models of planning that could replace consensus-oriented planning (Mouat et al. 2013, 164). The objective of agonist planning theory has been to challenge the theoretical foundation of Habermas’s philosophical project (Hillier 2002a; 2002b; 2003; Gunder 2010), and even more importantly, to question the applications of Habermasian thought in planning theory, applications that have been more or less truthful to Habermas’s original ideas (see Purcell 2009).

Habermas’s philosophical project – especially the presupposition of universal consensus – has been challenged, for instance, by Wittgensteinian ideas of incommensurable language games and the necessity of “frictions” in communication (Hillier 2003; Purcell 2009). Practical criticisms have addressed the ways in which consensus-oriented planning is often turned against Habermasian ideals of free and unconstrained argumentation (Purcell 2008; 2009; Gunder 2010). When the objective of reaching a consensus is prioritized – an objective that is not empirically attainable even in Habermas’s view – the ideal of inclusive communication has often been rejected, and only selected interest groups have gotten the possibility to negotiate the rules guiding urban planning and development (see Purcell 2008; 2009; McClymont 2011). In this way, according to the agonists, consensus-oriented planning serves increasingly often

neo-liberal agendas and hegemonic projects in urban space (Purcell 2008; 2009; see also Gunder 2010).

The proponents of agonist planning are typically concerned with the fact that within contemporary planning systems, conflicts are typically seen in terms of harmful antagonism, not in terms of productive agonism (Pløger 2003). Planning systems tend to favour rational and legal forms of conflict resolution instead of providing legitimate arenas of open confrontation between incommensurable visions of the good and the valuable (Pløger 2003; McClymont 2011). The question arises, then, as to where these arenas could be. Surely disagreement and dissensus cannot be objectives throughout the field of planning, since we cannot have planning without some decisions (Hillier 2003) or without any relatively stable arenas for agreeing and disagreeing (March 2012; Mouat et al. 2013).

Some recent case studies have explicitly (McClymont 2011; Mouat et al. 2013) or implicitly (Pløger 2003) suggested that arenas for agonist confrontations could and should be located especially at the level of detailed planning, where abstract norms are concretized and where planning system encounters everyday knowledge and values of people. Communicative planning has often been criticised for its process orientation and negligence of those "substantive" questions that relate to the ways in which we treat urban space – or rather, urban places that are meaningful for urban dwellers (Mouat et al. 2013). One of the objectives of the advocates of agonist planning, then, is to respond to this criticism by devoting more attention to the questions concerning urban spaces or places (ibid.).

Although the proponents of agonist planning have not explicitly taken up the theme of aesthetics, it is interesting – and not coincidental, I would argue – that they focus on conflicts in detailed planning and concrete projects where often at issue is our aesthetic encounters with the environment. It is not untypical that the view of the environment as an object of aesthetic appreciation and interpretation collides with approaches that view the environment as a vehicle for capital accumulation. Katie McClymont (2011, 244) especially praises Mouffe's agonism for recognizing the fact that agonist struggles are meaningful "in their specificity", but despite their specificity they can have broader implications for the development of democratic political culture.

While most of the case studies dealing with agonism end up criticising existing planning systems and practices (see, e.g., Pløger 2004; Mouat et al. 2013), McClymont's (2011) study stands out because it provides an example of a planning system that has some progressive elements, at least judging from the perspective of agonist theory. This is the development control based system, a system that is used especially in the UK. Development control is exercised by "case-by-case consideration of proposals, not in the first instance by a plan and regulations", as Philip Booth (2007, 138) describes it. Development control, being based on a project-oriented approach, leaves much power to private developers, but also to planning officials who have a considerable amount of discretionary power (see, e.g., Booth 1996). Correspondingly, as critics of development control have claimed, it does not empower citizen stakeholders and encourage their engagement in planning (McClymont 2011). Also McClymont (2011, 241–242) admits that while participatory practices have been increasingly utilized in strategic planning and in the processes of drawing up of development plans in the UK, development control – the process of applying for and granting planning permissions – is still largely regarded as a bureaucratic and technical process that needs to be assessed and developed mainly in terms of efficiency. Nonetheless, she argues that although development control does not advance values typical to consensus-oriented participation, it leaves room for agonist

confrontations and case-specific debates over the concretization of planning objectives.

McClymont (2011) argues that while development control gives developers opportunities to introduce relatively concrete and detailed project plans to be evaluated by local governments, planning officials and citizen stakeholders, it also gives the citizen stakeholders a legitimate arena for opposing plans and imagining sufficiently concrete alternatives to the plans. Again she refers to Chantal Mouffe, who emphasises that vibrant political cultures cannot exist without concrete alternatives (ibid., 244). Although Mouffe probably does not mean anything as concrete as the future of a certain site, McClymont maintains that at issue are not only disputes over alternative planning and design solutions, but differences in our views of the good life. As she contends, in traditional communicative and consensus-oriented planning, site-specific opposition to development plans is often condemned as NIMBYism and as a pursuit for self-interest, whereas the "right" kind of participation – from the perspective of communicative planning – would be oriented towards the public interest (ibid., 243) or "generalizable interests", to put it in Habermasian terms.

McClymont (2011) analyses the ways in which site-specific disputes point to broader differences in the views of the "good life" by turning her attention to planning discourses, and more precisely, to the terminological choices that different kinds of actors make. As she indicates, terminologies carry with them connotations related to value systems and ways of life. For her, the collisions between value systems and ways of life in planning disputes do not yet suggest an impasse in communication. Quite the contrary, the collisions – after having been voiced – can change the perceived framing of the planning problem and open up alternative views (cf. Mouat et al. 2013).

From the aesthetic point of view, and also from the point of view of Nordic planning systems, it could be argued that the specificity of development control is that it enables and perhaps also encourages quite daring development proposals, ones that might even represent sublime ruptures in the everyday environments and everyday experiences. Plans (even though they also exist in development control based systems) do not harmonize the styles and forms of the development proposals in the same way as they do in the Nordic planning systems. Even though I would not be willing to argue that the logic of development control produces a better quality built environment when compared to the Nordic systems, I would argue that it invokes passionate responses from the public and therefore might first sensitize us to the ways in which we treat urban space in general, and second, vitalize planning discourses.

Yet it seems to be clear that in development control based systems, like probably in all contemporary planning systems, the traditional rational and legal forms of conflict resolution are the prevailing mode of reconciling disputes. Case studies of agonist confrontations in the context of development control (McClymont 2011; Mouat et. al 2013) make it clear that the views concerning appropriate planning solutions and the good life typically need to be ultimately expressed in rational and juridical languages. Those who apply for planning permits and sketch planning proposals can also utilize expressive means of architectural design in addition to arguments. But could those who oppose the proposals have alternative spaces for artistic, aesthetic and other "residual" modes of expression, spaces that both Mouffe's and Rancière's agonist theories call for?

Lessons to learn for Finnish detailed planning

Nordic political systems can be generally characterized as consensus-oriented rather than adversarial, and the consensual nature of politics is reflected in Nordic planning systems and practices. In Finland, the planning law that guides planning practice was renewed at the end of the 1990s when communicative planning theory had made its breakthrough, both internationally and in Finland. Given the timing of the renewal, it is not surprising that the Land Use and Building Act (132/1999), which came into force in the year 2000, has been argued to be very Habermasian in spirit (Häkli 2002; see also Syrjänen 2005). Nonetheless, as some planning theorists have noted, we ought to bear in mind that Habermas is mainly interested in communicative and deliberative practices in the very broad and abstract context of writing constitutions and law-making in general (Campbell, 2006; Campbell and Marshall, 2006). In contrast with Habermas's broad-scaled thinking, the Finnish legislature directed the pressure on consensus-seeking especially at the level of detailed planning (see, e.g., Syrjänen 2005). Judging from case studies proceeding from the agonist perspective, this is a context where consensus is particularly difficult to achieve and where we can expect agonist conflicts between different world views and ideas concerning the good and the valuable to arise. It is often easier to agree on abstract norms than on their particular concretizations.

Still, the rationale of the legislature was solid: people typically are not interested in participating in planning on a broad scale, but they often get interested in planning when development takes place in their everyday environment. One of the central points of departure for the legislature was that urban development should no longer be primarily based on greenfield development, but on defragmentation and building cities inward (Syrjänen 2005). When development happens in places that are already inhabited, there is a risk of conflicts. The legislature wished to prevent conflicts and thus facilitate defragmentation by introducing early-stage participation in the Finnish planning system (ibid.). Hence, the spirit of the Land Use and Building Act (132/1999) is notably consensus-oriented.

The Finnish planning system – and especially detailed planning – differs considerably from development control. Finnish detailed planning does not officially recognize the project-based approach, but plans are comprehensive and regulate the development to an elaborate degree (see, e.g., Krokfors 2016, 205–206). Detailed plans are zoning plans, plans that stipulate where development can take place, what can be built and how much can be built. Furthermore, especially in big cities, detailed plans often determine the main lines of architectural design (ibid.). Detailed plans are legally binding, and they form the basis for the process of discretionary granting of building permits.

If plans were based on a broad-based consensus in reality, the minute regulations of detailed plans would not be a problem. However, many detailed planning projects are conflictual in practice. Furthermore, even though detailed plans regulate even the architectural designs, it seems that implementation of a plan is not in practice merely a technical process where developers and construction companies realise the plan (cf. Krokfors, 2016, 206). Recent studies have suggested that developers and construction companies are often dissatisfied with plans especially in big cities (Staffans et al. 2015; Krokfors 2016). Sometimes the reason for dissatisfaction is that it is costly to comply with all the regulations concerning architectural quality. At other times, the reason is that designers and architects want to come up with more creative interpretations of the site in question (Krokfors 2016). Whatever the reason for the discontent, it typically results in amendments to the plan. Developers and building companies can also apply for a permit to deviate from the plan; and in the case of minor deviations, municipal building control officials have the discretionary power to

decide on deviations. A recent case study showed that in Helsinki in the year 2008, about 90% of all building permits included some kind of minor deviation from the ratified plan (Krokfors 2016, 206; see also Staffans et al. 2015, 18). This means that in Helsinki, deviations have been predominant in planning.

Deviations have provided one way through which the project-based approach or development control approach has entered into the Finnish planning system. This is disquieting, given that deviations are typical for those cities where plans are most comprehensive and restrictive, and where planning is seen to be strongly in the public control (cf. Staffans et al. 2015, 18). Even though deviations fall into the category of minor zoning relief, typically affecting bulk, shape and design details rather than land use, for citizens the issues related to the aesthetic character of the development and its relation to the site in question are often important.

For the topic at hand, it is interesting that discretionary deviations are not planning instruments that would include arenas for agonist confrontations, alternative visions, and productive disputes. Although deviations can – and they often do – create disputes or conflicts, the disputes "are left to the citizens themselves", to borrow the words of John Pløger (2004, 79), who has studied the lack of arenas for agonist confrontations in the Danish planning system. As Pløger argues, Danish planning – much like Finnish planning – proceeds from the presupposition of consensus-orientation, thus preventing disputes from "unfolding and becoming important for planning politics" (ibid.).

Development control based systems	The Finnish plan-led system
Project-based approach	Comprehensive approach
Discretionary approach (plans and other considerations)	Plan-based steering
Proposals may be daring and provoke debates	Detailed plans harmonize the style and form of proposals
Confrontations are often to be expected	Consensual mode of working is emphasised

Table 2. The main characteristics of development control based planning systems and the Finnish plan-led system.

How could Finnish detailed planning be developed, then, to better meet the agonist planning ideals and make room for productive disputes? Moreover, could the handling of disputes even go beyond the argumentative resolution of disputes and facilitate new urban imaginaries through a residual, aesthetic means of expression? As already mentioned, in Finnish planning, urban design and urban planning are intertwined. Therefore, architectural modes of expression and aesthetically oriented place-interpretation have traditionally had a central function in Finnish detailed planning. Hence, the languages of economy and law do not dominate Finnish planning discourse. However, stakeholders seldom have the possibility to engage in architect planners' interpretations of places and their design work. One could argue that usually there is very little need for citizens to get involved in design issues, given that the Finnish comprehensive planning

system does not offer the possibility for developers to come up with controversial propositions. In this way, the Finnish system differs considerably from development control based systems. But from the agonist perspective, one could also argue that designating to a single profession the process of interpreting the nature and meaning of our relation to places might drain our political and planning cultures in the long run.

I will end my analysis by following the thought of Peter Munthe-Kaas (2015), who argues – drawing on case studies from Denmark – that co-design based interventions in urban space provide one promising example of turning agonist planning ideals into practice. Perhaps it could be worthwhile also for Finnish planning to open up the design dimension of planning for aesthetic and artistic modes of dealing with collisions between different ways of life. Finland has so far been culturally a relatively homogeneous country, and architect-planners' abilities in interpreting and shaping our living environment have not often been questioned by the public. The future will probably be different. Even if the public would not question the abilities of architect-planners to concretize our norms and values, the developers will probably do so (cf. Staffans et al. 2015; Krokfors 2016). If developers manage to introduce the project-based approach to the Finnish planning system, agonist – or even antagonist – confrontations are to be expected. It might be worthwhile to establish legitimate arenas for such confrontations.

Conclusions

This paper began with revisiting one of the common roots of Habermasian consensus-oriented planning theory and agonist dissensus-oriented planning theory: Kant's aesthetics and the notions of aesthetic sensus communis and consensus included in it. Whereas Habermas argues that something like sensus communis could be revealed in argumentative communication, the agonist theory denies this possibility. Nonetheless, agonists do not dismiss the concept of consensus altogether, but often turn their attention to a nuanced interplay between consensus and dissensus. The nature of consensus, dissensus, and their interplay, has been portrayed in various ways in agonist political theories. Hence, agonist theorists are not only "agonizing over consensus" (Hillier 2003), but also over the nature of dissensus.

So far, it has remained highly unclear what are the implications of agonist theory for planning practice. This is at least partly due to the fact that agonist (meta)political theory is geared towards safeguarding the preconditions of the political. While this is an important task from the perspective of planning as well, planning is also about everyday politics and administrative implementation, about "getting things done" (Hillier 2003; see also Mouat et al. 2013). The most concrete and practice-oriented moments in agonist theories such as Mouffe's agonist pluralism are those where at issue is the politically progressive potential of artistic activism. Hence, through the aesthetic dimension, agonist planning theorists might be able to concretize some of the endeavours of the theorists of agonist politics. However, the question remains whether "the aesthetic" has a function for agonist politics only through questioning and challenging existing hegemonies, or could agonist planning follow for instance Hannah Arendt's agonist political thought and devote a constructive role for the aesthetic in facilitating new initiatives and imaginaries in urban space.

Some recent case studies have shown that agonist approaches have practical relevance for citizen stakeholders who seek ways to express their concerns related to new development occurring in places they deem valuable and worthy of attention. I agree for instance with Katie McClymont (2013), who argues that citizen stakeholders' resistance is not always about selfish NIMBYism, but it can express deeper values related to a certain way of life. However, since there are

often many ways of life and many ideas of good environment co-existing in one place, I would like to argue that the Habermasian approach should not be completely rejected in favour of agonist approaches. Even though it seems clear that rational consensus in the Habermasian meaning of the term is not likely to come true in real planning disputes, I would still argue that in public planning, we should work on the premise that our arguments, judgements and even aesthetic expressions could and should be tested against some kind of prospect of generalizability, even though not always the prospect of universal agreement.

Does the Habermasian approach then contradict the agonist approach, as the recent debates in planning theory seem to suggest? Habermas's own aim is not to force argumentative communication in all areas of life, but he has stressed the plurality of discourses in the public sphere (see Habermas 1996; see also Mattila 2016a). Aesthetic judgements and disputes over differing ideas of the good life are important, just as argumentative discourses concerning norms are. Furthermore, as Habermas (1996) maintains, the interplay of different kinds of discourses is fruitful for the vibrancy of the public sphere. Nonetheless, it is true that Habermas stresses the role of norms that could be at last in principle discussed within a horizon of consensus or universal agreement. This is important for him not so much with a view of everyday life or administrative practices like planning, but especially when at issue are the processes of creating more or less permanent structures in society, structures such as legal norms and institutional frameworks that allocate power in society (Habermas 1996). Though decisions concerning these structures are needed, Habermas maintains, just as agonists do, that these decisions need to be understood as fallible and open to challenge (Habermas 1996; see also 1998, 397). In fact, Chantal Mouffe (2013, 8) also recognizes the need for some kind of weak or "conflictual" consensus "on the institutions that are constitutive of liberal democracy". Patchen Markell (1997, 379) has well comprised and summarised the paradox of agonism, and indeed, also the paradox of the Habermasian consensus-oriented approach: "Agonistic political action depends upon the existence of relatively stable and secure spheres in which it can thrive, but those spheres, to remain properly democratic and political, demand the very sort of contestatory political action which threatens their stability."

One pragmatic way of reconciling the dispute between consensus-oriented and agonist planning would be to suggest roughly that the Habermasian approach is still useful, especially for developing and shaping planning systems (March 2012) and for strategic plan making (Mouat et al. 2013), whereas agonist approaches are useful especially in site-specific disputes (McClymont 2011; Mouat et al. 2013). This, however, is not to say that such disputes between differing world views that emerge in the context of site-specific projects could not – or should not – eventually inform those discourses where at issue are strategic planning questions and abstract norms and principles that guide planning at the system level.

My paper ended with a discussion of recent analyses of potential places for agonist confrontations in planning systems, the analyses coming from the context of British development control. Development control based planning provided an example of a planning system where site-specific agonist confrontations have been argued to be encouraged. However, given that the development control based systems do not generally provide for resources for the production of alternative plans and visions, the question remains as to whether private developers and their plans can really be challenged in this framework. Hence, we are back to the old question concerning the uneven resourcing of different parties or interest groups in planning. This question was raised already in the 1960s, when the U.S.-based planning theorist and practitioner Paul Davidoff (1965) introduced his famous model of advocacy planning, the basic idea of which was to foster an adversarial style of planning and facilitate the emergence of various

alternative plans instead of one single plan. It has been argued that the success of this confrontation-oriented planning style was largely based on the fact that there were funding sources – foundations and government funding – for the production of alternative plans and visions (Heskin 1980, 57). Furthermore, the question remains as to whether development control, as planning systems in general, settles the conflicts between proposals and counter-proposals mainly in the language of rational argumentation without providing arenas for alternative modes of expression of differences in values and world views, modes of expression that both Mouffe and Rancière defend. Hence, existing models of development control would need to be modified in many respects so that they could provide a model for agonist planning practice.

Set against development control, Finnish detailed planning appears as consensus-oriented in spirit, which of course does not mean that conflicts do not occur. Even though consensus orientation has its merits, it is likely that this approach is gradually waning, one reason for this being that developers have been recently working on finding ways to introduce a project-based approach to Finnish planning. This will probably set the table for an increase in the number of conflicts. Also, a more adversarial practice in planning is to be expected because Finland is becoming increasingly multicultural. Pluralist approaches typical to agonism are needed if we want to prevent antagonist conflicts. Still, it ought to be noted that the existence of arenas for agonist confrontations requires that we also pursue consensus in developing planning systems and general strategic frameworks for planning.

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Arkkitehtuuri hyvinvointina

”Laatua vailla nimeä” etsimässä

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Abstrakti

Christopher Alexanderin arkkitehtuurifilosofian lähtökohtana on arkkitehtuurin käsitteellistämisen vaikeus. Hän puhui ”laadusta vailla nimeä”, mistä hän sanoi, ettei sitä voi ”valmistaa, vaan se syntyy ihmisten arkisen tekemisen kautta epäsuorasti” (Alexander 1979, xi). Tässä teoreettisessa artikkelissa jaetaan tuo näkemys, kuten myös pyrkimys selittää arkkitehtuurin tapahtumista kielellisyyden kautta. Teoreettista selitystä arkkitehtuurin ei-käsitteellistetylle laadulle ihmisten arkisessa toiminnassa haetaan kuitenkin eri suunnalta kuin Alexander: yhdistelemällä Gregory Batesonin teoriaa toiminnallisesta metakommunikaatiosta Ludwig Wittgensteinin filosofisiin näkemyksiin kielen käytön käytäntöjen (kielipelien) sidonnaisuudesta elämänmuotoihin sekä edelleen Roger Scrutonin Wittgensteinia soveltavaan arkkitehtuuriestetiikkaan. Tältä pohjalta artikkelissa hahmotellaan teoriaa arkkitehtuurin laadusta arkisena viihtymisenä, missä arkkitehtuurin käyttäjille tarjoutuu mahdollisuuksia käyttönsä myötä omaehtoiseen itseilmaisuun keskinäisessä sosiaalisessa koordinoitumisessaan rakennetussa ympäristössä. Vaikka tällainen viihtyminen on pitkälti tiedostamatonta, on sen mahdollistavaa arkkitehtuuria suunniteltaessa kuitenkin kyettävä käsitteellistämään siihen sisältyviä sosiaalis-materiaalisia elementtejä. Arkkitehdilta vaaditaan herkkyyttä ja eläytymiskykyä tunnistaa, ei vain arkkitehtuurin esineympäristön funktionaalisen käytön kielipelejä, vaan myös sen esteettisen käytön kielipelejä, joissa arkkitehtuurin käyttäjät itseään metakommunikoivasti ilmaisten koordinoituvat keskinäisissä suhteissaan. Funktionalismin perinnön myötä arkkitehtuurin esteettisen käytön merkitys on jäänyt laajalti vaille ymmärrystä. Vallitsevassa kulttuurissamme se näyttää korvautuneen arkkitehtuuriestetiikalla, joka suuntautuu ennemminkin arkkitehtikunnan keskinäisiin kielipeleihin.

Avainsanat: estetiikka, kielipeli, käyttötaide, metakommunikaatio, viihtyminen

PEER-REVIEWED ARTICLE

Johdanto

Mitä on hyvä arkkitehtuuri? Lukuisista vanhoista rakennuksista ja kaupunkikokonaisuuksista vallitsee laaja yhteisymmärrys siitä, että niiden arkkitehtuuri on hyvää. Mihin sellainen käsitys perustuu? ”Ajan patina” ei ole riittävä selitys.

Arkkitehtuuria voidaan liioittelematta sanoa välttämättömäksi osaksi ihmisenä olemista. Silloin kun se tyydyttää lajimme ekologisia ehtoja, fyysisesti ja psyykkis-sosiaalisesti, me voimme hyvin. Käyttäjälleen tällainen arkkitehtuuri on pitkälti tiedostamatonta ”laatua vailla nimeä”.

Myös joitakin uusia rakennuksia, vaikkapa Frank Gehryn Guggenheim-museota Bilbaossa, sanotaan hyväksi arkkitehtuuriksi. Viitataan siihen, että rakennuksen kuuluisuuden myötä kaupunki on noussut taloudelliseen kukoistukseen. Mutta mikä on tässä arkkitehtuurissa hyvää? ”Arkkitehtuuriasiantuntijoiden” enemmistön hyväksyvä mielipide ei kerro, mistä arkkitehtuurin laatu koostuu.

Tilanne on kaikesta taiteesta tuttu: maalauksen tai musiikkikappaleen laadukkuus tuntuu kiistattomalta, mutta laatu ikään kuin välttelee käsitteellistämistä; kriitikot selittävät myönteiset kannanottonsa kukin eri tavoin. Eikä siitä ole haittaa: voin itse valita, menenkö taidenäyttelyyn tai konserttiin, ja olla sen jälkeen kaikessa rauhassa omaakin mieltäni kokemani taiteen laadusta.

Arkkitehtuurin kohdalla tilanne ei ole näin mutkaton. Jokainen meistä elää arkkitehtuurin ympäröimänä lähes joka hetki, haluaa tai ei. Jokaisella on käsitys siitä, mitä tarkoittaa huonon ympäristön aiheuttama viihtymättömyys. Jos arkkitehtuuri jossa elämme, on huonoa, me kärsimme siitä. Ja jos se on hyvää, se saa aikaan nautintoa tai ainakin hyvää oloa.

Näin on, koska ekologian peruslauseke on totta: elollinen olio muodostaa ympäristönsä kanssa jakamattoman kokonaisuuden, systeemin (Järvilehto 2000) – olio ei voi olla kokematta ympäristöään. Ihmistä ei voi kuvitella olevan olemassa erillään ympäristöstään, on se sitten hänelle sopiva tai sopimaton; hän kokee ympäristöään joka hetki.

Ympäristömme on tärkeiltä osiltaan arkkitehtuuria; hyvin harvoin me elämme ympäristössä, jossa ei ole arkkitehtuuria. Jokainen kokee arkkitehtuuria lähes tauotta.

Arkkitehtuurin laatu, hyvä tai huono, ei ole pelkkiä subjektiivisia mielipiteitä. Sitä voidaan tutkia ja siitä voidaan sanoa jotakin yleispätevää. Näin on, vaikka me emme juuri koskaan tiedosta kärsivämme huonosta arkkitehtuurista enempää kuin nauttivamme hyvästä arkkitehtuurista.

Arkkitehtuuriteoreetikko Christopher Alexanderin mukaan arkkitehtuuri koetaan tiedostamattomasti, mutta arkkitehtuurin tilanteita on silti mahdollista tunnistaa. Alexander tunnetaan parhaiten toiminnallis-geometrisista malliratkaisuistaan arkkitehtuurin ongelmille (*pattern language*), joille on löytynyt innokkaita soveltajia varsinkin maallikkopiireistä. Sivuutamme tässä keskustelun mallien hyödyllisyydestä ja niiden perustana olevasta chomskylaisesta kielifilosofiasta. Keskitymme sen sijaan Alexanderin arkkitehtuurifilosofiaan, joka viime vuosina on ollut kasvavan kiinnostuksen kohteena (mm. Kalb 2014; Diethelm 2013; Bhatt 2010; Elsheshtawy 2001).[1]

Alexanderin lähtökohtana oli arkkitehtuurin käsitteellistämisen vaikeus. Hän puhui ”laadusta vailla nimeä”, ja lisäsi, ettei sitä voi ”valmistaa, vaan se syntyy ihmisten arkisen tekemisen kautta epäsuorasti” (Alexander 1979, xi) kun vain ”antaa sen tapahtua” (ix). Tämä kuulosti varmaankin mystiseltä kirjan ilmestymisajan positivistisessa ilmapiirissä. Alexander oli aikaansa edellä: hän tajusi, että kokemuksemme siitä, mikä on todellista, on tärkeällä tavalla

[1] Alexanderin arkkitehtuurifilosofia on selkeimmin esitetty hänen varhaisessa teoksessaan *The Timeless Way of Building* (1979). 2000-luvulla ilmestynyt neliosainen järkäle *The Nature of Order* (2005) on ennemminkin maailmanselitys arkkitehtuurin avulla.

ruumiillinen.[2] Neurotiede on viime vuosikymmeninä tarjonnut tästä vastaansanomattomia todisteita (Damasio 2010).[3] Kun tämä otetaan lähtökohdaksi, tulee selväksi, että arkkitehtuuri, joka ympäröi meitä joka hetki, vaikuttaa meihin jokaiseen kaiken aikaa. Pääosin vaikutus on ruumiillinen.

Jos tämä pitää paikkansa, arkkitehtuurin estetiikka ei olisi pohjimmaltaan sitä, mistä arkkitehtuurikriitikot kiistelevät, vaan se on ”arkielämän estetiikkaa” (Wittgenstein 1938/1981, 425-438, 475-490; Shusterman 1992/2000; Scruton 2011, 309-310). Sellainen estetiikka ei edellytä älyllisiä ponnistuksia. Jokainen on, riippumatta tiedoistaan ja henkisistä kyvyistään, ruumiissaan asustavien tunteiden kautta, osallisena arkkitehtuurin kokemisessa (Bhatt 2010). Alexanderin ”laatu vailla nimeä” ei siten olisi mystiikkaa harvoille ja valituille, vaan se voi tulla kenen tahansa osaksi – aivan kuten Alexander sanoi asian olevan.

Arkkitehtuurin laatu olisi näin ollen ratkaisevasti muuta kuin se, mitä arvioidaan arkkitehtuurikilpailujen pöytäkirjoissa. Arkkitehtuuri koskettaa syvältä jokaista, joka on sen kanssa tekemisissä. Kuten Alexander antaa ymmärtää[4], arkkitehdit eivät välttämättä ole parhaat arkkitehtuurin laadun tuntijat. Heidän taipumuksenaan on hakea laatua vain ammattikuntansa käsityksistä ja käytännöistä, jolloin arkkitehtuurin vaikutus käyttäjiin jää pimentoon.

Nostamme tässä artikkelissa keskeiseksi käsitteeksi *”viihtymisen”*. Termi viittaa tavallisesti harmittomaan mukavan olon tunteeseen. Sillä on kuitenkin toinenkin merkitys, joka on peräisin ekologiasta. Sanomme, että sormustinkukka viihtyy varjossa tai että tietty bakteeri viihtyy lämmössä tai että krottikala viihtyy syvissä vesissä.

Väheksymättä viihtymisen arvoa sanan tavanomaisessa merkityksessä annamme viihtymiselle artikkelissamme myös tämän *ekologisen* merkityksen. Me vietämme lähes kaiken aikamme arkkitehtuurissa, se on ihmislajin ympäristö. Täyttääkö arkkitehtuuri lajimme ekologiset ehdot? Mahdollistaako se psyykkisen ja fyysisen hyvinvoinnin – viihtymisen?

Mielestämme tämä on keskeinen arkkitehtuurille asetettava vaatimus. ”Laatu vailla nimeä”, jota artikkelissamme etsitään, on viihtymistä edellä sanotulla tavalla määriteltynä. Tämä arkkitehtuurin laatu on erilaista laatua kuin mihin on totuttu rakennustaiteellista laatua arvioitaessa. Kuten tulemme argumentoimaan, se on silti esteettistä laatua.

Työhypoteesimme on tämä: kun ihmisryhmän jäsenet löytävät jakamastaan arkkitehtuurista riittävästi laatua, he *tiedostamattomasti* mutta säännönmukaisesti viestittävät toisilleen viihtymisestään. Näin tapahtuu, koska on kyse arkkitehtuurista heidän elinehtonaan. He ikään kuin jatkuvasti varmistavat, että tämä arkkitehtuuri on sellaista, jossa heidän on yhteisesti hyvä elää. Viihtyminen on heidän yhteinen asiansa, jota he eivät osaa käsitteellistää, mutta josta he silti kantavat huolta.

Otaksumme, että tutkimalla tällaista arkkitehtuurin käyttäjien keskinäistä kommunikointia voidaan lähestyä ”laatua vailla nimeä”.

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[2] “[…] findings of cognitive science are profoundly disquieting in two respects. First, they tell us that human reason is a form of animal reason, a reason inextricably tied to our bodies and the peculiarities of our brains. Second, these results tell us that our bodies, brains, and interactions with our environment provide the mostly unconscious basis for our everyday metaphysics, that is, our sense of what is real.” (Lakoff & Johnson 1999, 17).

[3] ”Mind is a most natural result of evolution, and it is largely nonconscious, internal, and unrevealed. It comes to be known thanks to the narrow window of consciousness.” (Damasio 2010, 188). Damasion mukaan jo Freud oli vanhoilla päivillään tätä mieltä.

[4] Esim.: ”Since [architects] no longer have a widely shared language which roots them in the ordinary feelings people have, they are […] prisoners of the absurd and special languages which they have made in private” (Alexander 1979, 233).

Arkkitehtuurin käyttö metakommunikaationa

Kuten sanottu, lähdemme siitä, että ihmisorganismi muodostaa ympäristönsä kanssa systeemisen kokonaisuuden – subjektia ilman ympäristöä ei ole olemassa. Arkkitehtuuri *ihmisorganismin ympäristönä* muodostaa jokaiselle ihmiselle toiminnallisen kontekstin lähes joka hetki.

Usein arkkitehtuuriympäristön jakaa ihmisjoukko, jonka kokoonpano on satunnainen: ihmisillä on erilaiset taustat, erilaiset mielipiteet (myös arkkitehtuurista), erilaiset odotukset. Tästä huolimatta nämä ihmiset tulevat toimeen keskenään. Kerrostalon porrashuoneessa tervehditään, aivan vieraitakin henkilöitä. Auto pidetään parkkipaikalla eikä ulko-oven edessä. Jätteet lajitellaan ja viedään jätekatokseen; siivottominkaan asukas ei levitä niitä pitkin pihaa. Ja niin edelleen. Arkkitehtuuri ikään kuin tarjoutuu käytettäväksi tietyillä tavoilla, ja asukkaat vahvistavat näitä tapoja omassa toiminnassaan ja toistensa toimintaa seuraamalla.

Miten sopu on selitettävissä? Täytyy olettaa jonkinlaista kommunikointia tilanteeseen joutuneitten ihmisten kesken – sopimista siitä, miten arkkitehtuurin määrittelemissä tilanteissa toimitaan. Mutta on selvää, ettei kukaan tiedosta sellaista tapahtuneen. ”Sopiminen” tapahtuu siis sitä käsitteellistämättä. Ihmiset kasvavat ja mukautuvat rakennetun ympäristönsä rajoituksiin ja mahdollisuuksiin ja toistensa toimintaan siinä. Tämä tapahtuu käsitteellistämättömien tapojen muodostumisen kautta.

Tilanne muistuttaa muurahaisten tilannetta keossaan. Jotta elämä yhteisessä ympäristössä sujuisi, on elettävä sovussa. Tämä edellyttää kommunikointia. Muurahaiset osaavat sen. Konflikteja syntyy, mutta ne eivät saa muodostua niin vakaviksi, että yhteiselo vaarantuu. Kerrostalossakin eletään sovussa. Saatetaan harmistua (”tuo polttaa tupakkaa parvekkeella”, ”noitten kakara meluaa portaissa”), mutta vältetään avointa konfliktia.

Gregory Bateson (1972, 179-180) kertoo simpanssinpennuista, miten ne näykkäisemällä kommunikoivat, että leikitään, ei tapella (”tämä puraisu ei ole puraisu”). Toiminta kertoo, millainen on sen sosiaalinen konteksti. Bateson sanoo (177-178), että tällainen *metakommunikointi* on tyypillistä ihmisillekin.

Metakommunikoinnilla tarkoitetaan kommunikaatiota, jolla kommentoidaan jotakin kommunikaatiota siten osoittaen sen konteksti. Yleensä metakommunikaatio liitetään ihmisten väliseen sanallisesti käsitteellistettyyn viestintään. Esimerkiksi esimiehen ja alaisen välinen keskustelu, jossa esimies sanoessaan: ”Puhun sinulle nyt ystävänä”, metakommunikoi, että alaisen ei pidä tulkita, mitä hän on sanomassa, esimies−alais-suhteen kontekstissa vaan keskinäisen ystävyyssuhteen kontekstissa. Leikin teoriassaan Bateson kuitenkin sovelsi metakommunikaation käsitettä ei-käsitteellistettyyn kommunikaatioon kuten simpanssipentujen leikki. Tämän mukaisesti metakommunikointi ei välttämättä vaadi sanoja. Mielenkiintoisesti Ludwig Wittgenstein (1938/1981 [I § 10], 427) nostaa estetiikkaluennoissaan sanattoman, eleillä ja ilmeillä tapahtuvan kommunikoinnin tärkeään asemaan ihmisten ilmaistessa esteettisiä tuntojaan.

Ehdotamme, että ihmisten käyttäytyminen arkkitehtuurin määrittämissä tilanteissa on metakommunikointia simpanssinpentujen leikin tapaan. Tämä tarkoittaisi, että toimiessamme arkkitehtuurissa me ihmiset opimme metakommunikoimaan keskinäisten suhteidemme keksteja – jopa niin, että arkkitehtuurin keskeisiä tehtäviä ihmisten maailmassa olisi sellaisen metakommunikoinnin mahdollistaminen. Rakennetun ympäristön elementit ”tarjoutuvat” välineiksi metakommunikatiiviselle toiminnalle, kuten ”vaikka tervehdin sinua naapuri kättäni heilauttamalla, pitäydyn nyt oman pihani

yksityisyyteen ja haluan olla rauhassa", tai "työhuoneeni ovi on auki, minua saa häiritä".

Tällainen metakommunikointi tapahtuisi siis arkkitehtuurin esineisiin – kerrostaloesimerkissä porrashuoneeseen, pihaan, oveen, autopaikkaan, jätekatokseen – liittyvän toiminnan yhteydessä. Arkkitehtuuri tarjoaa mahdollisuuksia ja rajoitteita. Vaikka kommunikointi tapahtuu ilman käsitteitä, osapuolilla – asukkailla, naapureilla, lasten kavereilla, huoltoyhtiöllä – on tietoa siitä, miten toimia yhteisen arkkitehtuurinsa tarjoamissa tilanteissa (Cussins 2002, § 2, 3).[5] Tämä tieto on tilannekohtaista, se astuu kuvaan mukaan vasta kun osapuolet joutuvat sellaisiin tilanteisiin.[6] He toimivat silloin taitavasti. Taitavuuden kokeminen on osa viihtymistä.

Näin toimiessaan nämä ihmiset tiedostamattomasti tekevät *esteettisen* arvion yhteisestä arkkitehtuuristaan. Ihmiset kommunikoivat toisilleen, että asiat ovat tässä kohdin 'oikein' (Wittgenstein 1938/1981 [I. 8, 13, 15], 427-428; Scruton 2011, 310).[7] On 'oikein' että omassa pihassa saa olla rauhassa; on 'oikein' että työhuoneen oven ollessa auki saa tulla häiritsemään. Viihtyminen on tyytyväisyyttä omiin oloihinsa (Scruton 2011, 312).[8]

Roger Scrutonin mukaan meillä kaikilla on tarve ilmaista itseämme muille: "Se mitä olen sinun silmissäsi, on osa sitä mitä olen sinulle, ja se mitä olen sinulle, on osa sitä mitä olen itselleni" (Scruton 2011, 312; ks. myös Mead 1932/1962). Kun arkkitehtuurin käyttäjät toiminnallaan metakommunikoivat, että "tämä on minulle sopiva ympäristö", he tekevät esteettisen valinnan odottaen sille vastakaikua ympärillään olevilta ihmisiltä. Sellaiset arkipäiväiset valinnat edellyttävät aina sosiaalista orientoitumista (vrt. Mead 1932/1962) – tähdätään yhteiselon mutkattomaan sujuvuuteen. Se on meille ihmisille elintärkeää, aivan kuten muurahaisillekin.[9]

On olemassa perinne tai vakiintunut tapa toimia arkkitehtuurin suhteen, ja ihmiset viestittävät toiminnallaan, kerta toisensa jälkeen, että tähän meidän arkkitehtuuriimme perinne tai tapa soveltuu. Jos syntyy uudenlainen tilanne (esimerkiksi asennetaan kerrostaloon hissi) muodostuu pikkuhiljaa yritysten ja erehdysten kautta uusi yhteinen tapa (kuljetaanko hississä yhdessä vai erikseen, kuinka kauan hissin voi pitää varattuna itselleen, miten lapset saavat käyttää hissiä, jne.) Tällaisesta tilannekohtaisesta tiedosta ei ole luontevaa kysyä, onko

[5] Adrian Cussins kirjoittaa "käsitteettömästä sisällöstä" (*nonconceptual content*), joka ei ole tietoa ajatteluna vaan taitavuutena, jolloin toimitaan tietävästi ajattelematta. Tyyppiesimerkkinä vaikkapa sormien taitava liikuttelu pianoa soitettaessa, jolloin ajattelu vapautuu tulkintaan keskittymiseen (Cussins 2002, § 2, 3).

[6] "Kieli kuuluu luonteenomaisena osana hyvin moniin toimintoihin – puhumiseen, kirjoittamiseen, linja-autolla matkustamiseen, ihmisten tapaamiseen jne. Emme keskity sanoihin hyvä tai kaunis, jotka eivät ole lainkaan luonteenomaisia – tavallisesti ne ovat vain lauseen subjekti ja predikaatti ('Tämä on kaunis') – vaan niihin tilanteisiin, joissa nämä sanat lausutaan, siihen suunnattoman monimutkaiseen tilanteeseen, joissa esteettisellä ilmaisulla on paikkansa, – jossa itse ilmaisulla on miltei huomiota vaille jäävä paikkansa." (Wittgenstein 1938/1981 [I § 5, myös § 6], 426.)

[7] "Through aesthetic judgement we fit our surroundings to ourselves and ourselves to our surroundings; we also avail ourselves of a consensus-building device that enables us to co-ordinate our activities and to build a public and publicly occupied space" (Scruton 2011, 311). Kuten Scruton toteaa, Wittgenstein ottaa esimerkkinsä tilanteesta, jossa asiat ovat "oikein" eli säännönmukaisesti arkielämästä, kuten räätälin työstä tai kodin sisustamisesta. Sanonta "ottaa lusikka kauniiseen käteen" tarkoitti alun perin hyvän, "oikean" käytöksen ymmärtämistä – joka tekee niin toimii "kauniisti". Scruton edusti jo kirjassaan *The Aesthetics of Architecture* (1979) kantaa, että arkkitehtuurin estetiikka on arkipäivää, kaikkien asia.

[8] "Ehkä tärkein seikka estetiikan yhteydessä on se, mitä voidaan sanoa esteettiseksi reaktioksi, esimerkiksi tyytymättömyys, inho, epämukavuus" (Wittgenstein 1938/1981 [II § 10], 434).

[9] "The aesthetics of everyday life is in [its] proximate to manners – an attempt at co-ordination, a tacit recognition that we must live in harmony and be careful not to offend" (Scruton 2011, 312). "In aesthetic judgement we are [...] suitors for *acceptance*, and this means that there is a reference outwards in what we do, which gives purchase to the judgement of others" (315). – Scruton viittaa Fichten ja Hegelin termiin *Entäusserung*, jota voitaneen suomentaa 'itsensä ilmaisemiseksi' (312).

se totta vai ei; käsitteettömänä tämä tieto on vailla ajattelun yleispätevyyttä. Silti on kyse siitä, että asukkaille on syntynyt varma tieto, miten toimia.[10]

Arkkitehtuurin määrittelemissä tilanteissa kehittyy ja kertyy kaiken aikaa ympäristökäyttäytymisen tapoja, jotka ehdollistavat ihmisten ja heidän arkkitehtuurinsa muodostaman kokonaisuuden toimintaa. Lapset oppivat nämä tavat, lähinnä imitoimalla, pienestä saakka. Tavat jäävät suurimmaksi osaksi käsitteellistämättä. On toki järjestyssääntöjä, mutta ne astuvat kuvaan mukaan vasta, kun joku rikkoo asuinyhteisön kirjoittamattomia sääntöjä. Koska tavat syntyvät luontaisesti, ei ole mitään keinoa selvittää, missä määrin osapuolten kesken jaetut ympäristökäyttäytymisen tavat ovat merkityksiltään osapuolille samat. Olennaista on, että näissä merkityksissä on sen verran yhteistä, että yhteistoiminta arkkitehtuurissa luonnistuu. Tämän yhteistoiminnan luontevuuden myötä osapuolille syntyy kokemus jaetuista merkityksistä. Se vahvistaa yhteisyyden tunnetta, mikä on olennainen viihtymisen ehto.

Arkkitehtuurin kielipelit

Sanoimme, että kommunikointi arkkitehtuurin konteksteissa tapahtuu toimimalla, ei-sanallisesti. Saatetaan toki puhua, mutta tärkeää ei ole, mitä sanotaan, vaan *miten* sanotaan (Wittgenstein 1938/1981 [I § 5], 426). Toiminta, joka vahvistaa arkkitehtuuriin liittyvää yhteisyyden tunnetta, ei ole tahdonilmaisu, se ei perustu aikomukseen. Yhteisyyteen perustuva turvallisuuden käsitteellistämätön kaipuu saa aikaan toiminnallisen kommunikoinnin. Ihmisenä olemisen eksistentiaalisissa ehdoissa arkkitehtuurilla on keskeinen paikka.

Ludwig Wittgensteinin myöhäisfilosofian käsitteellä *kielipeli* (Wittgenstein 1953/1981) on mielestämme paljon yhteistä arkkitehtonisen metakommunikoinnin kanssa. On monta käsitystä siitä, mitä Wittgenstein itse tarkkaan ottaen tarkoitti termillään. Kiinnostavaa tämän artikkelin kannalta on, että Wittgensteinille oli tärkeää löytää käsite, joka kuvaa ”kielen ja niiden toimintojen kokonaisuutta, johon kieli nivoutuu mukaan” (Wittgenstein 1953/1981, § 7), jolloin hän samalla tähdensi, että ”kielen puhuminen on osa toimintaa tai elämänmuotoa” (§ 23) – elämää eikä retoriikkaa. Jos ”kielen puhumisen” tilalla olisi ”kommunikointi”, lauseet soveltuisivat hyvin niihin arkkitehtuurin tilanteisiin, jotka tässä artikkelissa ovat kiinnostuksemme kohteena. Wittgenstein (1938/1981 [I.35], 432) sanookin, että ”[p]äästäksenne selville esteettisistä sanoista, teidän on kuvattava elämäntapoja”.

Kun ehdotamme, että ihmisten metakommunikointia yhteistoiminnallisista tilanteistaan rakennetussa ympäristössä tarkasteltaisiin kielipeleinä, emme aja Alexanderin tavoin takaa arkkitehtuurin ymmärtämistä kieleksi, sikäli kuin kielellä tarkoitetaan itsenäistä symbolijärjestelmää tai grammatiikkaa. Kielipelin ajatus tuntuu sopivalta seuraavista syistä. Arkkitehtuurin laadun kokijat muodostavat yhteisön, jonka elämänmuodon määräytymisessä heitä ympäröivällä arkkitehtuurilla on tärkeä sija. Yhteisön jäsenet kommunikoivat toiminnassaan toisilleen, että arkkitehtuuri on laadukasta, koska sen tarjoamassa elämänmenossa heidän arkiset askareensa hoituvat vaivattomasti ja miellyttävästi – eli he viihtyvät. Vaikka kommunikointi ei ole sanallista, tuntuu kielipeli sopivan kuvaamaan, miten nämä muutoin usein erilaiset ihmiset ilmaisevat olevansa sovussa yhteisen arkiympäristönsä suhteen.[11] Osapuolet

[10] ”[...] accessible not through thought, but through the subject’s skilled and knowing competence in getting about. [...] the environment is given to the subject as a *realm of mediation*. [...] thought-free – but intensely cognitive – passage through the environment may manifest the subject’s personal-level knowledge of *what it is to be a competent agent in an environment like this.”* (Cussins 2002, § 4.) Osataan toisin sanoen toimia oikein.

[11] Kun Wittgenstein *Filosofisten tutkimusten* alussa esittelee ajatuksensa kielipelistä rakentajan ja hänen apulaisensa sangen alkeellisena kommunikointina, siinä käytettyjen sanojen verbaalimuotoisuus ei selvästikään ole hänelle tärkeä, vaan itse sosiaalisen kontekstin edellyttämä kommunikointi (Wittgenstein 1953/1981, § 2–7).

pelaavat kielipelejään keskenään, kukin sisällyttäen niihin erilaisia merkityksiä, sen kummemmin sitä tiedostamatta. Arkkitehtuuriin liitetyt merkitykset eivät ole kaikille samat mutta ne ovat väistämättä sosiaalisesti kommunikoitavia niin, että ne voidaan sisällyttää eriytyneisiin kielipeleihin.[12] Tämä on viihtymisen tärkeä edellytys sekä sanan tavanomaisessa että tässä artikkelissa esillä olevassa ekologisessa merkityksessä. Jos arkkitehtuurin käyttäjille sanottaisiin, että he pelaavat jotakin peliä, he toki vain ihmettelisivät – heidän kommunikointinsa ei ole tietoista.

Kielipelit opitaan osallistumalla kielen käytön käytäntöihin. Nämä käytännöt tapahtuvat paljolti rakennetussa ympäristössä sitä esineellistämällä. Kielipelien omaksuminen tarkoittaa ihmisen kypsymistä käsitteelliseen ajatteluun sekä sosiaaliseen ja yhteiskunnalliseen toimintaan kykeneväksi olennoksi. Käsitteellinen ajattelukin on kielipelin pelaamista – tällainen toiminto ei edellytä sosiaalisiin tilanteisiin osallistumista, mutta kykynä se ei olisi voinut muodostua ilman sosiaalisiin kielen käytön käytäntöihin osallistumista. Vastaavasti arkkitehtuurin käyttökään ei aina edellytä sosiaalisia tilanteita – tarvitsemme erilaisia tiloja myös yksinololle – mutta ilman osallistumista arkkitehtuurin käytön sosiaalisiin käytäntöihin emme voi oppia arkkitehtuurin käyttöä – emme sitäkään, miten arkkitehtuuria käytetään yksinoloa vaativiin eri tarkoituksiin.

Lähestymme siis arkkitehtuurin kielellisyyttä wittgensteinilaisittain niin, että kiinnitämme huomiota sellaisiin ihmisten elämänmuodoissa muodostuneisiin kommunikatiivisiin käytäntöihin, joihin liittyy arkkitehtuurin käyttöä. Wittgensteinin tavoin tähdennämme, että tällainen kommunikointi on laadultaan esteettistä.

Arkkitehtuurin käyttö

Tarkastelkaamme tarkemmin, mitä on ympäristö, jota edellä sanoimme jonkin ihmisjoukon ”yhteiseksi arkkitehtuuriksi”. Se on selvästi jotakin muuta kuin arkkitehtuurijulkaisuissa esiintyvät kuvat, jotka parhaimmillaankin kertovat sangen vähän siitä, miten ihmiset kokevat todellista rakennettua ympäristöä. Arkkitehtuuri liittyy kiinteästi siihen, mitä nuo ihmiset *tekevät*, kun he ovat tekemisissä arkkitehtuurinsa kanssa – aivan kuten Alexander edellytti malliensa kohdalla.

Toiminnallisuudestaan huolimatta arkkitehtuuri on toki myös materiaalista tai kuten Alexander sanoo geometrista: rakennusosia, huonetiloja, rakennuksia, pihoja, katuja, jne. Arkkitehtuuri ei ole pelkkä neutraali pelikenttä, jolla ihmiset pelaavat kielipelejään. Kaukana siitä: se on esineitä, jotka pelaajat ovat ottaneet ympäristönsä *käytön* välineiksi. Aivan kuten wittgensteinilaisissa kielipeleissä sanojen käyttö ilmaisee niiden merkityksen (Wittgenstein 1953/1981, § 43), arkkitehtuuriin liittyvissä kielipeleissä arkkitehtuuriesineitten käyttö ilmaisee, mikä on niiden merkitys kielipelien osanottajille. Esimerkiksi kerrostalon porrashuone on asukkaiden kohtaamisen näyttämö, jota käyttäessään he metakommunikoivat keskinäisiä suhteitaan. Arkkitehtuuriesineet eivät ole pelkkinä materiaalisina objekteina olemassa erillään käytöstään.

Käyttö ei useinkaan edellytä käsitteellistämistä. Porraskäytävä voi olla aivan hyvä väline liikuttaessa asunnon ja ulkomaailman välillä, vaikka se ei sitä käytettäessä tule käsitteenä mieleen; porraskäytävässä osataan käyttäytyä tilanteen vaatimalla tavalla tiedostamatta millainen väline on käytössä. (Toki porrashuone muodostuu käyttäjille myös käsitteeksi.) Käytön elementteinä arkkitehtuuriesineet ovat silti aina *artefakteja*, ne ovat ihmisen tekemiä fyysisiä

[12] Arkkitehtuuriesineet näin ymmärrettyinä tuovat mieleen Cussinsin (2002, § 4) tunnistamia käsitteellistämisen ulkopuolelle jääviä ”toimintajälkiä” (*activity trails*). Nämä voivat olla mitä tahansa ympäristöstä löytyvää, joka ”normittaa” tai ”suuntaa” ihmisen tai eläimen toimintaa jokapäiväisissä tilanteissa yksilön omista intentioista riippumatta. Käsitteettömyydessään ne eivät kuitenkaan kuulu mihinkään symbolijärjestelmään.

tuotoksia konkreettisin ominaisuuksin, eivät henkimaailmaa. Niiden käyttäjillä on niihin fyysinen, ruumiillinen yhteys. Käyttäessään yhteisiä artefakteja käyttäjät toteuttavat luomiaan ”sosio-materiaalisia” käytäntöjä koordinoiden jokapäiväisiä toimiaan. Arkkitehtuuriesineet, jotka ovat juurtuneet konkreettisiin käyttöyhteyksiinsä, tarjoavat riittävässä määrin yhteisten merkitysten tartuntapintoja, jotta ihmisjoukko voi kielipelejään pelaten elää sovussa niiden parissa, tilannettaan sen kummemmin tiedostamatta. Käsitteellistämättöminäkin arkkitehtuuriesineet ovat elävää kokemusta tuolle ihmisjoukolle, yhdessä ja yksilöinä.

Arkkitehtuuria käyttävät ihmiset antavat arkkitehtuuriesineille toiminnan myötä uusia erilaisia merkityksiä.[13] Artefaktuaalisuutensa ansiosta ne kuitenkin eri merkityksissäänkin säilyvät luotettavina. Sana ”vankka” (*robust*) kuvaa hyvän arkkitehtuuriesineen luonnetta. Se saattaa koostua monista, jopa ontologisesti erilaisista ominaisuuksista ja voi siten muodostua kiinnityspinnaksi monille erilaisille käyttäjiensä keskinäisten suhteiden metakommunikoinneille. Kaunokirjallisuus on sellaisia kuvauksia täynnä.[14]

Käyttö antaa arkkitehtuuriesineille merkityksen. Mutta arkkitehtuurilla on käyttäjilleen *esteettistä* merkitystä vasta, kun näille tarjoutuu mahdollisuus ilmaista siinä itseään ja siten metakommunikoida keskinäisiä suhteitaan. Tällaista metakommunikoivaa arkkitehtuuriesineiden käyttöä kutsumme *esteettiseksi käytöksi.*

Kokemus kyvystä itseilmaisuun arkkitehtuurin käytön kielipelissä on siis käsityksemme mukaan esteettinen. Näin alkaa hahmottua, mitä voisi olla Alexanderin peräänkuuluttama arkkitehtuurin ”laatu vailla nimeä”.

Rakennetun ympäristön suunnittelu

Arkkitehtuuriesineinä toimivat artefaktit ovat suunnittelun tulosta. Suunnittelu tapahtuu melkein aina erillään arkkitehtuurin tulevista käyttäjistä. Suunnittelija (oletetaan, että hän on arkkitehti) tiedostaa joitakin niistä konteksteista, joihin hänen suunnitelmaan valitsemansa artefaktit asettuvat. Toiminta noissa konteksteissa saa sittemmin puitteet artefaktien valinnan mukaan – siinä on arkkitehdin eettinen vastuu.

Arkkitehti tiedostaa aina rakennustuotannon kontekstin teknisine ja taloudellisine rajoituksineen, maaston kontekstin omine rajoituksineen sekä viranomaisten ja säädösten vaatimusten muodostaman kontekstin. Useimmiten hän tiedostaa ympäröivien rakennusten, katujen ja luonnon määrittelemän kontekstin. Melko usein hän tiedostaa kontekstikseen ammattikunnassaan vallalla olevat vaatimukset arkkitehtuurin tyylin suhteen. Tiedostettu konteksti merkitsee, että joitakin siihen liittyviä asioita on käsitteellistettävä.

Arkkitehdin on siis, toisin kuin hänen arkkitehtuurinsa käyttäjien, pakko löytää käsitteet koko joukolle arkkitehtuuriesineisiin liittyviä seikkoja. Mutta arkkitehdinkaan ei ole pakko erityisemmin käsitteellistää käyttäjien toimintaa hänen luomassaan arkkitehtuurissa. Viihtymisen turvaamiseksi suunnittelun pitää mahdollistaa perinteiden ja vakiintuneiden tapojen jatkuminen riittävässä määrin. Näin voi tapahtua suunnittelijan sitä tiedostamatta, jos nämä perinteet ja tavat ohjaavat hänen suunnitteluaan ikään kuin itsestään selvästi ja viihtymisen

[13] ”[...] mundane norms are situated in the environment, they are changed by the environment and by the flow of activity through it, and they change the environment and its flow of activity” (Cussins 2002, § 4).

[14] ”Hänen ystävättärellään oli uskomattoman heleät silmät, valoisat kuin muuten varjoisassa huoneistossa näkymä avoimesta ovesta huoneeseen, jota valaisevat aurinko ja aurinkoisen meren vihertävä kajo” (Marcel Proust 1982, 294).

edellyttämiä arkkitehtuuriesineitä syntyy siten riittävästi. Tämä on keskeinen osa arkkitehdin ammattitaitoa.

Silloin kun tätä tietä ”laatuun vailla nimeä” ei ole, arkkitehdeilla on kaksi mahdollisuutta. He voivat tyytyä heikompaan laatuun (esimerkiksi suunnittelemaan asuntoja, joihin tulee valoa vain yhdestä suunnasta), mikä on melko tavallinen tilanne. Tai he joutuvat käsitteellistämään viihtymistä. Parikymmentä vuotta sitten omaksuttiin viihtymiselle tärkeäksi huoneistokohtaisen saunan käsite. Voisiko esimerkiksi Alexanderin vaatima ”valoa kahdesta suunnasta jokaiseen huoneeseen” myös muodostua tärkeäksi viihtymisen käsitteeksi?

Koska käsitteellistämisen taso on käyttäjillä sangen matala, he joutuvat mukautumaan, ja mukautuvatkin, arkkitehtuurin vaihteluihin – silloinkin, kun perinne katkeaa ja vakiintuneista tavoista on luovuttava. Keittiö on asunnon, ja siten perheen, tärkeimpiä arkkitehtuuriesineitä. 1950-luvulle saakka se oli pääsääntöisesti oma huoneensa. 1960-luvulla se saattoi olla pieni komero. Yhteen aikaan sopeuduttiin siihen, että eteisen ja keittiön välinen yhteys oli kylpyhuoneen kautta. Nykyisessä asuntotuotannossa keittiö on melkein aina osa olohuonetta, kuten se oli perinteisissä tuvissa. Arkkitehtuuriesineet saattavat näin ollen muuttua paljonkin menettämättä paikkaansa ihmisten kielipeleissä. Vaarana on, että rakennettu ympäristö käyttöympäristönä suunnitellaan liian yksioikoiseksi, jolloin se tarjoaa kovin kapeat puitteet esteettiselle metakommunikoinnille. Tällöin ihmisten keskinäisten suhteiden säätely köyhtyy. Nuorison tapa spreijata seiniä lienee tätä koskeva metakommunikatiivinen kommentti.

Vaikka arkkitehdit kilpailevat keskenään paremmuudesta ja keksivät mielellään erikoisuuksia oman erinomaisuutensa korostamiseksi, arkkitehtuurityyli on kunakin aikana hämmästyttävän yhtenäinen. Eri aikoina käytettävissä oleva tekniikka ei selitä asiaa kuin osittain. Ilmeisesti arkkitehdit tiedostamattaan käyttävät luovaa energiaansa metakommunikoidakseen keskenään, käyttäen kulloinkin muodissa olevia arkkitehtuuriesineitä. He siis viestittävät toisilleen: ”Tämä on hyvää arkkitehtuuria.” 1960-luvulla se tarkoitti mustavalkoisia, vaakaraidallisia, säännöllisiä laatikoita, 50 vuotta myöhemmin tornimaisia ja eri tavoin viistettyjä muotoja epäsäännöllisin ikkuna-aukoin.

Arkkitehdeille arkkitehtuuri on usein pelkkiä artefakteja, he tiedostavat saavansa aikaan materiaalisia objekteja, joiden käyttökelpoisuus nähdään ikään kuin artefaktien ominaisuutena. Käyttöön liittyvä ihmisten keskinäinen koordinoituminen jää helposti käsitteellistämisen ulkopuolelle. Suunnitteluratkaisuista saattaa tulla kömpelöitä, jos arkkitehti ei luontaisesti osaa toimia käyttäjien perinteiden ja tapojen ohjaamana. Kuitenkin todetessaan, että suunnitelma ”toimii”, arkkitehti tulee itse asiassa ilmaisseeksi, että arkkitehtuuri ja sitä käyttävien ihmisten toiminta muodostavat yhdessä kokonaisuuden, joka toimii. Ymmärrys siitä, että ihmiset ja arkkitehtuuri heidän ympäristönään muodostavat systeemisen (ekologisen) kokonaisuuden, ei siten ole aivan vieras hänelle. Kun arkkitehti tiedostaa tähän sisältyvän vastuun, hän asennoituu uudella tavalla suunnittelutehtäväänsä. Hän ymmärtää taiteensa toisin - tajuaa, että arkkitehtuurin estetiikassa on kyse paljon suuremmista arvoista kuin kiistanalaisista ”kulttuuriarvoista”. Puutteellinen ympäristö riistää ihmisarvoa. Tähän palaamme lopussa.

Viihtymisen arkkitehtuuri

Jos olemme oikeassa siinä, että melko yleisesti ihmiset tulevat keskenään toimeen heille yhteisessä arkkitehtuurissa, niin arkkitehtuurin ”laatu vailla nimeä” (viihtyminen) ei nykyarkkitehtuurissakaan ole mitenkään harvinaista, vaikka oltaisiinkin sitä mieltä, että varsinaista rakennustaidetta syntyy harvoin. Usein

ihmiset todella viihtyvät kokiessaan eksistentiaalisten ehtojensa toteutuvan. Toiminta arkkitehtuurissa on silloin sillä tavoin vaivatonta, ettei tarvitse käyttää kohtuuttomasti energiaa vastusten voittamiseen. Asunto vastaa asumistottumuksia. Lapsille on leikkipaikkoja, nuorisolle hengailupaikkoja, autollekin on paikkansa. Liikennettä ei tarvitse pelätä eikä melusta kärsiä. Päivittäispalvelut ovat kohtuullisen lähellä. On puita ja muuta luontoa. Talot eivät ole häiritsevän rumia. On ulkoilumahdollisuuksia. Kelvollisia arkkitehtuuriesineitä on toisin sanoen riittävästi, jotta asukkaiden viihtymisen kannalta olennaisille kielipeleille on edellytykset.

Näin ei ole kuitenkaan kaikkialla. Viihtyminen muuna kuin mielipiteenä, on käsitteellistämisen ulkopuolella. Siksi sitä on vaikea mitata, varsinkin tapahtumahetkellä. Riskinä on, että mukautuminen arkkitehtuuriin tapahtuu ikään kuin pakosta. Arkkitehtuurin käyttö tuottaa viihtymisen sijasta kärsimystä ja stressiä. Ahdas porraskäytävä ilman ikkunoita pelottaa, parkkikellari pelottaa, alikäytävä pelottaa. Hämärissä tiloissa kyräilemme, pelaamme tahtomattamme keskinäisen uhan kielipeliä, arkkitehtuuri saa meidät metakommunikoimaan pelon ilmapiiriä. Jos suunnittelussa ei ole koettu tärkeäksi käsitteellistää viihtymiseen liittyviä seikkoja, arkkitehtuuri voi huonontua suunnittelijoiden sitä huomaamatta. Viihtymisen mahdollistavia arkkitehtuuriesineitä ei olekaan riittävästi.

Funktionalismiin liittyi edellä kuvattu viihtymättömyyden riski. Omaksuessaan universaalisen muotokielen siihen liittyvine rationaalisuuden ja terveellisyyden motiiveineen arkkitehdit saattoivat surutta jättää vanhat asumisen perinteet ja vakiintuneet tavat sivuun. Funktionalistisen suunnittelun käsitteellistyksissä erityisesti sosiaalisuus jäi ulkopuolelle ajan atomistisen ihmiskäsityksen mukaisesti.[15] Tämä asenne leimaa arkkitehtuurin tekemistä yhä, minkä seurauksena tärkeitä arkkitehtuuriesineitä jää syntymättä. Kerrostalon porraskäytävä on hyvä esimerkki. Ennen funktionalismia porrashuone koettiin asukkaiden yhteiseksi tilaksi, jonka merkitystä korostettiin liioitelluin mitoin ja ornamentein: se oli tärkeä osa asukkaiden yhteistä arkkitehtuuria. Funktionalismin myötä porrashuone muuttui, täyttäen nykyisissä kerrostaloissa vain alkeellisimmat vaatimukset. Porrashuone on yhä toiminnan kannalta tärkeä, mutta arkkitehtuurissa tämä ei näy. Funktionalismi, myös ”modernismiksi” latistuneessa muodossaan, jäi rationalismissaan suunnittelijan tunnistaman funktionaalisen käytön tasolle. Unohdettiin arkkitehtuuriesineitten esteettinen käyttö ihmisten arkipäivässä, jolloin tuli sivuutetuksi myös niiden merkitys käyttäjien keskinäisten suhteiden metakommunikoinnissa. Torjuttiin ornamentiikka valheellisena koristeluna ymmärtämättä sen merkitystä itseilmaisun välineenä (Nyman 2008, 313-321). Alexander on jäänyt lähes yksin puhumaan ornamenttien puolesta.[16]

Millainen porrashuone olisi, jos käyttäjien sosiaalinen koordinoituminen tilassa otettaisiin suunnittelussa vakavasti siinä missä helpommin käsitteellisesti määriteltävissä oleva funktionaalinen käyttökin? Olisiko se esimerkiksi tällainen: porrashuone tarjoaisi mahdollisuuden oleskeluun ja juttutuokioon; sinne uskaltaisi tuoda ruukkukukan sen kaunistamiseksi; tuntuisi luontevalta ja turvalliselta säilyttää siellä lastenvaunuja? Porrashuone olisi ikään kuin asunnon puolijulkinen laajentuma ulkomaailmaan siirryttäessä. Se olisi osa kotia. Arkkitehtuurin yksityiskohdat antaisivat tartuntapintaa sellaisten kielipelien

[15] Nuorten ruotsalaisten kirja *acceptera* (Gunnar Asplund et al. 1931/1980) on tämän asenteen kuvaava edustaja. Heidän innoittajansa Le Corbusier oli puhunut ”asumiskoneesta” (1923/1985, 210).
[16] Myös Scruton puolustaa ornamentteja. Hän kirjoittaa kaunopuheisesti: ”For ordinary mortals […] ornament is a way of incorporating a reference to communal life into the design. Ornaments spark off associations, they tell stories, they situate a building or a piece of furniture in the shared dreamscape of a community […]. Excluding them is a way of lifting a building *out* of its social context, making it stand alone as an abstract composition, refusing to be the loved companion of everyday life.” (Scruton 2011, 313.)

pelaamiselle, joissa kommunikoidaan, että ”tämä on meidän porras”. Se olisi selkeästi erottuvalla tavalla erilainen kuin talon muut porrashuoneet. Sanomattakin on selvää, että tämä onnistuu huonommin monikerroksisessa kuin matalassa kerrostalossa. Jos viihtyminen otetaan vakavasti, ns. realiteettien asettamat rajat tulevat nopeasti vastaan: tornitalojen rakentaminen ihmisille asunnoiksi katsotaan nykyään sopivaksi ja järkeväksi. Pihatilojen suunnittelu ihmisten kanssakäymistä tukevasti olisi varmaankin helpompaa kuin porrastilojen.

Arkkitehtuuriin kohdistuu arvojen ristiriita. Arkkitehdit eivät useinkaan tunnu olevan tietoisia omien valintojensa kauaskantoisuudesta. He käyttävät paljon energiaa rakennustensa visuaalisen ilmeen kirkastamiseksi, mutta eivät tunnista visuaalisuuden elimellistä roolia arkkitehtuurin käytön sosiaalisten yhteyksien ilmaisun tukena. Tällöin se jää käyttöyhteyksistään irralliseksi – usein jopa vieraannuttavaksi – pinnaksi tai veistoksellisuudeksi. 2000-luvulla yleistynyt julkisivujen koristeleminen graafisin ornamentein on tästä esimerkkinä, tosin arkkitehdit eivät sano sitä koristeluksi. Yritetään epätoivoisesti löytää jotain millä korvata yksityiskohtien viimeistelyn menetettyä taitoa (vrt. Scruton 2011, 317).[17]

Arkkitehtuurin käyttö hyvinvointina

On perusteita väittää, että ihmisten viihtyminen on riippuvaista siitä, millaisia esineitä arkkitehtuuri tarjoaa. Julkisuudessa ei juuri näy, että arkkitehdit olisivat kiinnostuneita tästä kysymyksestä, mikä on hämmästyttävää. Eivätkö he tajua vastuutaan kanssaihmistensä hyvinvoinnista? Se tarkoittaisi, että kokonainen ammattikunta on hakoteillä. Tämä ei näytä uskottavalta. Arkkitehdeilla on vankka asema yhteiskunnassa rakennusten ja kaupunkien tuottamisen tärkeänä osapuolena, ammattikuntana he eivät harhaile mitenkään. Eikä ole myöskään mitään syytä epäillä, että arkkitehdit yleensä ottaen suhtautuisivat välinpitämättömästi ihmisten viihtymiseen.

Tosiasia kuitenkin on, että arkkitehtuurin käyttäjien kaikinpuolisen hyvinvoinnin edistäminen ei ole niitä asioita, joilla pönkitetään arkkitehtuurin ja arkkitehtien ammatin yhteiskunnallista asemaa. ”Viihtyminen” ei kuulu ammatin käsitteistöön samalla tavalla kuin ”toimivuus”, ”selkeys”, ”luontevuus” ja ”rohkeus”.[18] Nykyarkkitehtuuri hukkaa perinteet ja vakiintuneet tavat, joihin suunnittelu aiemmin saattoi tukeutua.

Hämmentävän tilanteen syy on syvällä. Ymmärrys siitä, mitä arkkitehtuuri merkitsee ihmislajin ympäristönä, on meidän kulttuurissamme jäänyt pimentoon. Arkkitehdit harjoittavat ammattiaan toteuttaen arkkitehtuuria sellaisena kuin vallitseva kulttuurimme arkkitehtuurin ymmärtää ja toimivat siinä vastuullisesti. Mutta arkkitehtuurin suuren taloudellisen merkityksen vuoksi kulttuurimme näyttää hukanneen sen inhimillisen merkityksen.[19] Arkkitehdin ammatti on erityisosaamista vaativa professio siinä missä lääkärinkin, eikä kulttuurimme puutu siihen, miten siinä käytännössä menetellään. Kulttuurimme toteutuu arkkitehtien ammattikäytännöissä.

[17] Mielenkiintoista kyllä, suuri oppi-isä Le Corbusier asetti yksityiskohtien muotoilun arkkitehtuurin luomisen keskiöön: ”Profile and contour are the touchstone of the Architect. Here he reveals himself as artist or mere engineer.” (Le Corbusier 1923/1985, 186.)

[18] Tämän voi helposti todeta lukemalla *Arkkitehtuurikilpailuja*-lehdessä julkaistuja arkkitehtuuri- ja kaupunkisuunnittelukilpailujen arvostelupöytäkirjoja.

[19] Wittgensteinia kiinnosti estetiikan ja kulttuurin välinen suhde: ”Niillä sanoilla, joita sanomme esteettisen arvostelman ilmaisuiksi, on hyvin monimutkainen, mutta silti erittäin selväpiirteinen rooli siinä, mitä sanomme aikakauden kulttuuriksi. Kuvataksemme niiden käyttöä tai kuvataksemme, mitä tarkoitetaan sivistyneellä maulla, teidän on kuvattava kulttuuri. Sitä, mitä me nyt sanomme sivistyneeksi mauksi, ei ehkä ollut olemassa keskiajalla. Eri aikakausina pelataan aivan eri pelejä.” (Wittgenstein 1981 [I § 25], 430.)

Rakentamisen vaikutus taloudelliseen kehitykseen alettiin ymmärtää Napoleonin aikana: siitä tuli yhteiskunnallisesti tärkeä toiminto (Pérez-Gómez 1983). Sata vuotta myöhemmin funktionalismi teki tästä arkkitehdeille ohjelman. Arkkitehtuurin yhteiskunnallisena tehtävänä oli edistää modernisointia. Maailma uudistui kaupungistumisena, siinä arkkitehdeilla oli keskeinen rooli.

Nyt, vielä sata vuotta myöhemmin, arkkitehtuuri on yhä funktionalismin määrittelemässä asemassa. Arkkitehdeille tämä sopii hyvin. Kunhan yhteiskunnan sanelemat tekniset, taloudelliset ja poliittiset ehdot täyttyvät, he saavat omassa piirissään määritellä, mitä arkkitehtuuri on taiteena. Joidenkin arkkitehtien luomuksista voi tulla maailmankuuluja; 2000-luvulla on alettu puhua ikonisesta arkkitehtuurista.[20] Sellainen arkkitehtuuri on arvokas kaupanteon ja kulutuksen ympäristönä (Sklair 2010). Kulttuurisesti arkkitehtuuri ymmärretään, New Yorkista Dubaihin ja Pekingiin, yhä yleisemmin tässä viitekehyksessä.

Olemme argumentoineet, että arkkitehtuurin laadun lähtökohtana tulisi olla sen kelvollisuus arjen ympäristönä. Mutta nykyarkkitehtuuri loittonee tästä tavoitteesta yhä selvemmin.

Onko tämä huolestuttavaa? Mielestämme on. Ennen Napoleonin aikaa melkein kaikki rakentaminen oli osa elämää, arkkitehtuuri luontevalla tavalla arjen ympäristöä.[21] On enää vaikea mieltää, että näin voisi olla. Arkkitehtuurista on tullut keskeinen elinkeinoelämän osatekijä. Asumistakaan ei ajatella ihmisyyden toteutumisen kannalta vaan tuotannontekijänä.

Nykyään kiinnitetään suurta huomiota siihen, että uudet rakennukset olisivat ekologisesti kestäviä, ja hyvä niin. Se tarkoittaa parantunutta energiataloutta ja vähenevia päästöjä, toivon mukaan vielä joskus taloja ilman homeongelmia. Pyritään tekemään parempia arkkitehtuuri*tuotteita*.

Parempien arkkitehtuuri*esineitten* tekeminen tässä artikkelissa tarkoitetussa mielessä on jotakin muuta. Se on arkkitehtuurin ymmärtämistä kokonaisvaltaisesti ihmislajin ekologiaksi. Tällöin arkkitehtuurin vaikutusta ihmisten psyykkiseen ja sosiaaliseen hyvinvointiin pidetään vähintään yhtä tärkeänä kuin sen vaikutusta fyysiseen terveyteen ja työkykyyn. Tällaisen arkkitehtuurin tekemisen keskeisenä vaikuttimena on lajimme ekologisten ehtojen edellyttämä viihtyminen.

Arkkitehtuuri käyttötaiteena

Onko arkkitehtuuri näin määriteltynä *taidetta*? Vai onko arkkitehtuuri taiteena riippumaton arkkitehtuurin ekologisesta tehtävästä? Ehdotamme, niin uskaliaalta kuin se kuulostaakin, että *arvioidaan uudelleen, mitä arkkitehtuuri on taiteena*. Otettaisiin vakavasti, että toisin kuin kuvataiteet, arkkitehtuuri on taidetta jokaiselle – sillekin, joka ei voisi koskaan kuvitella tarvitsevansa taidetta (Scruton

[20] ”Works of [high] art are discussed by aestheticians as icons. They are chosen by articulate people with moral, political, or religious agendas, and presented as objects in a realm apart.” (Scruton 2011, 316.) “[…] identifies the most globally iconic starchitects [!] as participants in […] an increasingly celebrity-based culture-ideology of consumerism. And in this respect, iconic architecture is similar to most of the other culture industries but, given its presence in the actual and/or virtual lives of billions of people, it is arguably the most important if largely unrecognized culture industry.” (Sklair & Gerardi 2012, 71.) “One of the hegemonic effects of the architecture of malls, which frequently become endowed with lower-level local iconicity, is to create a disposition to see these buildings – usually characterized by glass and shiny metal to encourage happy and colourful thoughts of transparency, openness and light – as integral to the pleasures of consumption. In this process, the costs of the culture-ideology of consumerism, in terms of debt, addiction, stress, ecological damage and class polarization, are conveniently hidden.” (Sklair 2010, 154.)

[21] ”Before 1800 the architect was never concerned with type or integrity of a formal language as a source of meaning. Form was the embodiment of a style of life, immediately expressive of culture and perhaps more analogous to a system of gestures than to articulated language.” (Pérez-Gómez 1983, 12.)

2011, 316). Keskeistä tässä taiteessa on, että se toteutuu ihmisten käyttäessä arkkitehtuuriesineitä esteettisesti metakommunikoivaan itseilmaisuun. Sitä voi sanoa *käyttötaiteeksi*. Arkielämään liittyvien monien muidenkin esineiden muotoilu on käyttötaidetta aivan samalla tavalla (Nyman 2006).[22]

Tällainen taide poikkeaa muusta taiteesta siinä, että se toteutuu arjessa ilman tietoista reflektointia, että ollaan tekemisissä taiteen kanssa; eihän juuri kukaan sano arkkitehtuuriesineitten käyttöään – viihtymistään – taidekokemukseksi. Silti pidämme kiinni siitä, että kun arkkitehtuuri toteutuu viihtymisenä, se on nimenomaan taidetta. Arkkitehtuuri toteutuu taiteena, kun arkkitehtuuriesineet tarjoutuvat käytettäviksi niin ilmaisuvoimaisilla tavoilla, että käyttäjät keskinäisiä kielipelejään pelaten löytävät arkkitehtuurista keinoja ilmaista itseään sosiaalisissa suhteissaan.[23] Voidaankin sanoa, että tällä tavoin määritelty arkkitehtuurin taide on olemassa vain käytössä. Käyttötaide on käytön taidetta.

Käyttötaiteessa esteettistä käyttöä ei voi olla ilman funktionaalista käyttöä.[24] Funktionaalista käyttöä voi olla ilman esteettistä käyttöä, mutta silloin se on vain käyttöä, ei käyttötaidetta. Tavallisesti funktionaalinen käyttö ja esteettinen käyttö sekoittuvat.

On vielä yksi syy, miksi haluamme pitää kiinni siitä, että arkkitehtuuri viihtymisenä on taidetta. Sanoimme edellä, että ihmisten tiedostamaton kokemus viihtymisestä, jota he metakommunikoivat toisilleen, on esteettinen laatuaan. Jos rakennetun ympäristön suunnittelija ottaa tämän vakavasti, hänen on käsitteellistettävä niitä arkkitehtuurin tilanteita, joissa käyttäjille on luontaista ilmaista esteettisiä kokemuksiaan viihtymisestä. Tällaisen käsitteellistämisen kyvyn saavuttaminen on taiteilijaksi kasvamista. Nimenomaan *taiteilijana* on rakennetun ympäristön suunnittelijan tehtäväänsä lähestyttävä.

Arkkitehdit ovat kautta aikojen pitäneet itseään taiteilijoina. Nykyään arkkitehdin ammattitaito on ennen muuta osallistumista tärkeänä toimijana rakennusten, ja siten myös kaupunkien, tuottamiseen täydennysrakentamalla, korjaamalla, jne. Tässä yhteiskunnallisessa kontekstissa arkkitehti ei kuitenkaan ole ensisijaisesti taiteilija vaan spesialisti, eriytyneen professionsa haltija.

Silti arkkitehdeilla on yhä myös tarkoittamiamme edellytyksiä taiteilijuuteen. Koulutuksensa, kokemuksensa ja taiteellisen herkkyytensä ansiosta arkkitehti pystyisi omista muistiinsa kertyneistä ympäristön käytön tavoistaan ja niihin liittyvistä sosiaalis-materiaalisista tilanteista jalostamaan kyvyn tunnistaa ja arvioida arkkitehtuuriesineitä viihtymisen kannalta, mikäli hän kokisi sen eettisesti velvoittavaksi. Kyky pohjautuu siihen, että arkkitehti, joka kaikkien muiden tapaan on lapsuudestaan asti oppinut rakennetun ympäristön käytön taitajaksi, kykenee ammattiinsa harjaantuneena taiteilijana muita paremmin reflektoimaan muistiinsa luonnollistuneita ja koko ajan aktualisoituvia sosiaalis-materiaalisia ympäristötapojaan ja siten käsitteellistämään niitä suunnittelussa hyödynnettäviksi.

Taiteilijana arkkitehti voisi käyttää luovaa energiaansa ihmisten kaikinpuolisen hyvinvoinnin edistämiseen. Se edellyttäisi, että hän oppii suhtautumaan kriittisesti kulttuurimme arkkitehtuurikäsitykseen. Valitessaan arkkitehtuuriesineitä toteutettaviksi hän ottaisi joka kerta kantaa arkkitehtuurinsa käyttäjien viihtymiseen.

[22] Ruotsiksi käyttötaide on *brukskonst*, saksaksi *Gebrauchskunst*. Englannin kielestä ei ikävä kyllä löydy hyvää sanaa.
[23] J.J. Gibsonin (1979) käsite *affordance* kertoo kauniisti siitä, miten ympäristö, sen lisäksi että se on käyttökelpoista, voi ikään kuin *tarjoutua* käytettäväksi. Vrt. Cussinsin *activity trails* (viite 12).
[24] Faaraoiden pyramidit ja Parthenon ovat ainutlaatuisia esimerkkejä puhtaaksiviljellystä esteettisestä käytöstä.

Viihtymistä painotettaessa pitää hyväksyä, että arkkitehtuurin varsinaisena ”olemuksena” ei ole hätkähdyttävyys Bilbaon Guggenheim-museon tapaan. Hätkähdyttävyydelläkin voi joissain olosuhteissa toki olla sijansa, mutta se ei voi olla lähtökohtana pyrittäessä rakennetun ympäristön viihtyisyyteen. Kun monenlaiset ihmiset hakevat arkkitehtuuriesineistä perustaa kielipeleilleen, on vaatimuksena päinvastoin, että niistä löytyy sellaisia vankkoja piirteitä, jotka ovat aikojen kuluessa seuloutuneet esille käyttäjien esteettisistä valinnoista (Scruton 2011, 316). Suomalainen rintamamiestalo on hyvä esimerkki sellaisesta arkkitehtuuriesineestä. Se on myös esimerkki siitä, että hyvää arkkitehtuuriesinettä voi varioida loputtomiin.[25]

Lopuksi

Arkkitehtuuria koetaan sitä käytettäessä, kokonaisvaltaisesti, pääosin tiedostamattomasti – ruumiillisesti. Näköaisti on keskeisessä asemassa ihmisorganismin toimiessa rakennetussa ympäristössään. Edustamamme arkkitehtuurikäsityksen mukaan tiedostamattomat näköaistimukset ovat vähintään yhtä tärkeitä kuin tiedostetut.[26] Väitämme, että arkkitehti taiteilijana pystyy suunnittelutyössään käsitteellistämään osan niistäkin ja näin tarjoamaan taiteensa käyttäjille sellaisia itseilmaisun mahdollisuuksia, jotka näiden keskinäisissä kielipeleissä edistävät viihtymistä. Näköaistimuksilla on siten tärkeä rooli arkkitehtuurin kielipeleissä. Nämä ovat silti toimintaa – kielen käytön sosiaalis-materiaalisia käytäntöjä.

Taide, jota ajamme takaa, ei näin ollen ole sitä veisto- tai maalaustaiteeseen verrattavaa kuvataidetta, jota moderni arkkitehtuuri tavallisesti edustaa. Vaan käyttötaiteena se on *viihtymisen taidetta*, jonka tekemiseen ottavat osaa kaikki rakennetun ympäristön käyttäjät löytäessään itsestään kyvyn itseilmaisulliseen metakommunikointiin arkkitehtuurin välityksellä. He tekevät sitä paljolti tiedostamattaan. Sellainen arkkitehtuuri on Scrutonin (2011, 313) sanoin ”rakas seuralainen arkielämässä”. Tämä on taidetta ruumista varten – siinä on sen suuruus. Voidaankin yksinkertaisesti todeta, että ”[R]akennustaiteessa ympäristön ja ihmisen suhde on rakkaussuhde”. (Nyman 1998, 159)

Onko tällainen muutos arkkitehtuurissa utopistinen ajatus? Kykenevätkö arkkitehdit siihen ja antaako kulttuurimme heille siihen tilaa? Vaikeaa se on, mutta ei mahdotonta. Arkkitehtuuri olisi muuttuessaan edelleen osa yhteiskunnan poliittis-taloudellista todellisuutta. Muotokielikään ei välttämättä muuttuisi kovin paljon, ainakaan heti. Silti arkkitehtuuri tuottaisi käyttäjilleen vähemmän rasitusta ja stressiä, enemmän iloa ja tyydytystä, kuin nyt.

Rakennettua ympäristöä käytettäessä osa siitä vakiintuu arkkitehtuuriesineiksi. Nämä arvioidaan, pääosin tiedostamattomasti, käytön kokemuksessa. Arviointi on luonteeltaan esteettistä. Siinä missä arkkitehtuurin käyttäjät kokevat asioiden olevan Wittgensteinin sanoin ”oikein”, he toiminnallaan viestittävät tätä toisilleen ja koordinoituvat siten sosiaalisesti – he metakommunikoivat Batesonin simpanssinpentujen tapaan keskinäisistä suhteistaan. Tällaiseen itseilmaisuun ja siinä hyväksytyksi tulemisen kokemukseen on olemassa ”eksistentiaalinen tarve” (Scruton 2011, 312) – ihminen luo siinä itselleen paikkaa sosiaalisessa tilassa. Sitä viihtyminen on.

Arkkitehtuuri on keskeinen jokapäiväisen hyvinvointimme tekijä. Sitä voidaan liioittelematta sanoa välttämättömäksi osaksi ihmisenä olemista. Silloin kun

[25] Rintamamiestaloja on rakennettu yli 75000, erilaisia tyyppipiirustuksia on yli 1000 (Kummala 2005, 19, 32).

[26] Aivot ottavat vastaan 10 miljoonaa bittiä näköaistimukia sekunnissa; kaikista aistimuksistamme tulevat tietoisiksi enintään 40 bittiä sekunnissa (Nørretranders 1991/1999, 173). Arkkitehtuurikokemuksessa ovat näön ohella merkityksellisiä haptiset (liikkumiseen liittyvät) ja akustiset aistimukset.

arkkitehtuuri toteuttaa lajimme ekologisia ehtoja, fyysisesti ja psyykkis-sosiaalisesti, me voimme hyvin. Jos arkkitehtuuri on puutteellista, se riistää ihmisarvoamme ja voimme huonosti. Kukaan ei voi välttää näitä vaikutuksia eikä olla reagoimatta niihin. Toiminnallaan jokainen ottaa osaa ympäristön esteettiseen arviointiin kommunikoiden viihtymistään toisten kanssa.

Alexanderin ”laatu vailla nimeä” osoittautuu jokapäiväisen elämän estetiikaksi, ”hyvä arkkitehtuuri” elintärkeäksi ihmisenä olemisen perusainekseksi. Funktionalismin perinnön myötä tämä on jäänyt laajalti vaille ymmärrystä. Vallitsevassa kulttuurissamme arkkitehtuurin esteettinen käyttö näyttää korvautuneen elitistisellä estetiikalla, joka suuntautuu ennemmin arkkitehtikunnan keskinäisen kilvoittelun kielipeleihin kuin ihmisten viihtymisen kielipeleihin. Hätkähdyttävyydellään tämä arkkitehtuuri vaatii tietoista huomiota – huutaa laatunsa nimeä. Samalla laatu arkipäivän estetiikkana katoaa.

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Tectonic Use of Reclaimed Timber

Design principles for turning scrap into architecture

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Abstract

Increasing the use of timber has been proposed as one step towards more sustainable architecture and construction. Timber's renewability and the capability to store carbon have dominated this discussion. At the same time, viewpoints related to material efficiency and recycling, equally important aspects to sustainability, have been neglected. Unfortunately, recycling wood can be challenging, and countries that already build a lot with timber tend to rely on incineration at the end of the life cycle. Reusing wood could, however, save emissions from manufacturing new timber and disposing of demolished timber and prolong the time the carbon stays sequestered. Embedded in new architectural ensembles, salvaged components could also transmit the past to the contemporary viewer and thus, result in more evocative architecture.

Barriers preventing reuse in general have been documented in literature, but few solutions have been proposed. The obstacles include, among other things, inconsistent quality and quantity, difficulty of dimensional coordination and negative perception, which are all issues connected to design. This paper employs literature review and design simulation in addressing the challenges of architectural design from reclaimed timber. With the help of literature, the tectonic nature of reclaimed wood material is elaborated in more detail. The design simulation was conducted during a special timber architecture course with the help of 36 students, whose design projects form the empirical research material of the paper. Engaging in a discussion with literature and the research material, the study results in recognizing how reclaimed timber essentially differs from virgin timber and proposes ten design principles for managing the inconsistencies associated with the salvaged material.

The presented discussion demonstrates that reclaimed materials should be considered as materials of their own; they should not be expected to simply comply with conventional construction methods and design practices. Since the salvaged components already exist, their architectural and structural design cannot be differentiated from each other. Therefore, tectonic expression endogenous to reclaimed materials needs to be developed in order to actuate their more widespread reuse. Whereas historical and vernacular construction methods withhold many insights for architectural design from reclaimed timber, contemporary computer-aided design offers novel tools for the execution of these ideas. The remarks of the paper are not only valid in Western contexts, but may be highly relevant for architects working in developing countries.

Keywords: architectural design, cascading, circular economy, recycling, reuse, salvaged wood

Timber construction has many environmental benefits, but challenges related to its recycling at the end of the life cycle need to be addressed better. This paper discusses the significance of tectonic thinking for architectural reuse of salvaged wood.

PEER-REVIEWED ARTICLE

Introduction

Steel and cement have been identified as two key materials for global carbon emissions (Allwood et al. 2011). Consequently, the building sector is seeking for ways to become more environmentally friendly. Increasing the use of timber has been proposed as one solution, as wood is renewable and wooden products can store carbon in them, slowing down the carbon cycle (Burnett 2006). The concept of 'cascading' wood (Figure 1) has been introduced to further prolong the time carbon remains sequestered in buildings (Sakaguchi 2014). The idea of cascading resonates with the waste hierarchy presented in the European Waste Framework Directive, which prioritizes reuse over recycling and recycling over incineration (EU 2008). In practice, however, countries with strong timber-building traditions are not far-advanced in cascading. In North America, demolished timber is largely landfilled (Diyamandoglu & Fortuna 2015; Teshnizi, 2015), whereas Japan and the Nordic countries rely largely on energy recovery (Nakajima & Nakagawa 2010; Pirhonen et al. 2011, 42).

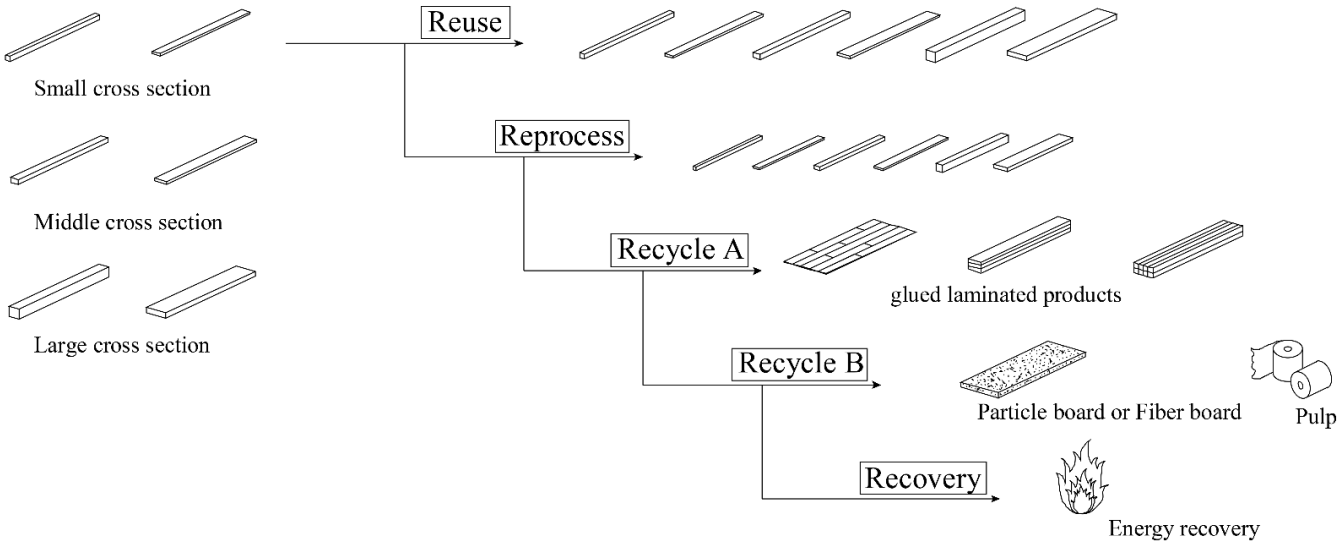

Figure 1. An ideal cascading chain for timber. It proceeds from reuse with or without reprocessing through recycling to incineration (Sakaguchi 2014). Image courtesy of Daishi Sakaguchi.

In Finland, where the current study is situated, wood is the most prominent construction material with 45% of the building stock's area situated in wood-framed buildings (Statistics Finland 2014). Nevertheless, none of the waste wood originating from demolished buildings is recycled, i.e. processed into particleboards or other engineered wood products (Meinander & Mroueh 2012, 26). In fact, Pirhonen et al. (2011, 47) have estimated that the opportunities to recycle are very limited with the techniques and structures that are currently used. They (p. 30) have, however, attributed architects with the possibility to increase the demand and supply for reclaimed timber, i.e. whole timber products deconstructed from buildings.

This kind of activity already exists in Finland, but to an extent not significant enough to show in the statistics, since it is currently limited to artisanal and do-it-yourself construction. Salvage yards that gather, store and sell reclaimed materials and products are mostly run by public operators or the third sector, but also by private companies. Most yards concentrate on hand-made historical building parts and associate themselves with heritage conservation. Historical log frames are also sold for relocation, even though the market is minor. Prices remain relatively low for both historical components and entire frames. Thus, salvage yards that take in industrially mass-produced components with even smaller monetary value are usually non-profit efforts that provide employment or training for marginalized groups.

Figure 2. Demolished wood in an ordinary sorting facility: inconsistent in quantity, quality, dimensions, availability and compatibility. Photo courtesy of Paavo Huuhka.

Figure 3. Deconstructed wood in a salvage yard: organized based on length and component type, but still varying in many respects.

Since the salvaged components already exist, their architectural and structural design cannot be differentiated from each other. A study situated in Canada suggests that salvaged timber has different properties than virgin timber with regard to both mechanical performance and dimensions (Teshnizi 2015). Thus, this paper looks at architectural design from reclaimed timber components as a tectonic question. 'Tectonic' refers here to a view that the properties of a building's construction materials should define the nature of its architectural and structural expression. The paper uses tectonics as the starting point to discuss findings from literature and empirical material. The objectives of the paper are to exemplify the role of architectural design in the reuse process and to provide practicing architects with practical design guidelines, derived from the empirical material. Understanding the nature of reclaimed wood better may help to scale the activity up from its current niche.

Theoretical framework and research design

Barriers for reuse

Several authors have studied barriers for reuse in different contexts. Some studies are focused specifically on timber while others touch upon all materials used in a certain country. Either way, the barriers are very similar, with some local aspects related to natural conditions and legislation. Many barriers are connected to the market condition and economic viability of deconstruction and reuse, which are better in the developing countries due to the availability of cheap labour and low-income customers (Gravina da Rocha & Aloysio Sattler 2009; Storey et al. 2005; Teshnizi 2015). Some barriers appear, however, matters related to design as well. These include inconsistent and often substandard quality and quantity, problems in availability and compatibility (Figures 2 and 3), as well as bad perception, knowledge and awareness (Gravina da Rocha & Aloysio Sattler 2009; Huuhka & Hakanen 2015; Storey et al. 2005; Teshnizi 2015).

Inconsistent quantity and problems in availability refer to the lack of similar components and unawareness of what kind of components will be available at a given time. Inconsistent quality suggests that properties of salvaged components are not similar; their dimensions, strength, surface treatment and colors vary. Even if parts come from one source, the properties of originally similar components may have changed during use or deconstruction. When it comes to historical hand-made parts, seemingly similar components tend to have slightly different dimensions. Moreover, it is usually not possible to extract all materials and components from a building, but some loss is bound to occur due to damage from use, exposure or deconstruction. Interfaces of components that come from different buildings and systems need special attention. Of course, no original specifications are normally available. When elaborated on this way, it seems that these aspects are all more or less intertwined and inherent to the material. It has therefore been concluded that the design of reuse needs to possess flexibility to accommodate for this variability (Gorgolewski 2008; Gorgolewski et al. 2008). The purpose of the current study is to elaborate on the properties of salvaged timber and to suggest strategies for designing with it.

Tectonic architecture

Tectonic architecture is the kind of architectural expression that derives from its making, including the implications of the material, function and stresses. The word 'tectonic' originates from Greek, where it refers to carpentry and building (Harper 2016). The term entered architecture theoretical discourse in the early 19th century, its emergence relating to the unearthing of ancient Greek monuments. The monuments, taken as a model for classical design ideals, were first believed to have been white; thus, the derived aesthetic dogma relied on the beauty of the 'acromatic' form. Discovering their polychromatic nature triggered

Figure 4. Wood is lightweight and linear, i.e. a tectonic material. A lookout tower in Wil, Switzerland, designed by Julius Natterer. Photo by Touristinforwil, downloaded from Wikimedia Commons and published under the license CC-BY-SA 3.0.

theorists to ponder the relation between inner structure and outer surface. (Mallgrave 1989).

The theme was highly topical due to the emergence of new materials and construction methods, and the contradiction between them and traditional ornamentation. In the 1840s, Karl Bötticher developed a seminal theory for 'tectonics' in his book 'Die Tektonik der Hellenen', distinguishing between the 'core-form' of the structure and the 'work-form' of the plan, and their architectural representation on the surface, i.e. the 'art-form'. The surface ornamentation was to communicate the building's static and functional characters. He applied these ideas later to iron architecture. (Schwarzer 1993).

In the next decade, Gottfried Semper (1851) introduced a universal architectural theory in which the crafts of building explicated the outcome. Studying primitive construction, Semper identified four fundamental 'elements' of architecture, i.e. the foundation, hearth, roof and envelope that constituted form. He associated these elements with the crafts of their making: foundation with masonry, hearth with ceramics, roof with timber and envelope with textiles, and suggested that the way they were made contributed to the building's architectural expression. (Semper 1851). In a later piece, 'Style', Semper made an effort to explain later stylistic features with the descendance of traits intrinsic to earlier crafts, and considered these features to withhold symbolic meaning stemming from the primordial world even in their converted form. Semper, however, titled only wood, a linear lightweight material as 'tectonic' (Figure 4) and masonry, i.e. heavyweight substances, as 'stereotomic'. (Mallgrave 1989).

Ideas related closely to the ontological and representational aspects of buildings, often referred to as 'honesty' of architecture, were discussed simultaneously by John Ruskin and E. E. Viollet-le-Duc. Ruskin (1849) suggested that materials should appear as they are and structures should convey transfer of stresses. Viollet-Le-Duc (1863) called for logical reasoning behind form-giving and its communication through design, 'an alliance' of the form and its making. In the 1960s, Eduard Sekler (1965) defined tectonics quite similarly in relation to structure (an abstract order) and construction (a making activity), so that a structure comes into being, in a physical sense, through construction and, in a visual sense, through tectonics, largely stripping tectonics from such spiritual aspects as Semper associated with it.

However, mainstream architectural theory in the 20th century was rather preoccupied with immaterial spaces than material structures, as the roles of the spatial and aesthetic designer (the architect) and the structural designer (the engineer) became separated in the beginning of the century. It was not until 1995 that architectural theory properly reengaged with tectonics, when architectural historian Kenneth Frampton released the book 'Studies in tectonic culture: The poetics of construction in 19th and 20th century architecture'. Building on the work of the previous theorists, Frampton (1995) suggested that architecture should be seen as a technical craft whose symbolic meanings derive from the way buildings are made, their structural expression and the bodily experience of the material space. A lot has since been written about the new tectonics brought upon by the digitalization of architectural design (e.g. Liu & Lim 2005; Oxman 2012). The current paper, however, identifies more with recent ideas of Danish scholars, who have proposed that sustainability should be an integral part of tectonic thinking in the 21st century (Beim 2012).

As the practical underlies the symbolic in the tectonic theory, one crucial starting point for tectonic architecture is the nature of the material, which defines what kind of structures may be constructed to border and form spaces that will, then, make symbolic references. Although the symbolic level is a focal aspect in tectonics, the current paper will operate mostly on the practical level and limit the

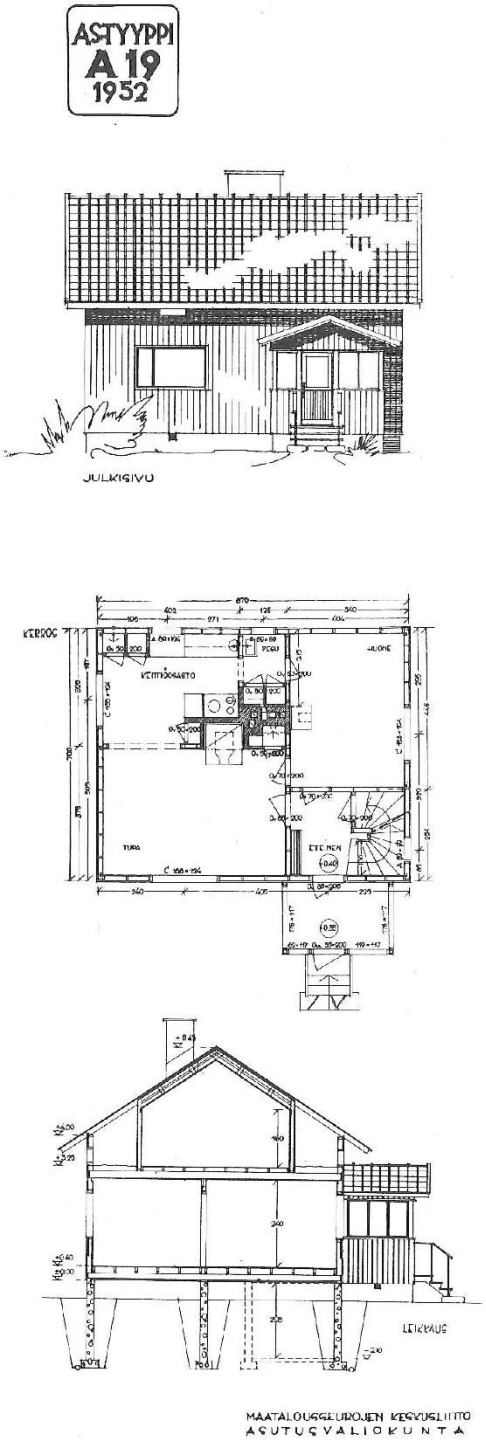

Figure 5. Type plans for balloon-framed 1950s houses. Public domain, archived in the National Archives of Finland, collection "Maa- ja metsätalousministeriön tyyppitalo-piirustukset, unit "Ieb. A 19, A 19 P", available through Digital Archives (digi.narc.fi/digi/slistaus.ka?av=49796)

representational largely outside its scope at this time. With regard to reuse of wood, the main question of the paper is, whether reclaimed timber is in fact the same material as virgin timber, and if not, how should it be built with.

Research material and methods

Literature: Reclaimed timber as a building material

In the first part of the research, I review global literature to reveal challenges related to the reuse of timber from a tectonic perspective. The literature I analyse consists of publications acquired through Scopus and Google on reclamation and reuse of timber. I compare the findings from the literature to the Finnish circumstances and evaluate their significance for Finland. My evaluation is based on my expert knowledge on Finnish building customs as well as observations I have carried out as a long-time salvage yard client.

Empirical material: Design solutions

In the second part, I examine projects utilizing reclaimed timber. I analyse the designers' strategies to enable reuse, i.e. to overcome barriers identified in the previous stage, from a tectonic viewpoint, and translate them into design principles. As there are very few realized timber reuse projects that I could have studied, I took advantage of the students that I teached in Tampere University of Technology in creating the research material. They – 36 international master's students in architecture – drew up the material as their design assignment during a special timber architecture course I arranged in 2014.

I perceive the course assignment as a simulation of a real commission aiming at realization. As construction involves significant economic interests, a design simulation, capitalizing on the creativity of numerous designers, can be an inexpensive way to experiment with unestablished ideas such as reuse. However, the imaginary nature of the assignment stripped the task from real-life constraints such as tight project schedules. While being an obvious deviation from reality, it is also an asset since it enables innovation by emphasizing freedom of creativity instead of project management and 'safe' solutions.

The course participants studied design from deconstructed timber with two different cases. I assigned half the students to design allotment garden cottages as examples of small reproducible architectural 'products', whereas I made the other half to design café pavilions, i.e. unique buildings with a public character. The purpose of the former task was to represent a case capitalizing on typical waste streams, whereas in the latter task, students could also study the use of parts from only one atypical building. I gave instructions for the area, spatial program, foundation type and insulation of the buildings, but apart for that, the students had free hands with regard to architecture and structures. I arranged lectures and tutoring to share knowledge about timber architecture and construction in general and the challenges of reclaimed wood identified from literature.

I provided the students with drawings and photos of representative Finnish houses for estimating the amounts, quality and dimensions of typically available structures (Figure 5). I also instructed them to browse an online salvage portal for log frames and secondary parts; and I visited a demolition waste treatment facility and a local salvage yard with the class in initiating the design task in order to see how demolished wood is handled currently. In addition, I enlisted gluelam post-beam structures of a condemned big-box furniture store for the students to be used in the design of the public café pavilion. I chose this specific building for its accessible location. My colleague inventoried the columns and beams in-situ and I listed them in the assignment handout. Thus, the students could begin with a list of known components or to source the parts themselves; these are the two

Figure 6. Scots pine, the most typical species of construction wood in Finland.

Figure 7. Cross-sections of an antique trim (left) and a modern panel (right). The former is extremely dense, almost entirely made of durable heartwood and the heartwood is towards the exposed surface. The latter is coarse-grained and has no heartwood.

starting points for reuse projects that the literature has recognized (Gorgolewski 2008; Gorgolewski et al. 2008).

The content analysis of the simulated designs is qualitative, and I base it on the close reading of the verbal and graphical material created during the course, aiming at understanding the design solutions and their implications for reuse even if all their aspects have not been explicitly expressed (as is often the case with architecture, let alone student projects). The graphical material encompasses preliminary sketches and finalized designs; whereas the verbal material consists of students' essays and discussions that took place during tutoring between the students and myself as their teacher.

Traditionally, close reading and content analysis are used in text analysis, but I applied the methods for graphical material, considering drawings and images as communicative and 'readable'. In the analysis, I followed the three phases of content analysis, i.e. reduction, clustering and abstraction of the material, with the purpose of producing a new classification from the material (Silius 2005). First, I listed the design solutions intended to facilitate reuse in each of the projects (reduction). Secondly, I grouped similar approaches together (clustering). Thirdly, I induced more general design principles from the applications (abstraction). After coming up with principles that covered all the applications, I carried out an iteration round to eliminate overlapping and associated the principles with the barriers from literature. Thus, the content analysis was theory guided, i.e. the classes arose from the material but the concepts originated from the theory (Silius 2005). Finally, I quantified the solutions in the light of the identified principles, as can be seen in Table 1 in the end of the paper.

Results and discussion

Properties of salvaged timber

Wood species

International literature distinguishes a difference in the reclamation of hardwoods and softwoods. In the southern hemisphere, durable hardwoods become well separated from other woods and are considered valuable, whereas reuse of softwoods is less developed due to a lesser financial value (Forsythe 2011; Gravina da Rocha & Aloysio Sattler 2009; Storey et al. 2005).

Almost all Finnish construction wood is softwood, since Scots pine (Figure 6) and Norway spruce dominate in Finnish forests. Common endemic Finnish hardwoods, silver and white birches, do not endure weather and have therefore not been used in construction, apart for interiors. Although oak, a hardwood, occurs in doors and windows of prestigious urban buildings, it is so rare that focusing on hardwoods is not a feasible strategy in Finland. Thus, resolutions for softwood reuse can contribute to reclamation in other countries too.

Material properties

To safely use reclaimed timber in structural applications, designers must be able to trust its load-bearing capacity. In general, wood exhibits good strength properties in both compression and tension, and timber can, therefore, be used in massive or skeletal form. Mechanical properties are the most critical in applications facing tensile or bending stresses, such as beams and columns, and less critical in massive compressed structures, such as log walls.

It is generally believed that aged timber keeps its properties unless it is damaged biologically or physically, which is why I treat the mechanical properties of aged timber and the damage that has possibly occurred during its history separately. Over the years, a number of studies have examined both aged and deconstructed

timber to provide evidence for the aforementioned belief. These studies have recently been evaluated in a review paper (Cavalli et al. 2016).

There is some evidence that strength properties of wood might either improve or degrade over time. The aforementioned review concludes, nevertheless, that most studies imply that ageing in itself does not reduce compressive and tensile strengths. Bending strength may remain unchanged or decrease slightly, but not in a decisive way; only the impact bending strength seems to decrease clearly due to ageing (Cavalli et al. 2016).

Wood quality

One difficulty with these studies is that the original properties of wood are rarely known. Density is an important factor for wood's strength, elasticity and durability, denser wood being better. Since slow growth produces dense wood, antique wood is believed to be denser than modern plantation-grown wood (Kaila 2008, 249). Moreover, the more heartwood in pine, the better its rot resistance. The amount of heartwood increases with the age of the tree. Since plantation-grown trunks are harvested at a young age, antique wood (Figure 7) is also considered more durable in this sense (Kaila 2008, 252).

Figure 8. Rot at the end of a salvaged floorboard. Damage in wood is easy to recognize visually.

One more factor influencing the quality of wood is the production process from a tree into a log and further into a construction component, including the selection, harvesting, drying and correct application of wood (e.g. heartwood for windows). These practices are regarded to have been better in past times (Obataya 2007; Kaila 2008, 393–404). The fact that historical wood has performed better than contemporary timber in some tests (Cavalli et al 2016; Obataya 2007) may support these views.

Damage

Not age but damage is considered to underlie major strength decreases in deconstructed timber (Cavalli et al. 2016; Nakajima & Murakami 2008). Defects in wood (natural or manmade) lower bending and shear strengths. Damage may occur during use or deconstruction. In-use phase damage originates from (over)loads, connectors (nail or screw holes) or biological attacks (rot, insects).

Figure 9. Painted members, traditional red ochre (left) and more modern paints (middle and right).

It has been suggested that nail holes can be considered equal to knots when timber is reused (Hradil 2014), because in testing, knots and nail holes have had the same effect on the tensile strength of deconstructed timbers (Nakajima & Nakagawa 2010). Excessively nailed timbers should, however, be deselected from structural applications, since dozens of nail holes may reduce the performance notably (Nakajima & Murakami 2008).

Permanent deflection from overloading and biological degradation are also easy to identify visually (Figure 8), enabling discrimination in the selection process. Many authors have brought up that official grading rules for secondary timber would facilitate reuse (Cavalli et al. 2016; Huuhka & Hakanen 2015; Teshnizi, 2015; Storey et al. 2005).

Treatment

Virgin timber is clean, but salvaged timber is often coated or impregnated. Since chemically treated wood is not used in house construction in Finland apart from external garden structures, the amount of such timber waste is not significant (Pirhonen et al. 2011, 36), unlike in New Zealand, where almost all modern framing wood is chemically treated (Storey et al. 2005). Nevertheless, exposed timber is almost always painted for surface protection indoors and especially outdoors (Figure 9).

Figure 10. Details of antique doors, crafted with skill.

Figure 11. Contemporary doors of industrial manufacture.

Figure 12. Reduction of length. Very few of the logs stored in this salvage yard span more than 2 m.

Frame members are usually hidden inside the envelope and therefore remain untreated but may be contaminated with metal (nails, screws), concrete (former cast-mould timber) or insulation (mineral wool, polyurethane) after the deconstruction. At the moment, material recycling can only accept clean wood; therefore, reuse may be the only effective option to incineration for impregnated, coated and non-toxically contaminated timber.

Types of components

Available components depend on the local timber-building traditions. Typical to the UK and US, timber framing uses members with large cross-sections, enhancing the possibility for reuse and reprocessing into e.g. flooring (Pirhonen et al. 2011, 51; Storey et al. 2005). Although timber framing is not used in Finland, log buildings yield large cross-sections. The other conventional Finnish construction method is balloon framing with two-by-fours.

Although more wood would be available in frame members, crafted products such as antique doors and windows (Figure 10) are typically considered more valuable, in Finland as well as elsewhere (e.g. in Brazil, Gravina da Rocha & Aloysio Sattler 2009). Alas, the built-in frames of doors and windows are often discarded, and only door leaves and window casements get salvaged.

Component quality

Salvaged components come in two categories: handcrafted and industrially produced. Antique doors and windows are artisanal products, whose artistic quality outweighs that of industrially serial-produced components (Figures 10 and 11). Not only the form-giving but also joinery and raw material are often more refined in handcrafting than in mass-production. The same applies to hand-carved logs in comparison to industrially planed or turned logs, not to mention glue-lam 'logs'.

On the other hand, historical components do not fulfil current energy norms. However, due to rapid developments in energy efficiency, only very recently produced components are able to meet today's standards. Nevertheless, Finnish energy norms incorporate a compensation principle that allows some components to have lower insulation values if heat losses are compensated elsewhere.

Dimensions

Dimensions of reclaimed timber differ from virgin timber in three ways: there is a reduction of length (Figure 12), a reduction of cross-section (Figure 13) and a lack of standardization (Figure 14). Timber sold in hardware stores typically spans 3.6–4.2m. Studs of older houses may be shorter than this in the first place, since room and floor height requirements have increased. In Japanese tests, however, lengths of salvaged two-by-fours averaged only 2.3m (Nakajima and Murakami 2008; Nakajima and Nakagawa 2010), clearly less than a room's height. In a study situated in Finland, length losses ranged from 1% to 69% in machine demolition, depending on the cross-section (Sakaguchi 2014).

Very large (4x4 beams) and very small (1x4 and 1x6 cladding) members kept their length best, whereas medium cross-sections of the frame performed clearly worse. Their original lengths were 3–4m, and after deconstruction they achieved average lengths around 2m only. (Sakaguchi 2014). Some losses could probably be mitigated with hand deconstruction. However, as members are usually nailed from their ends, the ends are prone to cracking (Figure 15). Weather may also contribute to the need to shorten exposed components.

Figure 13. Reduction of cross-section. A notch in a log.

The second dimensional anomaly, the reduction of cross-section, is supposedly a local phenomenon that is accidentally inflicted during deconstruction or that results from the nature of the previous use. In long members, reduced cross-sections will often contribute to their shortening, too: a member will easily be cut to two at the location of a notch. Design loads of beams have also been raised, denoting that members in older houses may originally exhibit smaller cross-sections than current houses. However, due to the intensification of energy regulation, widths of studs and heights of beams are often not defined by loads but the space needed for thermal insulation, up to tens of centimetres.

Unlike before, construction today is modular-coordinated, following multiples of 10, 30 or 60 cm, depending on the building part. The interfaces and tolerances between parts have also been designed to serve this coordination. Historical components do not, however, follow these rules. Therefore, missing door or window frames cannot be replaced by serially-produced substitutes. Norms have also established particular dimensions for certain components; e.g. doors come in given sizes due to accessibility regulation. Thus, few decades old salvaged doors might be modular-coordinated but no longer wide enough.

Figure 14. Lack of standardization. None of these windows are exactly the same.

Summary of properties

In some cases, reclaimed timber can be considered the same material as virgin timber (e.g. salvaged nearly-full-length logs end notches cut off and with no peg holes or middle notches). Chances are, however, that in most cases, salvaged wood is a different material, although it is the same (softwood) species as virgin timber. It will differ from virgin timber by its supply, mechanical properties, available dimensions and surface treatment. It will be more variable, slightly weaker in bending, shorter and thinner, possibly painted, not quite up to the latest energy norms, more often handmade than industrial, and already made into a component, such as a stud, log, door or window.

Tectonic use of salvaged timber

Apparently, the tectonic use of reclaimed timber must be, in most cases, also different from that of virgin timber in conventional wood architecture. Analyzing student projects helped me to identify strategies that enable the use of reclaimed timber better. I derived the following ten design principles from the students' architectural applications.

The principles are fusions of several applications that share common features addressing certain properties of reclaimed timber. They are, by and large, as intertwined as the design-related barriers of reuse, and also partially contradictory, because they are intended for a variety of different circumstances (e.g. one strategy suggest to use multiple lengths, while another suggest to use short stubs). I mention possible applications of the principles, originating from the student projects as well as literature. Designers' brief comments on the task accompany the principles.

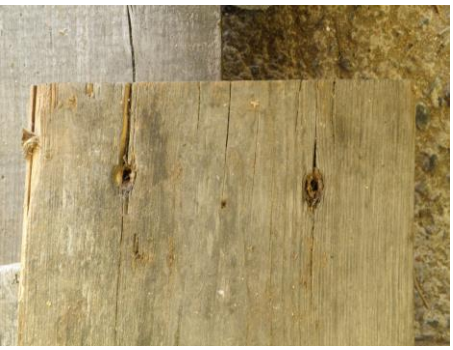

Figure 15. Cracking and nail holes at the end of a floorboard.

Principle 1: Divide the spatial program into smaller units

Shortness of beams and other horizontal components such as logs is a typical challenge. When a spatial program is divided into several rooms or volumes instead of one large space (Figure 16), the utilization of shorter and thinner beams is enhanced, with the proviso that load-bearing interior walls are used. When long timber is available, using continuous beams instead of simply supported beams enhances the use of smaller cross-sections.

"Reuse must include a smart and strategic approach to designing from the very beginning."

- Martins Ostanevics

"Reuse gives an impression of moderation, of necessity, and engaged the design with efficiency."

- Paul Texereau

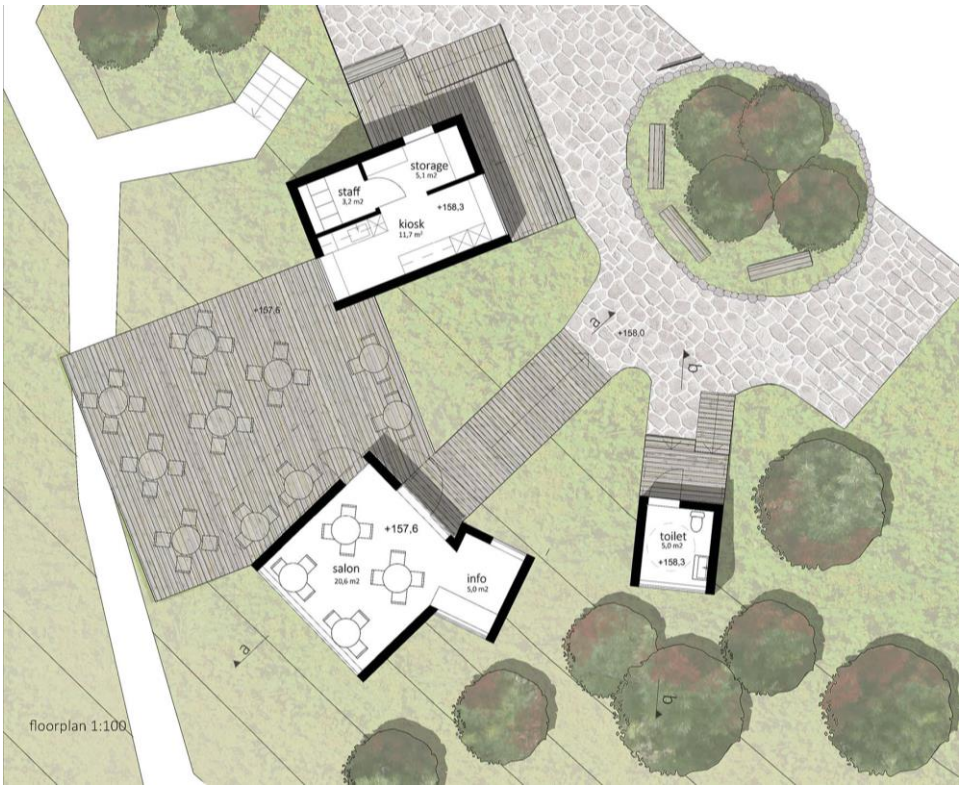

Figure 16. Divide the spatial program into smaller units. The plan of this café pavilion consists of multiple freestanding volumes (design and image by Paula Tiainen).

Principle 2: Divide elements into smaller units

Shortening in deconstruction applies often to vertical members, such as frame studs. This challenge can be overcome by dividing the structure into smaller units. The most obvious example is using the platform frame instead of the balloon frame. Whereas studs extend all the way from the foundation to the roof in the balloon frame, in the platform frame, walls are constructed floor-by-floor, reducing the necessary length of studs in multi-storey constructions (Knaack et al. 2012, 38). When the available stud length does not measure the room height, studs can be lengthened with nailed halved scarf joints. In fact, vernacular construct ion withholds several solutions for lengthening both compressed and tensioned members with traditional carpenter joints (Zwerger 2012, 233–237), which have become forgotten due to the contemporary unlimited availability of long timber.

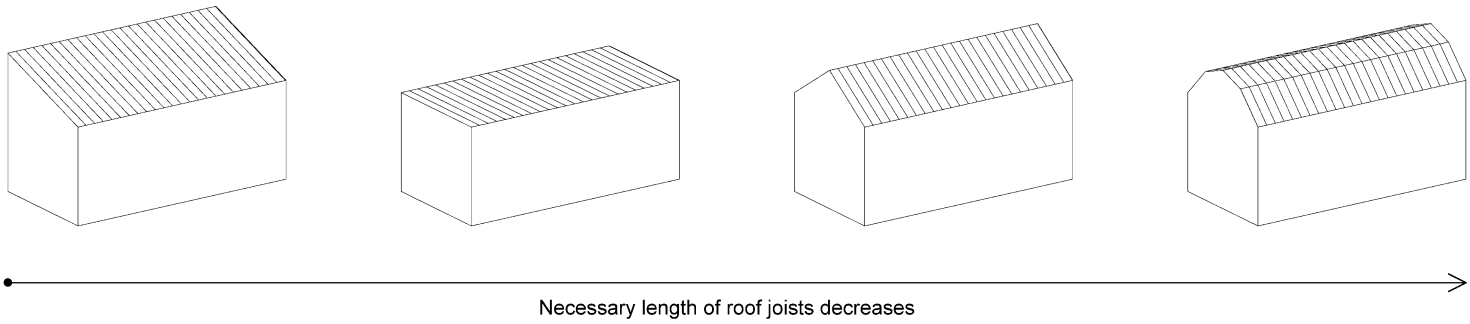

Figure 17. Divide the structural elements into smaller units. The figure illustrates the relation of the roof shape and the roof joist length.

"Do more with less."

- Marta Prikule

In horizontal direction, one wall frame can be divided into several narrower (prefabricated) wall panels to shorten the lengths of sole and base plates and head binders. Respectively, a gable roof or a split-level roof consisting of two sets of joists facilitates using shorter members than a shed roof or a flat roof that requires one set of long joists; a gambrel roof consists of four sets of even shorter joists (Figure 17).

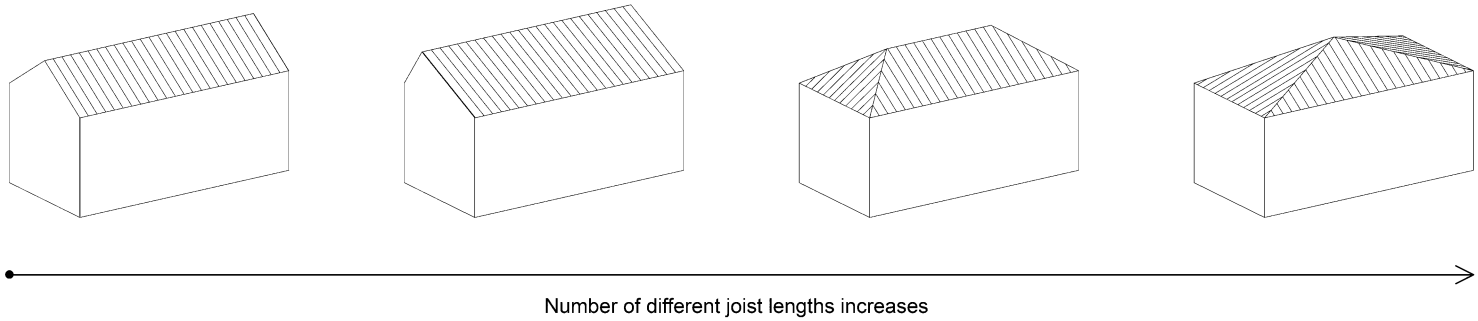

Figure 18. Avoid equal spans and dimensions. The figure illustrates the relation of the roof shape and the number of different roof joist lengths.

Principle 3: Avoid equal spans and dimensions

Salvaged timbers typically come in varying lengths; to avoid leftover cuttings, a design should accommodate many lengths. Oblong room shape is therefore superior to a square in log construction. Oblique layouts, on the other hand, provide opportunities for using several beam lengths. Similarly, an asymmetrical catslide roof is better than a symmetrical gable roof; furthermore, a pavilion roof consists of many joist lengths that are mostly repeated for only eight times (Figure 18).

In addition, multiple-span girders can accommodate different beam lengths by employing sleeved beams or suspended span beams. If beams are organized diagonally in relation to a rectangular room plan, the use of unequally spanning beams is also enhanced.

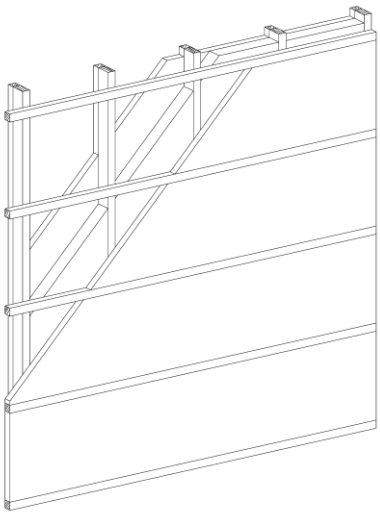

Figure 4. Distribute functions for different structural members. A wall structure with high U-value (0.17) made of thin studs: two-by-fours bear loads, inner and outer battening provide space for thermal insulation.

Principle 4: Distribute functions for different members

Traditional balloon frames were compiled from two-by-fours, which provided 100mm of space for thermal insulation. Nowadays, studs normally range 150–200mm because of energy efficiency requirements; for passive houses, laminated veneer timber studs up to 350mm are used. Studs this wide are oversized from the viewpoint of loads and they may be difficult to encounter in older buildings. However, if the load-bearing function and the function to provide space for thermal insulation are divided for different members, the necessary insulation space can be achieved by combining thinner studs. Load-bearing two-by-fours can be coupled with inner and outer battening made of two-by-twos (Figure 19). Even more thermal insulation space can be achieved with ladder-like structures familiar from straw-bale construction; using blow-in insulation mitigates the inconvenience for insulation work.

Beside walls, this principle can be applied to floors and to roof beams for providing the air gap between insulation and roofing. As for vernacular techniques, post and plank construction enables the use of short logs, laid between slotted posts. The posts bear the loads while the planks act as thermal insulation. These functions can be separated for different members in modern construction, too: if a facade only bears its own weight and wind stresses (and the load-bearing frame consists of posts and beams), the requirements for its load-bearing capacity are lesser. This enhances the use of lengthened or low-quality studs.

Principle 5: Use efficient forms for long spans from short pieces
Some structures are more efficient than others thanks to their geometry (Salvadori 2002, 179–205). For example, arches, vaults and domes can bridge extensive spans and bear immense loads although they are put together from small bricks. They represent the type of structures where only compressive stresses are present (Salvadori 2002, 144–149; 225–230). Using short sections of two-by-fours as 'timber bricks' would allow the construction of forms reproducible with actual bricks. Nails, screws, wedges and wooden pegs could replace the mortar in 'timber masonry'. In fact, a type of timber masonry wall is known in vernacular construction (Zwerger 2012, 231–232). In this technique, called stackwood building in the US and known Europe, too, the timber sections, perpendicular to the wall itself, are joined with clay mortar. In addition to real arches and vaults, corbelled forms can also be constructed with simple timber blocks (Figure 20).

"Being used to think that everything is available can cause a gap between the architectural concept and the salvaged components."

- Karianne Fonn Jårvik

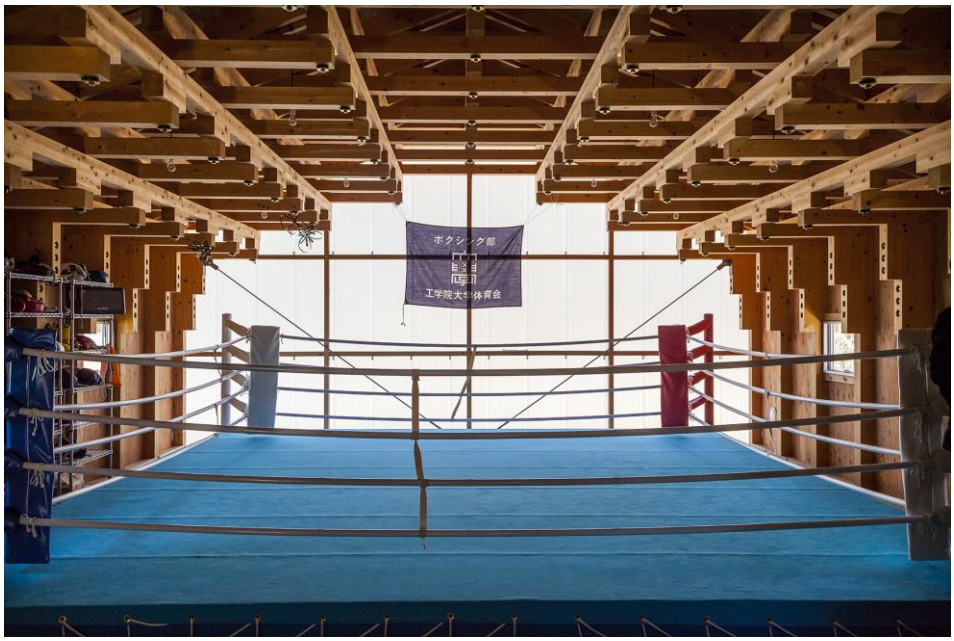

Figure 20. Use efficient forms for long spans from short pieces. Although not made of reclaimed timber, this figure illustrates the 5th principle with the corbelled roof structure of Kogakuin University Boxing Club in Tokyo, designed to be built from short low-quality wood (designed by FT Architects, photo in the courtesy of Jonas Aarre Sommarset).

"We must identify the constraints of reclaimed parts and transpose them into possibilities."

- Razvan Iov

Space grids and grid shells are more modern sources of inspiration for utilizing short timber pieces. For example, the geodesic dome is made of equilateral triangles; the high bearing capacity of the structure is based on the space-grid action of its members (Knaack et al. 2012, 62–64). CAD and BIM tools offer new possibilities for designing complex structures, although traditional hanging chain models also allow developing pure compression shells. More conventional examples of structurally efficient components are roof trusses, flat trusses, I-beams, I-posts and box beams. Although industrially manufactured timber I-joists and I-posts are today constructed with plywood webs, similar structures (traditional braced beams) can also be nailed together from diagonal boards. Three-hinged arches and folded slabs can be constructed with this method from short boards.

Principle 6: Define ranges instead of fixed properties
This principle manifests replacing designer control with tolerance towards the material. In a normal project, the architect's task is to define the dimensions and visual properties of a building and its parts unambiguously. This serves the

building permit application as well as the contract and working drawings. To be able to do this with salvaged components, the parts would have to be acquired before the design begins. However, storing components from early on has notable cash flow and management consequences for the developer, and when pre-purchase is not a viable option, redesign rounds are needed when suitable components are eventually found and purchased (Gorgolewski 2008; Gorgolewski et al. 2008).

To avoid redesigning, defining prefixed properties should be replaced by giving ranges. For example, the same room area can be acquired with multiple wall widths that enable different beam spans or log lengths. Flexible ranges are especially beneficial for reusing logs because the laborious task of re-carving notches can be avoided by employing entire rooms. Respectively, the dimensions for windows and doors can be given as ranges. The principle can even be applied to the colors of cladding by allowing multiple hues of a color or combinations of hues or colors (Figure 21).

"It was clear from the beginning that some flexibility should be maintained regarding the appearance and availability of the material."

- Marta Prikule

Figure 21. Define ranges instead of fixed properties. A facade cladding with ranges of red and grey colours; the window layout can also tolerate windows of varying dimensions (design and image by Szymon Galecki).

Principle 7: Rotate and repurpose

"What first was an obligation became an aid and an inspiration."

- Valentin Szymoniak

Reuse does not have to obey the original construction too faithfully: horizontal buildings can make vertical constructions by turning beams into columns, or vice versa. Very large glued laminated beams and columns from industrial buildings or warehouses can be utilized as wall panels or floor slabs in the same way as cross-laminated timber (Figure 22). Of course, components can always be sawn to sections if the new application is smaller or has smaller loads than the original. Furthermore, a permanently deflected beam could, in theory, make a pre-cambered beam when turned over. Solid timber beams and columns as well as planks and boards may be piled as if they were logs. In terms of vernacular techniques, stave construction was often employed with salvaged logs, because log rooms are typically wider than what their height is. With stave technique, the logs suffice better for new construction even though damaged notches are cut off.

"It is up to us architects to make use of the advantages of reused materials and to make sure our designs allow materials of any origin to be used."

- Paula Tiainen

Figure 22. Rotate and repurpose. The use of glue-lam beams as walls and a slab (design and image by Lassi Viitanen).

Principle 8: Select the application according to the properties

Sometimes shortness or damage of members may prevent using salvaged timber in load-bearing functions. Luckily, a timber building encompasses a number of components for non-load-bearing purposes: stairs; exterior and interior claddings (weatherboarding, lining, flooring, ceiling, trim, screens and grilles); and rough grounds (battening, furring, sarking and pugging boards). These uses tolerate short and variable timbers, and the lastly mentioned category does not even pose any requirements for their appearance.

Traditional shingle wall and roof coverings utilize overlapping short planks, but even non-overlapping weatherboarding can withstand discontinuity if the detailing effectively prevents rainwater from stagnating. However, the shorter the cladding boards, the more battens are needed to provide fixing points. Indoors, where rain is not an issue, claddings can be executed in an unrestricted manner (Figure 23): timbers of different widths and depths can be utilized to produce relief surfaces. Even the shortest pieces can make wood mosaic or end grain woodblock flooring.

"A limited supply enhances creativity. If an architect would have all the materials in the world, the result would be less exciting because one tends to reach for standardized solutions."

- Erlend Espenæs

Figure 23. Select the application according to the properties. Interior cladding made of short boards that would otherwise be practically useless (design and image by Razvan Iov).

Principle 9: Combine creatively
A designer's creativity can fight the incompatibility of salvaged components. Even conventional timber construction hosts solutions that suit well for putting together cladding boards from varied sources. For example, clapboarding, staggered siding or board and batten cladding facilitate using weatherboards of different widths. Clapboarding also enables combining boards with different profiles or damaged tongues and grooves. Short sections of sidings with different profiles or colors can be combined in an orderly manner by arranging them into fields separated by cover fillets. The combining strategy can be applied to windows and doors in order to create larger surfaces (Figure 24).

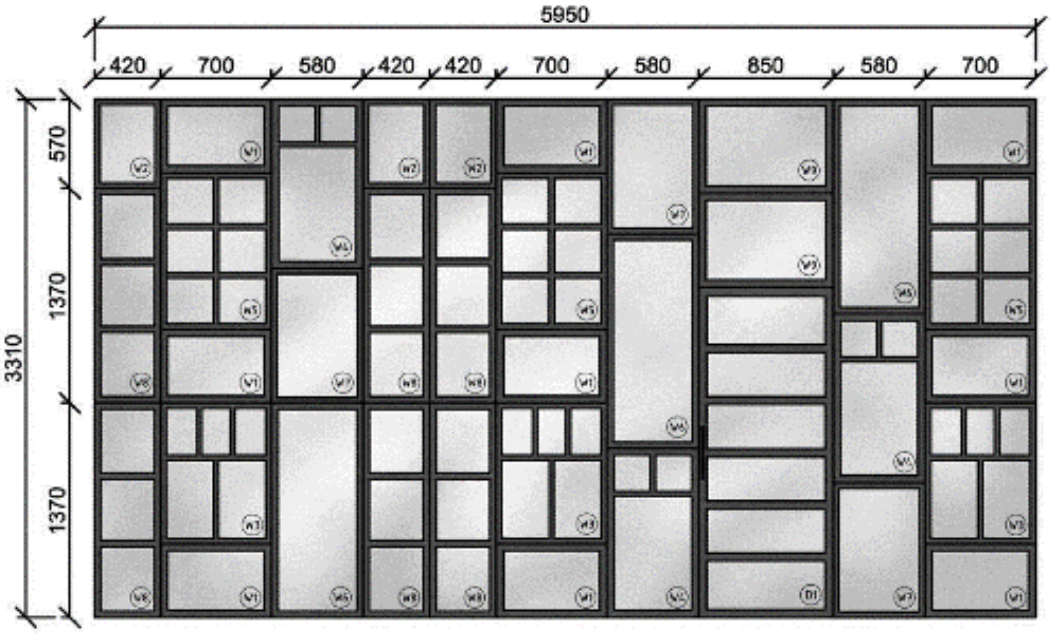

Figure 24. Combine creatively. A schema for a glass wall made of salvaged windows (design and image by Michala Konarikova).

"Sustainability can only be gained when the building conveys the message of reuse to its users.

- Hai Hoang Le Nam

Principle 10: Let the patina speak
The appearance of aged surfaces is called 'patina'. Kalakoski (2016) associates patina with the psychological experience of comfort and continuity by referring to the writings of such renowned theorists as Georg Simmel, Juhani Pallasmaa, and David Lowenthal. The students who created the research material found this aspect of reclaimed timber as especially meaningful. There is, indeed, an undeniable appeal to the old, for the decoration market boasts with products imitating cracked paint or corroded steel. The phenomenon extends to the building sector in the form of rusting cor-ten steel, mechanically produced 'hand-molded' bricks reminiscent of antique bricks and fiberboard doors pressed in the shape of handmade old-age panel doors, although reuse would be more environmentally friendly and architecturally more honest.

In the case of timber, weathered natural grey (Figure 25) as well as faded or layered and chipped paint are aesthetic features that are difficult to reproduce plausibly in new material. Although repainting is always an option for salvaged timber, stripping paints can be laborious (and thus, expensive) or harmful to the environment (if stripping chemicals are used). The patina should rather be seen as an indigenous feature of reclaimed wood and beside color, it includes many kinds of minor damage. In design, it should, however, be noted that due to its nature, patina is irreparable. When patinated components are combined to one oeuvre from multiple sources with artistic intentions, the effect cannot be retained when maintenance (e.g. repainting) becomes unavoidable. Relocating patinated

Figure 25. Let the patina speak. Weathered barn siding in an otherwise contemporary design (design and image by Paula Tiainen).

components to the interior, on the other hand, halts the decaying process whose nature is to evolve.

Appraisal of principles and applications

The principles I have presented touch upon aspects of architectural design ranging from more general design (massing and plan design – Principles 1–3, 5, 6) to structures of architectural elements (walls, roofs, floors – Principles 2–8) and, eventually, surfaces and secondary components (Principles 6–10). They do not discriminate between massive and skeletal construction, but are equally applicable to both. Since the room height is fairly standard in buildings, apart for certain building types, more opportunities seem to arise for enabling reuse in horizontal structures. Most principles (2–7) are, nevertheless, applicable to both vertical and horizontal structures, but for some, it is easier to recognize horizontal applications (3, 6). Based on the occurrence of the principles in the research material (Table 1), it seems easier to find applications for reclaimed timber on the facades than within the structure.

Some principles (1, 8) do not denote significant changes to conventional architectural design or construction methods. For instance, massing into several volumes (Principle 1) is a decision often made on solely architectural grounds, as it creates in-between spaces resulting in a richer spatial experience. Some applications of other principles (2–4) are also fully conventional, whereas their other applications and some other principles (5, 7, 9) may easily result in nonconventional forms and structures. These require more structural design skills but may produce impressive structures able to adopt aesthetic roles, an aspect characteristic to tectonics.

The downsides of nonconventional designs (Figure 26), while they indisputably promote material efficiency by enabling reuse, are the increased laboriousness in both design and erection, which may have unwanted cost implications, as well as challenges in moisture behaviour/long-term durability, which may make them

Table 1. Occurrence of the applications of the principles in the research material. P=principle.

Principles	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Design 1								■		■
Design 2										
Design 3	■		■						■	■
Design 4								■		■
Design 5							■			
Design 6						■			■	■
Design 7						■		■		■
Design 8	■			■			■		■	
Design 9							■	■		
Design 10							■	■		■
Design 11								■		■
Design 12							■			
Design 13										
Design 14									■	■
Design 15				■				■		■
Design 16			■	■			■			
Design 17								■		■
Design 18						■		■	■	
Design 19				■					■	
Design 20	■						■			
Design 21								■		
Design 22				■		■				■
Design 23	■			■		■				■
Design 24		■					■			
Design 25	■						■			
Design 26					■	■				
Design 27									■	
Design 28	■			■				■		■
Design 29				■			■	■		
Design 30							■	■		
Design 31			■			■	■			■
Design 32						■				
Design 33						■			■	■
Design 34			■					■		
Design 35					■		■			
Design 36			■				■			■
Total	6	1	5	8	2	9	14	14	8	16

more suitable for temporary pavilions than for permanent buildings. These notions, however, are characteristic of architecturally ambitious projects in general. In some cases, the opportunity for prefabrication may help to mitigate the assumed cost increase and enable to activity to be scaled up to a more industrial level (e.g. Principle 1 – spatial modules; Principle 2 – pre-lengthened studs; etc). Some applications (e.g. timber masonry suggested under Principle 5) will, however, remain artisanal and as such, exceptional.

Nevertheless, other principles may also help to reduce costs. Principle 6, for instance, is aimed at evading excessive pre-purchase and redesign, and Principle 10 for obviating laborious and costly stripping. Principle 7 may also ease procurement, as it helps to identify the affordances of components.

To understand the full environmental implications of the principles, the relation between material efficiency and energy efficiency would need to be studied

further. Whereas some applications of the principles may even help to decrease the necessary amount of (reclaimed) material (Principles 5 and 7), others may result in its increased use (e.g. Principles 4–5, 8). Even more importantly, some principles (1, 2) may require more foundations to be used, and these are made of carbon intensive mineral materials. Therefore, column foundations should be favoured, and the overall carbon balance should be studied carefully. Principle 1 may also increase the area of exterior walls, which implies greater heat losses than in compact buildings.

As the principles are aimed at mitigating the variability of the reclaimed material, they also call for tolerance towards variability of appearance (6, 9, 10). Whereas architectural unity might then be risked, playfulness and organicity may also be gained. Designers must, however, be willing to relinquish a part of their authority, resulting in a co-creation between the designer, the builder and the material – an idea possibly difficult to accept by the architect, trained and yearning to design. Moreover, similar flexibility is required from the building permit process, built into the Finnish legislation (Maankäyttö- ja rakennuslaki 1999, 134§; Maankäyttö- ja rakennusasetus 1999, 79§) but assumingly rarely employed in practice.

Lastly, these principles also tap into the ontological aspects of buildings, essential to tectonics. Reuse of reclaimed materials withholds cognitive risks, related to the recognition of time layers in the built environment. These risks are influenced by informedness of the viewers as well as the communicative nature of the design. Exposing the weathered substance for observation is one of the focal aspects for the symbolic dimension of tectonics in salvaged materials.

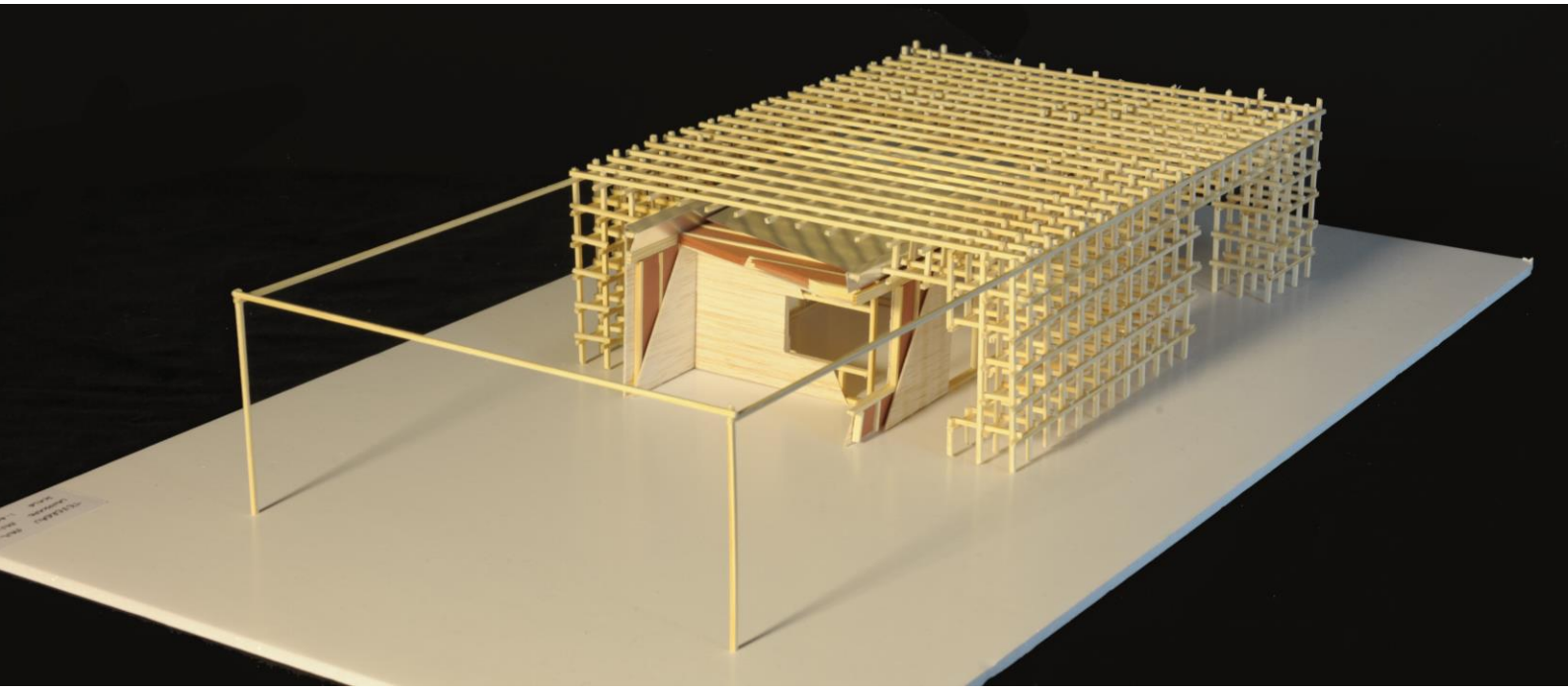

Figure 26. A non-conventional structure, with positive implications for architecture but challenges with long-term durability (design and model by Paul Texereau, photo by Arto Jalonen).

Conclusion

My purpose in this paper was to discuss the significance of architectural design for the reuse of a reclaimed material – timber – and to provide practical guidelines for architects working with the topic. I started off with the viewpoint of tectonic (crafting-based) architecture, and made an effort to expand the understanding on the barriers of reuse by elaborating on the material-specific aspects of timber reuse. I conducted a literature review that suggested that in comparison to new timber, the salvaged material will likely be more variable, slightly weaker in

bending, shorter and thinner, possibly painted, not quite up to the latest energy norms, more often handmade than industrial, and already made into a component.

Then, due to the lack of realized projects that could act as research material, I engaged my students to work with reclaimed timber in order to find design solutions appropriate for the material, i.e. to relieve, if not overcome, the material-specific barriers. In their projects, I found the inherent properties of the material to affect massing, plan design, facade design, roof design, structural design, interior design as well as building specification: basically, the whole spectrum of architectural design. My content analysis also revealed a vast number of applications that helped them to manage the variation of properties in salvaged timber. I was able to synthesize ten more universal design principles for facilitating the use of reclaimed timber from these applications, and to associate further applications with the principles. The principles, thus, surpass the case-specificity of the applications and can help architects to cater for reuse in their own way from the very beginning of the design process.

Methods-wise, the experiences I gained during the research suggest that design simulation followed by a content analysis can be a feasible method for the systematic exploration of solutions for unconventional architectural problems, such as design from reclaimed components, at an early stage.

Acknowledgements

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Criteria to Evaluate the Quality of Building Envelope Retrofits

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Abstract

The construction industry is progressively moving from designing and building new towards redesigning, upgrading and maintaining existing buildings. Concurrently, the increasing demand for urban renewal calls for architectural interventions. Success and the meeting of set goals is typically assessed using an established framework.

Architectural tradition offers methodologies to evaluate built structures based on characteristics like build quality, engineering performance, functionality, spatial design, and effects on the living environment.However, in addition to these qualities, building refurbishments target energetic, economic, environmental and social improvements. They respond to complex requirements set by an extensive network of stakeholders. A qualitative building assessment based on architecture alone does not sufficiently reflect the aims of such processes, and a holistic means to analyze refurbishment designs is lacking.

This paper presents a review of existing building assessment methodologies, and suggests a new, simple set of evaluation criteria for interventions on the building envelope. The proposal is demonstrated by assessing three cases illustrating different approaches to such processes. Evaluation results prove the usability of the method to assess the variation in extent and aims of implemented measures. Coupled with quantitative estimations, it could aid the decision making process in residential housing cooperatives. Future development should include further cases and more extensive building refurbishments.

Keywords: building envelopes, build quality, evaluation criteria, refurbishments, energy retrofits, qualitative building assessment.

Introduction

The construction industry is progressively moving from designing and building new to redesigning, upgrading and maintaining existing buildings. The context is complex and the regulatory framework is increasing. Refurbishments should target not only structural and energetic, but also economic, environmental and social improvements.

A major difference, as compared to new build, is the position of the end-user as main client and stakeholder. In Finland, the end-user is often also the sole investor, as the majority of our residential households are owner-occupied (Official Statistics of Finland 2016). Hence, qualitative improvements and added value for the end-user should be a main outcome of refurbishment processes.

The decision making process is challenging. Finnish residential multi-story buildings are typically organized as Limited Liability Housing Companies and led

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Building refurbishments respond to a complex set of requirements from an extensive network of stakeholders. A holistic means to analyze refurbishment designs is lacking.

by a board of laymen. Decisions are taken as a majority vote among shareholders, being the owners and usually also users of the building. Motivations for a voting decision can vary significantly. Typically, a refurbishment process starts with a project planning phase overseeing various scenarios for building works and required initial investment cost. Based on presented material and set requirements the board selects among numerous alternatives a few choices to be decided on by the shareholders. Minimum requirements are usually identified based on immediate needs, like leakages, and the long-term maintenance plan of the housing company. As laymen are involved personal preferences may also affect, for example, the setting of requirements and the selection of alternatives to be taken forward. Overall, there is a tendency towards avoiding high cost measures. (Cronhjort and le Roux 2013.) In this context, very seldom any actual assessment framework is applied. One reason being the cost. Hence, the alternatives might be limited to known solutions responding to limited requirements. Added value is seldom discussed.

To develop building retrofits the client needs to be educated on what to demand and how, and be offered tools to better evaluate proposed solutions. As the client in a building refurbishment often is also the end-user, the assessment should not only include quantitative aspects but additionally aid the understanding of the qualitative end result and added values of the proposal. The decision making process of housing companies calls for cost efficient assessments based on both quantitative and qualitative criteria, including architectural aspects. This study proposes one approach illustrated with three cases and discusses the results as well as needs for further development.

Section one of the article focuses on the methodology. Section two presents a literature review. Section three explores requirements set on building envelope retrofits and suggests a set of evaluation criteria. Section four demonstrates the method by assessing selected cases. Sections five and six discuss and conclude the results.

Methodology

The study includes a literature review of existing architectural assessment and complementary evaluation frameworks for building refurbishments, and suggests an interdisciplinary set of qualitative evaluation criteria reflecting current aims in construction. The proposal is demonstrated by evaluating three different approaches to facade retrofits of residential buildings.

An essential part of this research is the motivation for selecting and deciding on evaluation criteria. The motivations are as follows:

1) As the study is limited to facade retrofits, evaluation criteria base on structural parts that exist in the facade and measures that can be taken during a refurbishment process.
2) Added value for the end-user is the focal point. Hence, suggested measures are evaluated from the viewpoint of the end-user and direct effects on living, like comfort of the occupant.
3) Aims and goals are regulated by European Directives and national building codes. Such standards offer a basis for comparison when deciding on level of improvements regarding, for example, energy efficiency.
4) The study adds new knowledge to architectural research. The architectural tradition offers itself a holistic view on the art of building suggesting the user and his experiences as focal point. A key message of this research is placing the user back in the centre, building on this tradition. Hence, architectural frameworks are also investigated.

Additionally, a means to convey the results must be chosen. The target group for communications consists of laymen and hence the final outcome should be easily

and readily understood. To support this target the results are formatted into radar charts as suggested, for example, by Malm et al. (2014) and the developers of the Design Quality Indicator (Construction Industry Council).

Literature review

Methodologies and software exist to evaluate building performance. The emphasis of such is often on single indicators like energy efficiency or environmental impact (Horvat and Fazio 2011; le Roux and Cronhjort 2012). Tools to evaluate *Life Cycle Analysis* (LCA) and *Life Cycle Costs* (LCC) exist and the use is increasing. From the viewpoint of current European agreements this is sufficient; according to the recast Directive 2010/31/EU building retrofits should be done to a high standard of energy efficiency and in a cost efficient way (Buzek and López Garrido 2010).

However, researchers do argue that building projects should add value, not only to the built environment, but also to the end-user and client in the form of commercial and social benefits, and call for methodologies to holistically quantify the aspects of good design (Adamson 2004; Thomson, Austin, Devine-Wright and Mills 2003; Vestergaard 2011).

Project *Sustainable Refurbishment of Building Facades and External Walls*, *SUSREF*, presents one attempt suggesting a holistic and systematic evaluation tool of facade retrofits (SusRef). The method comprises fifteen aspects to be assessed, including the evaluation of aesthetic design in addition to energy efficiency, structural stability and safety, interior air quality, environmental performance, costs, and social impacts (Häkkinen 2012). The SusRefTOOL presents criteria for eight out of fifteen variables on a scale from -2 to +2. The aesthetic quality of the design is suggested to be assessed by a panel of experts (Häkkinen ed. 2012.). However, evaluation criteria remain undefined. The project provides a separate calculation tool for LCA and LCC for sustainable refurbishments of external concrete sandwich wall elements in the Nordic countries and Central Europe. It uses the VTT database and a cradle-to-gate approach. (SusRef.)

The architectural quality of ambitious facade retrofits on residential buildings has been assessed by Vestergaard (2012) in a case study discussing four projects from Denmark, Austria and Finland in her article *Architectural freedom and industrialized architecture – retrofit design to passive house level*. She concludes that despite offered opportunities, retrofitted buildings still express a similar repetition as the original designs of mass-produced housing. However, she does not either suggest any concrete evaluation criteria.

In the United Kingdom, the evaluation of architectural quality in construction, both new build and refurbishments, has been explored from the viewpoint of lean culture looking at architecture as part of the value delivery process (Thomson, Austin, Devine-Wright and Mills 2003; Gann, Slater and Whyte 2003). The meaning of value delivery, and the difference between quality and value in building design has been discussed by Thomson, Austin, Devine-Wright and Mills (2003). They suggest that "[…] the quality of a product is an assessment of how well its qualities (that is its features or attributes) meet the customer needs." Value is defined as a subjective perception, but it is recognized that it can have different meanings depending on stakeholder. However, the authors conclude that value can be viewed as an output-input balance and objectively assessed by comparing benefits and expense or sacrifices. To establish delivered value for the customer, delivered quality is assessed based on the qualities of the design and product. (Thomson, Austin, Devine-Wright and Mills 2003, 337.) The authors suggest using the *Design Quality Indicator* (DQI) developed by the Construction Industry Council in 1990. It was launched online in the United Kingdom in 2003, in the

United States in 2006 and by 2014 it was used in over 1 400 projects. (Construction Industry Council; Wikipedia 2014.)

The Design Quality Indicator proposes an assessment of architecture based on functionality, build quality and impact. It is a modern interpretation of Vitruvius´ tenets of architectural design.

The DQI builds on the foundation established by Vitruvius, translating "[…] Vitruvius´ principles of commodity, firmness and delight into the three indicators of functionality, build quality and impact for use in modern context." (Thomson, Austin, Devine-Wright and Mills 2003, 341). *Functionality* refers to the user experience including use, access and space; *Build quality* describes the engineering performance of the building including engineering systems and construction; and *Impact* the human perception of the building based on character, form, materials used, the interiors, the relationship with the surrounding community and built environment. The importance of stakeholder involvement is emphasized and the DQI is primarily intended for use during the preplanning and design (value delivery) process (Thomson, Austin, Devine-Wright and Mills 2003; Construction Industry Council; Wikipedia 2014). However, it is applicable throughout the lifecycle of a building (Gann, Salter and Whyte 2003). Figure 1 illustrates the three pillars of architectural quality assessment in accordance with the DQI.

The DQI is a comprehensive evaluation method including extensive stakeholder engagement and used for complex projects like e.g. hospitals (Construction Industry Council). Based on lessons learnt the developers of the DQI also recognize a need to continue work by furthering the understanding of design quality in terms of stakeholder participation, life-cycle design, the interactions of process and products, learnings from other sectors, organizational learning, validation and the feeding back of results (Whyte and Gann 2003).

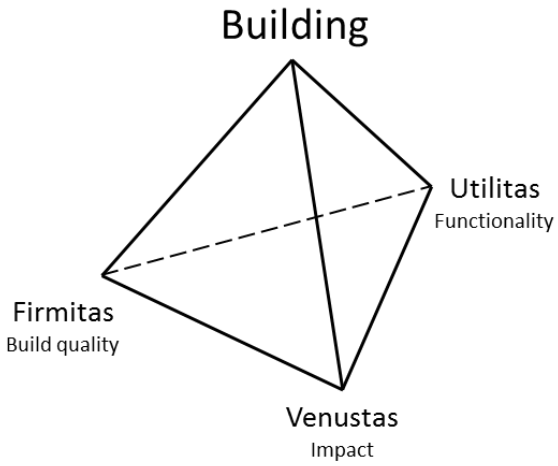


Figure 1. Three characteristics of architectural design. The Design Quality Indicator (DQI) proposes an assessment of architecture based on functionality, build quality and impact. It is a modern interpretation of Vitruvius´ tenets of architectural design.

Macmillan (2006) has discussed the concept of good design through the viewpoint of added value to a building. He distinguishes between three different types of values in accordance with DEGW & Technibank (1992): (1) use value – customized and owner-occupied buildings, (2) exchange value – buildings designed to maximize trade value, and (3) image value – designed to maximize the image of the building. To these he suggests the addition of social, environmental and cultural value. He recognizes the difficulty in defining design-based added value, but argues that the absence of a quantification of delivered value causes "[…] a perennial risk of building down to a cost rather than up to a value." (Macmillan 2006, 268.).

Qualitative assessment of building envelope retrofits

Building refurbishment projects and facade retrofits are here considered as value delivery processes with the end-user as primary client. The aim is to improve an existing built structure to better respond to changed requirements and needs, and deliver value for the customer. However, as Thomson, Austin, Devine-Wrigth and Mills (2003) suggest, value is a subjective perception.

In building refurbishments, key aims and values are established in the initial project planning phase. Regarding building envelopes, qualitative needs are often concrete, like new windows replacing old ones at the end of their lifespan, reduced draft and increased thermal insulation. In addition, immaterial aims might be stated, such as an improved image. Drivers are often diverse and can include, for example, an increased exchange value of the building as an asset.

The aim is to illustrate the extent of improvements in user experience, engineering, energy efficiency, and architecture achieved with the suggested facade retrofit design.

The process requires an investment. Regarding residential buildings and especially in the case of owner-occupied housing companies, the investment capacity and interest is limited. This boundary condition leads to an input-output balancing act affecting added value for the end-user. Decision making is demanding without objective means to compare alternatives.

Proposal for evaluation criteria

The emphasis in building codes is on energy and cost efficiency, with resource efficiency upcoming. Building retrofits should be done to a high standard of energy efficiency and in a cost efficient way.

Tools to evaluate cost efficiency exist. Life Cycle and Whole Life Costing are established concepts. However, early project planning in housing companies typically relies on initial investment cost figures and payback time calculations only, even if the aim is for an extended lifetime of built structures. This could be changed by introducing, for example, the SusRefTool limited to the building envelope, and developed specifically to aid facade retrofits in the Nordics. It includes both LCC and LCA.

Missing is a simple tool for qualitative analysis of the projected outcome in the planning phase.

Building qualities typically addressed in a facade retrofit include the structural condition, energy efficiency (thermal insulation and airtightness), user satisfaction and architectural image (quality). With an increasingly aging population, accessibility is also an important aspect to address even if the opportunities as part of a building envelope retrofit are limited.

To evaluate qualitative improvements and added value for the end-user, I propose using a framework based on the three-pronged approach of DQI including functionality, build quality and impact. However, due to the discussed context and the aim for simplicity, I suggest limiting the assessment to aspects relevant for a facade retrofit only. Characteristics evaluated are listed in Table 1. They include accessibility, ventilation, lighting conditions, the structural frame, external cladding (facade material), window U-value, thermal insulation, airtightness, visual appearance of the building and the building volume (form). All of these also affect the user experience of the facade, building, and living spaces. The variables are evaluated on a scale from 0 to 3. As the aim should be for improved user experience, negative scores indicating a weakening of some aspects are excluded.

Table 1. Suggested criteria and scale to evaluate facade retrofits.

Level of measures		Status Quo	Minor Improvement	Upgraded	Excellent
Score		0	1	2	3
USER EXPERIENCE (FUNCTIONALITY)	Accessibility	No change	Small changes including, for example, added handrails	Accessibility on the refurbishment design agenda	Accessibility measures like an improved access to the balcony / added new balconies to facilitate outdoor areas to apartments
	Ventilation	No change	Openable windows or air inlets, mechanical exhaust air system	Openable windows and air inlets, mechanical exhaust air system	Air ventilation system with heat-recovery
	Light	No change	Small changes including, for example, narrower window frames	Limited amounts of larger window area or some new, additional windows	Extensive amount of larger window areas and/or new windows
ENGINEERING AND ENERGY EFFICIENCY (BUILD QUALITY)	Frame of the facade	No change	Maintenance and repair work	Structurally improved	New
	External cladding/ facade material	Maintenance, minor repairs	Repair of the existing material	New, maintenance requirements close to original	New, expected lifetime up to 50 years or more, limited maintenance requirements
	Windows U-value	No change	New windows, U-value less than current building regulations for new built or national aim for building retrofits	New windows, according to current building regulations for new built or national aim for building retrofits	New windows, average value of all windows as installed U≤ 0.85 W/(m²K) in accordance with the EnerPHit suggestion (Feist 2010)
	Thermal insulation	No change	Added thermal insulation as compared to state prior to facade retrofit	According to current building regulations for new built or national aim for building retrofits	Passive house level local standard or better
	Airtightness	No change	Minor repair	According to current building regulations for new built or national aim for building retrofits	n50 ≤ 1.0 h-1 as a limit, target value n50 ≤ 0.6 h-1 in accordance with the EnerPHit suggestion (Feist 2010)
ARCHITECTURAL QUALITY (IMPACT)	Visual appearance of the building	No change	Small changes in visual appearance affecting only parts of the building	Aim to change visual appearance of the single building by e.g. changes in a monotonous original visual image of the building; visual changes limited	Aim to change visual appearance of the single building and affect the surrounding built environment by, for example, changes in a monotonous original visual image of the building; strong architectural vision
	Building volume/form	No change	Small changes affecting only parts of the building	Aim to change visual appearance of the single building by e.g. changing the original building volume with a new roof; visual and structural changes limited	Aim to change visual appearance of the single building and affect the surrounding built environment by, for example, changes in the building volume like building extensions; strong architectural and structural vision

The assessment aims not to compare factors with each other, but to evaluate to what extent each factor has been taken into account in the facade retrofit design. It is up to decision making to select which factors are given priority. For ease of use, the results are examined as a radar chart, visualizing the scores. Hence, more coverage indicates a more holistic refurbishment design including a larger extent of measures and qualitative upgrades.

Cases

To demonstrate the suggested methodology in use three retrofit and upkeep options are evaluated. Cases include (A) a building envelope retrofitted using prefabricated timber-based element systems *(TES EnergyFacade*), (B) a building facade retrofitted using thermal insulation and rendering (conventional), and (C) a facade subject to maintenance only. Figures 2−4 show built examples.

The proposed methodology is demonstrated by evaluating three different facade retrofit and upkeep options.

Case A uses *TES EnergyFacade*, which exemplifies a holistic approach to facade retrofits. The wording derives from the acronym of research project *Timber based element systems to improve the energy efficiency of the building envelope* (TES EnergyFacade 2009). The project demonstrated the method (later further developed) for retrofitting building facades using large-scale, prefabricated, timber based elements and hence introducing an industrial approach to building refurbishment. The separate wooden frame in the new facade elements allows for extensive amounts of thermal insulation. Coupled with an additional airtight layer, the energy efficiency of the building can be improved even up to passive house standard. Figure 5 illustrates the retrofit process of the discussed case. The presented project was a pilot and the first building in Finland to be retrofitted with *TES EnergyFacade*. The amount of thermal insulation after refurbishment totals between 350 and 400 millimeters (Lylykangas 2011).

A state-of-the-art alternative for facade improvements in Finland today is exemplified by *Case B*, using external insulated render. The existing facade is upgraded by adding new thermal insulation directly onto the existing wall. The thickness typically varies between 50 and 100 millimeters. The surface is completed with several layers of rendering. In a building from, for example, the early 1970´s the thermal insulation level of the facade after refurbishment is less than required for new built according to the National Building Code of Finland.

The third example is continuous maintenance of the facade including for example, patch repairs, the re-seaming of concrete sandwich elements and a renewal of windows to triple paned. *Case C* represents this option.

The alternative solutions are illustrated with realized projects; three neighbouring residential buildings originating from the 1970´s, and located in the area of Peltosaari, Riihimäki. The area is a typical representative of a Finnish suburb and the urban planning of its time, with large areas erected at once and forming a homogeneous built environment. The houses were built with similar building designs using a contemporary structural concrete system. It is based on prefabrication, with load bearing frames of concrete and non-load bearing facades of concrete sandwich elements (Betoni Elementti Systeemi BES (Finnish), Concrete Element Systems; SBK 1979). The original building envelope contains a maximum of 90 millimeters of thermal insulation and double pained windows. The buildings are originally equipped with mechanical exhaust air ventilation.

The investment cost for the three retrofit alternatives varies substantially. The maintenance cost of concrete element facades is negligible, including mainly re-seaming every 15 to 20 years. In Finland, the average cost of more extensive repair works varies between 50 and 100 euros per meter square (€/m^2). The cost for the conventional option including a 50−100 mm layer of additional thermal

insulation and rendering or, alternatively, a facade of cement fiber boards varies with an average between 150 and 200 €/m^2. (Mattila 2010.) The cost of an energy retrofit using timber-based elements can, as assembled and based on early pilots in several European countries, vary between 800 and 1000 €/m^2 (le Roux 2014, Lichtblau 2014). However, the price for single elements is close to the price for the conventional option.

Figures 2-4. Cases illustrated. To demonstrate the suggested evaluation method three options of building envelope retrofits are assessed. The images illustrate built examples. From the top; A) a building envelope retrofitted using prefabricated timber-based element systems *(TES EnergyFacade*), B) a retrofit using thermal insulation and rendering (conventional) with new windows and glazed balconies, and (C), a facade with upkeep consisting of continuous maintenance and optional glazing of balconies. All buildings originate from the 1970´s, were built using similar building plans and the same structural concrete system. Images by the author.

Figure 5. The *TES EnergyFacade* retrofit process of Case A visualized. Stages from the left: 1) original building, 2) removal of old balconies, the external layer of concrete and old thermal insulation (old windows are still intact for weather protection), 3) the assembly of soft thermal insulation as adaption layer, 4) the assembly of an airtight layer, 5) the assembly of vertical, pre-fabricated, timber-based new facade elements including new passive house standard windows and the removal of old windows beneath, 6) finalization of the renewed facade with a new roof and detailing, 7) the assembly of new balconies. Image by Ville Riikonen, Aalto University.

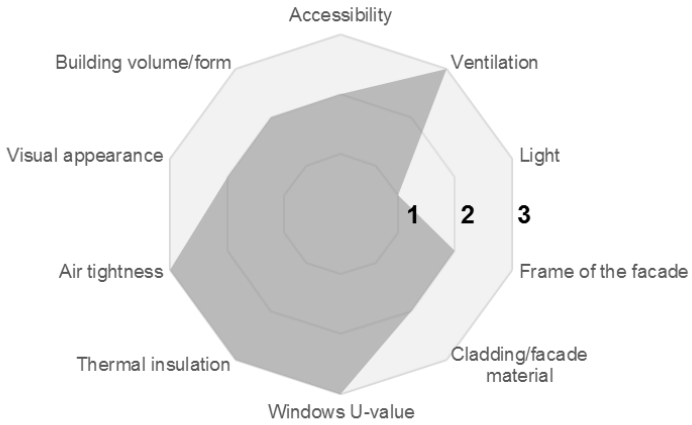
Figures 6-8. Evaluation results. Case (A) *TES EnergyFacade*. Next page: case (B) conventional retrofit, and case (C) maintenance and repair. A *TES EnergyFacade* retrofit attends a larger amount of aspects of the building envelope improving user comfort on many levels, as compared to a conventional retrofit. The dark grey area of case (B) illustrates the outcome if the window U-value is not up to current standard for new built and the total amount of thermal insulation as built varies. In an optimal case, the points for windows and thermal insulation would be 2 (light grey). Case (C) might include the renewal of windows (dashed line). Lighting and accessibility are still considered only to a limited extent in facade retrofits, regardless of used technology.

Evaluation results

A comparison of the facade retrofits using the above defined criteria illustrates clear differences in goals and outcomes. The results are presented as radar charts in Figures 6−8.

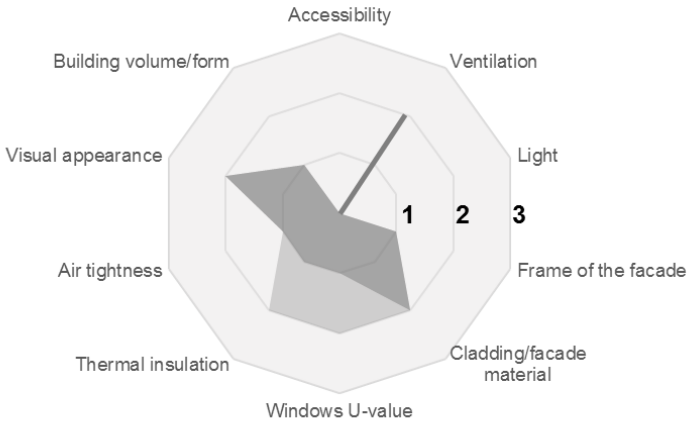
A typical Finnish concrete multi-story building from the 1970´s, without any renovation or retrofit measures (case C), scores 2 points for ventilation as openable windows and a mechanical air ventilation system for exhaust air is originally included. Other attributes score 0 points. A conventional facade retrofit including renewed windows (typically done separately), a layer of added thermal insulation on top of the existing facade or on a partly demolished facade covered with rendering on site (case B), mainly addresses the look of the building with 2 points for Visual Appearance. The results show the extensiveness of a *TES EnergyFacade* retrofit (case A), attending not only the building appearance but also energy efficiency. However, in this comparison, no difference between the architectural impact in cases A and B can be identified. Figure 9 shows the collected results; *TES EnergyFacade* is the most extensive but also the most holistic approach to repairing a building envelope.

A) TES EnergyFacade



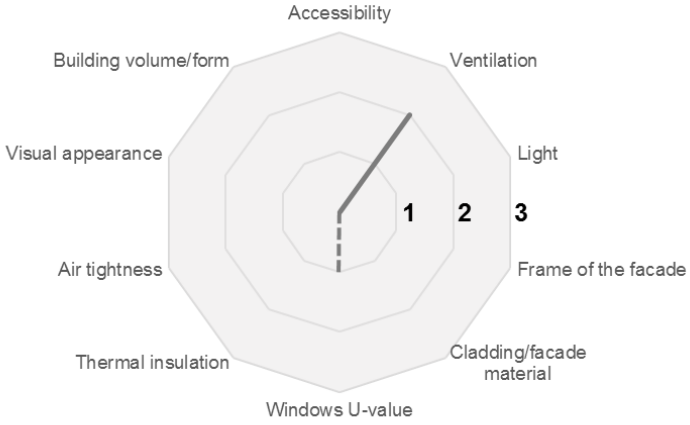
Level of measures: 1 Minor improvement **2** Upgraded **3** Excellent

B) Conventional retrofit



Level of measures: 1 Minor improvement **2** Upgraded **3** Excellent

C) Maintenance and repair



Level of measures: 1 Minor improvement **2** Upgraded **3** Excellent

Differences are also reflected in total scores. Points achieved with the *TES EnergyFacade* retrofit (case A) total 23 out of a maximum 33, with conventional measures (case B) 11(or 12-13, depending on windows and thermal insulation level) and with maintenance only (case C) 2. *TES EnergyFacade* is a costly solution but the price reflects the extent of improvements.

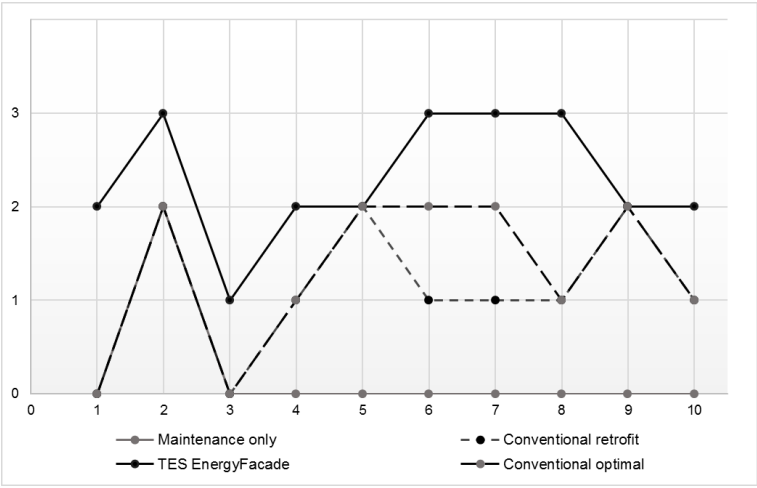


Figure 9. Evaluation results compared. The Y-axis lists scores achieved on a scale from 0 to 3, the X-axis assessed variables from the left as follows; (1) accessibility, (2) ventilation, (3) light, (4) frame of the facade, (5) external cladding (facade surface), (6) windows U-value, (7) thermal insulation, (8) airtightness, (9) visual appearance of the building, (10) building volume (shape). The results illustrate the difference in extent and aim of refurbishment measures, explaining also the large variation in costs.

Discussion

Building upgrades do no longer include maintenance and repair work only, but target extensive technical and architectural improvements. The overarching aim is for increased energy efficiency and urban renewal of our existing building stock and areas.

Evaluation results reflect the variation in extent and quality of measures and the development of building refurbishments towards increasingly holistic approaches. The method could aid decision making in residential housing cooperatives.

Literature provides suggestions for evaluation methods to assess environmental impact, whole-life costing or architectural quality. However, a building assessment based on quantitative indicators only, does not sufficiently reflect the aims of modern retrofit processes with added values for the end-user as focal point. A holistic means to qualitatively assess refurbishment designs is lacking.

This paper suggests a set of evaluation criteria reflecting the quality and extent of refurbishment measures undertaken in a facade retrofit. Variables are narrowed down to aspects of the building envelope. One can argue that such measures seldom are undertaken separately, but often as included in a larger project. However, the aim of this study is to explore a new means to assess refurbishment processes using the limited context of facade retrofits as an example. Further research should extend the scope.

The proposed method is demonstrated by evaluating three building facades illustrating different amounts and types of measures including maintenance only, a conventional retrofit using external insulated render, and an extensive intervention using prefabricated timber-based elements, *TES EnergyFacade*. The results reflect the difference in extent, number and quality of measures employed in the three cases. The evaluation clearly illustrates the holistic approach of *TES EnergyFacade* explaining, for example, differences in initial investment costs.

Evaluation results also illustrate the development of building refurbishments from including only a few measures like new windows towards increasingly holistic approaches. However, the assessment is limited. A more extensive comparison of various options available could visualize the alternatives for laymen even better.

Regarding architecture, the extent of the intervention and vision shows in the results. However, variation in architectural quality is difficult to identify. Regarding the architectural end-result, it comes down to a subjective opinion. This view is supported by literature suggesting architectural quality to be evaluated by, for example, a panel of experts.

Conclusions

Means to evaluate quantitative aspects of building refurbishments like investment costs, life cycle costs, energy efficiency and environmental impact exist. However, a holistic means to evaluate and reflect qualitative aims and results of a planned refurbishment is lacking, even if the qualitative outcome is a priority for the end-user, a key stakeholder and client in such processes.

The proposed qualitative assessment method reflects the outcome of a facade retrofit in terms of end-user comfort and improvements in functionality, build quality and impact of a building. Coupled with quantitative estimations, it could aid the decision making process in Finnish residential housing companies. The methodology also includes an indicator for architectural vision. However, the results fail to reflect differences in architectural quality.

To develop the method further a larger number of cases and facade retrofit alternatives should be analysed. Further research could also explore the evaluation of more extensive building refurbishments, complementing the criteria correspondingly.

Acknowledgements

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Revitalizing New York's East River Waterfront

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Abstract

Urban waterfronts are undergoing significant transformations. In many Western cities former industrial sites are experiencing a renewal as they are being rebuilt for new uses. For a long period, many waterfronts in inner cities were used primarily as industrial zones and harbors, limiting the number of citizens living on the shore. However, in the future new urban maritime districts around the world will provide cities with more waterfront housing and leisure venues.

The city of New York has already opened up access to miles of shoreline that had been closed off to the public for decades. Diverse waterfronts are now among the most important of the city's resources. Open space, resiliency, living by the waterfront, transportation and in-water recreation are among the priorities for future development.

The aim of this paper is to look into current waterfront development along New York's East River, map the activities and functions, and research the processes behind the development. The key question is what are the existing activities at the waterfront and what kind of approaches does the city have to face the future challenges at the coastline. The methods include field study, observation, data research, data analysis and interviews with key actors involved in the development processes in New York.

This paper will contribute to the discussion on urban waterfront transformation and the experiences it provides. Emphasis is placed on urban planning, programming, cooperation and innovation in relation to the waterfront. Urban development is viewed as a condensation of activities, programs and networks. The themes include meantime strategies and collaboration strategies. The aim is to shed light on what lies beyond – the models and processes of waterfront development that create urban experiences.

Keywords: waterfront, New York, urban planning, urban design, revitalization

Urban waterfronts are facing significant transformations world-wide and they are among the most pressing urban design challenges of the next hundred years.

Introduction

Urban waterfronts are facing significant transformations world-wide and they are among the most pressing urban design challenges of the next hundred years. Former industrial sites are being reclaimed and rebuilt for new uses, while new urban maritime districts are beginning to provide a mix of housing, recreation, and post-industrial uses, alongside ecological programs in the midst of greater environmental uncertainty. North American cities were among the first destinations in waterfront regeneration, with the revival of abandoned harbour areas close to downtown districts (Smith & Garcia Ferrari 2012).

The city of New York has already opened up access to miles of shoreline that had been closed off to the public for decades and the process is ongoing. Diverse

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waterfronts are among the city's most important resources. Open space, resiliency, affordable housing, transport, and recreation are priorities for future development. The coastline and the waterways are referred to as a "Sixth Borough", which has the potential to provide working harbor, public parks, housing districts and ferry routes. The aim of this paper is to study the different approaches used in certain locations to open New York City's waterfront to the public. The focus is on how to bring life to the waterfront and what types of urban experiences it can offer.

Besides offering great opportunities, the effects of climate change mean that the water is increasingly seen as a challenge. There is a growing need to integrate ecological research into urban regeneration processes at the waterfront to reduce the environmental impacts (Dyson & Yocom 2015), and to develop a more harmonious relationship between the built urban areas and water (Hayward 2015). The waterfront projects have to offer solutions for living "with the water instead of fighting it" (Waterfront Alliance 2015). Innovations are needed to find new ways of adapting to the changing conditions. The city of New York has invested in improving water quality in the harbor and collecting wastewater to be reused (Holloway 2011).

The role of culture and history is emphasized in the process of urban regeneration and re-constructing maritime identity (Sepe 2013). Earlier research studying social aspects of urban waterfront regeneration has identified four different dimensions: resources and identity, social status, access and activities and waterfront experience (Sairinen & Kumpulainen 2006). Bottom-up development arising from grassroots level is seen essential to sustainable long-term development (Taufen Wessells 2014; Campo 2002). Civic stewardship is strong in New York, and this can be seen clearly at the waterfront. According to urban planner Thaddeus Pawlowski and Jeffrey Shumaker, chief urban designer and director of urban design at City of New York, Department of City Planning, there are many different kinds of ownership on the waterfront. Civic organizations offer activities and education at the shoreline and participate in programming, while providing stewardship at the waterfront. According to an accessibility and stewardship report, "Civic organizations play a critical role in terms of providing public access to the waterfront and supporting waterfront stewardship" (Boicourt 2016, 3). Collaboration and bottom-up approaches can promote positive urban change (Orff 2016). Collaboration is a joint effort to achieve a common goal, where participants cooperate in order to profit a given community. Collaboration models typically include elements of communication, diversity, sharing and problem solving. In New York, various collaboration models have been developed to enliven and revitalize waterfront areas together with the people living and working there.

This paper investigates some of the tools and approaches that have been used to open up and revitalize the waterfront, creating urban experiences in collaboration with various participants. The key question is what are the existing activities at the waterfront and what kind of approaches does the city have to face the future challenges at the coastline. The paper focuses on the areas along the East River, specifically the cases of Brooklyn Bridge Park and East River Waterfront Esplanade. As a result ten different approaches are identified by the author for revitalizing the waterfront.

Urban planning history of the East River Waterfront

New York City's coastline is 520 miles long and borders the ocean and rivers. The first settlements were built in a location, where the shoreline offered natural protection from storms. However, the coastline has faced dramatic changes as the city has grown. Some of the historic natural features, such as vast wetlands and oyster beds, almost vanished as piers and bulkheads were built and vast

cargo shipping harbors and storage areas were constructed. Nevertheless, urban growth and the changes it brought also enabled also economic growth.

Using the waterfront for harbors meant that it was closed to the wider public for decades. When major shifts in the economy led to the abandonment of the waterfront, even after most of the harbor functions were removed, there were large sections of the waterfront that remained unused. By the mid-1970's the waterfronts of the Hudson and East Rivers had become like a no man's land, isolated from the inner city districts by Robert Moses's highways (Balsley 2012, Anderson 2015). Along East River waterfront informal development created by local residents offered recreational and social spaces (Campo 2002).

Figure 1. New York´s waterfront. Image by Meri Louekari.

According to Michael Marrella, director of Waterfront and Open Space Division at the City Planning Department, in the 1990's the city realized, that should the economy turn, the waterfront should also turn. In the recent years and decades, the city has been working on reconnecting New York with the water and transforming the abandoned banks into vibrant new locations. The projects include Harlem River Park, Governors Island and rezoning at Greenpoint and Hunters Point (Burden 2011). According to Mary Kimball, senior waterfront planner at City of New York, Department of City Planning, the development of the city's formerly industrial waterfront areas to residential, commercial, and recreational uses can be seen most notably along the East River.

The first long term initiative for the coastline of New York was published in 1992, when the Department of City Planning launched the first *New York City's Comprehensive Waterfront Plan*. It was a land-use plan, indicating residential and recreational uses for the waterfront. The plan was the starting point for the long term work to transform the waterfront; to create access and to reclaim the waterfront for the public.

A new sustainable vision for the coastline, the *Waterfront Vision and Enhancement Strategy,* was issued in 2008. The strategy aims to utilize and develop New York's waterfront while preparing for climate change and the

challenges it brings. The initiative consists of two parts. The first, *Vision 2020: New York City's Comprehensive Waterfront Plan*, is the centerpiece of the *Waterfront Vision and Enhancement Strategy*. It builds on *PlaNYC*, the sustainability plan released in 2007.

According to Marrella, who led the work, *Vision 2020: New York City's Comprehensive Waterfront Plan*, is the backbone of waterfront planning, and has a broad vision. It consists of eight broad goals, which are:

> *1. Expand public access to the waterfront and waterways on public and private property for all New Yorkers and visitors alike. 2. Enliven the waterfront with a range of attractive uses integrated with adjacent upland communities. Support economic development activity on the working waterfront. 3. Improve water quality through measures that benefit natural habitats, support public recreation, and enhance waterfront and upland communities. 4. Restore degraded natural waterfront areas, and protect wetlands and shorefront habitats. 5. Enhance the public experience of the waterways that surround New York—our Blue Network. 6. Improve governmental regulation, coordination, and oversight of the waterfront and waterways. 7. Identify and pursue strategies to increase the city's resilience to climate change and sea level rise. 8. Identify and pursue strategies to increase the city´s resilience to climate change and sea level rise* (NYC-DCP 2011, 20-21).

Four functional categories were identified for waterfront activity: the natural waterfront, the public waterfront, the working waterfront, and the redeveloping waterfront. The fifth, blue network, was added later (NYC-DCP 2011, 8).

The Comprehensive Waterfront Plan is accompanied by a three-year implementation component: *A Waterfront Action Agenda*, which presents the initiatives already realized and provides new ideas for implementing the strategy's goals (NYC-EDC 2015). Resiliency means adapting to the impacts of climate change, protecting ourselves from natural disasters and being prepared to recover quickly from them (NYC 2013). Resiliency report "*A Stronger, More Resilient New York*" published in 2013, presents a comprehensive coastal protection plan. Partnership with the federal government and other regional stakeholders plays an important role in implementing the plan (NYC 2013).

According to Amanda Burden, city planning commissioner of *Vision 2020*, "The design of waterfront spaces and shorelines is a critical part of achieving the goals of Vision 2020, from fully integrating the City with its waterways, to advancing the ecological vitality of the waterfront, and making the City more climate resilient" (Burden 2011, 42). To ensure design quality, the city has created new design and zoning guidelines for waterfronts. It is important, that planning for the waterfront is site-specific. Public spaces should provide a variety of features, including vegetation, benches and bike racks (Burden 2011). High-quality design is seen as a path to sustainability (Holloway 2011). To support access, resiliency and ecology on the waterfront, the Waterfront Alliance has developed *Waterfront Edge Design Guidelines* (WEDG) as a tool for reviewing and promoting waterfront projects (Waterfront Alliance 2015).

Creating public access is one of the main themes of the plans for the waterfront and reconnecting it to the inland districts of the city. Marrella states that there are many different ownership models on the waterfront. According to director of urban design, Jeffrey Shumaker, land ownership on the waterfront is scattered, and the state regulates the waterways. The City Planning Department regulates building using zoning.

Senior waterfront planner Mary Kimball states, that while ownership is scattered, much of the city's waterfront is owned by public entities, mostly parkland and some transportation uses. Public ownership of large stretches has enabled some of the most transformative projects to come to fruition - places like Hudson River Park, Battery Park City, Brooklyn Bridge Park, and Governor's Island. For other stretches that are owned by disparate private entities, change is more gradual and dependent on the real estate market, Kimball says.

Some of the challenges of the waterfront planning include how to regulate land use and how to guarantee public access. Recently, density on the waterfront (e.g. in Brooklyn) has increased, which requires more open space. In many places access to waterfront is provided by the developers, and often this has proven to be success. For example, developers can be allowed to build taller if they agree to build more public space. Along with the waterfront development, there is an aim to relax the regulations. According to Shumaker, regulations that used to be very strict, are now becoming more flexible.

Hurricane Sandy caused massive losses for New York in 2012. In the future, the rising sea level and warmer ocean temperatures will cause even more extreme weather. The threat of destructive storms creates challenges for the plans and ambitions to open up and revitalize the shoreline. However, the city of New York has decided that it will not abandon the waterfront, instead it will work harder to strengthen resiliency and find new ways to open up the shoreline while providing protection from storms. The aim is to turn "the risks into incentives to create a more inviting, livable, and resilient world" (Rodin 2010, 9). According to Shumaker, after Hurricane Sandy there has been a lot of new investment in the waterfront. Ideas include the East Side Resiliency Project, based on a competition entry known as the Big U by Bjarke Ingels Group (BIG). Strategies for resiliency include building offshore breakwaters to weaken waves, protecting inland districts by creating dunes and constructing floodwalls and tide gates and requiring elevations for new building areas.

The city's coastal zone management program, the *Waterfront Revitalization Program,* was originally issued in 1982, updated in 2002 and revised in 2016 (NYC-DCP 2016). It contains the city's policies for development and use of the waterfront. According to Kimball, changes to zoning and major public projects must be consistent with these policies. In addition to promoting the city's goals for public access, resiliency, and other issues, the Waterfront Revitalization Program prioritizes water-dependent industrial uses in areas well-suited to maritime uses, and protection of natural habitats in areas with extensive natural areas, Kimball explains.

Two case studies: Brooklyn Bridge Park and East River Waterfront

Research materials and methods

This paper is based on a case study. The research methods used for empirical material collection include field study and observation as well as data research. Interviews with key actors in the development processes were conducted by the author. The interviews, field work and most of the other empirical material collection were conducted by the author as a visiting scholar at Columbia University, GSAPP. The research material was analyzed during and after the visiting scholar period, as well as at an additional visit later in the same year. The development of the waterfront in New York was studied and analyzed by mapping activities and functions along the coastline and conducting research on the processes behind the development. In the selected locations - Brooklyn Bridge

Park and East River Waterfront - existing activities and the underlying processes were studied. The research included models for co-ordination and organization and investigated the participants and their different roles.

Figure 2. Dumbo, Brooklyn Bridge Park. Image by Meri Louekari.

Approaches for revitalizing the waterfront at Brooklyn Bridge Park

Brooklyn Bridge Park is a vast new public park built on a post-industrial waterfront site. Stretching 1,3 miles along the banks of Brooklyn's East River, it has a great location and covers 85 acres of land. Formed as a long string of diverse locations, the park site stretches from the Manhattan Bridge in the north to Pier 6 and Atlantic Avenue in the south.

The area was used as a storage and cargo shipping harbor until the 1980's. Piers 1 and 6 were opened to the public in the first half of 2010. Today the park also includes Piers 2 to 5, the Empire Fulton Ferry, John Street, and Main Street. Investing in design has been an important part of the park development. The master plan was created by the city, the state, and landscape architecture office Michael Van Valkenburgh Associates. The starting point was to turn an industrial site into a natural one while preserving the experience of the industrial waterfront, and use of topography played an important role in the design. The park design by Michael Van Valkenburgh Associates reuses existing site structures; for example, old harbor structures are used as basketball courts. The section of the park that is adjacent to two residential districts creates many opportunities. However, in the southern part creating access to the long and narrow park is a challenge, as a highway separates it from the existing city structure for 3 miles along its length.

Founded in 2010, the city-owned not-for-profit entity Brooklyn Bridge Park Corporation, known as Brooklyn Bridge Park, is responsible for the planning, construction, maintenance and operation of the park. Regina Myer, president of the Brooklyn Bridge Park says that the park offers a wide variety of different uses, intentionally including neighborhood uses. There is a balance of passive and active uses. Areas used for activities include football and basketball courts, playgrounds, lawns, a roller rink, a greenway, playing fields, and picnic tables.

There is also fitness equipment, bocce, handball, and shuffleboard. Brooklyn Bridge Park encourages close interaction with the water, with boat launches and beaches. According to Myer, activities are planned and carried out in collaboration with the people who live in the surrounding districts. Identifying partners and inviting people to participate has been an important part of the development of the park: Myer says it is about people and getting to the water. The program of activities includes various art projects and events. Movies are shown outdoors regularly, literary events take place under the bridge, and there are music and theatre performances in the park. There are also many temporary sculptures and other works of art in the park, including a temporary living earthwork consisting of hundreds of plants. Regularly organized tours guide people through the history, architecture and nature of the park and its surroundings.

Brooklyn Bridge Park is required to be financially self-sustaining: ”While a small fraction of the required operations and maintenance funds for the park will be collected from permits and concessions, the majority of the funds will come from a limited number of revenue-generating development sites within the project’s footprint” (Brooklyn Bridge Park). However, according to director of Waterfront and Open Space Division Michael Marrella, upkeep is very expensive, and it is difficult to be financially sustaining. Brooklyn Bridge Park has developed an alternative funding mechanism, which is sometimes seen as controversial, generating revenue from the developers who are allowed to build in the area. After an in-depth analysis, potential locations were identified for uses that would generate revenue for running the park. The development footprint was minimized and the existing urban structure was utilized.

There is no budget for programming. Brooklyn Bridge Park does not pay for the program – instead money is raised from the private sector and government, which demands a lot of balancing, according to president of the Brooklyn Bridge Park, Regina Myer. Developments in the area pay taxes to Brooklyn Bridge Park. This money is used for maintenance and waterfront development. Other similar models include High Line and Hudson River Park, which raise money from the private sector for maintenance. According to Myer, the development of the park has been a continuous, very dynamic process. It is conducted using a top-down model, but with many meetings between the various stakeholders. The Brooklyn Bridge Park has continued to play a very proactive role in reaching out to the active "doers".

Before area was used as a storage and cargo harbor, the shores along the East River flourished with plants and birds. The aim of the park design has been to rebuild some of these natural habitats, including salt marshes and meadows. Some elements of the harbor construction have been recycled to create park structures. In addition, the park has a storm water recycling system, where rainwater is collected and used to water the lawns and gardens. Others actions aiming to increase sustainability include building green roofs, conserving energy and growing organically. Maintaining the balance between nature and programs demands careful coordination of activities. Thanks to its design - elevation and soft edges - Brooklyn Bridge Park survived Hurricane Sandy with comparatively well (NYC 2013).

The connections from Brooklyn Bridge Park to Manhattan, Queens and other parts of Brooklyn are enhanced by the East River Ferry Service, which revitalizes New York’s waterfront by offering a fast new transportation option. The city-subsidized pilot service was launched in 2010. The three-year goal of 1.2 million riders was achieved in only 14 months. Because ferry service increases access to previously underused areas of the city, new development potential has been opened up along the coastline. According to director of urban design, Jeffrey Shumaker, new ferry stops were provided in the areas where growth is expected.

The East River Ferry service was initially intended as pilot but it was extended as a permanent service, says senior waterfront planner Mary Kimball. Following its' success the city launched a study to examine additional routes to expand the service throughout the city. According to Kimball, in 2017, new routes to Astoria, South Brooklyn, and the Rockaways will be launched, followed by additional routes serving the Lower East Side and the Bronx in 2018.

Figure 3. Water transport connects Brooklyn Bridge Park to East River Waterfront. Image by Meri Louekari.

Approaches for revitalizing the waterfront at the East River Waterfront

Collaboration and community involvement play a very important role in the development of the East River Waterfront, which is an extraordinary example of a participatory and interactive planning process. The city departments conducted a study of the area in 2004. The outcome of the study, a concept plan, was developed with local communities, elected officials, and civic leaders, in addition to tenant representatives in over 70 separate meetings. This cooperation has continued, and the locals are involved in design and programming work for the area. Collaboration with community boards was considered especially important and helped to build trust and active dialogue. (East River Waterfront)

The aim of the work is to strengthen access to the waterfront and create new recreational opportunities and amenities by designing and implementing waterfront-related programming. The project includes creating a new waterfront esplanade and enhancing connections from Lower Manhattan to the East River Waterfront. Programmed spaces include basketball courts, a petanque area and an open-air exercise area. Urban design provides spaces for gatherings and organizing events. The sustainable approach can be seen in the use of recycled materials, collecting rainwater and aiming for improved air and water quality. Besides new seating and plantings, the new esplanade will include amenities such as pavilions underneath the Franklin D. Roosevelt (FDR) Drive, and open piers to the public.

The new plan for the area was created by a design team including architecture firm SHoP architects / Richard Rogers and Ken Smith, the Department of City

Planning, the Economic Development Corporation and the local community. The plan proposes both ”short-term improvements and long-term strategies to reconnect Lower Manhattan's diverse communities to a two-mile stretch of East River waterfront” (East River Waterfront). The project was opened to the public in four phases in 2011-2016. The aim is to gain a collective approach to develop the area in order to respond to local needs. A new set of activities and amenities is called ‘the Foundation Projects’. Their role is to encourage the establishment of other activities on the water’s edge. Finding new waterfront uses is an important part of revitalizing the East River shoreline. Providing infrastructure as a sound base for new activities that respond to the needs of the community will improve the whole waterfront. Together ‘the Foundation Projects’ and the new amenities they inspire will bring vitality to the area. This approach is called planning by evolution rather than revolution: ”By adding new among the old and smaller public interventions into the larger waterfront context positive change is in place to bring new programs and uses for neighborhood and city wide benefit” (East River Waterfront).

Since Hurricane Sandy, there have been many new investments and innovations in the waterfront. One of these is a proposal to construct the East Side Coastal Resiliency (ESCR) project. ESCR is "an integrated flood protection system that is intended to reduce coastal flooding and improve coastal and social resiliency" (NYC-Parks 2015). Unofficially called "the Dryline", ESCR was designed by the Bjarke Ingels Group (BIG) with the city. It aims to find a way to combine opening up the shoreline with protecting it from extreme weather conditions.

The South Street Seaport district along the East River was damaged by Hurricane Sandy. A pilot program involve many different developers was set up, producing an outdoor movie area and containers for commercial and cultural uses while the rebuilding took place.

The Lower Manhattan Cultural Council (LMCC) is working to bring the waterfront along the East River to life. The LMCC aims to enhance the communities in Lower Manhattan by supporting and enabling artists to work on diverse art projects on the area. Working in partnership with the public and private sectors (e.g. Department of Parks and Recreation), the LMCC provides resources to artists in the visual, performing, and new media arts, resulting in over 60 days of free urban experiences (LMCC). Arts East River Waterfront is a collaborative initiative organized by the LMCC. Its aim is to bring the people of the Lower East Side to the waterfront to participate in art installations and performances.

Paths to Pier 42 is a collaboration project initiated by LMCC to revitalize the pier located between the Manhattan and Williamsburg bridges. A temporary park located on the south side of FDR Drive is activated by artists who are commissioned to work with the local community. The ongoing process of creating new public space with cultural experiences is renewed every year by selecting new artists each summer. (Paths to Pier 42, LMMC) Over the years, number of people participating in the collaborative projects has grown, creating an asset for developing the public space further in the future. LMCC continues to play an enabling role, curating and producing the program.

According to Kay Takeda, director of grants and services for the Lower Manhattan Cultural Council, in addition to providing cultural experiences, the program aims to provide ecological education. Takeda oversees grant programs and professional development for artists. She is also responsible for planning and programming the LMCC’s Manhattan arts grants and professional development programs as well as the East River Waterfront arts initiative, which is made up of several partnership projects including Paths to Pier 42. She sees the need to create different models in different waterfront locations. There are many artists in Lower East Side, and the chosen approach works well for the district. Takeda says that programming a pier next to subsidized housing area was done in

collaboration with Two Bridges Neighborhood Council. The core ideas included equity and involving people and the focus was on creative place-making. According to Takeda, the program is funded primarily by private investors with strong support from state and other political resources. The LMCC is also raising money for permanent development. It receives no multi-year funding, except for one three-year funding stream form the government. Many parks receive funds from partnerships. Often they have "friends" - groups that are non-profit organizations, such as Friends of Pier 35. Friends groups do volunteering work and receive small amounts of funding from the government.

Typically, artists are selected through an open call process. However, Takeda explains that in the case of transforming a vacant lot into a park, temporarily activating an empty space, a call was sent to seven artists and designers asking for proposals. All the artists and designers were focused on social practice, and community involvement was an essential part of the selected proposals. The LMCC received 40 proposals, of which a jury reviewed 18. An advisory committee consisting of 40 people including residents, staff members and artists chose five projects. As an arts partner, the LMCC took care of all the related work, including arranging artists' fees and organizing the volunteer work that was needed to implement the project. Takeda emphasizes that public programming was an essential part of the project. Each part of the community worked with the artists. For example, artist Mary Mattingly organized a fishing clinic and tours on the waterfront. Photographer Sonia Luis Davis ran an image making project with local people, emphasizing shared authorship. Artist Ted Foutang delivered a resilience project that focused on the theme of Hurricane Sandy, creating emergency kits in a workshop. The program also included an educational aspects, for example, an after school science program. Takeda says that two of the artists are continuing for a second year and the other participants are changing. Using a community model, three events were organized, and took place in In May, July and September. At the first event, people living in the area were able to meet the artists and begin the participation process. The second event was for the public and artists to work together. The last meeting was a closing celebration, which was open to everyone.

Results: approaches for revitalizing the waterfront

In this study ten different approaches were identified by the author for revitalizing the waterfront: (1) urban design, (2) programming, (3) participation and inclusion, (4) art and temporary use, (5) preservation, (6) reuse, (7) accessibility, (8) mobility, (9) ecology and biodiversity and (10) resiliency. Each of the approaches is manifested in the two study areas; Brooklyn Bridge Park and East River Waterfront Esplanade.

Approaches for revitalizing the waterfront	Brooklyn Bridge Park	East River Waterfront Esplanade
1. Urban design	A vast new public park, formed as a long string of diverse locations. Investing in design is important. Close interaction with the water.	Creating a new waterfront esplanade and spaces for gathering and organizing events. New pavilions underneath FDR Drive
2. Programming	Passive and active uses: for example, football and basketball courts, playgrounds, lawns, a roller rink, a greenway and playing fields, fitness equipment, picnic tables bocce, handball and shuffleboard, boat launches and beaches.	Passive and active uses: for example, basketball courts, a petanque area and an open air exercise area. A diverse, continuous art programme with public programming.
3. Participation and inclusion	Brooklyn Bridge Park has a very proactive role: activities are planned and delivered in collaboration with the people who are living in the surrounding districts.	Concept Plan developed with local communities, elected officials, civic leaders and tenant representatives Locals are involved in design and programming. Participatory art program.
4. Art and temporary use	Various art projects and events: movies, literary events, music and theater performances, temporary sculptures and other works of art in the parks.	Creating new public space with cultural experiences, for example, a temporary park. Continuous, participatory art program, using vacant lots. Focus on social practice.
5. Preservation	Built on a post-industrial site. Preserving the experience of the industrial waterfront was a starting point.	Built on a post-industrial site. A pilot program for rebuilding the damaged South Street Seaport district.
6. Reuse	Park design reuses harbor site structures (e.g. as sports courts and park structures). Opening piers to the public as sports fields.	Recycled materials. Opening piers to the public.
7. Accessibility	Strengthening access to the waterfront and to the water. Various new points of access.	Strengthening access to the waterfront and the water.
8. Mobility	The East River Ferry connects Brooklyn Bridge Park to Manhattan, Queens and other parts of Brooklyn.	East River Ferry connects East River Waterfront Esplanade to Northern Manhattan, Queens and Brooklyn.
9. Ecology and biodiversity	Turning an industrial site into natural one: aiming to rebuild some of the natural habitats. Building green roofs, conserving energy and growing organically.	Collecting rainwater and aiming for increased air and water quality. Providing ecological education.
10. Resiliency	Design for resiliency: storm-water recycling system, elevation and soft edges.	East Side Coastal Resiliency Project. A pilot program for rebuilding the damaged South Street Seaport district. Art projects reflecting on resiliency.

Table 1. Approaches for revitalizing the waterfront.

As the issues of opening, revitalizing and developing post-industrial sites have similarities around the world, it is interesting to study how ideas can translate into new environments and circumstances. Even though the big issues of harbor transformation have similar characteristics, the parameters vary, and naturally, the development should always be site-specific. What is unique for a site is the

starting point for transforming it. However, new ideas can serve as a platform and framework from which new models can be created based on the specific needs of each individual waterfront location.

Of the ten approaches presented in this study, urban design, participation and inclusion, accessibility and mobility, ecology and biodiversity and resiliency are almost inevitably part of each waterfront revitalization project, in one way or another. Programming, art and temporary use offer urban experiences, strengthen the cultural identity of a place, and help to develop a sense of community and commitment. In terms of sustainable development, preserving existing buildings and natural features and reusing the former industrial structures saves resources and draws the history of a place into a natural part of everyday life. Meantime strategies and self-learning help to refine ideas and take them further. Informal spaces provide opportunities for bottom-up development and creativity. Enabling the informal use of the waterfront can support civic stewardship. Civic organizations have an important role in providing programming at the waterfront. Their work aims at engaging people with the coastline through education, organizing events and water-related activities.

Figure 4. East River Waterfront. Image by Meri Louekari.

Summary

Urban waterfronts around the world are going through a major process of transformation. In many cities, inner-city waterfronts had long been mainly engaged in industrial activities and port operations, limiting the public access to the shoreline. In the future, urban waterfronts will offer new opportunities as former transport and industrial areas are converted for new uses, such as residential and work. At the same time, however, environmental uncertainty is increasing and innovations are required in order to adapt to climate change.

In New York, the waterfront has faced dramatic changes as the city has grown. New York has already opened up miles of shoreline to the public and the process is still continuing. This paper has studied existing activities at the waterfront.

Today, the city´s diverse waterfront is considered to be one of its most important resources and is referred to as the ”Sixth Borough”. Creating public access is one of the main themes of planning the waterfront and reconnecting it to the inland districts of the city. The coastal zone and the water are perceived and valued in many ways: not only as a working port, but also as a place that provides green spaces, residential districts and ferry routes. The waterfront is opened up, revived and made vibrant in a variety of ways, such as by building public parks, sports facilities and playgrounds, by investing in the arts and temporary uses and by organizing a range of public events.

This research has studied and analyzed, what kind of approaches does the city of New York have, to face the future challenges at the coastline. Hurricane Sandy caused massive destruction in New York in 2012. In the future, the rising sea level and warmer ocean temperatures will cause more extreme weather conditions. The threat of devastating storms creates challenges for plans and objectives relating to opening up the shoreline. However, the City of New York has decided that it will not reject the waterfront, instead, it will work even more diligently to strengthen resilience to climate change. The aim is to find new ways to open up the waterfront while at the same time protecting it from storms.

Major planning projects, such as The East River Waterfront and Brooklyn Bridge Park, are transforming New York City’s waterfront. Because the city’s population is growing, there is a need to develop opportunities for recreation. Enabling informal use of the waterfront can support civic stewardship and collaboration. In addition to offering new urban experiences, the waterfront projects are responding to the need to adapt to the impacts of climate change by building protection against natural disasters and preparing to bounce back.

This paper has identified ten approaches for revitalizing the waterfront and creating urban experiences: (1) urban design, (2) programming, (3) participation and inclusion, (4) art and temporary use, (5) preservation, (6) reuse, (7) accessibility, (8) mobility, (9) ecology and biodiversity and (10) resiliency. These approaches can be adapted to waterfronts in many different locations. While development should naturally always be site specific and the characteristics of a site should define the future possibilities, ideas can serve as a platform for creating new models - based on the specific needs of each waterfront location.

In this paper, two cases, Brooklyn Bridge Park and East River Waterfront Esplanade, have been analyzed. Future research topics could include expanding the study to other parts of New York - for example - the western coastline including High Line, the Chelsea Gallery District, and the Meatpacking District, and projects like the SuperPier, Pier 55, and Whitney Museum of American Art. Another interesting future research could include studying some of the approaches deeper, and find different ways in different districts and cities for implementing them. For example, resiliency and adaptive strategies will gain increasing importance in the future.

Reinventing and rethinking the shoreline to create a new sustainable vision strengthens the resiliency of the coastline as new ways are found to open it up while protecting it from future storms. The long term work to transform the waterfront by creating access and reclaiming the area for the public focuses on bringing new life to the waterfront and creating new urban experiences. A living waterfront and thriving communities strengthen cultural identity and help to develop sense of community. As a well-designed and maintained edge of the city, a vibrant waterfront can generate activity that encourages people to use it all year round.

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Impervious Coverage in Finnish Single-Family House Plots

Potential of low-density residential areas in stormwater management and creating urban green spaces

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Abstract

Single-family house areas account for a significant percentage of the total square area of cities. Where statutory land use planning is concerned, single-family house areas and single-family house plots in Finland are usually addressed only in terms of housing, even though the impervious surfaces their construction creates also determine the cause of stormwater runoff and urban green spaces.

This study will explore the specification of impervious surfaces in the single-family plots of modern-day Finland. Impervious surfaces are a key factor in causing stormwater runoff and the deterioration in the condition of catchment area streams. At the same time, impervious surfaces seal the ground surface and prevent vegetation from growing at each site. The research subject involved three plots in a housing fair area and their garden plan (N = 63), which represent sites completed in the same area. Housing fairs present individual consumers with the ideal of single-family housing as proposed by commercial developers.

Permeable and impervious surfaces and their detailed breakdown into different surface types were measured in the plans. Although a considerable percentage of the impervious surface area in a modern-day Finnish plot is formed by garden surfaces, vehicle parking and various types of shelters and roofs also play a role in the formation of imperviousness. Used as a tool in statutory land use planning, plot density does not specify plot permeability, in which the roof square area is the primary factor. When defining the area of imperviousness, statutory land use planning could make use of the maximum allowable roof square area and/or the maximum allowable amount of impervious surface coverage as well as reduce the need for surfaced passageways by placing the parking space and residential building centrally within the plot. Setting guidelines for the amount of green space within a plot is more challenging, because the changing needs of residents significantly influence plot landscaping.

Keywords: low-density housing, housing density, garden size, imperviousness, plot scale, Housing Fair Finland

Introduction

Urbanisation will remain a global phenomenon as population growth accelerates and the economic structure undergoes change. The expansion of cities consumes more and more land area, including arable land, thus eating into the food production capacity for urban residents. The two extremes of urban growth

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strategies are a decentralisation of the urban structure or a consolidation of the existing urban structure. Decentralisation of the urban structure results in the need for a more extensive infrastructure in the form of transportation systems, water and wastewater networks, and power and data transmission channels. Consolidation of the urban structure is based on the principles of sustainable development and, in particular, environmental sustainability, so that growth of the land area covered by the city remains moderate. Despite urban growth strategies, urbanisation and urban growth inevitably mean an increase in the amount of water-impervious surfaces. A city creates impervious surfaces.

An impervious surface is any surface, regardless of the material, that prevents water from being absorbed into the ground. Schuler (1994, 100) defines impervious surfaces in urban areas as: "[...] the sum of roads, parking lots, sidewalks, rooftops, and other impermeable surfaces of the urban landscape." Schuler (1994, 100) further refines his definition by stating that: "This variable can be easily measured at all scales of development, as the percentage of area that is not 'green'." Stone (2004, 102) states that the rapid growth of impervious surfaces poses the greatest threat to the condition of urban streams. Imperviousness refers to all surfaces through which water cannot pass, such as asphalt and stone paving on roads and parking lots as well as different types of roofs and shelters.

Impervious surfaces

Both Arnold and Gibbons (1996) and Schuler (1994) have highlighted the importance of impervious surfaces to catchment area streams. They emphasise a receiving watershed's capacity to both 1) handle changes in the quantity and quality of water resulting from an increase in impervious surfaces and 2) the ability to recover from changing loads. In their opinion, imperviousness is a precisely measurable and physical indicator, which can be used to unite representatives from all the different fields who are working with urban streams. This makes it possible for architects, city planners, researchers and public officials to work on a scale that encompasses the entire catchment area, even if their own individual job description is but an individual part of the whole.

Imperviousness has a major impact on the receiving watershed. It affects the hydrology, habitat structure, water quality and biodiversity of the water ecosystems. The degradation of watercourses and streams occurs when the 10% of the catchment area is impervious. (Schuler 1994; Arnold & Gibbons 1996; Schuler, Fraley-McNeal & Cappiella 2009).

A locally impervious surface alters the circulation of water, particularly where absorption and surface drainage are concerned. Figure 1 shows the relationship between water absorption and surface drainage when the amount of impervious surface increases.

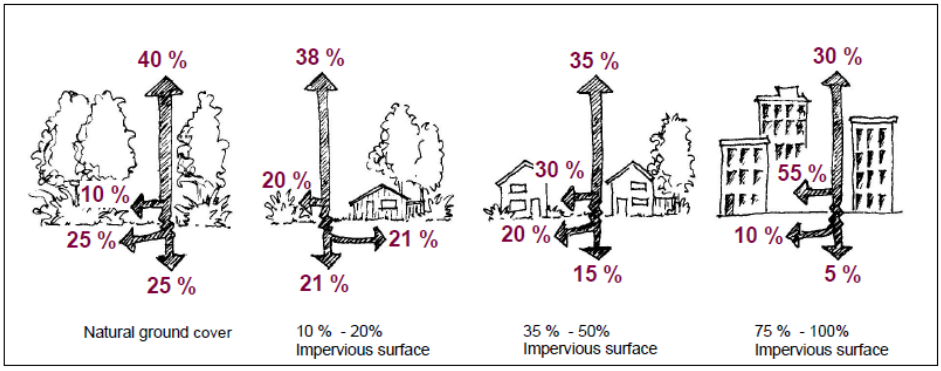

Figure 1. Change in evaporation, surface runoff, surface layer runoff and groundwater outflow with an increase in impervious surface coverage (based on EPA 1993).

An impervious surface does not only act as a physical barrier to water absorption, it also functions as an additional drainage route for the resulting surface runoff. The water flushes pollutants away from impervious surfaces as it flows past. Previously, the guidance and planning of surface water was indeed based on managing water volume and directing water into closed drain and pipe systems, both during flooding caused by heavy precipitation and in order to prevent the erosion of receiving watercourses. Stormwater management imitating natural hydrology, on the other hand, imitates the various processes of water circulation that normally occur in nature.

Increases in impervious surface can also be seen as a broader phenomenon of the challenges facing stormwater management. Roof square areas and paving with stone and asphalt represent a polarised response to a vegetated environment - to urban vegetation. An impervious surface blocks soil nutrients, water reserves and microbial activity--the drivers of vegetative processes--from receiving any sunlight. From an urban ecology standpoint, impervious surfaces therefore limit the possibility for a vegetated environment to exist, ultimately reducing the percentage of urban green space within the total square area.

The building of structures and other impervious surfaces is based on the replacement of substrate mass, in which frost-susceptible soil is replaced with non-frost-susceptible mineral aggregates. According to current recommendations, a substrate mass minimum of 30 centimetres and maximum of over 1 metre must be replaced under asphalt or stone paving. In addition to this, frost protection is augmented with subsurface drainage, i.e. water stored in the ground is channelled away and anti-frost insulation panels are installed. These construction and frost protection methods channel the water required for a vegetated environment even farther away. Although, seams in concrete offer a new type of habitat for plants which thrive in dry environments, thus increasing the range of urban habitats and urban biodiversity within its own scale.

Impervious surfaces in land use planning

Statutory land use planning basically involves the arrangement of different functions within a plan area. Housing, transportation, workplaces and industrial sites as well as well recreational areas can be placed either separate from one another or mixed together. Commonly used plan notations and standardised planning practices do not generally support the placement of several functions within the same area. For example, conventional urban green space planning is used (and is also often considered as having been implemented) in parks, recreational areas and protective green zones, even though urban green spaces are also comprised of gardens in single-family house areas, street tree plantings in traffic zones and the plantings of industrial plots. The processing, requirement and presentation of multifunctionality have not yet been established in statutory land use planning. In the future, an effective statutory land use plan will no longer mean the production of usable floor area, but rather the placement of multiple functions within a single area.

Forming imperviousness and methods for its control

In Finland, the plot-specific formation of impervious surfaces is specified in the (local) detailed plan, architectural and landscaping plan and the constantly changing choices made by residents/users over time. The control system for land use is based on different plans, in which the local detailed plan determines the housing density and general placement of the building(s) on the plot. The local detailed plan implements the guidelines of the local master plan and specifies, in particular, the creation of the cityscape, urban space and functionalities. As a rule, we do not limit the amount of impervious surface coverage formed by the local detailed plan, but have instead recently specified general measures for the measurement of stormwater structures, such as the required retention volumes per impervious surface or guidelines on stormwater treatment methods.

In plot-specific planning, the drafter of a site plan must specify the precise position of the structure (and its distance from the street) as well as the location of parking. These designated vehicle traffic areas are often made as impervious surfaces in order to facilitate their maintenance, positioning a structure far from the street line increases the area of impervious surface coverage. In addition to this, the local detailed plan specifies different types of shelters, roofs and canopies, which increase the percentage of impervious surface coverage within the total square area.

During the landscape planning phase, a motif for the garden area is created, functions are placed and surface materials are specified. Outbuildings, such as storage sheds and playhouses, the extent of lounging areas and surface materials for passageways further increase the percentage of impervious surface coverage. Very small details might have a major impact on resulting surface runoff. For example, curbstones, which are used to direct surface water, collect all the water on the covered area, generally channelling it into a rainwater well. On the other hand, a solution without curbstones might be used to direct water over a broad area for use in vegetation areas, where the resulting stormwater load is absorbed within the plot.

Changes in the amount of impervious surface area also continue after the construction phase. In their study, Verbeeck, van Orshoven and Hermy (2011) found that impervious surface coverage in single-family house areas increased an average of 1.3 m^2 a year in the Flanders region of Belgium. Likewise, Perry and Nawaz (2008) found that impervious surface area in single-family house areas in the United Kingdom had increased 13% from 1971 to 2004. This change occurred gradually in small alterations and remodelling work done in accordance with usage needs and requirements.

The opposite of impervious surfaces, i.e. pervious surfaces, allows for water absorption, water storage in the soil and plant growth, provided that all the habitat factors are in place. Coverage of the ground surface with impervious surfaces prevents the natural circulation of water, shutting down vegetative processes. In a built environment, various habitats are formed in varying conditions.

Impervious surfaces are not the only indicator determining or guiding stormwater management - there are also several concepts related to the management of stormwater and management concepts. The main idea behind all of these is to avoid channelling stormwater directly into the sewer system, place an emphasis on managing both quantity and quality, and give consideration to the use of stormwater in creating a pleasant environment. The aim of American Low Impact Development (LID), European Sustainable Urban Drainage System (SUDS) and Australian Water Sensitive Urban Design (WSUD) is the decentralised and multifunctional management of stormwater (Novotny, Ahern and Brown, 2010). These concepts focus on solutions for the management of existing stormwater, while imperviousness as an indicator seeks to prevent causing stormwater runoff. If the percentage of impervious surface coverage remains low, there will be no stormwater. Impervious surfaces, however, are an integral part of the urban environment, so near-natural stormwater management methods can be employed to reduce the adverse impacts of stormwater coming from impervious surfaces, both in terms of quantity and quality.

Managing the amount of impervious coverage at the catchment area, city and individual plot levels requires different approaches. Arnold and Gibbons (2006, 243), however, state that impervious coverage itself is an indicator that can be used at different levels, something which is clearly understood by all professions involved in urban development. The near-natural management of stormwater is used in an effort to treat already existing stormwater, while impervious surfaces determine how stormwater runoff is caused.

Single-family house areas and plots

Urbanisation requires either new areas or the densification of existing areas in order to provide housing for an increasing population. A compact, densely-built residential area can house a larger number of people than a low-density single-family house area, even though Finnish housing preferences, in particular, clearly favour the latter. Low-density single-family house areas are, however, important in terms of their extent. In the United Kingdom, single-family house areas and their gardens cover 16% of the total urban area (Loram, Tratalos, Warren & Gaston 2007), 36% in New Zealand (Mathieu, Freeman & Aryal 2007) and 16% in Stockholm (Colding 2007).

Single-family house areas offer a platform for both creating urban green space at the private level and the ability to treat stormwater locally. Stone (2004, 102) states that: "...modest changes to municipal land development regulations could yield significant reductions in the total impervious cover of new and existing development." However, the choices made for garden areas in privately-owned single-family house plots are difficult to regulate, as homeowners represent a wide-ranging group, whose plot usage preferences are formed by a myriad of ideas, opinions and ever-changing trends in housing, decor and garden care.

Finnish planning practices do not make use of the multifunctional nature of single-family house areas, with approaches used in urban ecology leaving single-family house areas as blank spaces between parks and urban forests (Vierikko, Salminen, Niemelä, Jalkanen & Tamminen 2014, 39).

The goal of this study is to determine the formation of impervious coverage in single-family house plots as well as the extent of plot vegetation in modern-day Finnish development. The impetus is to examine the potential of single-family house areas in both the local management of stormwater and the creation of urban green spaces at the private level. The research questions are: a) What parts of a modern-day Finnish single-family house plot are covered by impervious surfaces? What indicators can be used in statutory land use planning to regulate the formation of impervious coverage? In addition to the above questions, a question regarding the vegetated environment is: b) What parts of a modern-day Finnish single-family house plot constitute a vegetated environment?

Materials and methods

Site selection

In Finland, Housing Fair Finland is a consumer presentation concept for single-family housing, construction and remodelling. The idea behind housing fairs is to improve the quality of housing in co-operation with companies and organisations at a fair event, which is held in different cities each year. Research data and its application also play a role at housing fairs by: ”[…] [producing] practical applications that provide innovative examples and concrete visions of excellence in living/housing standards, for both consumers and professionals within the industry.” Housing fairs also involve research and development, placing an emphasis on different single-family house planning trials as well as individual test house or test construction research. (Housing Fair Finland 2016).

Each year, housing fairs are attended by approximately 110,000 visitors. According to visitor surveys, these visitors attend year after year in search of information and ideas on not only interior decor, but also gardens and package houses (Housing Fair Finland 2012; Housing Fair Finland 2013; Housing Fair Finland 2014). Housing fairs could therefore be considered a major Finnish event, showcasing the best that Finnish single-family housing has to offer. The event reaches fair visitors directly as well as interested consumers through the media.

The fair gardens shown at the housing fairs in Tampere (2012), Hyvinkää (2013) and Jyväskylä (2014) were chosen as the single-family house sites for this study. The fair sites represent a new vision for good building practices, with the sites using commercially available products and materials. The single-family house sites were primarily designed by industry professionals and statutory land use planning work was done in co-operation with local community hosts. Consequently, the professionals' vision for the fair themes can be seen in the end result. Because statutory land use planning, house construction and landscaping were all done at the same time, the prevailing practices of that time are apparent in the fair sites chosen for this study. Housing fair sites differ from conventional house construction in that impervious surface materials are used in the garden to a greater extent.

The theme at the Tampere, Hyvinkää and Jyväskylä housing fairs included stormwater management in some form. All the fairs showcased the theme of the stormwater management chain across ownership boundaries as a theme. In Hyvinkää, the emphasis was on a stormwater feature placed in a park area, while the fairs in Tampere and Jyväskylä showcased stormwater retention and channelling routes shared by multiple plots and placed in the middle of a residential block. Solutions for the management of already existing stormwater are not a key element of this study, whose primary focus is actually the amount of impervious coverage and the mechanics of its formation. As a result, the stormwater management solutions presented at the fairs will not be discussed in this study. The primary focus is on impervious surfaces, as they cause stormwater runoff by preventing water absorption.

Imperviousness studies often use remote sensing or aerial photography, thus limiting the available data to finished gardens and gardens altered by residents as well as their material choices. In this study, however, the primary focus is on the plans of landscaping professionals and the entity that these plans form.

Collecting data

The data used for this study pertains to single-family house sites at three different housing fairs (a total of 63 sites) and the landscaping plans presented in their fair directories. The plans were scanned and adapted to the scale used in the statutory land use plan, and the different covers were measured using a CAD-based software. Square area measurements were first divided into two main categories: pervious and impervious surfaces. The study examines both plot-specific imperviousness and the perviousness of the garden formed outside the building (Figure 2). Because a garden is defined as the area between the exterior walls of buildings and the plot boundary, it may also comprise covered elements. This definition was created to preserve the functional entities of the garden.

The following measurements were taken in each plot: the square area of plot buildings and their roof square area; impervious surfaces in the garden (stone/tile paving, outbuildings and wood surfaces); and pervious surfaces (aggregate ground covers, preserved areas, lawns and planting areas). The roof square area was measured along the outer edge of the eaves on a carport/garage and (if any) connected shed. In this context, the building square area comprehends the area of both the main building and carport/garage and connected shed measured along the outer edge of the walls. As the shed and carport/garage are integral elements of the architectural plan, often connected to the main building with various types of permanent shelters/roofs, they are included in the total building square area in this study. They also show the impervious coverage specified in the architectural plan as a percentage of the total plot area.

The division into pervious and impervious coverage is not simple, as, for example, wood surfaces might be either pervious or impervious depending on the foundation type. Intended for a large audience, the presentation material does

not include detailed information on whether wood surfaces have a cast concrete or crushed aggregate foundation. In this study, all wood surfaces are classified as impervious surfaces.

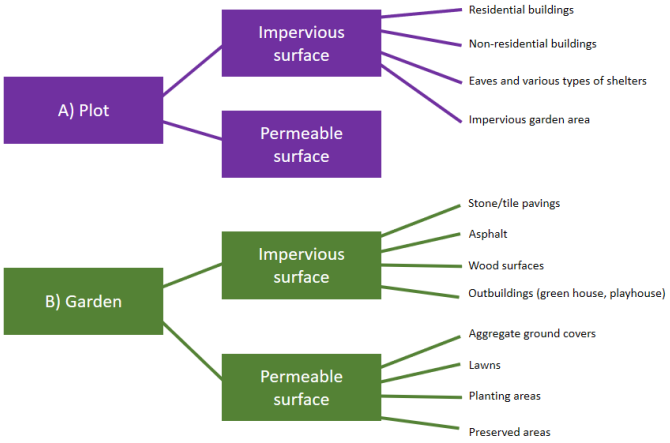

Figure 2. Pervious and impervious coverage are divided into categories, according to which plot-specific measurements are taken in this study.

When examining the plot as a whole, impervious surfaces are divided into the following categories: residential buildings; non-residential buildings; eaves and various types of shelters; and impervious garden surfaces (Figure 3). The residential building category includes residential space used for living functions and is measured based on the floorplan presented in the fair directory, unless otherwise specified in the landscaping plan. The non-residential building category includes non-residential spaces, which were, for example, (out)buildings/sheds, garages and carports (RT-kortti Rakennuksen pinta-alat 2011). However, small garden structures, such as greenhouses or playhouses, were not included in this category. What different spaces are called is not the main focus when dealing with impervious surfaces in plot-specific construction. The main focus is the total roof square area formed. Consequently, the last impervious surface area category related to buildings includes eaves, shelters and various types of canopies and roofs. Depending on its use, the space below a shelter can be either considered a structure (e.g. a greenhouse) or cover part of the lounging area of the garden. A shelter might be an eave that protects the building facade from precipitation or, in terms of amenities, a transparent polycarbonate shelter for a hot tub. In any case, it constitutes part of the garden's impervious coverage.

Figure 3. Formation of impervious coverage in measuring data.

The four categories were used in the measurement of garden imperviousness and perviousness. In the fair gardens, as in any other densely-built single-family house area, the building of pervious surfaces is based on the rebuilding of the substrate as well as seeding it for a lawn or planting vegetation. Existing vegetation is also preserved. Lawns, planting areas regardless of the substrate depth, areas to be preserved and areas to be covered with different types of mineral aggregates were measured as pervious surfaces. Mineral aggregates include cobblestone foundation skirts, dry creeks, stone dust surfaces or artificial grass sand infill. Mineral aggregate surfaces can be partially bound and, as a result, partially impervious, but here they are classified as pervious surfaces.

The impervious garden surfaces category classified paving stones and tiles, asphalt, wood surfaces and outbuilding roof surfaces. In Finnish building practices, paving stones and tiles are often laid on crushed aggregate beds. Depending on the type of stones used, their joints are or can be made to allow for water absorption into the base structural layers, but in this measurement all paving stones and tiles were laid on impervious surfaces. The paving joints do,

however, provide a habitat for dry areas and varieties that can withstand trampling Wood surfaces on decks, patios and garden stairs can be founded on a crushed aggregate bed or concrete tiles.

Results and their discussion

Plot-specific impervious coverage in a single-family housing area
The data shows a positive correlation between the planned plot density (e_t) and the impervious coverage of the plot (Figure 4), as one might assume. Generally used as a measuring tool in statutory land use planning, plot density is not a directly applicable indicator for analysing impervious coverage, because, on its own, it does not indicate how many floors are to be placed in the permitted building volume. Even though the scatter diagram in Figure 4 shows a correlation between plot density and impervious coverage, there is also a significant deviation in different plots within the same plot density. For example, the data shows that the impervious coverage within a plot density of 0.35 ranges between 40% and 75% in individual plots.

Where a building is concerned, the roof square area is a key factor in determining the impervious coverage of a plot. When the permitted building volume describes the amount of space for residential use, the roof square area is the real determiner of impervious coverage. Scatter diagram 5 shows the relationship between the building's roof square area and plot density found in the data of this study; there is no statistically significant correlation between these indicators. If the impervious coverage of a single-family house area is to be taken into consideration in statutory land use planning, plot density cannot be used as an indicator for regulating impervious coverage.

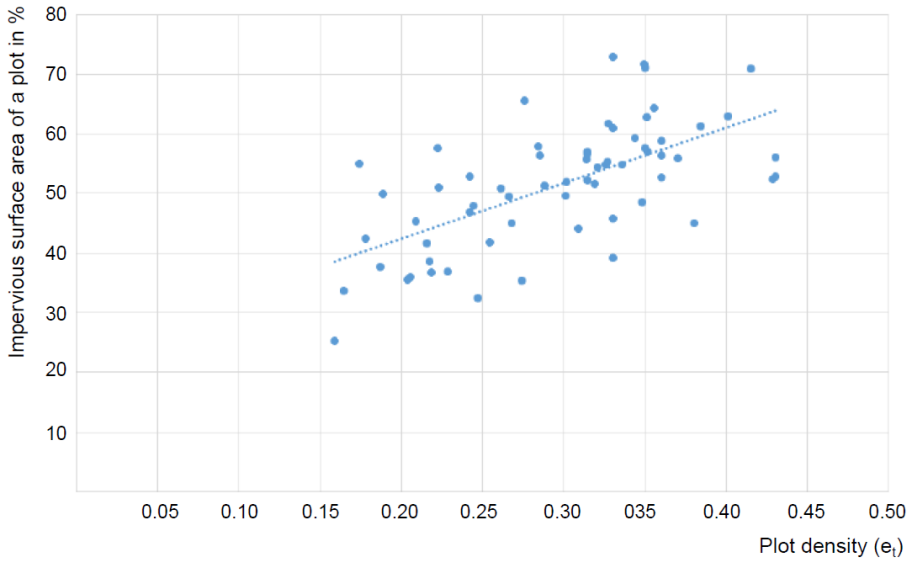

Figure 4. There is a positive correlation between plot density and the impervious surface area of a plot (r = 0.6; 1-way test p-value < 0.001).

Particularly in housing fair sites, the roof square area seems to include a large amount of covered outdoor space, such as in lounging areas, but it also comprehends area covered by various passageways and balconies. This concealed coverage in the permitted building volume quickly and imperceptibly increases the impervious coverage of the plot.

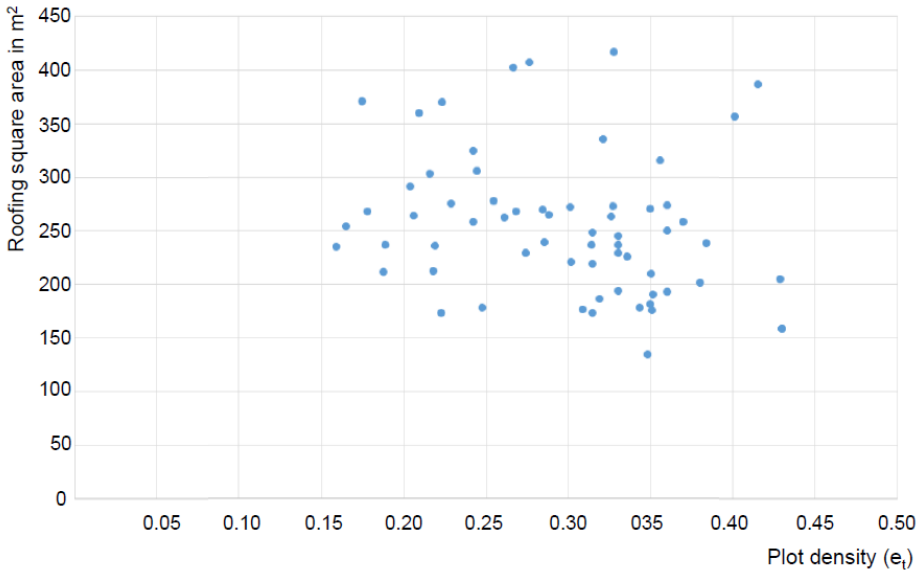

Figure 5. There is no significant correlation between the plot density and roofing square area (r = -0.24; 2-way test p-value > 0.05).

A more detailed analysis of roof square area specification in building plans is presented in Figures 6a and 6b. Figure 6a presents the ratio between residential building area and impervious coverage in different plot densities. In this study, the difference between residential building area and impervious coverage stays the same in all plot density classes within the same order of magnitude. In plot density class 0.3-0.39, one can see a decrease in the residential building area compared to other plot density classes, which indicates the more frequent use of multi-storey solutions when moving from plot density class 0.2-0.29 to 0.3-0.39. The interesting thing about the impervious coverage is the difference between the roof square area and residential building area, which averages over 100 m^2 in all plot density classes. This area includes vehicle parking and storage space as well as a significant percentage of the outdoor covered space. Figure 6b shows the change in area of all buildings and roof square area in different plot density classes. Based on this, it is evident that vehicle parking and storage space comprise an average of 50 m^2 of impervious coverage.

As plot density increases, the difference between roof square area and building area seems to decrease very slightly.

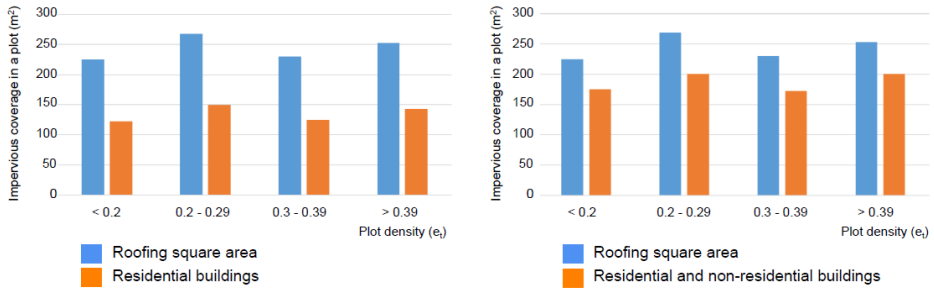

Figure 6a and 6b. Change in the roof square area in relation to the residential building area and area of all buildings with an increase in plot density.

The importance of gardens is highlighted when examining the impervious coverage of a single-family house plot as a whole (Figure 7). In the housing fair gardens, a large amount of paving stones and tiles are used in order to facilitate visitor movement during rainy conditions. As a result, the impervious coverage ratio does not directly correlate with the situation of other single-family house

areas. However, the housing fair gardens represent an ideal of what constitutes a good garden, so there is some justification for their analysis.

The study found that the garden of a single-family house accounts for the largest amount of impervious coverage within a plot. It is, on average, greater than that of the residential building area. If the garden, vehicle parking and sheds (outbuildings) are taken as a single entity where garden functions are concerned, the impervious coverage of the garden will account for over half of the average impervious coverage.

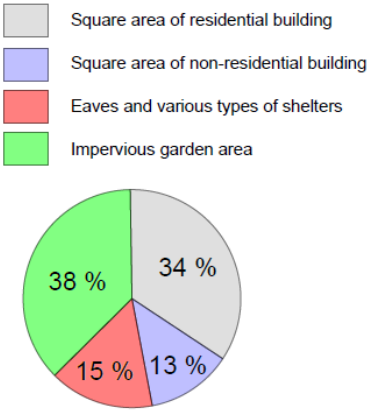

Figure 7. Average distribution of impervious surfaces in single-family house plots (N = 63).

The impervious coverage of the garden is tied to the placement of buildings, their entrances and vehicle parking within the plot. The American and Australian discussion on the roles played by the front and back yard and changes in their surface coverage (Hall 2006; Stone 2004) does not, in and of itself, dovetail well with Finnish practices, where the building or buildings are clearly separated from buildings in neighbouring plots. The housing fair gardens even include solutions, in which the garage is placed at the back of the yard in a narrow plot, thus making the impervious coverage considerably more than if the garage were to be placed right off the street. Thus, building placement and the need for passageways determines the formation of impervious coverage during the drafting phase of the local detailed plan.

In a more detailed analysis of the above-mentioned averages in the impervious coverage of single-family house plots, Figure 8 shows that there is very wide variation in the percentage of impervious coverage in a garden. The error bar in the figure indicates the area between the minimum and maximum value, where the impervious coverage of a garden in a plot density class of less than 0.2 was 52 m^2 and 359 m^2 at either extreme. Although the impervious coverage of a garden varies in all plot density classes, it is extremely low in plot density classes over 0.4. In a densely-built single-family house area, garden sizes are essentially small, so it stands to reason that homeowners would not want to entirely cover such a small garden area.

As the housing fair gardens have a plot density class of 0.3-0.39, the area of other buildings, i.e. vehicle parking and storage space, does not include any covered area at all. It is interesting to note that increasing the plot density does not significantly reduce the area taken up by a garage or carport. If there is a desire to limit the amount of impervious coverage of single-family house areas in an increasingly dense urban structure, a stance must be taken regarding vehicle parking in covered structures. Indeed, in this respect, the housing fair concept might place greater emphasis on the result, as the garages and carports built for the fair are showcase venues for product presenters.

Covered outdoor space attached to the building, i.e. shelters, canopies and eaves, decreases as plot density increases beyond a plot density class of 0.2-0.29. On average, more covered outdoor space is designed and built in a plot density class of 0.2-0.29 than in other classes. This would suggest that, as the total area decreases, so too does the amount of covered outdoor space.

According to this study, the residential building area does not decrease along with plot density, but rather increases to a plot density of more than 0.4. The single-family house has been the preferred housing type for Finns due to the private garden it offers, which provides space for family activities as well as distance from the neighbours. Increasing the residential building area in the highest-density class results in a more frequent use of one-storey solutions and a shrinking of distances between neighbouring plots and their buildings. However, it must be kept in mind that only 5 plots had a plot density class of over 0.4 in this study, so there is not a large sampling of data for this class.

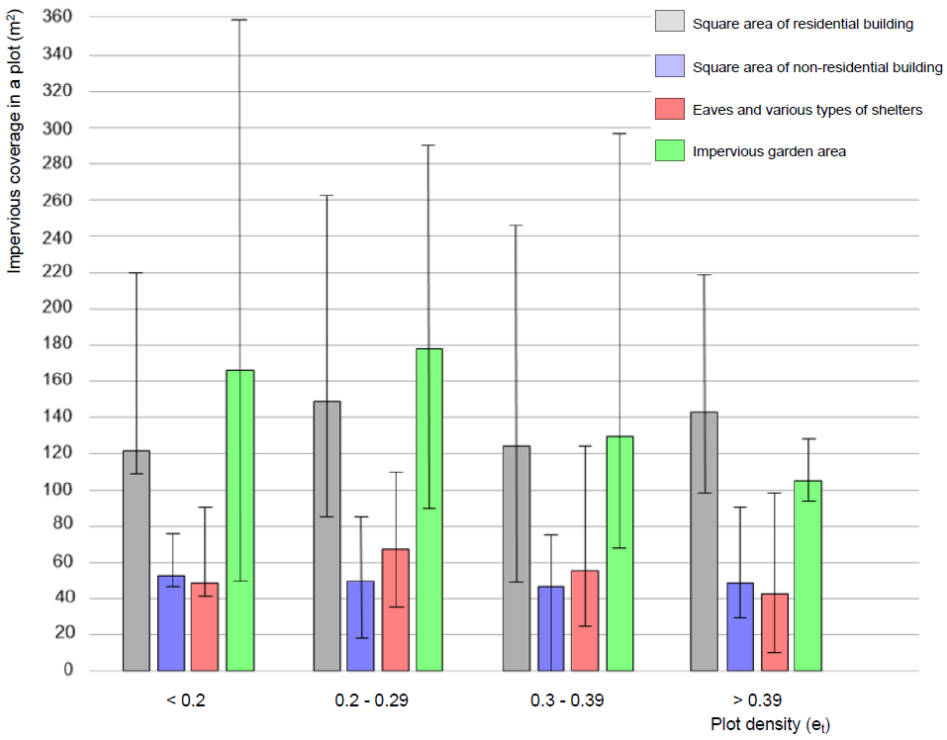

Figure 8. Division of impervious coverage in a single-family house plot in different plot density classes (as an average and as the range between the minimum and maximum value).

Pervious garden area

The pervious area of a garden allows for water absorption, water retention in the ground and facilitates the growth of vegetation in and around the plot. Pervious surfaces also include mineral aggregate surfaces, whose total coverage decreases as the plot density increases (Figure 9). One obvious place for mineral aggregates within a plot is the skirting around the building foundation. The purpose of the skirting is to ensure that no water-retaining substrates come into direct contact with the foundation. The use of pervious surfaces in these areas do not--or should not--include the function of water absorption. In the fair plots, mineral aggregates were also used in stormwater detention ponds placed in the middle of a block. These ponds are used in stormwater management. Cobblestones, gravel and crushed aggregates were used as surface coverings in the housing fair sites.

The vegetated environment of plots consists of lawns, landscaped areas and areas with preserved vegetation. In developing diverse vegetation, landscaped areas and areas with preserved vegetation play a key role. Even if the plan for a landscaped area were to only include just one or a few varieties, it would still have a substrate that retains water and nutrients, thus offering the potential for adding more varieties. Areas with preserved vegetation contain varieties growing there prior to their development. Maintaining substrate vitality brings endemic varieties to the area. In the study, areas with preserved vegetation were only found in individual plots and were completely missing from plot densities over 0.3 (Figure 9).

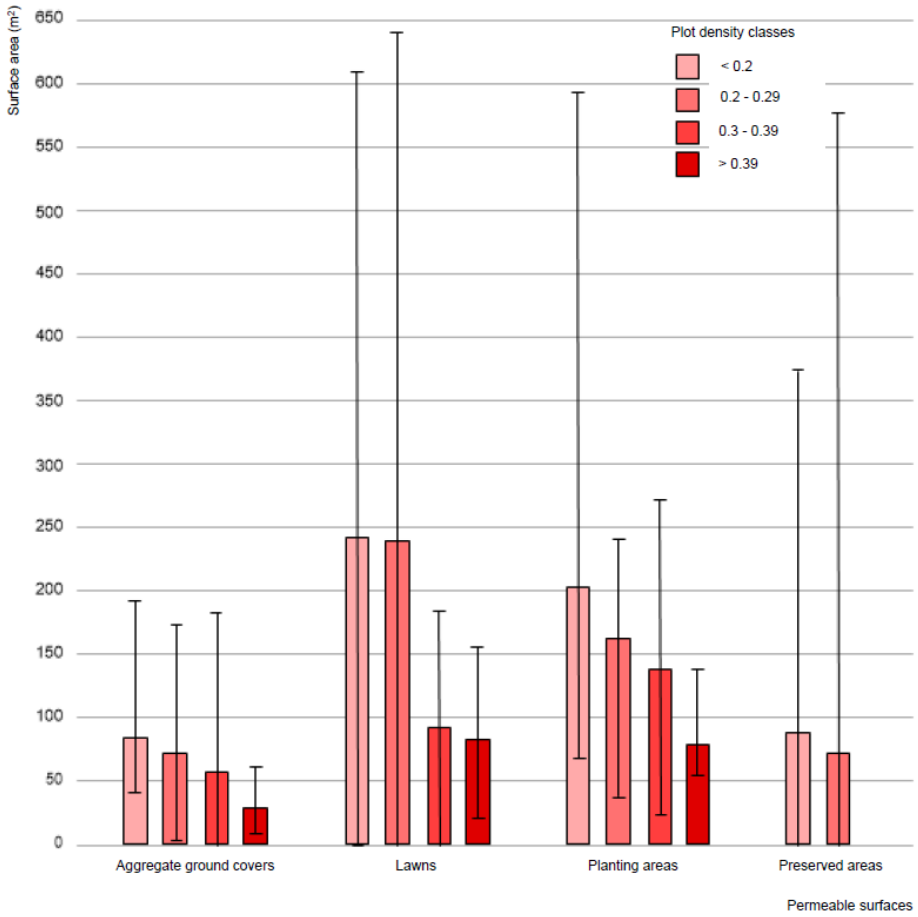

Figure 9. Change in pervious coverage in a single-family house garden in different plot density classes (as an average and as the range between the minimum and maximum value).

Although lawns are seen as offering very little in terms of biodiversity, with very few varieties represented, they do offer an important area for lounging and activity in the garden. Consequently, lawns are low in biodiversity value, but very important to social sustainability and diversity. Lawns also provide area for water absorption. The study found that lawns were used extensively in low-density plots, while lawns in plot density classes of less than 0.2 and 0.2-0.29 were, on average, slightly less than 220 m^2. On the other hand, the use of lawns is largely based on the preferences and choices of individual landscape planners, as the study includes numerous gardens that did not have any lawn at all as well as gardens almost entirely covered by lawn with single trees and bushes placed simply in scattered locations.

Conclusions

Single-family house areas will continue to exist in cities, regardless of the growth strategies being employed. The role that a single-family house area plays in creating urban green spaces or stormwater management depends on several factors during the implementation phase and even after it. Naturally, an individual plot in a single-family house area does not define the characteristics of the entire area, but when a majority of the plots adhere to limits set for, for example, the type and quantity of surfaces to be used, it becomes possible to reduce the formation of impervious coverage and, in turn, mitigate the cause of stormwater. At the municipal level, single-family house areas have the potential to both create privately developed urban green spaces and manage stormwater, both of which can be controlled by the percentage of impervious coverage in each plot.

This study found that 62% of the impervious surfaces in a Finnish single-family house plot is formed by the house itself and its eaves, canopies and other covered outdoor space. Just over half of this area is made up of the roof square area of the residential building. Regulation of the remaining roof square area should become a key area of focus in the management of imperviousness, also in Finland. In follow-up studies, particularly in practical design work, thought should be given to: a) the use of uncovered vehicle parking methods in densely-built single-family house areas; and b) the true purpose of recreational shelters in the Finnish climate. Regulatory measures for these might include limiting the total amount of roof square area and redefining the standard guidelines for garages and carports.

Thirty-eight per cent of the impervious coverage in a Finnish single-family house plot is found in the garden. Where the garden is concerned, the ability to use statutory land use planning for regulating impervious coverage in plots is focused on the central placement of the residential building and vehicle parking, thus reducing the use of unnecessary passageways.

The popularity of paving stones and tiles results in a considerable amount of impervious coverage. However, the use of paving stones and tiles stems from the need to move between different parts of the garden, provide additional vehicle parking or a turnaround within the plot, or create a foundation for a lounging area. Hard surfaces directly take pervious and, in many cases, vegetated environment away from the total garden area. Issuing a guideline concerning the amount of vegetation to be included within a plot is not, however, realistic, as the individual preferences of the plot users over time may change the surfaces into impervious ones. Promoting the amount and type of a vegetated environment, such as by doing away with intensively manicured lawns, requires a great deal of resident co-operation after statutory land use planning and construction.

If stormwater management is problematic in the planning of a certain area, such as where soil properties or drainage system dimensioning are concerned, statutory land use planning should make specification of the maximum area or percentage of all impervious surfaces in each plot a key statutory land use planning regulation. Reducing the amount of stormwater in these areas is of the utmost importance. Specification of the maximum area of impervious coverage also regulates the amount of urban green space within plots.

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Affordances and Limitations of Cognitive Bias Reduction in Introductory Digital Design Pedagogy

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Abstract

As digital design rapidly expands the disciplinary knowledge-base of related media, methods, and modes in architecture, cognition-based pedagogical strategies hold unique promise in introductory digital design education to increase knowledge transfer efficiency (i.e. learning) by aligning the learner's natural schema-developmental processes with the inherent affordances of digital tooling methods. Through the employment of cognitive-based instructional strategies that seek to refine the designer's own judgement and decision making processes, can academicians exploit the affordances of digital design technologies to enhance the architectural learning process in ways not possible in an analog age? This paper frames and explores cognitive bias mitigation as a pedagogical strategy that may increase knowledge transfer efficiency in digital design pedagogy by helping novice learners to mitigate common cognitive biases in the iterative design process. The literature that explores decision-making processes in design will be presented first. This foundational introduction will then be followed by an overview of the implications of early-stage design decision making in architectural learning environments. Cognitive biases particularly applicable to architectural design will be introduced with a distinct emphasis placed upon those that may be augmented or compounded in digital design environments. Cognitive limitations to architectural decision-makers such as projection bias, affective forecasting, and the hot/cold model will be explored in detail. Cognition-based pedagogical strategies that seek to refine the designer's own judgement hold promise in the emerging field of digital design as progressive technologies and processes are plagued by missed opportunities for the learner's own decision-making intellectual advancement. Theory and concepts from the decision sciences and digital design in architecture are cross-pollinated in this study.

Keywords: digital design, novice learner, cognitive biases

With or without heuristic usage during the problem solving process, decision making under uncertainty is prone to non-normative behavior, irrationality, and biases

Introduction

Irrational, biased decision-making and non-normative behavior are ubiquitously symptomatic of the human mind. Research related to cognitive biases originated in the field of cognitive psychology but has now expanded into other fields such as economics, management, and decision science. Cognitive biases are sub-conscious, systematic errors or deviations from rationality that are associated with heuristics or the mental shortcuts that people use in decision-making (Kahneman 2003). Decision-makers resort to heuristics when faced with the limitations of cognitive processing capacity within a decision-making environment characterized by complexity, ambiguity, and uncertainty (Hallihan 2012; Keil, Depledge & Rai 2007). Whether it is a consumer deciding which product to

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purchase or an executive making a financially impactful decision, choosing one alternative among many within the face of uncertainty creates the potential for the use of heuristics and the influence of cognitive biases. Hence, in a disciplinary context such as architecture characterized by iterative decision making and the nearly infinite spectrum of potential design artifacts engendered by digital technologies, one must question how heuristics and biases impact the design decision-making process and whether digital tools alleviate or compound prevalent biases in design.

Although architectural design is often stereotypically viewed as an act of 'creative genius' (Beaty, Silvia, Nusbaum, Jauk & Benedek 2014; Dorst & Cross 2001; Goldschmidt 1983) rather than an iterative decision-making process, "the development of an architectural solution demands reasoning as well as inspiration" according to Salama and Wilkinson (2007, 126). Architecture involves creative design solutions that are developed through an iterative process and, like other forms of design, "necessitates the making of decisions in order to fulfill certain objectives" (Hasirci & Demirkan 2007, 260). Replicating professional task performance in architecture, the design studio provides students similar decision-making experiences through course projects. Perhaps the most challenging element of architectural practice and education is the framing and probing of the ill-defined problems of design (Eastman 1969; 2001).

Given that, architecture involves decision-making and "cognitive biases are always present in decision making" (Keil et al. 2007, 395), the question of how the work of students in the design studio may be influenced by cognitive biases seems worthy of consideration by architectural educators. As cognitive psychologists continue to expand upon their understanding of cognitive biases in decision making, those involved in the education of future architects continue to debate the learning ramifications of the movement from analog to digital design. It appears that both "fields are making progress on parallel paths" (Lovett & Greenhouse 2015, 196). This article is an attempt to merge research from cognitive psychology related to cognitive bias with the development of digital design in architectural education to specifically consider how such a development and pedagogical integration may impact the degree to which cognitive biases influence student work.

Although the influence of cognitive bias on architectural design in practice is an established subject of research (Bay 2001), the role that cognitive biases may play in the architectural digital design studio have yet to be explored. The purpose of this paper is to establish the decision-making element of architectural design, describe how cognitive biases influence decision-making, consider which cognitive biases may be most relevant to design studios using digital design, and finally consider how certain cognitive biases may be mitigated or augmented in the digital design environment.

In the following seven sections, cognitive biases and irrationality will be explored relative to the novice learner and the media, modes, and methodologies of digital design. The order of the research will be organized as follows: (1) introduce decision making in design and the architectural learning environment; (2) acknowledge the projection-based irrationalities in design underpinned by the comparison between analog and digital design's ideational developmental processes; (3) introduce projection bias and its impact on the process of progressive decision making in architecture; (4) utilize affective forecasting and temporal correction as analytic lenses to explore the regressive decision-making tendencies of novice learners in design; (5) establish a background and introduce accountability shifting – a key procedural avenue for projection bias mitigation – relative to the digitally-mediating potential of digital tooling methods in architectural design; (6) explore hot/cold biases in relation to inter-temporal choice, design thinking, stimuli-influenced choice, and novice learning. In

furtherance of these seven steps, limitations and future research possibilities are then presented.

Decision making in design

Judgements under uncertainty

Decision making is a crucial component of the iterative design process in architecture. From the initial outset of the design problem until the design or building is completed, architects are required to make an extensive number of decisions that affect virtually every component of the final design artifact or design product (Schön 1983). Design problems in academia as well as practice are difficult to solve due to "incomplete information, limited time and human mental resources" (Bay 2001, 51). It is not possible, due to the aforementioned constraints, to search through all "alternative solutions, multiple contingencies, and multiple conflicting demands" (Bay 2001, 51) that affect the design situation. "Donald Schön (1983, 49-50) referred to this condition as practice with 'uncertainty, instability, uniqueness and value conflict', where the architect managed his design work by using his experience, intuitive and human feel, rules-of-thumb and previous examples, developed through the years of education and practice" (Bay 2001, 51). Schön (1983) and Tversky and Kahneman (1982) have referred to these experiential and intuitive rapid judgements, or cognitive shortcuts, as heuristics. Heuristics, as described by Tversky and Kahneman (1975), reduce the complexity of assessing probabilities and predicting values and preferences to more simple judgmental cognitive operations based upon the brain's limited processing capacity. These simplified judgmental operations, however, may lead to "severe and systematic errors" (Tversky & Kahneman 1975, 1124). With or without heuristic usage during the problem solving process, decision making under uncertainty is prone to non-normative behavior, irrationality, and biases (Kahneman 2011; Kahneman & Tversky 1973; 1979; Tversky & Kahneman 1975; 1985; Stanovich & West 1998; Nikander & Liikkanen 2014). In an iterative decision making process such as the design-development method commonly employed in architectural design, biases and irrationality can be compounded or mitigated through the iterative design process. The reasons why compounding and/or mitigation of biases and irrationalities are particularly delicate aspects of the design process will be explained next.

Implications of early-stage design decisions

Architectural decision making is a particularly high-stakes form of design decision making due to the high level of material and financial resource investment and the expected lifespan of the design product. Socio-cultural and technological changes that occur during the lifespan of the design product make this form of design decision making particularly challenging as future requirements and uses may or may not be known during the design development process. Concept design, or early-stage design, is particularly critical for the design development process due to the divergent-convergent method of ideational development, a process in which an initial spectrum of various design alternatives are considered and then "evaluated and eliminated in order to select the best concept or concepts for further development" (Nikander & Liikkanen 2014, 474).

As stated by Nikander and Liikkanen (2014), the early-stage divergent-convergent method of ideational development is particularly critical for the success of a project as large decisions that impact scale, quality, cost, and desirability of the end product are typically made rapidly and the "consequences of a poor choice may be disastrous at worst" (Nikander & Liikkanen 2014, 473; Asiedu & Gu 1998 cited in Nikander & Liikkanen 2014). Thus, the importance of the divergent-convergent process of ideational development beacons instructors to consider how biases with regressive tendencies such as the projection bias,

and relatedly affecting forecasting, may be mitigated in architectural design environments.

As previously stated, digital design is fundamentally discrete, diverse, and dynamically evolved while analog design has been linked to the relatively static historical design-development logics of industrial modernism. As such, pedagogical strategies that align the innate characteristics of digital design ideational development with the novice learner's conceptual design process may help to alleviate some regressive tendencies associated with projection bias and affective forecasting. A key aspect of digital design is that it positions the designer in novel relationships with design media, though as in analog design the designer still assumes a key role in design schema (Becker 2015). The introduction of novel relationships with design media, a rapidly expanding field of digital design specializations, and varying degrees and nature of interactivity between the designer and material representational medium each increase the possible processes by which conceptual design development may occur.

Architectural learning environments

Architects have traditionally utilized material-representational media to engage in the experimental, 'reflective conversations' with the materials of the design situation that lead to a design solution (Schön & Wiggins 1992). Through the design process, architects draw, model, sketch, and through additional means, seek to accurately represent the design idea. As Schön (1983) has described in his foundational texts on the design-learning process, the architect sees what design ideas have been represented and reflects upon the physical manifestations of the aforementioned design ideas, thus informing further design concepts. This process of representing, 'seeing', reflecting, and retranslating forms the foundation of modern, analog architectural design in both practice and academia. Architectural education, as in other related design fields, is based upon professional-task-performance replication (Oxman 1999). As such, students of architecture also face the cognitively demanding task of making iterative sets of decisions. This method of education typically includes students from across the curricular spectrum, from novice learners in foundation courses to 'experts' at the thesis level. As various researchers have articulated, traditional architectural pedagogy to a great extent is still based on the Ecole des Beaux Arts educational model including the aforementioned cross-curricular example (Cuff 1991 cited in Oxman 1999). In addition to professional-task-performance similarities, Beaux-Arts-based studios are also organized in the standard problem-exploration-solution sequence capped by a final review of the design product. As alluded to by Oxman (1999), this studio model contains a plethora of missed opportunities for the student's intellectual development. In addition to an overemphasis on the final design artifact at the expense of process, instructors may also miss, one, important opportunities to stimulate cognitive development via digital tooling methods, and two, the utilization of digital media as a bias-mitigating decoupling-agent between designer and material representational medium.

Projection bias

As an introduction to the affordances and limitations of projection bias reduction in studio based learning environments, a general chronology of the typological-to-dynamic ideational shift in design will be presented. While digitally mediated design creates increased opportunities for cognition-based pedagogy in architecture, the integration of digital media, modes, and methodologies into studio-based learning environments also challenges educators to consider not only the curated selection of material to be integrated but also the varying cognitive expertise levels to be achieved by the student. "These cognitive demands for the learner also create critical pedagogical challenges for educators" as they in turn consider how to implement instructional strategies for effective

knowledge transfer (Becker 2015, 1). Cognitive biases play a key role in the knowledge-transfer process, yet they have neither been studied relative to the transformative, digital age in architecture nor to novice learners in creative fields, thus justifying the relevance and novelty of this study.

Analog developmental processes

Through the framing, structuring, and articulation of digital design as a methodologically unique form of design, an inverse articulation has emerged which further assists in the understanding of analog design. As differentiated from the digital, analog design and developmental processes can be understood as fundamentally typological and self-referential in nature, thus engendering a typologically-based discourse and the emergence of typologically-based critique (Oxman 2006). This can be partially attributed to historical practices of iterative ideational development via non-intelligent representational media (i.e. paper, wood, glue, etc.), but perhaps also due to historical disciplinary practices that derived symbolic value through formal and spatial attribution. Thought processes that were primarily based on formal and socio-cultural precedent drove design development and alternate logics based upon an alternative to the relatively static concepts of architectural development had not yet gained influence. William Mitchell (2005) has described the static, analog logics of architectural development as normative, standard, and repetitive in nature, while emphasizing that historical and cultural conceptions helped to propagate these sets of ideas comprising what is generally termed 'industrial modernism.' (Mitchell 2005 cited in Oxman 2006).

Digital differentiation

For a section concerning projection bias reduction and its potential implications in studio-based design environments, the typological methods and ideological frameworks aforementioned are essential to understand as a counterpoint to the striking shift in media, modes, and methodologies introduced by the development and evolution of digital design. Rather than a typologically based logic, fundamentally modular in nature, digital design promulgates the development of design artifacts that are systemically derived, discrete, diverse, differentiated, and dynamically evolved (Oxman 2006). This seminal shift from the static and singular in nature to dynamic and systemic can primarily be attributed to the complexity of the digital era spurred by a plethora of digitally-mediated design software applications and related tooling methods (Oxman 2006). While digitally-mediated design is commonly understood to be capable of producing exceptional geometric complexity, it is important to note that perhaps the most distinguishing characteristic between digitally-mediated design as a methodologically unique form of design and analog design is the digital's ability to propose "meaningful alternatives" to the aforementioned industrial-modernist logic of modularity and repetition.

Due to the fundamental shift in the systems of design from the analog to digital, would it not be logical to assume that by designing with an industrial-modernist logic rather than the digital's associative discrete, diverse logic that one would partially overlook or altogether miss both novel design opportunities and design solutions engendered by digitally-mediated design? While the following paragraphs introduce and unpack projection bias relative to introductory digital design, the underlying presumption is that projection bias in introductory learners may limit or result in a failure of the designer to exploit the myriad of novel interactions, possibilities, and opportunities for design development in digital environments. The complementing presumption is that this "projection of a decision-maker's past into attempts to imagine a new future impedes the development of novel ideas as well as accurate assessment of their likelihood of success" (Liedtka 2015, 6).

Rationality and decision making

As discussed in earlier sections, designing is iterative decision making and designers like all others are susceptible to irrationality. Projection bias, as described by Loewenstein, O'Donoghue, and Rabin (2000), is defined as an exaggeration of "the degree to which [the subject's] future tastes will resemble their current tastes" (Loewenstein, O'Donoghue & Rabin 2000, 1209). If one was able to accurately predict future preferences relative to current preferences without being cognitively compromised, the initial decision could then be deemed rational. In order for optimal decision making to occur, one must able to predict future preferences in an uncompromised state. However, depending upon social, cultural, environmental, and personal changes, future preferences may change considerably from current preferences due to various stimuli and physiological development and/or maturation; thus the likelihood that one's cognitive state is not impacted to some degree over time is unlikely (Wertenbroch 2001). Generally, "people tend to understand qualitatively the directions in which their tastes will change, but systematically underestimate the magnitude of these changes" (Loewenstein, et al. 2000, 1210), a common example being an excessive purchasing of food while shopping when hungry. As stated by White and Poldrack (2014), biases in decision making provide valuable information about cognition in general, thus the study of biases in architectural design may open new avenues for the study of existing challenges in architectural thought.

Limited ideational development in architectural design

In architectural design, the projection bias may be limiting to progressive decision-making and in relatively extreme scenarios may stifle the entire iterative design process by contributing to a common condition known as 'stuckness' (Sachs 1999). Due to the novice learner's relative lack of design-based knowledge structures, structures that are understood to be composed of both precedent knowledge and problem and solution space knowledge (Cross 1982, 2004), the novice learner may be more inclined to succumb to projection bias through the over reliance on initial design concepts and limited pursuit of iterative development. Described as the inability to see beyond themselves, or in other words escape the confines of past experience, designers impacted by projection bias will tend to become overly attached to initial design concepts due to a limited perspective on future possibilities (Novemsky & Kahneman 2005). Thus, the student's design decisions tend to be regressive with an overemphasis on the present. The following sections will present a cognitive action termed affective forecasting, a similar concept to projection bias yet one that through the recognition of mental images holds promise to mitigate regressive tendencies via temporal correction.

Affective forecasting in design

A related approach to Loewenstein's definition of projection bias is what Gilbert, Gil, and Wilson have described as affective forecasting, a prediction of future preferences or interests based upon mental proxies for actual or previously experienced events (Gilbert, Gill & Wilson 2002). With affective forecasting come two primary problems, one being that current preferences can be contaminated by current circumstances and, two, that "mental images often fail to specify the temporal location of events they are meant to represent" (Gilbert, et al. 2002, 431). These problematic factors could have a particularly strong impact in disciplines such as architecture that make frequent use of precedents and that are artistic in nature, thereby being impacted upon to some degree by an inspiration. For novice learners with reduced knowledge-structure clarity and relatively limited experiences with the ill-defined problems of design, a greater reliance on the projection of past experiences to future situations may occur more frequently than with experts who can draw upon their more developed and relevant knowledge structures to the related design problem or challenge. Without developed knowledge structures relative to the problem and solution

spaces of design (Cross 1982, 2004), novices may have to draw from more disparate mental images that are then projected onto future design solutions, thereby increasing the likelihood that misalignments and irrational associations will form from mental images in unrelated temporal locations.

Affective forecasting and temporal correction in design

In architectural design, for example, the aforementioned problematic factors of affective forecasting could be influential for a student who has just read about Zumthor's Therme Vals baths in Switzerland and predicts that the building design that they will develop next semester will include many types of baths, hot and cold, deep and shallow like the Therme Vals. The student may have enjoyed swimming as a child and has many fond memories of their local pool, so they predict that guests in the building that they will design will enjoy the excellent quality of the baths. It is likely that the student has imagined some aspects of their future design and predicts a pleasant future experience for the swimmers. A complicating factor in this projective process is not only that this projection was made under the influence of a circumstantial excitement stimuli by having just read about the Therme Vals, but also that the student's prediction may not have included a cognitive assessment of the temporal locations of their mental images, a process known as temporal correction (Gilbert, et al. 2002). In other words, the student may not have realized that by combining positive mental images of swimming from childhood, a precedent project, and a projection of an enjoyable thermal bath experience for guests of a future building that there may be misalignments and irrational decision making due to unrelated, disparate associations.

If the student was aware of the possibility that their current assessment of future design preference could be irrational, they may realize that next semester they should be much more careful when designing, perhaps including more quantitative factors in the conceptual design process in addition to the factors drawn from personal experience. The student's positive memories of swimming and a widely-regarded belief that Zumthor's baths in Switzerland are architecturally successful have little to no bearing on the potential for success in a completely novel design scenario.

To help alleviate the irrational, regressive tendencies to combine disparate mental images and utilize past experiences to form future preferences, digital tooling methods hold the possibility to materialize a plethora of differentiated, diverse design artifacts based upon the designer's input criteria. Perhaps most importantly for irrational decision making as spurred by affective forecasting, digital design technologies *offer the designer a choice* of highly differentiated artifacts stemming from singular or multiple initial concepts. Higher-order generative logics can be initiated with or without editing by the designer, arguably a complication of digital flexibility but also an opportunity to expand the ideational process of the learner beyond past-to-future affective forecasting tendencies. Affordances of digital design technologies relative to design pedagogy also involve a mediation of the relationship between designer to design artifacts as will be introduced next.

'Accountability shifting' via digital mediation

In contrast to analog design in which conceptual design is limited by the medium's compositional and formal nature via material-based developmental constraints, digital design affords the possibility of highly-diversified processes, relationships, and outcomes through the diversity of digitally-mediated designer-to-design-artifact interactions. For example, rather than designing and producing a series of ten different concept models for a two-story, mixed-use housing project in paper or cardboard, the student can exploit the rapid-production affordances of digital design tools to produce any number of design artifacts, each at a variety of complexity-levels relative to the student's digital skill level. Basic box modeling

could be employed, or for greater ranges of complexity and interactivity, highly-diversified generative processes such as evolutionary modeling, morphogenetic modeling, parametric modeling, and others could be employed (Becker 2015). Each of these unique procedural vehicles for digital design employ a process of bidirectional information transfer that could be utilized as a means to generate multiple concepts and design artifacts from a singular initial concept (Becker 2015; Oxman 2006 cited in Becker 2015). Additionally, high levels of complexity in digital design enable a "more sensitive and inflected response to the exigencies of contextual aspects such as site, program, and expressive intention than was generally possible within the framework of industrial modernism" (Mitchell 2005 cited in Oxman 2006), a personal and professional context from which designers may source ideational projections.

Through the process of digitally-mediating the interaction between designer and material-representational medium, a key strategic avenue for projection bias mitigation is born. This novel avenue is referred to by the author as 'accountability-shifting'. A problematic aspect of projection bias in design thinking is the tendency of the designer to overestimate the similarity between the experience or importance of a future event or entity to the current or past experience of an event/entity. The projection of one's past as a means to imagine a new future is particularly limiting for novice learners, a process that stunts the development of novel ideas and solutions (Liedka 2015). That said, as a form of media, which supports affordances unavailable in analog design environments, digital media offers the unique possibility for accountability-shifting, a method that may de-personalize past-to-future design logics by disrupting the direct designer to material-representational-media relationship. Through the decoupling of the direct designer-to-design-artifact connection via a digital logic, interface, product, or other means, digital technologies, through their diversity and degrees of interactivity, afford increased possibilities for design development in a context methodologically unique from analog processes and existing artifact production systems, thereby to some degree shifting accountability for future designs drawn from past experience to digitally-enabled, dynamic, discrete, and differentiated digital developmental processes. Digital media, methods, and modes could serve as a proxy for the designer themselves, the degree dependent upon the level of control shifted from the designer to the related digital technology (Oxman 2006). Through digital design's inherent decoupling of the designer's direct relationship to the associative material-representational media, the impact of the projection bias on novice learner's decision making processes may be mitigated via accountability shifting.

Hot/cold model

Intertemporal choice

A majority of the choices that one makes are intertemporal. In fact, intertemporal choice is such a broad domain within the fields of psychology and economics that one would be hard-pressed to find a consequential choice that is not intertemporal (Loewenstein, Read & Baumeister 2003). Defined as the type of choices we make when determining the trade-offs between costs and benefits occurring at different points in time, intertemporal choice could include whether we prepare for a lecture now or after our morning coffee to the order and difficulty of assignments that are given to students throughout the semester. Chosen from among a number of foci in psychology and economics, two primary fields with a rich history in the study of intertemporal choice, the situational determinants of impulsivity, hot and cold systems in particular, may be beneficial to consider in relation to digital design pedagogy.

The design process in architecture is typified by iterative, exploratory decision-making processes comprised of intertemporal choices. Due to a building's long

lifespan, material transformations – due to moisture, temperature, light, etc. – and various other factors impact the building over time. Thus, architects must make many choices relative to trade-offs between present and future states. Are the higher costs of energy-efficient windows justified by the potential energy savings later? Can a more attractive, expensive stone be justified by the improved building aesthetic and greater durability over time? Both questions are examples of common intertemporal choices. However, the latter also hints at an intricate, complicating aspect of the intertemporal decision-making process in design, the interplay of 'hot' emotional to 'cool' cognitive choice illustrated by the prior example's aesthetic preference factor.

As described by Metcalfe and Mischel (1999) in their influential research on the dynamics of willpower, the interplay between the two-system hot/cold model of cognition is crucial to the way people self-regulate their decision-making, thereby limiting or succumbing to impulsive responses and, associatively, irrational choice (Metcalfe & Mischel 1999). The hot/cold model is also commonly referred to as hot/cool cognition, hot/cold gap, or hot/cool framework. Considering that design is decision-making (Hasirci & Demirkan 2007) and is influenced by excitement stimuli (i.e. novelty, artistic inspiration, etc.), the exploration of hot and cold cognition becomes particularly relevant as design processes in architecture diversify in a digital era. By first exploring the cognitive research that links the hot/cold model to its effects on self-regulative decision-making, an identity for stimuli-influenced-choice can then be more effectively correlated to the opportunities and challenges of rational decision-making in digital design environments. Affordances and limitations of digital design environments will then be considered relative to the cognitive challenges faced by novice learners in stimuli-rich, digital contexts.

'Know' or 'go' decision-making

The hot/cold or hot/cool framework originally proposed by Metcalfe and Mischel (1999) is a theoretical framework through which one can understand and justify how humans who are driven by impulsivity are able to overcome the powerful reactions instigated by environmental stimuli and exert self-control strategies in decision-making processes (Metcalfe & Mischel 1999). Unlike past theories of self-regulation linked to the strength of personal willpower, the hot/cool theory differentiates between "a cool, cognitive 'know' system and a hot 'emotional' go system" (Metcalfe & Mischel 1999). The cool system has been described as "cognitive, emotionally neutral, contemplative … slow, and strategic" while the hot system is "the basis of emotionality, fears as well as passions – impulsive and reflexive – initially controlled by innate releasing stimuli" (Metcalfe & Mischel 1999). The hot/cold model conceptualization is metaphorically based upon connectionist systems where concepts are represented as nodes that are interrelated through links, a link being a connection between two nodes (Mischel, Ayduk & Mendoza-Denton 2003). Designated as either excitatory or inhibitory, "information processing works through spreading activation – that is, activation at each initial concept spreads through the links to the other related concepts" in a metaphorically ripple-like manner (Mischel, et al. 2003, 180). Determining whether it is the 'know' or 'go' system that is primarily activated in decision-making is not of utmost importance; rather it is the interaction of these two cognitive systems that is the essential factor behind purposive volition and self-regulation (Metcalfe & Mischel 1999).

'Hot/cold' overlap

As presented by Mischel, Ayduk, and Mendoza-Denton (2003) in their book, *Time and Decision*, the hot/cold model builds upon a lengthy history of research on the interplay between cognition and emotion. Various cognitive models have suggested that emotion precedes its cognitive interpretation which is dependent on context. Another related model includes an initial state of arousal as a forerunner to emotion and cognitive interpretation. Nonetheless, the emotion-

cognition interplay is relevant throughout prior models in a similar way to the hot/cold model. An aspect that is unique, however, is the direct, overlapping relationship between the hot and cold system to the degree that the same environmental referents are utilized with each opposing response. Cold or cool 'know' nodes can activate hot 'go' nodes just as 'go' nodes can be 'cooled' by the contemplative, slow, and strategic 'cool' nodes. According to the hot/cold model, self-control is dependent upon the 'cool' nodes direct access to 'hot' nodes, an aspect of self-regulation that develops over time due to environmental influence (Mischel, et al. 2003). It is important to mention that the effect of stress on decision making extends beyond the scope of this paper; however it is ultimately a crucial factor in the hot-cool decision making process. "The hot-cool model provides a heuristic framework for understanding intertemporal choice, as the 'hot' system works on a here-and-now principal relying mostly on biologically significant active triggers", whereas the compensating 'cool' system is emotionally neutral and strategic (Mischel, et al. 2003, 182). If design pedagogy strives to improve stimuli-influenced-choice, then an understanding of the hot-cold interplay is important to understand as the structured development of robust 'cool' systems for novice learners is intimately related to 'hot' predispositions.

'Hot' thinking in design

Focusing on one system in particular could be beneficial relative to the discipline-specific objectives of this perspective research due to the stimuli-laden environments of design. While the 'cool' system is understood to develop later in children than the 'hot' system, between 4 years and infant respectively, it is the hot system that is most rapidly triggered by environmental stimuli (Mischel, et al. 2003). Linked to an "almond-shaped region in the forebrain thought to enable flight or fight" (Mischel, et al. 2003, 181) reactions (Gray 1982; 1987; 1990) (Ledoux 1996), the 'hot' system is influenced by experiential learning particularly related to significant environmental triggers, significance being determined by prior experience and biological disposition among other factors. The impact of the aforementioned 'triggers' can include, but are not limited to, nodal activation levels, speed of response, and probability of nodal transition or evolution. The specification of environmental stimuli and their related impacts on nodal behavior are important due to the possibility of 'hot' reactions being 'cooled' and new 'hotspots' or 'hot regions' being created over time. Depending upon the situation and cognitive development of the individual, this suggests that 'hot' reactions need to be actively managed as they evolve and spread over time, perhaps via properly adapted 'cool' systems. In a correlative manner, the aforementioned point also suggests that novice students in digital design, or those students with less developed knowledge structures relative to digital design and digital tooling methods, may be impacted by different stimuli than expert learners with digital media. If novice learners in digital design contexts are impacted by different stimuli than expert learners, thus leading to 'hot', biased reactions, how can digital design pedagogy limit these stimuli and create a learning environment that helps novice learners build cognitive 'cool' systems to offset misleading 'hot' reactions? The application of knowledge relative to the interactions between 'hot' and 'cool' systems may be particularly useful for applicable pedagogy (Mcalpine, 2004).

'Hot' thinking and the misuse of advanced digital technology

Digital design is a methodologically unique form of design and thus contains novel mis-uses and missed-opportunities via contemporary technologies along with the promise of increased design capabilities and novel design artifacts, processes, and conceptualizations. Following the establishment of a cognitive, research-based background to stimuli-influenced decision-making, an exploration of digital design's misuses and missed opportunities will be undertaken relative to hot/cold cognition. As introduced by Becker (2015) in *Design Cognition: Optimizing knowledge transfer in digital design pedagogy*, "the misuse of advanced technology is a common plague in introductory digital design education as affordances of advanced technology are exploited. For example,

the user-defined associative compositions or frameworks that control parametric operations offer opportunities for explicit knowledge transfer and formative assessment in digital design education, but such affordances are also two-faced with opportunities for enhanced knowledge-transfer being abused for quick results via ease of transference and formal complexities that mask a lack of intellectual rigor" (Becker 2015, 9).

In the prior example, the user-defined associative compositions or frameworks such as Grasshopper or Rhinoceros 3D scripts are particularly relevant to hot-cool/cold biases due to their novelty, capabilities, ease of transference, and ubiquity within contemporary pedagogical discourse in architecture. Unique to digital design media, user-defined associative compositions or frameworks are arguably the foremost exemplification of the ease and speed of geometric production via digital tools. Scripts, one of multiple generative framework examples, can be easily downloaded, imported into the relevant software, and implemented by a student to quickly create geometric complexity and higher-order associative logics, often without requiring the student to understand the higher-order digital facility themselves. If the utmost objective is to develop robust, flexible knowledge structures of digital tooling methods and processes, the ease of script implementation is worrisome. Not only does the aforementioned example of user-defined associative compositions exhibit a generally problematic lack of intellectual rigor, but the novelty of rapid complexity and ease of form generation may compound pre-existing biases relative to design artifact production, a problem spurred by digital tools that affects novice learners to a greater degree.

The 'hot' effect on novice learners

Higher-order generative frameworks and geometric complexity are characteristic of higher-order didactic, or technical, per this particular example, cognitive facility. Due to the "increased exposure of novice learners to digital design media and materialization technologies" (Becker 2015, 9), biases that may be exhibited by expert learners to a limited degree may become more widespread and intensified via higher-order digital media being exploited by inexperienced or novice learners. Visually seductive geometric complexity that would normally be produced only by expert learners in analog contexts can now be produced relatively easily via digital methods by novice learners. While the production of complex geometry and associative logics may support greater design possibilities for novice learners, design artifact production via digital media also runs the risk of being intellectually shallow yet highly stimulating to inexperienced learners, thereby functioning as an environmental stimuli and triggering 'hot' biases due to visual complexity and novelty.

Hot/cold influence upon design artifact production

Design faults in introductory digital design in architecture commonly tend to involve an infatuation with the capabilities of geometric production and formal complexity that privileges seductive formalism over more intellectually robust design artifacts that may have simpler geometries. Visual/tactile environmental stimuli such as attractiveness or complexity may impede rational decision-making due to the generation of emotion-laden 'hot' states such as excitement or intrigue relative to the student's production of a design artifact. Hence, the primary determination then becomes whether being "emotion-laden (hot) or not (cold) unduly influences their assessment of the potential value of an idea, leading them to either under or overvalue ideas" (Loewenstein & Angner 2003 cited in Liedtka 2015, 7). The decision-makers rationality can be so heavily influenced by emotion laden 'hot' states that not only can they vastly mis-assess how others will react to the relevant entity, but also how they themselves will react when not in a 'hot' state. Designs that solely rely on the exploitation of readily-available digital capabilities that may generate excitement and intrigue through complexity, particularly complexity that masks intellectual rigor, can quickly change from

objects of excitement and potential to shallow objects with little relevancy through the eyes of the creator. In introductory digital design learning environments in particular, there may exist an enhanced tendency for students to become infatuated with the capabilities of geometric and formal acrobatics. Design capabilities that involve higher-order knowledge are now accessible to introductory learners, a challenge for design instructors as students seek to exhibit higher-order digital facility without proper, well-developed technical knowledge. Simply because the student can produce geometric complexity does not mean higher-order digital facility or design knowledge exists.

Discussion and limitations

The complexity and differentiation present in digital design media is directly correlated to the diversity of affordances and challenges for cognitive-based pedagogy in digital design environments. The propositions and explorations listed here are mere starting points as digital design methodologies continue to evolve in parallel to developments in cognitive psychology and the decision sciences. Despite the affordances of digital technologies for bias mitigation, a failure to recognize the diversity of interactions and possibilities novel digital environments engender may threaten the utility of digital tooling as mediating element in the decision making process.

Thus, a series of questions are raised that further probe the propositions aforementioned in this research. Are 'hot' decisions necessarily bad decisions? Should the development of more robust 'cool' systems be supported? "Arkes wrote that knowing one has a problem with biases does not help him avoid the effects of biases" (Arkes 1981 cited in Bay 2001, 10). Therefore, what relevance do self-initiated mitigation strategies have when other concepts such as 'accountability shifting' are inherent in the design methodology and do not necessarily require a conscious choice for initiation by the student? Besharov (2004) has focused specifically on the correction of cognitive biases, yet his research suggests that there are many complicating factors that limit the possible corrections that can occur. Factors such as multiple, overlapping cognitive biases, the 'curse of knowledge,' and the correction of one bias while making others worse all directly impact the study of biases in digital design environments (Besharov 2004). Aligning digital design pedagogy for novice learners with the cognitive sciences does however increase the opportunities for knowledge-transfer enhancement in design fields through the exposing of novel questions and considerations for effective pedagogy.

Conclusion

Design as a decision-making process has been linked with the systematic errors and deviations from rationality associated with heuristics. Unique to the ill-defined problems of design and the vast resource investments associated with the constructed design-artifacts of architecture, learners – particularly those that are novices – are at an increased risk for severe and systematic errors due to biased decision making. This paper attempts to expose and explore projection bias and the hot/cold model in digital design environments as digital media, modes, and methodologies may alleviate or compound the problems of biased decision making.

It is beyond the scope of this paper to quantitatively analyze each aforementioned bias and its impact on digital design pedagogy, however the paper does attempt to raise relevant questions and create multi-disciplinary linkages, thereby raising awareness for future research. A notable gap in digital design literature has thus been exposed through the pairing of decision science and cognitive science with digital design pedagogy. In furtherance, the mediative aspect of digitally-mediated design – a seminal characteristic unique to digital design – is presented

as an integral factor for bias mitigation through the development of 'accountability shifting', a concept that exposes the cognitive benefits of decoupling the designer from their material-representational medium. Seeking to refine the designer's own judgement, cognition-based research concerning biases and heuristics hold exceptional promise in design fields as digital design's affordances and limitations are becoming increasingly integrated into architectural pedagogy.

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