Managing urban complexity

Participatory planning, self-organization and co-production of urban space

Sirkku Wallin
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Aalto University
School of Engineering
Department of Built Environment
Supervising professor
Professor Marketta Kyttä, Department of Built Environment, Aalto University

Thesis advisor
Adjunct Professor Liisa Horelli, Department of Built Environment, Aalto University

Preliminary examiners
Professor Luuk Boelens, Department of Civil Engineering, Ghent University, Belgium
Adjunct Professor Ari-Veikko Anttiroiko, School of Management, University of Tampere, Finland

Opponent
Senior Researcher Maija Faehnle, Finnish Environment Institute (SYKE)

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Abstract

Contemporary urban planning theories and practices are still dealing with the linear procedures and institutional sense-making. However, a new planning paradigm is emerging. The actor-based perspective acknowledges self-organizing urban development, which is able to operate apart from statutory government and decision-making.

This dissertation is a longitudinal case study analysis on local urban development in Herttoniemi, Helsinki. The dissertation is based on meta-analysis of an action research, which operated with the local stakeholders for almost a decade since 2004.

The aim of this dissertation is to provide theoretical and practical solutions that enhance the comprehension of urban development patterns in the Finnish context, and to explore the role of citizen engagement in urban planning. The dissertation answers the questions: What is urban complexity? What is the role of civil engagement in urban planning and development? How can e-planning enable civil engagement and urban transformation?

The analysis of urban complexities indicates that the civic engagement is an advantage in planning and development initiatives. Unlike the public participation in the planning discourse, which often emphasizes conflicts, the self-organization fills in the discontinuity of the statutory processes. For example, neighbourhood activists created new public space, supported local services and maintain urban events. In addition to the self-organizing activities, mundane everyday life improved the local surroundings and nurtured the local identity, while the formal planning initiatives have been less effective to develop Herttoniemi.

The dissertation suggests that urban complexity emerges due to a systemic gap: the one within planning and implementation, and the other between the planners and the local diverse realities. There are several reasons for this systemic gap. Namely, the linearity of the planning procedures and the lack of versatile planning methodology which prohibit adequate approaches to steer and feed urban transformation.

Therefore, I argue that there is a need for expanded urban planning, which acknowledges the grass root level dynamics and systemic urban change, and integrates different planning approaches, including the promise of urban and community informatics in e-planning. The dissertation presents different types of urban complexity, and the means to cope with them.

Keywords urban planning and development, complexity, self-organization, civil engagement, urban change and transformation

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Tiivistelmä


Tämän väitöskirjan tavoitteena on edistää kaupunkisuunnittelun keinovalikoimaa erilaisten paikallisten suunnitteluehdelmien tunnistamisessa ja hallinnassa. Väitöskirja perustuu lähes vuosikymmenen jatkuneeseen pitkittäistutkimukseen, jossa kehitettiin toimintatutkimuksen keinoin Helsingin Herttoniemen kaupunginosaa. Väitöskirja vastaa tutkimusryhmässä: Mitä on kaupunkitoimijoiden kompleksisuus, ja miten sitä voidaan kaupunkisuunnittelun keinoijn hallit? Lisäksi väitöskirja tutkii, mikä on ollut paikallisten toimijoiden rooli kaupunkikehittämisessä, ja millaisia mahdollisuuksia sähköinen suunnittelu (e-planning) tarjoaa kaupunkisuunnittelulle ja -kehittämiselle.

Väitöstyö perustuu viitteet vertaisarvioituun artikkeleen. Niiden pohjalta väitän, että kaupunkisuunnittelun käytäntöjen tulee kehittyä tunnistamaan ruohonjuuriteton toiminta ja paikallisuuden kaupunkikehitykseen vaikuttava dynamikka, jotta kaupunkitilan ja -toimintojen muutosten ymmärtäminen, seuranta ja jopa hallinta on mahdollista.

Kompleksisuuden hallinnassa korostuu, että kaupunkisuunnittelun käytäntöjen tulee kehittyä tunnistamaan ruohonjuuritason toiminta ja paikallisuuuden kaupunkikehitykseen vaikuttava dynamikka, jotta kaupunkitilan ja -toimintojen muutosten ymmärtäminen, seuranta ja jopa hallinta on mahdollista.

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Helsinki Metropolitan Region, I had Sanna Ahonen and Janne Roininen on my side. And Maria Söderholm, who provided me the literature and information on planning, life and and beyond.

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I wish to thank the current ending of the journey, the City of Espoo for giving me a new territory of practice as well as the place and time to conclude the thesis. I thank also the funders of this journey, especially the Finnish Academy and the Finnish Funding Agency for Technology and Innovation.

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Kirkkonummi, 20th August 2019
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Appendix I
List of publications

This doctoral dissertation comprises an introduction and the following publications:


(the English translation: Urban transformation in action - Analyzing urban planning and development in Helsinki)


Author’s contribution

**Publication 1**: Refereed scientific journal.

The only author. The PhD Thesis Advisor provided advise and comments for structuring and editing the paper.

**Publication 2**: Refereed scientific journal

The third co-author. Responsible for urban planning, complexity and self-organizing issues in the article. Shared responsibility for collecting and analysing the data. The main contribution is in the chapter “Expanded Urban Planning as a Theoretical Framework”, and respectively also in conclusion. The main writer is the PhD Thesis Advisor.

**Publication 3**: Refereed scientific journal

Main author. Shared responsibility for collecting and analysing the data with the second author. The second author is the PhD Thesis Advisor.

**Publication 4**: Refereed scientific journal

Main author. Shared responsibility for collecting and analysing the data with the second author. The second author is the PhD Thesis Advisor.

**Publication 5**: Refereed scientific hand-book article

Co-author. Responsible for e-planning, e-democracy and ubiquitous technology issues in the article, and respectively also in conclusions. Shared responsibility for collecting and analysing the data with the main author. The main writer is the PhD Thesis Advisor.
1. Introduction

This dissertation explores the connection between contemporary urban planning and urban development. It focuses on urban complexity and self-organization based on a longitudinal action research. The research problem deals with, how urban planning can cope with urban complexity, more precisely, how it is able to comprehend urban transformation produced by the self-organized civic engagement on the neighbourhood level.

1.1 Complexity challenging urban planning

Planners, researchers and urban dwellers largely agree with that urban planning has not been able to reach the local realm1. The task of urban planning has been to plan and design well-functioning urban environments, and to steer urban development. Yet, planners have had difficulties to cope with urban development. The dynamics of urban change and the cause of urban transformation are not only difficult to foresee, but also to analyse. Hence, it is challenging to make decisions, how to deal with urban complexity.

Urban complexity is an acknowledged part of urban life and morphology (Allen & Saglier, 1981; Trift, 2000; Portugali, 2012). It is a phenomenon that becomes tangible in everyday life, but which remains vague and ambivalent in statistical analyses and policy making (Mazza, 2002).

Also, the planning itself has become more complex. In addition to the congested urban tissue, complicated regulations, transcalar structures of administration and economics, accelerated social interaction and the growing number of stake-holders have impacts on urban planning. Steering urban transformation through the staged processes of forecasting, planning and evaluation is compromised, as well as the actual implementation (Innes & Booher, 2010; Allmendinger & Haughton, 2009; Healey, 2006).

Urban complexity is not dependent on scale or size of the planning intervention. It is particularly apparent in the so called megaprojects, large scale infrastructure initiatives (Flyvbjerg & al 2003; Salet & al. 2012). For example, in the

1 The local realm refers to the diverse realities of local stakeholders (see Chapter 2.2.1.).
Finnish context, in spite of thorough planning and evaluation processes, the budgeting of the new metroline from Helsinki to Espoo, has rocketed and its project management stalled. Thus, one might consider that the scale is more prevailing than the context when conceptualizing complexity in planning. However, the procedure might not be less complicated in smaller urban development initiatives. For instance, in the City Region of Porvoo (50,000 inhabitants in 2017), it took four decades to finish one traffic planning initiative called Alexander Bridge.

These examples might lead the reader think that urban transformation is something that only takes place after years of construction and large investments. Quite on the contrary, the change of urban space and functions is on-going and it takes place outside the official planning system, sometimes inspite of the system (Boelens, 2006; Boonstra & Boelens, 2011; Uitermark & Nicholls, 2014).

Urban transformation takes place through the use of urban space and its facilities, the lived everyday life and experiences of urban patterns. Thus, urban transformation is based on action and on the reaction to that action. It takes place both in fractions and entities, with varying scales and time spans (Batty, 2005; De Roo, 2012). Sometimes the dynamics of urban transformation seems explicable, such as action for a reason, with effects and impacts. More often, the patterns of change are less visible, even disruptive (Aaltonen, 2010). Unexpected events alter the aims, means as well as the outcome, until there is no beginning or end, just continuous change.

Urban planning seeks to steer urban transformation by land-use planning and targeted urban development initiatives. Also, other administrative sectors apply urban policies as a way to enhance social and economic development. Yet, their implementation in situ calls for action on the local level, in the local realm, where the change expresses itself in the form of polymorphism, contradictions and in-congruent events. (Davoudi, 2012; McLaughlin, 2012; Huxley, 2000; Di-Gaetano & Klemanski, 1999).

There have been several approaches to deal with the local realm in urban planning. In crude, one of them has focused on the substance of planning and if necessary, muddling through the-state-of-the-art planning (e.g. Lindblom, 1959). Another has laid emphasis on the processes, actors and stages of planning with aspiration that the careful orchestration of the planning procedure will steer and legitimize the implementation (e.g. Forester, 1999 and Healey, 1997). Yet, there are also planning researchers who have acknowledged that the substance and procedure are entwined, and that the local actions, despite of their status in the official planning procedure, will have impetus to the neighbourhood level (e.g. Jacobs, 1961 and Gans, 1969).

This dissertation deals with a longitudinal action research that chose to follow the third way. Therefore, it has taken time to reach beyond the formal urban
planning processes and practice to explore the local urban initiatives and development processes in the Herttoniemi neighbourhood (40,000 residents) of Helsinki (650,000 residents), the capital of Finland (6.5 million population). The field study continued for six years, the observation and reporting of the outcomes three more years during which the stakeholders participated in numerous initiatives ranging from formal urban planning, including public participation, co-design and co-production of space, to diverse self-organized endeavours. The analysis of outcomes took five years in five refereed journal articles, after which the outcomes of the statutory planning were monitored and finally reported as the synthesis for this dissertation.

One might think that after a decade, most of the research outcomes would be outdated. However, on the contrary, urban planning is not merely the planning process, but also the consequences taking place after the planning as a procedure has concluded. When the focus is turned on urban development, the planning procedures have to be analysed side by side with local urban transformation, the actual change, which does not emerge in a year or two.

In the longitudinal action research, the field work on the local level, in the actual neighbourhood, was a test bed for observing the urban planning processes, which sought to find a path from the strategic level to actual implementation. At the same time, the field work with local actors and stakeholders gave a different perspective. The action research provided an opportunity to observe people in their local realm. The locals’ sincere unawareness of urban policies and planning processes, as well as their explicit aims, means and resources for improving their everyday lives and the immediate surroundings, were surprising.

In addition to the observation, there was the possibility to apply and test measures of participatory urban planning. These included measures, which engaged both the local capacity and planning initiatives with a progressive impact on urban development. The outcomes of the action research have been published in articles which constitute this dissertation.

The research work begun with the methodological ambition to enhance participatory planning. However, during the action research, the interest turned to the larger civic engagement. It aligned from staged participation and mediation to active citizenship and self-organizing movements, which at the time, had a weak connection to the formal administration and planning, but plenty of coverage in the neighbourhood. Even with the elaborated participatory methodology, the formal and informal actors and their processes of development met only occasionally.

2 Following the ethos of participatory planning (cf. e.g. Healey, 1997; Forrester, 1999), the City planning department of Helsinki informs inhabitants with yearly pamphlets, makes announcements in the local newspapers and provides both planning documents and background information on their Internet pages. The planners also visit neighbourhood and organize evening events with neighbourhood associations, as a part of local planning procedures.
When elaborating the empirical findings, it became obvious that the local urban processes of development were dispersed by nature. There was a gap between not only in scale, means and measures, but also in the overall logic. Even the place and time were conversable terms, depending on who was defining them. In order to make sense of the different perspectives to planning and development patterns, it was necessary to apply planning theories which could explain urban transformation and complexity also in situations where the future is unknown, even disruptive.

Therefore, the dissertation builds on the notion that contemporary planning theories and practices are still dealing with linear causality and sense-making (Rantanen & Joutsiniemi, 2016; deRoo, 2016; Hillier, 2011), while the urban development is complex by nature, and explicitly driven by self-organized action and actor-networks (Boonstra & Boelens, 2011; Innes & Booher, 2010). In this dissertation, the ontological and epistemological comprehension of urban development and planning reflects the recent ideas post-structural geography and actor-relational planning (Murdoch, 2006; Hillier, 2011; Boonstra, 2015). It is not a question, whether the communicative rationale (Healey, 1997 & 2006) will replace the technorational one (Faludi, 1973). The question concerns the new comprehension of civic engagement, which actively produces urban surroundings through self-organization, and which impacts on urban development and also planning (de Roo, 2015 & 2016; Boonstra & Boelens, 2011; Alfasi & Portegali, 2007).

1.2 The aim, research questions and article findings

The aim of my dissertation is to provide theoretical and practical solutions that enhance the comprehension of complex development patterns in the Finnish context and elaborate the role of civic engagement in urban planning.

The purpose of the dissertation is not to claim that urban complexity can be managed per se, but to explore the means to deal with it.

The dissertation is based on the analyses of a longitudinal, neighbourhood level action research from the perspective of urban planning and development. The research questions are the following:

---

3 According to Harper (2016), the word neighbourhood is a “modern community of people who live close together”. The neighborhood meaning “near, somewhere about” was first recorded in 1857, in American English. In this dissertation, the neighbourhood refers to a unit of local communities that recognizes itself as an entity. It is defined and experienced by the dwellers themselves (Mumford, 1954), but it also functions as an area for urban planning and administration (Perry, 1929), as well as a place for community engagement and local resistance (Massey, 2005; Jacobs, 1961).
Introduction

• What is urban complexity? How can it be dealt with?
• What is the role of civic engagement in urban planning and development?
• How can e-planning enable civic engagement and urban transformation?

These research questions have been dealt with in five articles that constitute the thesis (Table 1.). The meta-analysis of the Herttoniemi case study supports the argument of the dissertation, that there is a need for expanded urban planning that reaches beyond participatory planning procedures and supports civic engagement (Wallin & Horelli, 2010; Staffans & Horelli, 2014; Horelli et al., 2015; Figure 2).

The meta-analysis of the findings and the current situation of spatial development in Herttoniemi also support the notion that the grass root level dynamics and systemic urban change feed one another (Allen, 2012; Portugali, 2012; Batty & Marshall, 2012). Civic engagement is a dynamo of local resistance but also that of resilience. Urban development on the neighbourhood level comprises simultaneously the straightforward planning procedures and the sporadic, self-organizing urban transformation, sometimes with a perception that is unattainable for planners. It is important to explore the existence of these two, and especially their discontinuities.

This introduction of the dissertation is the summary of the articles in which the theoretical concepts have been elaborated and applied. The first two articles contributed to the dissertation an empirical and conceptual introduction to urban transformation. They also describe the self-organized actor-networks and urban complexity in the wider Helsinki Region (Table 1). The third article presents the applied methodology used in the action research which has formed the basis for both the data gathering and the participatory planning processes that enhanced development on the local level. The fourth article discloses the immediate outcomes of the action research process and discusses the role of e-planning, especially that of community informatics. The fifth article detaches itself from the empirics and probes the measures to wield the unknown future. It introduces the chronotopes for diverse sense-making (Aaltonen, 2007), which are elaborated further in Chapter 5.

---

4 The civic engagement is described in Chapter 2.2.2.
5 Resilience is a concept widely adopted in urban planning, but also in environmental science, psychology, engineering, sustainability studies and governance research. For example, Meerow, Newell and Stults define resilience (2016, 45), “as the ability of an urban system and all its constituent socio-ecological and socio-technical networks across temporal and spatial scales to maintain or rapidly return to desired functions in the face of a disturbance, to adapt to change and to quickly transform systems that limit current or future adaptive capacity.” However, resilience is not part of the conceptual analysis in this thesis. The focus is in the processes of local participation. The empirical data did not align with large scale statistical analyses often conducted in urban sustainability research or social resilience studies (Cf. UN HABITAT, 2008).
De Roo (2016) refers to Berting (1996, 24), who has pointed out: “Social reality is always complex... (t)hat complexity in itself is not the problem, but acting on the basis of simplification of social reality is”.

Also, this dissertation certainly oversimplifies the planning and development in Herttoniemi, but it is one effort to explain, how urban planning can cope with diverse realities. The dissertation comprises actor-relational planning in the Finnish context, and encourages planners to apply a variety of methods and tools that enhance systemic change and diverse sense-making (Mazza, 2002; Weaver, 1948; Christensen, 1985).

Table 1. The content and contribution of the articles.

<table>
<thead>
<tr>
<th>Articles</th>
<th>Research questions in the articles</th>
<th>Contribution to the dissertation</th>
</tr>
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<tbody>
<tr>
<td>Urban transformation in action: Analysing urban planning and development in Helsinki</td>
<td>How do urban functions and structures become transformed at the neighbourhood level?</td>
<td>Introduction to urban complexity on the neighbourhood level:</td>
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<td>-The process of urban transformation versus the steering power of urban planning</td>
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<td>-Empirical evidence on self-organization on the local level</td>
</tr>
<tr>
<td>When Self-Organization intersects with Urban Planning, Two Cases from Helsinki.</td>
<td>What is the role of local stakeholders in urban transformation?</td>
<td>The conceptualization of self-organizing urban development, and its connection to urban planning through formal, informal and semiformal spheres and processes</td>
</tr>
<tr>
<td>The Methodology of user-sensitive service design within urban planning</td>
<td>What kind of methods and practices exist within participatory urban development?</td>
<td>The methodology of action research:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-LENA, the main method of data gathering and civic engagement, and also a means to transform urban space through co-production</td>
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<td>-The first conceptualization of expanded urban planning</td>
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<tr>
<td>Playing with the Global Through Participatory e-Planning</td>
<td>What is the role of participatory e-planning in local urban development?</td>
<td>The outcome and impact of civic engagement:</td>
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<td>-The conceptualization of the supportive infrastructure of everyday life</td>
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<td>-The impacts of participatory e-planning on urban planning and community development.</td>
</tr>
<tr>
<td>The Future-making assessment approach as a tool for e-planning and community development – the case of Ubiquitous Helsinki</td>
<td>What is the role of evaluation in the complex system of urban development?</td>
<td>-Pertinent measures to manage wicked urban problems,</td>
</tr>
<tr>
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<td>- Definitions of diverse realities</td>
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<td>- A basis for the typology of urban complexity presented in this PhD</td>
</tr>
</tbody>
</table>
2. Research framework

This chapter presents the key concepts and their inter-relations in urban planning and development. The chapter begins with the context of the concepts, the interaction between urban development and local realms both of which are challenging to urban planning.

However, the main objective of the chapter is to conceptualize civic engagement, especially self-organizing and everyday practices outside the statutory urban planning processes and even official decision-making. Therefore, the chapter conceptualizes three types of urban complexity and their relations to the planning practice and sense-making in varying temporal contexts. It also probes the evolution of participatory urban planning as a discipline. (Figure 2).

2.1 The context in urban planning and development

The connection between urban planning and development is contested. There is the struggle with the implementation of planning, especially with the outcomes and steering effects of the plan. Also, the agility and justification of the planning and decision-making processes in terms of different stakeholders and local dwellers, have been challenged (Innes & Booher, 2000; Hillier, 2003; Boonstra & Boelens, 2011).

There is also the ontological challenge with the concept of urban development. Spatial change, reflecting the social, economic and political urban transformation, takes place through urban development and manifests itself in urban space.

The relation between urban morphology and the patterns of change and their dynamics have been discussed since the early urban models (Skaburskis, 2008; Rohe, 2009; Allen, 2012). The metaphor of the city as a system, has been useful in urban planning research. Urban systems have been divided into three categories: closed systems, open systems and complex systems (Checkland, 1981).
City as a closed system has been apparent in the techno-rational urban models that have been built since the end of 1800s until today (Christaller, 1933; McLoughlin, 1969; Faludi, 1973). In crude, it consists of economic and social networks with spatial distribution. Urban development is an endemic process of the system and its parts. The planning apparatus has been the vehicle to steer the system. The planning denotes that urban transformation takes place through statutory planning and urban policies. Quite often, this “fixed order” (Davoudi, 2012) is supported by planning research and evaluation on the macro-scale level with quantitative methods (e.g. Batty, 2005; Portugali, 2008).

During the past two decades, approaches to urban systems have evolved. The evolution of spatial statistical analysis has provided the basis for research on urban dynamics and its interrelationships (Portugali, 2012; Partanen, 2018). With theoretic concepts, such as path-dependency, transcalarity and emergency, urban systems have been acknowledged as open and evolving, even complex by nature (Partanen, 2018; Rantanen & Joutsiniemi, 2016). The planning research has been supported by governance studies in which the city is a co-evolving, interactive system comprising different actors, networks and organisations (Sotarauta, 1996; Anttiroiko, 2015; Allmendinger & Haughton, 2009; Andres, 2013).

Also, in this dissertation, the conceptualization of urban development and planning has changed. In the beginning, the interest of the study focused on the procedures of planning and on the traditional participatory planning, but not on urban development per se. Urban development was defined in a simplistic way, based on the objectives of the formal planning procedure. Thus, urban development was considered as an improvement of an urban area by building or by other investments in the physical surroundings. This definition is often shared in the field of architecture, planning and civic engineering, in which development is considered as a change in the physical structure. It can be orderly planned, budgeted and finally implemented through construction and building. As a tangible and accountable performance, it is assumed that urban development can be steered and evaluated as an ongoing process, measured for example as an input-output equation.

As the actual outcomes of the urban interventions in Herttoniemi gained salience, it turned out to be impossible to discuss urban development without describing the development taking place outside the formal planning process. This urban development comprised a variety of individual actors and their actions, organizations and networks, which contribute to the complex nature of urban

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6 In Finland, municipalities have the planning mandate. They introduce spatial development strategies, and provide prospects for land-owners, developers and construction companies through land-use contracts and subsidies. Building regulations and building permit processes guide the implementation of the planning. (Cf. The Land Use and Building Act, 1999/132). However, in the large infrastructure initiatives, municipalities and governmental organizations are also often in charge of the implementation of the plans.
transformation. Simultaneously, urban development was the outcome of processes, the actual progress in the social, cultural, economic and spatial transformation of cities, but also the underlying cause of the progress.

Therefore, the relation between development and progress is contested, often laden with normative impetus. The urban development can both accelerate or inhibit urban change, the progress can be positive or negative by nature, or simultaneously both, depending on the context and the perspective. Also progress can be tangible or intangible, and a cause for further spatial change. These different, overlapping and sometimes even contradictory, dimensions of urban development make the analysis difficult – and have effect on the methodology of the thesis. Yet, there are also wider epistemic consequences as the comprehension of urban planning and development evolves from a closed system into an open and complex one.

As this dissertation is based on more than a decade-long qualitative case study in which the focus has been on the observation of local events and actions, planning interventions and on the spatial change in situ, the definition of urban transformation and development is based on participatory planning and governance studies (cf. Chapter 3).

Therefore, unlike urban systems analysis, urban development has been tapped by applying qualitative analyses of actors and their actions as well as their spatio-temporal dimensions. In practice, urban transformation has become visible through community development initiatives, real-estate development and large-scale investments in urban infrastructure. The overarching strategic aims of urban development and the actual implementation of new urban fabrics (comprising not only of the buildings, but also the appropriate social and economic activity) to be successful, require engaged local dwellers and stakeholders.

There is plenty of planning literature claiming that not all urban initiatives are produced and fostered by formal governance and operated by the planning system (Mäenpää & Fahnle, 2017; Rantanen & Joutsiniemi, 2016; Boonstra, 2015; Boonstra & Boelens, 2011; Lehtovuori, 2010;). Urban development needs to be conceptualized as including the self-organized co-design and co-production of urban space, as well as the implicit everyday life practices (Sandercock, 1998 & 2003; Shove & al., 2012; Ingold, 2000).

Consequently, if accepting that urban development takes place through initiatives that are not initiated and steered only by the statutory plan, it blurs the barriers not only between formal and informal, but the actual process of planning. The defined stages of planning and implementation convert into an

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7 The concepts of co-design and co-production are used in the literature of urban activism, in the field of urban design and urban studies (e.g. Saad-Sulonen & Horelli, 2015; Faehnle & al. 2017; Munthe-Kaas, 2015; Finn, 2014). The concepts have roots in participatory design deriving from system development research, namely the Scandinavian School of Design since 1960’s. (Bodker & al., 2000; Björgvinsson & al., 2012 Bansler, 1989)
on-going ur-ban process. The linear planning logic turns into sporadic interaction and inertia. It is not only the urban systems that can be considered as open and complex. The planning as a system has becoming that, too. (de Roo, 2012; 2015 & 2016) Therefore, it is time to take a look beyond the planning, to the everyday life that the planning seeks to address.

2.2 Key concepts

The key concepts of the thesis are local realms, self-organization, and urban complexity.

2.2.1 Local realms

People’s everyday lives are detached from the polical and administrative procedures. The planning system seeks an order in which the objectives and steering mechanisms of the planning system are indisputable inside administration (Davoudi, 2012). However, in the actual implementation and on the local level of everyday life, the planning objectives and initiatives become difficult to comprehend.

In research on the systems level of planning discussion leans on resilience, i.e. on the capabilities for adaption and mutual learning in which the planning procedures as well as the planning information are co-produced with the stakeholders. This kind of relational and context-aware planning system (Rantanen & Joutsiniemi, 2016; Davoudi, 2012) is supported by those planning researches, who focus on the reasoning and sense-making of stakeholders. For example, Mäntysalo (2012) and Mäntysalo & Kanninen (2018) suggest that strategic land use planning would benefit from a shared goal which resonates with the stakeholders’ interests and verbalizes the planning task in an explicit way.

However, research on the systems level planning is still looking for effective strategies and instruments to deal with lock-ins and discontinuities between the government and the stakeholders. Even for the professional planning practitioner the task is complicated.

For example, Hillier (2003; 46) claims: “There is thus always an unbridgeable gap separating reality from the Real. This gap is known in Lacanian terms as the lack. There is always a gap or lack between the subject and its representation.”

In the Herttoniemi case study, this gap is not merely the inherent nature of different stakeholders, but the changing context defined by transcalar spatial processes and temporals. According to Hillier (2008, 24-25), “(r)ealities of urban
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and non-urban space are ever-changing, but the folding together, unfolding and re-folding of entities and lives cannot be predicted. Nor can they be entirely managed by rules or regulations. I suggest that spatial planning practice requires both redefinition and a new theoretical foundation in order to be relevant to the dynamic complexities and contingencies of today’s world.8

This resonates with the findings of the dissertation. The meshwork of different initiatives and actions, and the variety of stakeholders and otherwise involved parties were overwhelming in a neighbourhood of 40 000 people. During the observation, but also in the individual and group interviews it became obvious that each and every stakeholder had their own perspective to the neighbourhood, to the development initiatives and the planning goals as well as the measures. In crude, for some people the neighbourhood was a place where they had lived since their childhood. The local environment is not just a part of their everyday life, but their identity. For others, Herttoniemi was a place they had recently moved in. The most familiar part of the neighbourhood was the route to the metro station. While they both agreed with that the neighbourhood should be developed, they had very different objectives or they perceived the outcomes of the development through different lenses.

However, the gap is not merely in the minds of the stakeholders, but also in the actual planning process. First of all, the stakeholders themselves and their representatives changed during the planning, which lasted several years to complete. The same planning initiative was perceived in another way by the same stakeholder as the time past (see Article 1). Also, the planning initiative itself changed during the implementation (see Chapter 4).

The planners had few means to transcend this gap. They had set up the planning process, with an appropriate participation procedure, but they were mostly interested in what the stakeholders thought about their planning proposal. In some cases, there were even optional proposals with an alternative spatial distribution, but with the same building volume, and especially with the same purpose of use. If the participants wished to change something in the urban design, they could make suggestions, but the urban development, constituted in the plan, was already fixed. The planners did not want to hear, what people were up to other-wise; what kind of services they hoped for or what kind of improvements they needed for the immediate surroundings. The local development, especially as the locals would perceive it, was not on the planning agenda.

8 Hillier (2008, 24) even suggests to develop a new theory of spatial planning. She writes: “This is a multiple, relational approach of dynamic complexity to understanding and working with contingencies of place, time and actant behaviours. Inspired by the planar philosophy of Gilles Deleuze, I offer the potential for multiple planes: several – or perhaps one collectively preferred – broad trajectories or ‘visions’ of the longer-term future – (Deleuzean planes of consistency or immanence) – and shorter-term, location-specific detailed plans and projects with collaboratively determined tangible goals – (planes of organization or transcendence).”
In fact, the planning did not ever even notice the local realm. For the planner, questions raised by the locals were not relevant to the plan. Mundane people wishing, for example, a swimming hall, were merely “white noise” in the government-driven participatory trajectory in which the plan issued a hotel, shops and new accommodation. For the planner, interests of the locals, should be answered in other planning case, somewhere else.

From the perspective of planning research, this kind of gap is surprising, even if understandable, when the rigid planning system, the time pressure and limited resources that practitioners face in their work are considered. However, planning should be able to recognize the challenges of mundane everyday life and to support the locals` interests in the development of their neighbourhood.

The capabilities to reach the local realm have improved with the technological revolution of ICTs. The Herttoniemi case study witnessed the rapid change that the social media provided for both the locals and the planners. In 2005, the main interest in the neighbourhood was to launch local web sites for shared communication, but also to support the local identity and place-making (cf. delivery of the Herttoniemi Neighbourhood websites, in Articles 3 and 4). After the social media application, such as local Facebook groups were launched, the representation of different local realms increased. There were Facebook groups for the local families with children, for the ones interested in a sustainable lifestyle or consumption, but also for those who were interested in organizing and developing the neighbourhood.

Community informatics (e.g. Gurstein, 2007) provided a backbone for local activism and all forms of civic engagement (see Article 2). The social media was a place to gather, launch happenings and discuss relevant issues, always defined by the discussants themselves. If the realms did not find a foothold in a certain social media group, another site of interest could be found.

The possibilities of ICTs were noticed also in urban planning. Outside the planning practice, there was a growing interest in reaching the local realm, by gathering urban informatics about people’s living preferences, everyday mobility or opinions about urban development. The urban informatics (e.g. Foth, 2009) data rapidly grew in a decade, and the possibilities to use it in the actual planning evolved. The practice of e-planning introduced fast and convenient methods to analyse GIS-based data and to visualize them for decision-makers and the media (Kahila, 2015; Nummi, 2017). The Helsinki city administration also launched new e-surveys with mapping tools (e.g. the application Kerro Kartalla http://kerrokartalla.hel.fi/), and the action research itself developed a local service desk with a web and mobile application which did not succeed in its original form, but preceeded the metropolitan level application,which is in use even today (e.g. Palvelukartta https://palvelukartta.hel.fi/). The administration had a sincere wish to produce better e-services and e-democracy for the people.
However, there was no continuum between community informatics and urban informatics in the practice of e-planning. The administration did not use the social media data and arenas produced by the civic engagement. Instead, administration made its own surveys and analysis with the focus they had. The gap between the local realm and the official planning system remained uncontested.

2.2.2 Civic engagement in urban actions

As the dissertation disclosed the gap between the dispersed local realm and the linear planning system, the analysis of the Herttoniemi case study made visible different forms of civic engagement⁹ - all related to urban development in their own way.

The detected forms of civic engagement comprise:

- Public participation (Innes & Booher, 2009; Healey, 1997) that takes place in the formal urban planning and decision-making processes.

- Everyday life practices which make changes in the physical and social construction of urban space (de Certeau, 1984; Kuoppa, 2016)

- Self-organization in which people take action outside formal organizations, including non-governmental organizations NGOs (Faehnle & al., 2017; Boonstra & Boelens, 2011; Boonstra, 2015)

Public participation

The research on communicative actions in urban planning has been focused on public participation. In public participation, civic engagement is organized inside the planning system, and it follows the process of planning (Healey, 1997; Innes & Booher, 1999). Therefore, the constitution of participation (the context, means and methods) are adjusted by planners. Thus, it is not surprising that a significant part of communicative planning theory is contributing to the organization and mediation of the participation process (Davidoff, 1965; Forester, 1999; Innes & Booher, 1999). This dissertation will contemplate the evolution and shortcomings of participatory planning more closely in Chapter 2.2.

In this section, the interest lies in the difference between the forms of civic engagement as they are often taking place simultaneously, and with the same stake-holders without a specific distinction in practice.

⁹ The word civic originates from Latin and refers to urban dweller, belonging to a city, a citizen, or citizenship; municipal or civic (Merriam-Webster, 2019).
The main difference is in status, more specifically in the legitimacy and distribution of power. Unlike the two other forms of civic engagement, traditional public participation has a legal and legitimate status in the planning and decision-making process. The public participation process is a part of the democratic decision-making process in which there is a constant quest for who’s ideas and interests are represented. The question of conflict is a built-in feature of public participation as much as in any other political process (Forrester, 1998; Eranti, 2017). In this conflict, the best argument is the most supported one. The number of representatives can become important, when a public opinion is formulated. The local knowledge and minor stakeholders have less power in the process, and less power to change the plan. Due to the contested nature of participation, the planner is the gatekeeper for public good. The planner has a position to define processes, for example emphasize the role of minorities (Massey, 2005; Sanderscock, 1998; Fainstein, 2001). The planner is also in the position to choose, how to use the results of the public participation. In crude, the planner and her/his framework for participation supercede the participatory process and dynamics instead of that of the participants.

*Everyday life practices*

Everyday life practices are completely opposite kind of civic actions to public participation. They deal with mundane human interaction in urban space, such as commuting, living and shopping, which are all individual tasks, but shared by masses and meaningful for urban development in the larger units. People’s habits, preferences and attitudes have an impact on their behavioural patterns and eventually on their living environment, often to the same degree as demographies and geographic distribution. Everyday life in the local surroundings is the basis for social networking, even hierarchies that reflect and reconstruct society. (Ho-relli, 2017; Manzo & Perkins, 2006; Shove & al., 2012; Harper, 2016; Bourdieu, 1984)

In urban systems discourse, the everyday life actions of individuals, communities, organizations and institutions are vehicles for urban transformation that shape urban morphology (Batty & Marshall, 2012; Portugali, 2008). In urban analysis, everyday life can be monitored and analysed - defined and separated into particles and fractals. For example, when receiving data on the use of public transportation and local mobility, it is possible to analyse the spatial distribution of pendling, the income of the household, the length of journey and travelling preferences. This information can be used in the further planning of public transportation and urban development initiatives.

Even if the civic engagement of everyday life is completely detached from the administration, urban planning is able to produce information on everyday life patterns by using tools of e-planning, especially spatial analysis of statistics and
e-surveys. For example, PPGIS-tools\textsuperscript{10} and other sophisticated e-planning instruments can introduce new data on everyday life (Kahila, 2015; Saad-Sulonen, 2013; Nummi, 2017). Nevertheless, as was described in the previous sector, the connection is single-handedly defined by administration. The way people act is not always the way they prefer, and not how they will act in the future.

\textit{Self-organization}

In the third form of civic engagement, self-organized urban development, the setting is different. Boonstra and Boelens (2011, 100) define self-organization in urban development “as initiatives for spatial interventions that originate in civil society itself, via autonomous community-based networks of citizens, outside government control.”

The dissertation follows their definition and approach to self-organization as community-based actor-networks and their urban initiatives. The difference to the public participation perspective is that self-organization escapes the formal procedures of planning and administration. Yet, it is also different from mundane everyday life practices, as people self-organize around intentional action for change.

Self-organization has several implications for urban planning and society. Some consider self-organization as a counter force that breaks the procedure of public participation (Rantanen & Faehnle, 2017; Innes & Booher, 2010). Others regard it as complementing the planning system through the production of local knowledge and innovations that the civil servants and policy-makers can use.

For example, in Finland, \textit{self-organized urban planning} emerged in 2009, when a group of urban activist formed a Facebook group called “More City to Helsinki” (Lisää kaupunkia Helsinkiiin). Currently, the group has 17 000 followers and the number is counting. Via this Facebook group, a collective called Urban Helsinki introduced an alternative general plan called Pro Helsinki 2.0. This plan, or at least its main objectives on urban morphology, building volume and density, were adopted in the formal general plan of Helsinki in 2015. In addition to the general planning, the group has been involved in the detail planning of the Koskela hospital area. However, there are some less fortunate co-designed plans, which have ended up more as a counterforce to the statutory planning, not as adoptable material (Cf. Birdlife associated urban activists in Helsinki). (Faehnle & al., 2017; Niitamo & Sjöblom, 2018)

\textsuperscript{10} PPGIS (public participation geoinformation systems) has been mostly used as a tool in formal urban planning processes. One of its solutions, VGIS (volunteer geoinformation systems) has been used for more deliberative occasions, but mostly in the rural development initiatives in the developing countries (Brown & Fagerholm, 2015; Smith-Thomé & al., 2014).
Self-organized urban planning has also manifested itself as *ad hoc movements with explicit outcomes on urban strategic planning on a policy level*. A mundane community engagement can turn into a strategic endeavour that changes urban policies. For example, in the large urban agglomerations of USA and Europe, where local dwellers have claimed streets and motorways for pedestrian use, manifestations have turned into experimentations of urban regeneration. This kind of tactical urbanism has improved immediate urban surroundings, but they have also had an impact on the innercity development (Lydon & Garcia, 2015). The Finnish examples can be found in the bicyclig movement, which has changed both the traffic planning and the urban design of streets and pedestrian sidewalks in the Metropolitan Region.

Secondly, the formal city administration has sometimes favoured urban activists as they produce vivid and interesting urbanism, such as alternative urban sub-cultures, which have enhanced gentrification in less developed neighbourhoods. They have also provided temporary use for the old industrial sites and harbour areas in which urban regeneration would not happen in decades through official urban development. (Lehtovuori, 2010; Hernberg, 2012; Berglund, 2015). Also, co-housing initiatives that challenge the centralised construction industry, can be understood as a form *self-organized co-production of urban space*. Already in the early 1970’s and 1980’s, there were a few co-housing initiatives in the Finn-ish metropolitan area, where the dwellers themselves planned, designed and constructed their own houses and plots (Kukkonen, 1985; Vähätalo, 2017). Currently, there are several examples of self-organized co-housing (e.g. Loppukiri and Malta in Helsinki; Aurinkolinna in Espoo).

Thirdly, self-organization can also be seen as a *self-containing provider of societal change* without any connection to the planning system. According to Mäenpää and Faehnle (2017), self-organization is not just a phenomenon, but a practice and a means to co-finanze and co-produce goods, services – even new forms of economy, consumption patterns and sustainable society.

Many planners, researchers, urban developers and construction companies have been enthusiastic about urban activism and its possibilities to create interesting urban culture and space. However, some consider that self-organization has also its shortcomings. It has been criticised for being a form of neo-liberalism that runs down the legitimate public participation procedures and NGOs, who depend on government funding. Self-organization is also regarded as the movement of the well-off, so called latte-generation who lacks interest in issues, such as social inequality (Uitermark & Nicholls, 2014; Berglund, 2015).

The input of this dissertation is also to provide empirical evidence of self-organization in Herttoniemi. The Helsinki Metropolitan Region has witnessed a new kind of urban activism and community development with the strategic en-deavour to change urban policies and space. They have succeeded, to a certain extent,
in transforming some of the formal decision-making procedures of urban planning (Wallin, 2013 & 2015).

This constitute the justification to the argument that urban planning as a discipline is expanding. I will discuss this in Chapter 2.3, but before that it is important to reflect on the connection between self-organization and urban complexity.

### 2.2.3 Types of urban complexity

Self-organization is an evident part of systems thinking and urban complexity research. Complexity thinking around cities provides conceptual means to understand and explain the role of unpredictability, seemingly autonomous, dynamic urban processes (urban development), and the methods for their flexible steering (urban planning) (Portugali, 2012; de Roo, 2012; Rantanen & Joutsiniemi, 2016).

This dissertation focuses on community-based self-organization. The simultaneous actions of different actors make the networks dynamic, but also unpredictable and uncontrollable. Therefore, complexity is an inherent part of self-organization. However, this does not undermine the capabilities of actors to initiate and react, and also learn from the actions. Boonstra and Boelens (2011) advise to avoid the so called black box of systems thinking in which self-organization is used as an explanation to the unexplainable, to the complexity that has escaped the analysis and the predefined system. As a solution, they suggest to open up the black box of urban systems by recognizing actors, factors and the objectives of their urban actions. They refer to Murdoch (2006) and claim that empirical, actor-based approach to urban system(s) and self-organization does not force complexity to a predefined setting. Thus, the approach also trails in line with the post-structuralist perspective to social and cultural systems as being open and dynamic.

The dissertation has followed this advice. But instead of a Latourian actor-network-analysis (ANT), the analysis is based on a systems evaluation method, which suits better the thick and messy data that has been produced during the decade long action research. The methodology is discussed in Chapters 3. The relation between civic engagement (including self-organization) and urban complexity is elaborated further in Chapters 4 and 5.

This section addresses urban complexity and its connection to urban planning, especially to steering, management and forecasting in the planning practice. There are different opinions about, how planners should deal with complexity, whether with complex planning situations or complex urban issues.
According to several scholars, complexity per se cannot be managed. For example, Boelens and de Roo (2014) claim that there is a difference between complicated systems and complex systems. The first one can be arranged, but not the latter, because; “(e)ach of its parts influences the others reciprocally, exchanging (dissipating) information mutually and in accordance with the specific circumstances or contexts. Disassembled and reassembled – even if this were a realistic option for complex systems and their fluid behaviour – the system would not be the same, as the circumstances which sustained it would have changed meanwhile, and the system’s parts and context are subject to discontinuous, interactive change not allowing a return to the system’s initial settings.”

From the empirical analysis of the Herttoniemi case study, it was possible to recognize that urban complexity was an evident part of the daily life and planning processes. And that there were different possibilities to deal with complexity.

In order to analyze urban complexity in the Herttoniemi case study, and the coping mechanisms that were used in practice, I have applied the typology of complexity in urban development and management by Timothy Baynes (2009). His typology is based on literature analyses of systems thinking and historical urban development models. In addition to the deterministic, large-scale spatial urban models, his overview covers complexity research on social systems and community development traditions from Jane Jacobs onwards. Therefore, the typology resonates well with the outcomes of Herttoniemi case study.

The typology made a difference between simple complexity, disorganized complexity and organized complexity.

According to Baynes (2009), simple complexity comprises problems that can be solved, or at least described and detangled. Traffic is a good example of an urban system, which consists of known parts, such as public transportation, logistical corporations and a number of personal vehicle users. The physical networks, such as routes, are known and stable in traffic. Yet there are pollution, noise, gridlocks, unexpected cut downs and accidents. The mundane traffic planning regards them as complications in the complex system. However, even the most complicated system or situation in the traffic can be split into smaller units, detangled and therefore solved, if there are enough resources. This kind of solving will not mend any other part of the system, and it will not prevent new complications in the future, but it will deliver better functioning traffic.

When the planning task itself is considered, simple complexity is not necessarily about simplicity. On the contrary, it can also be intellectually a highly demanding problem. For example, traditional civil engineering questions can be answered through methods, such as life-cycle thinking and efficiency consump-
tion calculations. Sophisticated engineering and planning for sure, but quite often a task of straight forward calculation and design. (e.g. Cottineau & al., 2015; Mazza, 2002)

Beyond wicked, but comprehensible planning tasks, there is urban complexity which is difficult to perceive and comprehend, as it takes place in changing situations, contexts and logics. In this kind of situation, it is difficult even to define the actual problem, or the origin of the complication. Sometimes it is not even obvious to which urban system it belongs. According to Baynes, this second type emerges from disorganised complexity. For example, climate change is a transdisciplinary challenge to tackle. It requires research from several fields and professions in order to understand the status quo, even in one scale or in a part of an ecosystem. In addition to research, advanced statistical analyses and modelling should be used for forecasting, anticipation and insight. However, the knowledge creation (or even the political decisionmaking) is not likely to be able to stop climate change. As a phenomenon, disorganised complexity cannot be solved as such, but it can be examined and anticipated. After careful planning and management, it is possible to provide solutions to adopt more sustainable development tools.

One might think that after something as tremendous as climate change, all complexities in the urban system would have been covered. Nevertheless, the typology does not sustain comparative or otherwise normative order. Also, in a planning situation, complexity can prevail in many forms. The typology names only the origins and the possibilities to deal with the complexity.

Therefore, Baynes suggests that the planner has to prepare that the urban complexity is not just about complicated situations and demanding sense-making in unknown context but also fuzzy logics of apparently organized stakeholders. According to Baynes, the third type called organized complexity is built-in to institutions and organizations. It appears in formal, acknowledged actions, rationally-led and well-steered structures, in which each stakeholder brings forth its own contribution to the chaos. The ensemble of institutions comprises a competitive and overlapping system, which does not blend in. Organised complexity lives in the meshwork of official policies and strategies, outspoken objectives and annual reports.

Organized complexity takes place especially in the administration, and therefore in the planning system as well. Different theories from organizational studies to economic and behavioural research that has tried to open up the gridlock of organized complexity. Baynes (2009, 215) claims that “The problems of organised complexity are characterized by heterogeneity, coherent local interactions, irreducibility, and persistent disequilibrium. Deterministic approaches and statistics cannot adequately represent the diversity or importance of interactions and dynamics that lead to aggregate observations in organised complex systems”.
Thus, unlike other types of urban complexity, the organized one is unsolvable by nature. For example, the discontinuity of administration from local level to the central government is already acknowledged by all stakeholders. There are no methods to produce information that would change the actual constitution of organized complexity. Very little can be done, since shutting down or splitting institutions into smaller units does not solve the consequences of organized complexity, which might even worsen it. Sometimes incremental development is considered as a solution, but it can relieve only the first type of complexity. In organized complexity a new technological advancement or political decision might be "the juggernaut of destruction"\textsuperscript{11}, paving a new layer on the prior mess, which makes the situation even more problematic (Urry, 2003).

The definition of organized complexity resonates quite well with institutional ambiguity, which is discussed and elaborated in strategic urban planning research (e.g. Mäntysalo, 2002). Therefore, it is not surprising that Baynes suggests that the way to deal with organized complexity is in deliberation and social reconciliation, as well as in the new models of governance and practical innovations that take over the current systems and practices (Baynes, 2009). Again, the idea of organized complexity follows the post-structuralist perspective.

2.3 In search of an expanded urban planning

The conceptual framework of the dissertation underlines that self-organization is not only challenging the practice of institutional planning, but also the theory of participatory planning. During the past twenty years, participatory planning has been an integral part of the planning system, both in the Finnish ethos and in its implementation. Unfortunately, public participation has quite often turned out to be a disappointment both to the stakeholders and planners (Rantanen & Joutsiniemi, 2016).

In participatory planning, the planners seek to involve citizens and to advocate the co-operation between entrepreneurs, civil organizations and government organizations for several reasons. For example, Boonstra and Boelens (2011, 100-101) describe that the benefits of participatory planning can be the following:

\textsuperscript{11} The juggernaut of destruction is a metaphor for a vehicle of progress, designed to ameliorate wicked problems. This can be a new practice or a technological gadget that seems like a solution to problems, but turns out to be a more destructive practice than the previous ones. The automobile is an example of the juggernaut of destruction which John Urry (2003) uses in his work. An intensive farming technique is another example that has defeated hunger, but has cut down biodiversity and the overall ecology.
Research framework

- Improvement of social cohesion through local empowerment and networking
- Better environment through increased spatial accountability
- Acceleration of planning process and local economic robustness
- Increased legitimacy of the political and administrative system

Research on participatory planning has developed a variety of approaches and methods to gain these benefits in practice. Research has focused on the participatory processes and created methods for mediation and co-operation, even advocacy, in order to make the process transparent, open, representative and conflict-free (e.g. Davidoff, 1965; Forester, 1999). It has also tried to empower the stakeholders by providing them a position on the different levels of the planning system; from the strategic metropolitan level to the local actions, also in the different stages of the plan, as well as in large scale surveys and hands-on workshops (e.g. Balducci, 2003). With the assistance of ICTs, the rise of e-planning, participation has expanded, for example through digital arenas and e-mapping tools (Anttiroiko, 2012; Kahila, 2015; Saad-Sulonen; 2013).

A great deal has been done. Public participation has grown up in many ways, and it has evolved as part of political decision-making. Nevertheless, even as a legitimate procedure, public participation still is a problematic part of planning. According to planners, public participation is always biased; people who participate are driven by their own interests, they do not represent their cause in adequate numbers, and there are many reasons why their knowledge cannot be translated and transmitted to the planning documents (Healey, 1997; Staffans, 2004; Bäcklund 2007). Some, e.g. Innes & Booher (1999) conclude that traditional participatory processes have failed to meet the local needs, but also failed to provide solutions for planners and the larger society. Public participation does not provide meaningful information to the civil servants in the sense that it would make a difference to the process, and therefore, it will not improve the situation of the participants and their opportunity to be heard. The gap between the planning system and the diverse realities emerges in spite of public participation (cf. Hillier, 2003).

As described earlier, the enhancement of public participation was the objective of the Herttoniemi case study in the beginning (cf. Article 4). As the research evolved, the perspective enlarged from statutory urban planning to community development, and later on to self-organized local development (cf. Articles 3, 2, and 1).

The research in Herttoniemi underlines that citizen engagement is more extensive than one planning process and even the planning system as a whole. It raised the question, what is the role of civic engagement in the complex urban
development. How can urban planning cope with the local realms which are not represented in the formal planning procedures, but instead in the self-organized initiatives and everyday life practices? What are the methods and approaches to deal with them?

Participatory planning has been challenged as a discipline, because it has not been able to make the planning system as open and adaptive as it should be. The performance of the planning system in urban development, in this case on the local neighbourhood level, is failing.

Therefore, the dissertation suggests that there is a new emerging paradigm to participatory planning, as the collaborative practice of dealing with complex urban development should cover more than just statutory urban planning. In order to address the local realm, the urban planning should expand, and reach from strategic planning to the actual implementation and co-production of urban space on the local level (Wallin, 2013; Staffans & Horelli; 2014; Horelli, 2017).

Figure 1. Expanded urban planning promotes urban development by recognizing different types of civic engagement and planning approaches.

Figure 1. visualizes the expanded urban planning (EP). EP builds on the current planning discipline, but seeks to enlarge the scope. The traditional planning system endorses linear procedures and the monolithic reality that provides a “fixed order” (Davoudi, 2012; Rantanen & Joutsiniemi, 2016). Public participation is a part of linear procedure, which main objective is to produce a plan, a statutory blueprint for execution. From the administrative perspective this is necessary, but crippled by nature as the reality is not monolithic, but diverse and craving for versatile methods that can deal with urban complexity. However, the ethos
and logic of the current planning system put pressure to public participation to become a reduced practice.

**EP** strives for an integrative epistemology which includes, besides traditional public participation, versatile planning procedures and methods depending on the context and the purpose of the issue\(^{12}\). Above all, **EP** supports the diverse realities of citizen engagement and their manifestation in urban surroundings. This takes place by orchestrating a suitable methodology for multi-actor sense-making assisted by a variety of methods. Some of them will empower self-organized urban actions in practice, some provide methods for observing and anticipation. The dissertation will present examples of practice in Chapter 4.2, and suggests a compilation of planning methods which addresses diverse realities in different spatio-temporal scales (cf. chronotopes in the Chapter 4.3).

From this point onwards, the dissertation describes **EP** in practice. In the case of Herttoniemi, traditional urban planning has had a modest impact on the local urban development. Yet, local stakeholders, both their self-organized actions and everyday life preferences, have had an impact on the neighbourhood’s spatial development, as well as on urban functions and the local identity. Self-organization in urban development has contributed both to the horizontal expansion (from traditional spatial planning to community development and co-governance) and to the vertical one (from strategic planning to implementation and evaluation). The case study also includes an example of hybrid co-governance that might function as a deliberative system on varying scales (Jarenko, 2013; Cambell, 2012). Therefore, the lenses of **EP** provide a possibility to deal with the different types of complexities, at least with the ones of simple, disorganized and organized.

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\(^{12}\) Diverse realities’ has a double meaning: an ontological and a phenomenal one. First, irrespective of the lacking consensus over the ontology of complexity sciences, this dissertation subscribes to a pluralist ontology (Popper, 1972; Escobar, 2017), including an emergent critical realism which assumes that certain interactive particles exist in reality with unexpected consequences, such as self-organization, emergence etc. (Niiniluoto, 1999). Thus, the ontology is closely tied with epistemology and can in fact only be understood through the latter. Secondly, ‘diverse realities’ refers here to the concrete fact that people are different, and not just representatives of their demographic cohort. For example, women and men of varying backgrounds experience and interpret their daily life from different perspectives.
3. Methodology

This chapter sheds light on action research as a method to produce information on the local patterns of urban development and civic engagement, and as an enabler to implement urban planning initiatives. The action research comprised development initiatives in situ, in a neighbourhood of Helsinki, called Herttoniemi. The chapter will outline the basis of the empirical contribution.

3.1 Urban planning in situ

According to Bengt Flyvbjerg (2006, 219): "(T)he Kuhnian insight that a scientific discipline without a large number of thoroughly executed case studies is a discipline without a systematic production of exemplars, and a discipline without exemplars is an ineffective one.”

Flyvbjerg (2001) emphasises the use of case studies, by making in-depth analyses of certain planning cases and the local context. He disclaims five misunderstandings concerning the case-study research (2006, 221). Also, in his famous case study on Aalborg traffic planning (Flyvbjerg, 1998), his main tools for explaining urban planning, its implementation and outcomes were story-telling and the analysis of actors and stakeholders. Therefore, it is time to present the case, especially the planning in situ.

Herttoniemi, which is one of the oldest suburbs of Helsinki, provided a rich context for studying urban development and transformation as well as civic engagement in all its forms. The neighbourhood has followed the general transformation of the metropolitan area. Therefore, it can be regarded as the mirror of urban development in the Helsinki region in which the internal and external push and pull factors take turns, enabling and constraining one another.

Historically, Herttoniemi has functionally been part of Helsinki since the 1950s. Industrial activities found their place there and offered harbour and ware-house services to the whole city. Right after the Second World War Herttoniemi turned into one of Finland’s first suburbs, which attracted people who wanted better housing conditions. Thus, Herttoniemi became a classical neighbourhood unit that provided its inhabitants all public and commercial services in addition to
work places. Gradually its identity got stronger. It was divided into two residential areas: West-Herttoniemi and Roihuvuori, which were separated from one another by an industrial and harbour area, and later by the eastern motorway and the metrorail towards East-Helsinki and the South-East Region (Packalén, 2008).

Currently, the urban structure of Herttoniemi is decisively different from that after the war. The neighbourhood has been rebuilt in terms of its functions, population, townscape and position in the central hierarchy of the metropolitan area. Gentrification has been strong in like many other neighbourhoods close to city centre. The social housing stock of apartment houses has been transformed into owner occupied dwellings by older people but also increasingly by young families. The once labour-class neighbourhood has now a conspicuous concentration of new urbanism and green urban activists.

Urban structure has changed drastically. The old suburban structure is dissolving. The former harbour area has been replaced by a new sub-area with high density urban building, called Herttoniemenranta. The commercial services have moved into the centre of Herttoniemi around the metro station and the former industrial area has evolved into an office and retail district. The old shopping centres in the West-Herttoniemi and Roihuvuori have been emptied of commercial services, except for small supermarkets. Also, public services, such as the library, youth house and the local parish have been searching new places, some hoping to move to the commercial centre around the metro.

All the above described factors have transformed the urban landscape, and the change is continuing - but mostly outside the neighbourhood. A bit further north from the Herttoniemi Centre, in Myllypuro, the point-access block houses and slab blocks are being complemented by new buildings of latest architecture. Also, a completely new neighbourhood, called Kruunuvuorenranta, is being built to south-east from Herttoniemi. And just few kilometres south, there is Kalasatama, a new, even bigger agglomeration with a metrostation. Herttoniemi has always been the transport node of South-East Helsinki, but now it is scaling down to a new level, while it is simultaneously being changed internally.

The major planning interest of the case study was the statutory planning of Herttoniemi Centre. The Plan was initiated in 2005. After almost 15 years, a shopping mall and housing project are under construction but there is still a striking difference between the visualizations of the local detailed plan (redesigned version accepted in 2011 in Figures 2a) and the current situation in Herttoniemi (Figure 2b). However, the centre block of the Herttoniemi Centre consisting of the large high/rise tower for a hotel and housing has not evolved, and the plot of the metro station is still waiting for its turn.¹³

¹³ The first detailed plan of Herttoniemi Metro Centre was accepted in 2007. In 2011, the plan was extended to cover also the eastern side of the motorway, as the land/use contract had
Figure 2a. The visualization of the local detailed plan, Herttoniemi Centre and Mega- hertsi, based on Helin & co Arkkitehdit/ Arkkitehtuuritoimisto B&M Oy. (City of Helsinki, 2011)

Figure 2b. The Herttoniemi Center, in 2018. 3D, Google Maps, 2.2. 2019.

been signed with a construction company called Hartela in 2012. (City of Helsinki, 2017a) However, in 2017, the contract was resigned together with both Hartela and another construction company, YIT (City of Helsinki 2012 and 2017). Due to this contract, the new traffic plan (City of Helsinki, 2017b) is partly executed and rental agreement with local K/Market entrepreneur has been re-signed (City of Helsinki, 2017). However, the center block of the Herttoniemi is still waiting for its turn. According to the latest information, the plan of Herttoniemi Centre is going to be opened for the third time, and redesigned from 2018 onwards.
Methodology

From the perspective of urban development, it has taken over 15 years for a plan to be implemented. Even after redesigning for potential real estate investors, the plan is still “left on the drawer”.

The contrast of what might have been becomes highlighted when exploring the urban development that has taken place, not only in Herttoniemi but in the larger Helsinki metropolitan region. The past decade has been a time of fast urban development in the metropolitan region. The blooming economics and population growth have made the housing market thrive. The interest of real estate developers has been concentrated on the urban centres, especially around metro stations. During the time of action research and this dissertation, more than ten new urban centres has been developed around metropolitan region (including urban development around new stations of Länsimetro in the City of Espoo and Ring Rail in the City of Vantaa). Many of them are situated much further away from Helsinki Central Railway station than Herttoniemi metro station.

Also, several completely new neighbourhoods have been launched in Helsinki. In addition to the mentioned Kalasatama and Kruunuvuori, there are Pasila, Jätkäsaari and the forthcoming Hernesaari. During all this time, apart from small in-fill housing initiatives, the formal urban development in the neighbourhood of Herttoniemi has remained stagnated. The public service infrastructure has deteriorated as the social services and health care has been moved to another neighbourhood, and the metro station and bus station are in need of renovation.

That was the storyline of urban planning and development in short. However, there is much more to know, when carrying out an analysis of the on-going change and the local solutions for a better future (Cf. Chapter Key Findings).

3.2 Action research - a strategy for research and development

In 2004, the research group from Aalto University begun to seek a new approach that could assist the urban planning endeavours and produce in-depth research knowledge on the actual urban context in which the planning took place. The group, together with the Helsinki administration and outside funding started an action research which continued until 2009, after which the group has analysed the data and evaluated the outcomes.

Action research is simultaneously an explanatory and transformatory factor in terms of the research object (Alasuutari, 1993; Shotter, 2007; Brydon-Miller & al., 2002). The action research in Herttoniemi is urban planning research that followed principles of advocacy planning (Davidoff, 1965), but exceeded further into scientific analysis and interpretation.
Methodology

Action research often comprises the following iterative phases:

1. Production of information as part of planning and development
2. On-going analysis of information
3. Interpretation of the information and the drawing of conclusions
4. Reflection and evaluation of the results and processes

In the action research on Herttoniemi, urban planning and community development interventions were intertwined with the study of different actors and their activities in the neighbourhood.

Herttoniemi action research provided a way to study urban change in a systemic way\textsuperscript{14}. Systemic refers here to a trans-disciplinary approach in which, besides the structural and temporal transformation of the context, also the different agents and their rationalities are recognised as part of the urban planning interventions (Cf.2.2.1). The systemic approach by Kurt Lewin (1947) seemed to support the understanding of urban transformation, because it combines specific development methods with the community action.

This systemic action research methodology was called LENA (\textit{the Learning-based network approach to urban planning and action research}), and it contained the described iterative phases above. The LENA comprised a method- ological package contained both enabling tools and traditional research methods of urban planning and design\textsuperscript{15} (see Figure 3; Horelli, 2002 and Articles 3 and 4).

\textsuperscript{14} Action research is a strategy in which the researcher, together with the subjects in the study, implement various interventions. The study comprises simultaneous observation, monitoring and analyses (Lewin, 1947). The ideal process of data gathering is transparent and co-evolves with the context (Cambell, 2012). The action research also pursues for changing the status quo. In the action research intervention, researcher becomes involved, even part of this change. This dual role of the researcher, the so called `sitting on two chairs`, is a dilemma in science in which the research should remain objective. However, in a practical discipline, such as urban planning, the changing role of the planner and researcher is obvious. Both the planners and researchers are stakeholders among the others, and yet the ones providing the framework, methodology as well as the actual staging for action.

\textsuperscript{15} Lena has been earlier applied in Malminkartano, another neighbourhood of Helsinki, and in the region of North Carelia (Horelli 2002; Horelli & Vepsä, 1994).
The LENA integrated shared practices of community development to urban planning process. Community development is known in the Anglo-Saxon countries as a counterpart of the process-based town planning. This meant in practice, that the community development methods (e.g. ABCD asset-based-mapping by McKnight (2003) and empowering event-making (Sarkissian & Hurford, 2010)) were combined to participatory planning methods (e.g. the roundtable negotiations of Forester (1999). It also promoted the possibilities the combining of of community informatics (Gurstein, 2007) to the local stakeholders and enhanced the interest in urban informatics (Foth, 2009) and e-planning mapping tools with civil servants. (Cf. Article 3.)

With these hand-on methods and the LENA-procedural logic, the urban development endeavour was cut down from complex interventions into small events in which participants from a variety of population groups had their own role in order to reach a shared goal.

According to the research and development process, explained in the dissertation articles, LENA expanded the formal urban planning that traditionally...
deals with specific zoning and building projects, into a multi-stakeholder development process (see Article 3).

It transcended administrative and areal borders and explored new ways to gather inhabitants. Instead of being passive followers of the planning and development process, the local inhabitants and NGOs were involved in the actual co-designing and co-production processes which they defined themselves. The action took place in the everyday surroundings, such as kindergarten centres, a library or in the neighbourhood house, called Ankkuri.

Researchers did not define meetings but sought to keep up the processes together and steer them from one stage to another. Researchers also had the role to articulate the outcomes, inform the actors about other similar initiatives and the overall objectives of the city administration. They were also prepared to mitigate arising conflicts. This, however, turned out to be irrelevant, as the participants were free to choose and decide their own actions, even to establish new development initiatives, which did not end up in conflict.

Researchers also encouraged and assisted the locals to use new web-based technologies. Some of them were applied in the actual co-designing of urban space. For example, participatory e-planning was applied in the design of the Roihu-vuori Yard. Social media, in the form of the new neighbourhood web-pages and later on Facebook groups were tools to inform and support the development processes and to build up the local identity in the long run. This kind of community informatics was used in the LENA-approach, as well as also in other development initiatives in the neighbourhood. (Cf. Article 4.)

Secondly, contrary to the traditional participatory urban planning process, the planner was not this time an organiser of the process but merely one actor. There was no primary object or target, but several intertwining projects that were simultaneously taken forward. These were, for example, the renovation of the metro station, bus routes, the planning and building of a Roihuvuori yard, but also the activation of different resident and hobby groups, by developing a specific local participation structure. This meant, among others, the founding of local web sites and voluntary local governance institutions in the form of a Local Committee and a Local Assembly that started to meet regularly (See Articles 3 and 4).

Thirdly, with the LENA, the neighbourhood is no longer seen as an object of the town fathers or professional town planners. Herttoniemi unfolded as a self-organising, co-evolving system in which all actors had some meaning, even if the roles were not similar or comparable. This conceptual approach meant that the residents and communities of the self-organizing city, who traditionally had been regarded as users of activities and spaces, stood up side by side the authorities of urban planning. The prior stakeholders in planning had been other civil
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servants, land owners and construction companies, who had wanted to engage local actors in planning, but only in the role of the end user.

This reflects the need for a change in the urban planning paradigm in which the plan and the planner performing the planning process are not an evident centre of the research focus. It also manifestates the EP.

In the expanded focus of urban planning, residents, civic society organisations and the workers of local associations, even passive actors who do not come to events, carry weight in terms of shaping the environment. The transformation can take place by conscious participation in development interventions or just by having an impact on the setting through everyday practices, such as walking (Kuoppa, 2013). Not only active involvement in a workshop or writing a statement, but even the chosen route or service, and a lived moment and even personal recollection can be part of the evolving urban texture (cf. Wallin, 2018) (See Chapter, 2.2.2).

This kind of urban planning and development might seem chaotic, when diverse interventions and research are simultaneously taken forward. However, in practice it is clear that the redesigning of the location of children’s afternoon care, the building of a community yard and the changing of local bus routes are different planning processes, but together they make the neighbourhood a better place to live. The co-planning, timing and taking forward of these locally identified activities through action research enabled the description and even certain steering of the transformation in the neighbourhood that was never present in the official planning and policy making.

LENA provided a structure for the research design. It staged the methods and research incidents, and set the gathered data in a chronological order. Therefore, LENA was not only an enabling method of local action and development, but also a research method that enabled the use of several research techniques (Horelli, 2002). Together it was an example of, how to conduct expanded urban planning.

3.3 The data, analysis and interpretation of the action research

The action research produced a large variety of data, due to the fact that the action research (2004–2009) continued in three different planning, research and development projects and comprised several distinctive development initiatives with different foci. In addition to them, there were other local development endeavours in the neighbourhood, which did not relate to the action research. Some of them were primarily part of the action research initiatives, some of them spin offs, but most of them were separate development initiatives which
were not involved with this study\textsuperscript{16}. In addition to them, the observation of the statutory planning processes has continued, as described in Chapter 3.1.

Therefore, it was necessary to study the action research, but also the context in which it took place. In each phase, the data was gathered from the actual interventions, but also from the area, concerning the place-based data of the attractiveness and functioning of the neighbourhood. There were two surveys covering the residents of the neighbourhood. Also focus group and individual interviews were conducted, in addition to the observation of the meetings of administrators and associations in Herttoniemi.

The data was gathered in the events described in Table 2 and Appendix 1. The action research provided data on the:

- Interventions and experiences of the participants
- Stages and outcomes of the action research
- Official planning documents both on the neighbourhood level and further on the Helsinki Metropolitan region.

The original aim of the action research was to examine the urban transformation of a neighbourhood and to find out, how to support people’s everyday life and opportunities to participate in urban planning.

Therefore, the objective of the data gathering was twofold: first of all, to collect views of different actors concerning the ways to develop the neighbourhood and to disseminate information for deliberation. Secondly, the data enabled the monitoring of the evolving context.

\textsuperscript{16} At the same time with the action research of Aalto University, there were other on-going development projects in Herttoniemi and in its surrounding neighbourhoods. The largest ones were also initiated by the City of Helsinki. The first Neighbourhood Project Plan (Lähiöprojekti) was initiated already in 1996. It was targeted at the improvement of housing conditions and public spaces in the Eastern part of Helsinki. The other large scale development initiative was the Healthy Neighbourhood-project (Terveellinen kaupunginosaa) conducted by Forum Virium. It had several initiatives that were targeted at better public services and at the e-infrastructure.
The actual interventions and experiences of the participants formed the primary data which describes the events and issues related to the action research initiatives that the local actors considered relevant (Table 2). The data was produced by the locals themselves. The researcher was present in these occasions. The secondary data was produced by the research team of Aalto University. The surveys and interviews were used to gather data on the local inhabitants, their experiences and hopes for the future development. Both sets of data contributed to the first research objective. After that, the data was also used to find out, what outcomes the development initiatives had produced. The evaluation of the outcomes, including the performance of the statutory planning, has been conducted in a simple way by analysing, whether the intended initiative or the plan has been implemented in practice. The interviews provided a method to verify and assemble the primary data, and so did the observation data produced by the researchers.

The supporting planning data and official planning documents were used at the beginning of the action research in order to formulate a better understanding of the neighbourhood. During the action research, the documents were used to inform local actors. After the action research had ended, meaning the actual

<table>
<thead>
<tr>
<th>Data sources</th>
<th>Types and items</th>
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<tbody>
<tr>
<td><strong>Primary data</strong></td>
<td></td>
</tr>
<tr>
<td>Data from local gatherings, produced by the actors and stakeholders themselves (memos, drawings, photographs)</td>
<td>Memos of Local Assemblies (23 items), Memos from the formal urban planning participation events in Herttoniemi (4 items) Memos from semi-formal planning workshops and the gatherings of local stakeholders (5 items)</td>
</tr>
<tr>
<td><strong>Secondary data</strong></td>
<td></td>
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<tr>
<td>Data gathered by the researchers (surveys, interviews and data from observation)</td>
<td>Survey I (Häkkinen &amp; Wallin 2004) Survey II (Jarenko 2007) Group interviews with local stakeholders (3 items) Group and personal interviews with administrators (5 items) (2009 – 2010) Observation memos and graphics from the local events and happenings. (over 200 items during 2003–2012)</td>
</tr>
<tr>
<td><strong>Supporting planning data</strong></td>
<td></td>
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</tbody>
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interventions with the stakeholders, the supporting data was used in the analysis of the context of the local development on the neighbourhood level.

The descriptions of the data gathering and the outcomes of the action research were published in referee journal articles. The first article\textsuperscript{17} from this data was published in 2010 and the last one in 2015. Each article of this dissertation used the same data (Table 2.) but from different perspectives (Table 3.). Therefore, the articles present different sides of the urban transformation in Herttoniemi (Table 1). Each article provides research questions and analyses of their own, but their theoretical and conceptual basis of participatory urban planning, community development and e-planning remain the same.

\begin{table}[h]
\centering
\caption{The methods of analysis and data used in the articles. Each method is described in the articles.}
\begin{tabular}{|l|l|l|}
\hline
\textbf{Article} & \textbf{Analysis and methods} & \textbf{Data/ Perspective} \\
\hline
I Urban Transformation in action & CATWOE systems evaluation method (Hummelbrunner & Reynolds, 2009) & Planning data of Herttoniemi Centre and Roihuvuori Yard \\
& & Interviews of the stakeholders and participants \\
\hline
II When Self-Organization intersects with Urban Planning & A comparative case study analysis of urban activism and its organization & Event data \\
& & Data of the social organizations of the participants \\
\hline
III User-sensitive service design in urban planning and community development & A descriptive analysis of LENA and its implementation & Procedural data of five local initiatives \\
& & Surveys I ja II \\
\hline
IV Playing with the glocal through participatory e-planning & A descriptive analysis of the outcomes of LENA & Procedural data of five local initiatives and \\
& & Surveys I ja II \\
\hline
V Future-making assessment as a tool & Evaluation of the action research method & An e-planning initiative in Roihuvuori \\
& & An organization of the Herttoniemi local group \\
\hline
\end{tabular}
\end{table}

\textsuperscript{17} In addition to this PhD, there are several articles published by the Aalto University research group called PALCO. The publications of PALCO are enlisted at: https://wiki.aalto.fi/display/Palco/Publications. There are also two other dissertations, which have used the data gathered during the action research at Herttoniemi, namely by Joanna Saad-Sulonen (2014) https://aaltodoc.aalto.fi/handle/123456789/13352 and Jenni Kuoppa (2016) http://tampub.uta.fi/handle/10024/98653.
The meta-analysis presented in this summary was based on a systems evaluation method, called CATWOE (Hummelbrunner & Reynolds, 2010). The method and its application has been described in Article 1.

CATWOE is a method of content analysis that helps to study complex situations by first breaking them down to categories, such as clients, actors, transformation, worldview, owners, environment, and secondly by examining their relationships as part of the system. The difference with the ANT-method, based on Latour’s actor network theory (2006), is that CATWOE is an evaluation method suitable for heterogenic data in different time-spans.

The application of CATWOE also provided the possibility to conduct a metaevaluation, which:

- Defined development patterns that took place in the neighbourhood (urban transformation processes and the performance of the plans)
- Evaluated complications and progress that occurred (types of complexity)
- Interpreted modes of civic engagement versus administration

The outcomes of this analysis is presented in Chapter 4.

3.4 Reflection

The long time span of the dissertation, which began in 2005 with the action research, requires to reflect the trustworthiness of the study. According to Lincoln and Guba (1985) trustworthiness comprises credibility (trad. internal validity), transferability (trad. external validity), dependability (trad. reliability) and confirmability (trad. objectivity).

Urban planning is a time-consuming practice. The statutory planning process that could be validated from the formal strategy papers and political decision-making took more than five years conclude. After that, the outcomes of the planning procedures have been emerging – or are still in process of becoming. The longitudinal research design comprising observation, interviews, surveys and analyses of documents, but also the data collection provided by the stakeholders themselves improved the verification of this becoming. It is unlikely that it could have been disclosed in any other way.

The pitfalls of a longitudinal action research are many. In action research, the researcher defines the research design, chooses the research questions and

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18 CATWOE is based on Peter Checkland’s (1981) soft system methodology. As a system evaluation it seeks to provide an approach for complex policy-level analysis, which acknowledges multi-actor networks and set them in context (Reynolds, 2014; Reynolds & Holwell, 2009).
methods, and simultaneously influences the actions that she/he is studying. In
the Herttoniemi case, the action research comprised altering layers of action
and observation. However, they tended to blur to the extent that it was difficult
to de-fine the input of the research from the ones made by lay people on the case
study site.

Therefore, the following techniques, recommended by Guba and Lincoln (Ibid)
to increase trustworthiness, were applied. Credibility was augmented by tri-
angu-lating concepts, methods and perspectives, which were constantly com-
municated with the local stakeholders, especially in the Local Forum. Transfer-
ability was supported by the thick description of the case studies, which accord-
ing to Brom-ley (2002) may permit findings to be generalized to a class of sim-
ilar cases, alt-hough the context draws the boundaries. Dependability and con-
firmability were consolidated by keeping audit trails and by reflecting on the
design, process and outcomes of the study with the research group. Due to the
chosen LENA-approach and the audit trail, it was possible to notice, who had
participated in the initiatives. It was also possible to check, if the initiative was
part of the action research or that of the administration or even part of self-
organized local actions.

However, both internal and external validity need a closer examination. In a
dec-ade long action research on urban planning and development each research
phase and action have taken place in a unique span of time and space. In all
research, both quantitative and qualitative, fallacious assumptions or bias in the
researcher´s work corrupts the perspective and data.

In crude, the long time span of the study is not the only problematic issue. The
paradox is that in action research, the action itself corrupts the scene. As action
research is a meshwork of a variety of operations and agencies, both implicit
and explicit, intended and unintended, trustworthiness is demanding. After the
long research process with several incidents and piling up of data with conflict-
ing per-spectives, it was challenging to draw straight forward conclusions.
Transferability is also context-related. Therefore, the outcomes cannot be taken
for granted in a different neighbourhood, nor even in the same neighbourhood
but at a different time.

However, Corbin & Strauss (1990) point out that substantive theory produced
through content analysis might enhance transferability. Also, Flyvbjerg (2011)
claims that the strength of the case study is not in its power to explain compre-
hensively the world, but to give an example that makes the world more compre-
hensible. This is the task that the dissertation also pursuits to provide.
4. Key findings

This chapter presents the key findings of the research concerning urban complexity, the multifaceted nature of civic engagement and the challenge which they pose on the linear urban planning procedures. The key findings also propose the measures to deal with urban complexity and the gap between the planning system and local realms, as well as the plan and its implementation.

4.1 Participation beyond urban planning

The first key finding is related to the role that civic engagement had in the local urban development. The analysis recognized the limited role of public participation in the traditional processes of urban planning and development. It was also found out that other forms of civic engagement fed and steered urban development and played a distinctive role in the management of the different types of urban complexity.

Public participation is often regarded as having a legitimate but biased nature in terms of planning outcomes (cf, Chapter 2.3.). As described in Articles 1 and 2, the local development, based on the formal planning process in the Herttoniemi Centre, did not proceed accordingly, either.

The plan of Herttoniemie Centre and the planning procedure raised plenty of criticism among local dwellers and action groups already in 2005, when the process begun. People who participated in the statutory planning provided an alternative to the plan, but it was not supported by the planner. In addition to the local dwellers, there were also other stakeholders, such as the local library and the youth services. The alternative option promoted by the locals was based on the renovation of the metro station. However, it did not propose additional square meters outside the metro plot, which the city needed in order to pay their share of development. The number of participants in the planning evenings and local debates varied from 30 to 60 people, while the majority of local dwellers was not aware of the intentions that the city administration had for their neighbourhood.

The analysis of Herttoniemi demonstrates that participants, especially in the formal public hearing procedures, had no actual impact on the process, nor on
the outcomes of the plan. Public gatherings provided information, engaged inhabitants and provided an arena for the interplay between the local actors and civil servants, which benefited more the self-organized urban initiatives than the planning of the Herotniemi Centre. The ladder of Arnstein (1969)\(^9\) got stuck in its primal stage. The public could not implement their opinions.

The plan of Herotniemi Centre emphasised that the planner is in charge of both the procedure and the substance of planning. Also, the planner has both the legal status to interpret the Building Act and to represent the city, which owns the land in Helsinki. Therefore, if the City of Helsinki City would have wanted to develop the Herotniemi metro station, the decision could have been taken instantly. Instead, the situation in the metro station, which is the major transportation hub for the whole Eastern part of the metropolitan region, has remained the same since 1982 when the metro started to operate. The development process is still open after 15 years of planning. It is evident that in this kind of context, public participation cannot challenge administration and the planners’ position.

Therefore, the argument that public participation stagnates the planning process, is based on the false idea that the planner is not able to speed up the process or to choose the most suitable mode of participation for the situation. The stagnation of the Herotniemi planning procedures was the outcome of the plan itself and the strategic land use decisions of the administration and politicians, which did not appeal to the investors. The development prospects in the surrounding neighbourhoods were more appealing. Consequently, the plan in that spatial and economic context dispelled the investors and developers from the Herotniemi Center.

Secondly, the analysis made the self-organizing movements visible (see Article 1). The case study in Herotniemi revealed that self-organization differs from public participation, not only in terms of occurrence, the dynamics and motives of the movement, but also in terms of legitimacy. However, they also had shared qualities.

The quality of public participation is quite often measured by democratic representativeness, because in public participation the participants have to be in favour or against the planning proposal. Self-organization is shaped by the action itself, with a progressive ethos of doing. The actors participated in the ac-

\(^9\) The ladder of participation by Arnstein (1969) has been widely used to illustrate the distribution of power in/at/to the planning processes. The ladders consist of stages from manipulation, (2) therapy, (3) informing, (4) consultation, (5) placation, (6) partnership, (7) delegated power and (8) citizen control. The highest steps are considered to ensure citizen empowerment. However, the post-structuralists consider even the highest stages insufficient, because the ladders are staged from the perspective of government. The model amplifies government’s leading and deciding role, and provides participation by procedural inclusion. (e.g. Boonstra & Boelens, 2011:107).
The sovereign nature of self-organization is not based on the number of actors. Unlike public participation, nobody represents anyone else but him/herself. This does not exclude that many people are involved with the motivation for doing good, working for others\textsuperscript{20}. Self-organization does not need large numbers of social actors or movements. Even a small and enthusiastic action group can be effective. For example, the movement that initiated and produced the neighbourhood house at Tuhkimo Kindergarten was formed by a handful of people. Later on, the house was widely used by locals for many occasions. Also, the Roihu-vuori Yard initiative improved the local surroundings and is enjoyed daily by the local dwellers. Relatively small numbers of local dwellers and other stakeholders have managed to develop and maintain better public urban space in the housing areas of Herttoniemi.

Consequently, there were also shared features with traditional participation. The same people, who represented the traditional neighbourhood association, were also active in the neighbourhood house initiatives and in other endeavours of urban activism. The semi-professional “super participants” (Staffans, 2004) were active in public participation, and gathered around themselves a “community of practice” (Saad-Sulonen, 2013). For example, the activists around the local web pages and social media tools were just a handful of people, but they were also active in many urban issues and in the local identity-making. All methods and tools of participation turned out to be important and successful, if they were also applied outside the traditional planning procedures. The transition from participatory planning to participatory co-production speeded up and enabled a satisfactory outcome, for example, in the case of the Roihuvuori yard (See also Saad-Sulonen, 2013; Saad-Sulonen & Horelli, 2013; Saad-Sulonen & al., 2015).

Unlike one might think, the connection of self-organization with the formal planning and administration was not contested, it was evolving and even productive. In the beginning of the action research, traditional planning did not recognize local activists. The actions of local event-makers and hobby-groups were not a focus in the planning procedures or mentioned in a spatial plan, even if they shared the same objectives, namely the development of their local environment. This situation has changed in the past couple of years, but it was not obvious during the action research.

The research showed that the strategic decision-making of the two city departments (Social Affairs and Urban Planning) had very little impact on local movements. The hypothesis of the study was that traditional public participation

\textsuperscript{20} In Finnish, there is a form of voluntary work called talkoot. The idea of talkoot is to arrange a “work party” to assist a person, a family or a part of community.
would be essential for dealing with ‘simple urban complexity’. However, it turned out that the precondition for solving urban complexity was the self-organizing collaboration between the residents, associations, entrepreneurs and the administrators. Local development initiatives turned out to be successful, when the official responsible for the planning collaborated with the service providers and the users (Articles 3 and 4).

Therefore, the new angle to participation should comprise both public participation, self-organization and everyday life practice (see Figure 1.). Self-organization is not just about the multi-faceted nature of civic engagement, but also about the resilience it provides urban planning and development. Civic engagement is dispersed by nature, but at the same time, it brings forth ties to the local realm and constitutes the baseline for local development. Sometimes it checks the administrative game beforehand through NIMBYs\(^\text{21}\). Other times, it accelerates the situation through YIMBYs or even by producing and maintaining new public spaces and functions.

### 4.2 Urban complexity on the neighbourhood level

In the very beginning of the action research, it became evident that there were many local questions that needed to be solved. Some of the problems were linked to one another, but also to a wider context. Some were easy to perceive and discuss with the stakeholders. Some were incomprehensible, or not recognizable without research.

Issues, such as the lack of suitable bus routes or information and availability of local gathering spaces can be regarded as problems of simple complexity (cf. Chapter 2.2.3.). This does not mean that simple complexity is less severe or less important, but that complications are comprehensible by nature. These problems of simple complexity turned out to be solvable, as in the typology of Baynes (2009) suggested. The solutions for traffic planning were found through surveys, workshops and the task force for traffic safety. Some of the solutions were strategic in terms of local development, such as the creation of participatory arenas and instruments for local co-governance and the founding of the local websites (cf. Table 4; Articles 1 and 2). Others were operative, for example, the hiring of a community worker. Many common issues of urban development were problems of simple complexity which can be defined, marked on the map and above all, they can be solved through traditional means of engineering – and planning.

In addition to the traditional planning (and its public participation process), action research arranged gatherings for the local stakeholders. There were also

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\(^{21}\) NIMBY is an acronym for Not in my backyard, which is used as a label for planning criticism of the local people. YIMBY is the opposite action (Yes in my back yard) in which local stakeholders support of even suggest and co-create urban development (Eranti, 2017).
local activists, who arranged workshops and task forces all of which speeded up solutions for simple complexity. Simultaneously, the self-organized actions, outside the planning system, built up ground stones for the participatory structures that enabled to find solutions to much more problematic issues.

**Table 4.** Urban complexity recognised by action research at the neighbourhood level. (The typology based on Baynes, 2009)

<table>
<thead>
<tr>
<th>Typology of urban complexity</th>
<th>Findings in urban planning/development</th>
<th>The input of civic engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problems of simple complexity</td>
<td>New timetables and routes for the bus (traffic planning), Rouhuvuori community yard, (co-design and co-production), local websites (community informatics)</td>
<td>- Workshops and task groups speeded up the finding of problems and their solutions - Urban activists enabled the implementation of solutions even through the means of co-production, which increased the fit of the solution and its sustainability</td>
</tr>
<tr>
<td>Problems of disorganized complexity</td>
<td>Local family services - Uncertainty brought about by a multitude of service providers and the lack of planning data, such as childcare in the afternoon and the mobility for hobbies of young people</td>
<td>- The Local Assembly produced information about phenomena, events and trends that cannot be found in statistics or via surveys to particular groups. - The Local Assembly enabled the comprehension and deliberation of different perspectives</td>
</tr>
<tr>
<td>Problems of organized complexity</td>
<td>Urban development of the Herttoniemi Centre. The stagnation brought by administrative systems, varying objectives and 'temporal windows'. The evolving context in general, for example, the raising of real estate rents.</td>
<td>- Improvement of local service structure and public urban space in the housing areas. - Supported local identity and place making with events and gatherings. - Brought forth new active user groups as producers of planning knowledge for the future direction - Enabled the use of digital data (e-planning) and time planning for anticipation and foresight, provided opportunities to envision solutions in the changing urban context</td>
</tr>
</tbody>
</table>

However, as described there were problems that turned out to be difficult to solve through direct formal intervention of planning. The organized complexity was especially present in the development of Herttoniemi Centre, when the Department of Urban Planning was interested in finding novel places for housing in Herttoniemi, and in accelerating the zoning and transport projects due to the large-scale urban development initiative in Kruunuvuorenranta. Their interest to develop the Herttoniemi Centre was shared by the Department of Social Affairs, who consiredered that urban development around Herttoniemi
metro and bus station could provide a new plot and location for social and health services, but also other shared public services. The Social Department of Helsinki had been worried about the lacking services for 20,000 residents in Herttoniemenranta, which had not been built due to the financial recession in the early 1990’s. And, there were also the deteriorating estates of the existing hospital in the West-Herttoniemi and other facilities, which were in desperate need of renovation. Therefore, the two departments were looking for ways to steer their service delivery and to achieve their strategic objectives on the local level.

Also, the Social Department lacked local data on services, as the planning of social services were based on age groups in the whole city, instead of looking at the local needs. In crude, the services were provided to each family member by different unit or organization, which hid the fact that social problems were concentrated in certain neighbourhoods, even in particular housing blocks.

This lack of knowledge was an example of disorganized complexity. After the hiring of the community worker and the organization of the Local Assembly, over 40 different organizations related to children services emerged. With the mediation and deliberation taking place in the Local Assembly, the self-organized stakeholders solved, for example, the provision of childcare in the afternoon based on different partnership models. Also, the task force arranged by local urban activists reconfigured the transportation system together with Helsinki Transportation Company (HSL). In addition, there were also another self-organized urban initiative in which local stakeholders started the co-operation to plan, build and turn an unsafe area in Roihuvuori into a multi-generational community yard (cf. Table 4. and Article 3) (cf. Wallin, 2013; Saad-Sulonen & Hörrelli, 2010). Thus, the dismantled problems of disorganized complexity became, at least partly, problems of simple complexity, and therefore they were possible to solve.

Consequently, the problem of organized complexity could not be solved as such. Like in any typical planning conflict, the local activists and residents pro-tested against the decision of The Social Service Department to centralize the services around the metro station, because it worsened the services of West-Herttoniemi. But the city administration was unwavering. The city administration had its own rationale that disregarded the local realm. The overall aim of urban densification, the need to rationalize the provision of services in large units and the need of develop public estates incited the administration to take action according to their plan. Later on, as the development of the Herttoniemi Centre stagnated, and The Department of Social Affairs invested their resources to the joint health care centre in Kalasatama, two neighbourhoods away. In the end, Herttoniemenranta did not receive more services, and the West part of Herttoniemi lost their local public services. Instead of progress, the city administration provided stagnation.
The other example of organised complexity, was the raise of real estate taxes. The city decided to triple the rent of the old housing areas, at the same time as these housing estates were in desperate need of renovation. The raise increased the dwelling costs to a level that was unbearable, especially as housing and living had become extremely costly in the metropolitan region in general. The raised rent endangered the possibilities of residents and real estate owners to maintain their houses and even to live there. On the other hand, not increasing the rent was inconceivable. The old rental agreements were ending and new ones had to be made. According to legislation and transparent governance, lower rents were not possible due to the principle of equality of citizens.

The case study in Herttoniemi emphasize that the administrative and decision-making machinery is not capable of controlling the urban organism, especially when the timescale extends to years or decades. The planning system and the city government cannot steer, not even together with the neighbourhood activists or associations, the most important activities and events related to urban spaces.

The solving of specific planning problems, or the revealing of different perspectives and the creation of shared understanding are not enough to resolve a situation that emerges from an unknown future of wider contextual transformations. The disruptive future cannot be completely dealt with, even if the anticipation of and preparation for changes are the purpose of different administrative departments, especially that of the Department of Urban Planning.

In the next section, the dissertation sheds light on a variety of planning approaches suitable for dealing with these situations.

### 4.3 Management of diverse realities

In Herttoniemi, the local realms, the different realities of the stakeholders and planners, became an obvious element in planning and development. That had a profound impact on urban complexity, and thus, the approaches to deal with different types of complexities.

The planner can reach the local realms by acknowledging the diverse realities of the different stakeholders. The realities themselves cannot be standardized, but they can be set into a shared local framework, and analysed through sufficient and relevant data including the self-organized urban actions and everyday life practice.

The planner is an advocate and assistant to the local stakeholders, who in practice define the framework for local development and planning. In the ideal world, the planner introduce this framework into the planning practice and translates it into the official administrative process.
Therefore, the data should be gathered together with the stakeholders, not just about the stakeholders. Examples of this kind of shared data gathering can be collected in workshops with the methods of story-telling and shared observation, or with delphie surveys.

The gathering of everyday life data should take place where the actions is. For example, kindergartens, sport facilities, such as football fields and tennis halls, which are full of people with hands on information in mobility and local services (e.g. Hamdi, 2010; Sarkissian & Hurford, 2010). The virtual and augmented space provided by ICTs and social media application make possible to reach people though means of e-planning (Nummi, 2017; Falco, 2016).

The technological advancement gives possibilities to use quantitative methodologies to analyse qualitative issues, for instance place-based experiences of local inhabitants (e.g. soft GIS, Kahila & Kyttä, 2009), or simulate the impact of ad hoc urban events and happenings which transform the use of urban space, the way the space is perceived, and visualize the possibilities for futher use (e.g. real-time urban informatics; Foth, 2009; Johnsson & al., 2017).

When gathering data with self-organized stakeholders, planners should also take advantage of the expansion of data produced by the civic society. For example, citizen science provides the planning data gathered by semi-professional urban activism. In addition to the knowledge creation, citizen science increases the participation of residents and new interest groups, as well as the dissemination and reuse of information (Saad-Sulonen, 2013).

These versatile methodological approaches, combined with quantitative and qualitative techniques and deliberative actions, open up a view to different realities, even to the urban transformation. Novel data, and the new ways to use it, enrich prior planning material and provide the possibility to understand and anticipate complexities (Baynes, 2009; Wallin, 2013).

Also, planning methods have to be chosen in the context, which comprises a kaleidoscope of time (past-present-future), space and the purpose of the planning itself (Figure 4).

In planning, time provides a framework for all realities. For example, do we make decisions based on former documentation and statistics, but also on the lived life and events (past). Or are we pursuing to deliver a plan to solve up-to-date issues, such as the traffic congestion (present). Then there is the need to make spatial strategies for the next 20 or 30 years (future).

All the time spans demand different kind of methods to analyse and asses the current situation and the possible solutions for decision-making. Especially, in
the anticipation of the future, there is no statistical data, and the current estimations of people can change quite drastically. Yet, we seek to produce scenarios for the future actions and engage the possible future stakeholders, who will not be present in this time (Aaltonen, 2010).

Thirdly, the choice of methods to produce planning data requires an understanding of the purpose of the data in planning. For example, will the data be used for developing a blueprint plan (linear), or for deciding which strategy to choose (visionary), or for agreeing, how to share and implement that strategy for the unknown future (disruptive)?

Aaltonen (2007) suggests that a choronotope is a metaphor for different motivations situated in the temporal and spatial interaction. The metaphor can be used in the evaluation of interrelationships between different phenomena and actions in space and time.

In the original schema of Aaltonen, the linear, visionary and disrupted dimensions are integrated in the same illustration. However, each dimension deserves a choronotope of its own as some data gathering and analysis methods in urban planning are more suitable to a certain purpose and context of planning. In a simple type of urban complexity the linear approach can be more suitable than application of visionary, even disruptive planning methodology.

**Figure 4.** Examples of methods to gather data for different planning contexts. These chronotopes (originated in Aaltonen, 2010:32) are suitable to unfold the focus and implementation of urban planning, when analyzed from the spatio-temporal perspective.

Figure 4. presents examples of different planning methods for data gathering, analysis and sense-making. The main task is to choose the methods that provide knowledge for the right purpose and time span of the plan. Each choronope can
be a framework, formulated together with the stakeholders, spatially in the local context, as was described above.

This might sound complicated, but in practice, there are several civil servants who have a profession to assist participation in planning in the local context. As they have access to different methods of data gathering, analysis and sense-making, they could make a framework that comprises the self-organizing nature of urban development. The planners could give the local stakeholders a possibility to define the scope and the substance of planning in a more open and agile way. When reaching to the statutory planning process, the planner should also be able to check that the plan for participation (described in the statutory OAS-document) are in line with the planning purpose. Without a civic engagement, the planning task will merely seek to provide the square meters for the real estate investor.

I do not claim that all planning problems and complex urban development could be solved by a chorotopic framework. With the chronotopes, I suggest that a variety of methods exists, and they can be integrated into a meaningful combination. The power of the chronotope is that the participation is not a process or a stage in planning, but an organic part of setting the aim, purpose and the sense-making of the planning.

There are already inspiring examples of urban planning research, which have managed to tap the changing scales and scopes of urban development. For example, the reasons for the localisation of the service structure and the fragility of the steering power of master planning (Alppi & Ylä-Anttila, 2007), or the unexpected collective impact of land use planning and different strategic plans on tourism in North-Finland (Staffans & Merikoski, 2011). In the recent years, the assistance of e-planning simulation and visualization equipments, have made the possibilities explicit in a new way. For example, The Aalto Built Environment Lab (ABE) has had the capacity to define and explain societal problems that are connected with urban structures and functions, by applying a multifaceted methodology (Eräranta, 2019; Staffans & Horelli, 2014).

In sum, versatile methodological competence is part of a larger capacity to understand urban complexity and to resolve wicked problems (Partanen & Joutsiniemi, 2015; Batty, 2009; de Roo, 2012; Weaver, 1948). The production of data does not begin from the current state of the art with a linear approach, but from the reflection over the diverse realities, which requires the application of methods for visionary and even disruptive sense-making (Figure 4.) This makes urban planning more transparent and more fit for purpose. The faculty to combine knowledge, produced through traditional quantitative methods with qualitative knowledge and modelling, enriches urban planning and decision-making.
4.4 Minding the gaps

According to the research findings, the formal urban planning processes in Herttoniemi lived their own life, detached from the local everyday life and the interests of the local dwellers. Neither the architectural competitions and public hearings, nor the local surveys tapped the local realm, because they were arranged top-down. At the same time, the local stakeholders, sometimes together with local civil servants, executed their interests and everyday initiatives, which had an impact on the urban structure and functions. Information about these initiatives did not reach the political decision-makers, nor the high-ranking officials. In resonance with the post-structuralist thinking in planning (Hillier, 2011; Murdoch, 2006), there was a gap between the planning and implementation (the planning system), but also a gap between the realities of the planners and the producers and end-users of urban space (the local realm).

One of the reasons to this detachment, was the design of the urban planning process. The aim of planning was to define the future for the future people, not to improve the current urban issues of the local dwellers. In addition, the formal planning had only one kind of vision for the future. It was based on the anticipated demographic change and the large-scale infrastructure demands for public transportation, housing and services. There were no proposals for diverse or even disruptive scenarios. Sometimes there were visions and alternative planning proposals at hand, but all of them were merely variations of the same scenario, produced by the administration or the consultants of the administration. For example, the architectural competition for the Centre of Herttoniemi disregarded all the proposals made by the local stakeholders.

In the Herttoniemi case, the adopted ‘outsider perspective’ of the Urban Planning Department ensured that the formal planning and development efforts were blind to the self-organizing nature of the local endeavours. In addition, it also ignored the everyday life practices that shaped people’s perceptions and capabilities to transform the urban space and functions. This blind professional discourse is largely criticized in urban planning but existing in practice (Bäcklund, 2007; Staffans, 2004).

Therefore, it was almost ironical that the administration emphasized participation, but sought to reach the local realm through quantitative measures. The municipality commissioned surveys, which enquired local experiences of safety and wellbeing, the use of services and aspirations for better living conditions. However, the surveys were not context- or stakeholder-related. The questions did not cover locally meaningful events, nor relevant dilemmas, such as the closing down of the local school or the raising of the property rents. Nor did they acknowledge the different socio-economic situations of the residents. The single, low-income young male had a different experience of the local services than the highly educated, middle-class woman with two children. Thus, it was impossible to receive comparable information from both of them with the same questionnaire.
Blindness to the local realm became obvious through the action research with the LENA-approach. A variety of co-planning methods, ranging from informal events to structured workshops and charrettes enabled to see the complex situation from different perspectives, as well as the background of problems. It also made it possible to find common denominators, which made it easier to understand the varying patterns and relationships. Although complexity as such did not decrease, the LENA-approach enhanced the shared means and arenas for the neighbourhood actors, which in turn, enabled to make complex, even conflicting issues visible (Article 5).

The analysis of the case study led to the question: how should urban planning relate to urban transformation that occurs both apart and within the established administrative and planning practice, especially if the challenges cannot be solved through planning interventions?

The action research in Herttoniemi concluded that urban planning is both as techno-rational problem solving, and as part of a larger understanding concerning the anticipation of the socio-political development of society. Action research-based interventions were able to engage capabilities of different stakeholders, and thus, to gather alternative kind of data and to produce diverse visions for the disruptive future.

The action research applied in the case study is an example of disruptive sense-making in planning but also the expanded urban planning (EP) (Figure 1.). EP enhanced the integration of different planning stages and methods within community development and co-governance. This kind of expanded urban planning ranged from spatial planning to the co-production and maintenance of urban space and functions. In practice, it produced visions, scenarios and tools for planning and communication which supported local interests, as well as the strategic demand for progress.

Expanded urban planning approach with its multiple measures can be applied in the local development and participatory planning processes. Unlike in the linear statutory planning process, the self-organized local stakeholders supported the local urban development, and managed to provide services and facilities that the formal endeavours could not provide. This supports local endeavours, which are sporadic initiatives by nature, by creating partnerships for both construction and service delivery. Instead of large-scale housing initiatives and urban development processes by construction companies, there is also the need for structures and networks which maintain local facilities and urban surroundings appealing, safe and human-friendly.

I do not suggest in this dissertation that action research should be applied as a planning device. Instead, I claim that it is worth while to profit from the applied methods and from the conceptualization of the development approach in the
different planning cases and spatio-temporal contexts (see 4.3. and Figure 4). With the aid of multiple methods and a sufficiently long-term examination, it is possible to understand the neighbourhood and to alleviate its challenges. Expanded urban planning in which the different forms of participation are at the core, might enable the anticipation of the future and the understanding of plausible continuities or loose trends which organised complexity is made of.

In sum, urban complexity brings forth two gaps; one within planning and implementation and the other within the comprehension of diverse realities. The resolution of both of them can be found in the new approaches to urban planning, and their application in the different stages of planning and local development.
5. Conclusions and discussion

The research problem of the dissertation has dealt with, how urban planning can cope with urban complexity, more precisely, how it is able to comprehend urban transformation produced by civic engagement on the neighbourhood level. It has provided some theoretical and practical solutions that can enhance the comprehension of urban development patterns in the Finnish context. This has taken place through the analysis of a longitudinal, neighbourhood-level action research. The data to the research questions were analysed and interpreted by using the typology of urban complexity, based on Baynes (2009), which provided a fruitful means to deal with the research problem. The dissertation provided empirical examples of self-organization inside and outside the formal urban planning processes. It also defined the actual means and roles of self-organization as part of civic engagement in local development.

The answers to the research questions are in the following:

*What is urban complexity and how should it be dealt with?*

Urban complexity is metaphora on complicated phenomena taking place in urban structure and its functions, including human interaction. Urban transformation through self-organization is the basic cause of urban complexity, as demonstrated not only in the quantitative studies of urban dynamics (Partanen, 2018), but also through the qualitative analyses of this study. In this thesis, the ontological and epistemological comprehension of urban complexity is based on actor-relational planning (Murdoch, 2006; Hillier, 2011; Boostra, 2015).

According to the case study, complexity as such is not a problem, but it can cause problems in planning, especially, if it is not sufficiently recognized and dealt with accordingly. This dissertation has used a typology of urban complexity (Baynes, 2009) to define the empirical planning issues of the Herttoniemi neighbourhood. Through the lens of the typology, it was possible to recognize the solvable planning problems from the unsolvable ones, and to improve the comprehension of their nature (e.g. scale, actors and their aims). This kind of systemic classification could assist planners in the choice of their planning strategies and methods for knowledge creation and sense-making, which enables to deal with complex urban issues in practice.
The management of urban complexity is a disputed concept that comprises the steering and anticipation of urban transformation through procedures of planning and implementation (Boelens & Roo, 2014; Partanen, 2018). The steering of urban complexity seems superfluous, as even the steering of planning procedures is challenging.

In fact, some might think that the more suitable title for the dissertation would have been “Patching up the urban complexity” than managing it. However, this dissertation claims that urban complexity can be explored, recognized, and in some occasions even anticipated, meaning that it can be dealt with (Table 4.).

Also, the dissertation was able to explain with examples, why the steering effect of planning is questionable. The Herttoniemi case study disclosed that urban complexity brings forth two gaps; one within urban planning and implementation and the other within the comprehension of diverse realities.

In the Herttoniemi case, the resolution for urban complexity management was found from expanded urban planning (EP) and its participatory methodology (LENA), which took place through different planning measures and procedures.

EP enlarges urban planning ranging from strategic vision-making to the actual empowerment of local actors, from the participatory planning and self-organization into actual co-production of urban space. Expanded urban planning enables both actual implementation by managing disorganized and simple complexities, and also the production of planning information and arenas for the comprehension of diverse realities and deliberation. Therefore, EP assists in the battle against wicked problems, also in the context of organized complexity, which cannot be solved as such. This is, in fact, what urban planning has always been about.

**What is the role of civic engagement in urban planning and development?**

The analysis of urban complexities in Herttoniemi pointed out that civic engagement is an advantage in planning and development initiatives. Unlike the participatory planning discourse, which often emphasises conflicts, the different forms of civic engagement enhance the steering and adjustment of local development. Self-organized neighbourhood activists did not only create local services, but also supported the renovation of the local school as well as the design of a neighbourhood yard. In addition to the self-organizing activities, mundane everyday life improved the local surroundings and nurtured the local identity, unlike the formal planning initiative to develop Herttoniemi.

Civic engagement, especially self-organization and the everyday life practice of inhabitants, were able to maintain the local urban context. The local realm in which each of the stakeholders live, is simultaneously an incubator and an inhibitor of upper level planning endeavours. The civic engagement was able to
Conclusions and discussion

patch the noncontinuous, detached planning and development initiatives, and to integrate them into the local realm.

Consequently, the local realm and civic engagement can be completely detached from the formal planning procedures. The latter do not sufficiently address the local realm as the diverse realities of the neighbourhood and the linear nature of formal procedures do not entwine (cf. Hillier, 2003). Formal urban planning is not able to face and steer urban complexity. Therefore, it is questionable whether formal procedures and public participation processes in their current form should be at the core of acknowledged urban planning.

Based on the analysis, the dissertation suggests that the policies and methodology of urban planning should acknowledge and endorse all forms of civic engagement. In addition to the public participation processes, it is important to nourish self-organizing movements and to use all methodological capabilities to reach the existing, ever transforming force of mundane human action (Figure 1.).

Urban planning should create environments for people to take action. A living link between formal, semi-formal and informal forms of governance is needed, which should be addressed and endorsed in planning. In addition to governance, local resources and places for mundane gathering should be accessible, as they are vital for self-organization.

Urban activism is often a middle-class phenomenon in Finland. It is entertained by those, who are able to choose their living environment and housing type. However, local resourcing and empowering favour those who are less able to leave their neighbourhood. Providing people capabilities to improve their own life and to adjust their living environment has an impact on the personal and neighbourhood level, but also on urban development in general.

**How can e-planning enable civic engagement and urban transformation?**

Michal Batty (2017) has posed the question: *“How can we use computers to bring science to a wide constituency?”* The dissertation was involved with initiatives, which tried to use different applications of e-planning in participatory pro-esses. It also followed initiatives of community informatics that were used in self-organized urban movements. At the time when the data for the dissertation was gathered, the promise of social media was at its early stage (Wallin et al., 2010). Also, the evolving GIS mapping tools and mobile survey methods were under scrutiny.

The Herttoniemi action research pointed out that it was possible to use new social media and GIS-assisted methods not only for gathering data, but also for engaging people to take action themselves. Self-organized initiatives and even movements became conspicuous through local internet pages and later through
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Facebook and other media applications. The development of the “digital layer” was reflected in the physical environment of events, organized happenings, local resistance, and also in the lively hobby groups which grounded various forms of civic engagement.

The revolution of social media in action, as well as the rapid development of the methodology of urban spatial analysis, gave a glimpse of their potential to the expanded urban planning. The possibilities for urban planners to steer, engage and analyse urban actions and the real-time transformation of urban space increased beyond anyone could dream of.

The co-design interventions during the action research (Wallin & Horelli, 2012; Saad-Sulonen, 2013) redeemed the anticipation that the local dwellers are able to take action through e-planning tools (mapping, survey & graphic tools), and that the outcomes can be used in the actual planning and construction initiatives, as happened in the Herttoniemi neighbourhood yard. With the assistance of e-planning, urban planning took a leap from blue printing to actual implementation and even maintenance. The e-planning tools translated the visions and actions of local dwellers into the same context in which the formal planning procedures took place. There were also signs that the locals are able to use community informatics to address issues by using sophisticated urban data in a manner that can be called citizen science. For example, the residents used data to fight against the City of Helsinki which was raising the real estate taxes and abolishing the local school.

If e-planning was able to become a new source of information for planners and an arena for the citizens, it certainly had an impact on urban research. E-planning, especially when assisted by community informatics, provided a novel form to carry out action research. It enabled to introduce issues, engage dwellers and gather data in a fresh way. The data produced by e-planning was always much more real time than any other statistical spatial data.

Unfortunately, the experience of e-planning in action research remained limited including only the Neighbouhood yard project, the local internet site initiative and the observation of local rallies all of which were separate issues themselves. The technology was also much less advanced compared with the current possibilities. However, the use of e-planning provided an understanding that it is possible to use several methods to tap the altering urban transformation and to make sense of complex processes. The understanding of scales, sizes and “incompleteness” of knowledge becomes tangible, when ethnographic methods are combined with spatial analyses.

The Changing Paradigm of Urban Planning

The discipline of urban planning has embraced several decades the concept of urban complexity and its connection to self-organization (Jacobs, 1961; Batty,
2005; deRoo, 2016). However, self-organization as actual civic engagement with consequent mundane coping and semi-formal steering has only recently been acknowledged in the field of participatory urban planning (Rantanen & Faehnle, 2017; Boonstra, 2015; Boonstra & Boelens, 2011, Boelens, 2009). A good example is tactical urbanism, which has the potential to lead to long term and even strategic change (Lydon & Garcia, 2016; Finn, 2014). In addition to the urban activism and its impact on policies, the everyday life practices of consumption and mobility have raised interest among urban researchers in Finland (Berglund 2015; Mäenpää & Faenhle, 2017).

At the same time, there are important studies on urban complexity that have been able to address the problematic linearity of planning procedures and to disclose the urban dynamics and transformation through sophisticated spatial analyses (Partanen, 2018; Partanen & Joutsiniemi, 2015). The rapid methodological development has brought forth new forms of spatial analysis and graphic tools, which enable the use of new sources of data (Nummi, 2017). Some of them are collected through survey-based mapping tools, which produce ready-to-use planning data (e.g. Maptionaire, soft-GIS tool developed by the research team of professor Marketta Kyttä). The analysis and simulation of observation data transmitted by the social media, can be used in planning and urban studies, but also in the devolution of government silos and societal deliberation (Anttiroiko, 2015).

Michael Batty (2017) stated in his seminar presentation at the University of Helsinki that “Complexity theory replaces the old model of the city as a machine with one which considers the city as an organism.”

This dissertation is merely a local case study. But as more than a decade long study it has witnessed the evolution of participatory planning as a discipline, and the societal change enhanced by technology and governmental transparency. Therefore, it is suggested that there is going on a change of paradigm within urban planning. The city as an organism is not regarded just fractals and nodes, produced by the layers of statistics of the past, but as bodies, actions and visions of human beings. Urban functions and their research, become more important than the mere physical form (Batty, 2017). The basic assumption - in which professionally-led planning and development can tame the city-beast with concrete and asphalt - will be replaced by adjusting and recognizing the actors and stakeholders, who create the urban through their own actions.

The evolution in urban planning research raises expectations that expanded urban planning will be possible. Urban planning as a discipline is able to gather and analyse both “hard” and “soft” phenomena in different spatial scales, temporal contexts, local realms and diverse realities. However, making them play in tune in practice is an on-going process in which urban planning will still have a vital role.
References


References


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Managing urban complexity

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Sirkku Wallin