



BEITSKE BOONSTRA
PETER DAVIDS
ANNELIES STAESSEN



OPENING UP THE PLANNING LANDSCAPE

15 years of Actor-relational Approaches
to Spatial Planning in Flanders,
the Netherlands and Beyond



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PREFACE

BEITSKE BOONSTRA, PETER DAVIDS & ANNELIES STAESSEN

The research topics at the Centre of mobility and spatial planning (AMRP) at Ghent University show great variety. However, what binds the team at AMRP together are the principles of actor-relational governance and complexity sensitive research. These principles have proven to be a powerful tool to open up the planning landscape for new actors, new relations, and new approaches.

These attempts to open the planning landscape up by employing these principles have not been limited to this AMRP group. Over the past 15 years, a group of researchers conducted project-related and theoretical work on a wide variety of spatial planning issues within Flanders, the Netherlands, and beyond. This book brings this rich body of research together, explores the consistencies in its insights, addresses future challenges in actor-relational and complexity-sensitive planning research, and discusses its potential for future planning in the Eurodelta region. The aim of the book is twofold: first, the book functions as exposure to the current legacy of the actor-relational approach. In this ‘showcase’ you will find applications of the approach related to climate change, housing markets, public transport, urban regeneration heritage, and so on. Second, the book functions as a springboard for actor-relational and complexity-sensitive research planning and practice in the future.

With the compilation of texts in this book, we as editors did not aim to be comprehensive. Instead, the objective was to provide a wide range of perspectives that would be inspirational for planners, urbanists, theorists, students, stakeholders, etc. Therefore, the structure of the book is organized thematically, according to the main ingredients of the approach—namely actors, relations, and approaches. This thematic ordering clarifies the coherence but equally allows the reader to move in a non-linear way through the book. Moreover, there are boxes accompanying several texts which provide a ‘taster’ of the contribution and offer short in-depth elaborations of the specific topic by highlighting examples, methods or remarkable results. Next to the main corpus of texts, an article on the planning context and two more reflective essays supplement the three chapters (actor, relation, approach) as intermezzos.

The introduction chapter contains a theoretical and a contextual introduction. The theoretical section discusses the main features of the actor-relational approach, as a way to open planning practices for new actors, new focal points, new business models, new governance models for spatial developments. The chapter argues how the actor-relational approach helps planning systems in Flanders, the Netherlands, and perhaps even planning systems in general, to reach beyond their own defaults and path-dependencies and open up for complexity and dynamics in a world of undefined becoming. This chapter functions as the theoretical background of the actor-relational approach, which is found within complexity theory, actor-network theory, regimes theories, relational geography, differential system theory, and post-structuralism.

The contextual section of the introduction chapter deals with the planning history of Belgium and the Netherlands and the particularities of the spatial configuration of the so-called Eurodelta. By doing so, this chapter provides the context of the main applications of the actor-relational approach.

What follows is a wide collection of applications and reflections on the actor-relational approach, focusing on the severe contemporary socio-spatial challenges that are increasingly dynamic, complex, uncertain, and non-linear.

The chapters in Part 1 (Actors) discuss how the inclusion or acknowledgment of certain actors or actor-groups can lead to an opening of the planning landscape. Contributions elaborate on the introduction of new actors in the planning landscape, or new roles for existing actors, predominantly actors who had not previously been very visible as planning actors, or were not included in the spatial planning discourse and decision making processes. Many of such actors have been included in the actor-relational and complexity-sensitive research over the past few years. This part of the book reveals their influence on spatial development, discusses the importance of acknowledging such actors, and describes the struggles such actors experience and dilemmas they encounter while making their way into the planning discourse – including how they sometimes deliberately remain outsiders. An intermezzo on large infrastructural projects forms a bridge to the next chapter.

The chapters in Part 2 (Relational) focus on systems and relations that become visible when using the actor-relational approach. By approaching industrial areas, housing markets, harbors, etc. as (part of) networks, these areas generate new questions and solutions for future spatial design. The contribu-

tions in these chapters elaborate on the entangled complexity and interdependencies of various spatial systems. An intermezzo reflects on how to translate these stories into everyday language.

The chapters in Part 3 (Approach) discuss new methods for planners with methods that are based on notions such as self-organization, co-evolution, and actor-networks. Methods typically include Living Labs. This part of the book also reflects on (Flemish) planning instruments, or for instance the role of the unconscious in complex and dynamic planning processes. Each chapter illustrates how new or unconventional/experimental planning methods were able to set in motion new dynamics in previously rigid planning processes, and how new approaches, new perspective for action, and new perspectives can lead to an opening of the planning landscape. The chapter ends with an intermezzo elaborating on the educational program, its studio work and experiments that are conducted by students, and academic and practice-based research projects.

The epilogue of the book synthesizes the theoretical insights of the various actor-relational and complexity-sensitive studies and approaches described in the book, explores the consistencies in its insights, addresses future challenges in actor-relational and complexity-sensitive planning research, and discusses its potential for future planning in the Eurodelta region and beyond. The incorporation of reflection in the actor relational process could be a springboard for future actor-relational and complexity-sensitive planning research and practice.

INTRODUCTION

Opening up new Planning Landscapes – An introduction in the actor-relational approach of planning

LUUK BOELENS

How we came here

The actor-relational approach of spatial planning has a long history. For me it started with the socio-economic oil-crises during the 1970s, the adjoining critiques about the failure of the welfare state, and the announcement of the end of the (political) project of the Enlightenment (Lyotard, 1979; Habermas, 1984; Fukuyama, 1989; Pierson 1994; Goodin et al., 1999; Svallfors & Taylor-Gooby, 1999). These developments strike at the very roots of Modernist planning theories, which had stipulated that government planning was actually *the* missing element of progress to prevent society from becoming helpless, chaotic, and ineffective (Dror, 1968; Etzioni, 1968; Friedman, 1969; Faludi, 1973). With the failure of the welfare state, and thus Modernism, modern planning had triple failed: effectively, holistically, and emancipatory. As such, planning needed to reform itself profoundly from within (Bolte & Meijer, 1981). These ideas at the time coincided with those of my PhD-promotor Ton Kreukels, who claimed that planning as a form of planned governmental action should be linked to other forms of independent action, within the business sector, the institutional community, and in everyday life (Kreukels, 1980). In his opinion, it was precisely in Western societies that there was a need for a planning system which relied on a multitude of parties and actors outside the government: in the semi-public sphere, the economy, business management, between groups of people, in interest groups, and within the cultural realm. With a more

thorough analysis of these webs, an enormous (albeit more informal) planning dynamic would become visible. Such a new planning system should resemble an expanding web of sub-plans. Anyone who had the intention to claim something meaningful about spatial development would therefore be well advised not to limit him or herself exclusively to government planning, but also to look for innovative possibilities in those ‘non-governmental worlds’. At least it would enhance a much broader support than would be available for governmental practices. In addition, it would also expand planning views beyond pure government interests (Kreukels, 1985).

At the time these kinds of ideas seemed to resonate directly in professional practices, too. Based on smart growth and regime theories (Krasner, 1983; Fainstein & Fainstein, 1986; Stone, 1989; Stoker & Orr, 1994; Mossberger & Stoker, 2001; Hamilton, 2004) from the end of the 1980s and into the mid-1990s and onwards, public-private partnerships entered the scene of professional planning. Planning practice was inspired by successful urban renovation practices in the USA at the time, where so-called local growth coalitions between decisive actors from the business, governmental, and (sometimes) non-governmental society were the main drivers for change. In this respect an urban regime was defined as an informal but relatively stable group of decisive actors from these ‘societies’, to encompass their power from different expertise and backgrounds (economic, financial, political influence, or social bonding). As such, whether temporarily or not, they jointly pursued precise spatial or planning objectives (Stone, 1989). Although those kinds of planning approaches were heavily criticised as being too back roomed, capitalistic, and/or neo-liberal, (Davies, 2002; Harvey, 2005; Sager, 2011; Stead, De Vries, & Tasan-Kok, 2017) urban regime theory distinguished itself sharply from the traditional Elite Theory (Pareto, 1906; Mills, 1956; Domhoff, 1967; Putnam, 1976). Beyond the back rooms of power decisions, urban regime theory emphasized that there was an increasingly complex web of interrelations in planning mechanisms in urban regimes, where no interest group had final and comprehensive control over urban or spatial developments (Ferman, 1996; Brown, 1999; Sellers, 2002). Moreover, urban regime theorists offered a way out of the indecisiveness within an ongoing pluralist society and offered a new practical perspective for the collective. This was based on trade-offs between various decisive actors, backed up by a facilitating, instead of a traditionally dominant, planning system (Peterson, 1981; Scharpf, 1994; Kreukels & Van Vliet, 2001). More or less parallel to these regime theories congruent ideas about participatory planning entered the scene. These were grounded in advocacy and community based

approaches, whereby planners started to represent the plural interests of the minorities, deprived, and have-nots, by giving them a voice or even a seat in the government (Jacobs, 1961; Davidoff, 1965; Arnstein, 1969). Thus from the 1990s onwards, new communicative and collaborative approaches entered into planning practice, whereby the protagonist of these approaches stressed the need for shared partnerships, and sometimes even the need for shared implementation, by and for the people (Innes, 1995; Healey, 1997, 2007; Allegretti & Herzber, 2004). Here they were striving to enhance the support for planning and close the growing gap between government and society. Instead of the government being connected to the urban regime theories mentioned above, the term (multi-actor and multi-level) governance entered the scene, stipulating the need for a more networked process and way of policymaking with other stake- and shareholders to enhance shared responsibilities (Kooiman, 2003; Stubbs, 2005; Bell & Hindmoor, 2009).

All these ideas got a further boost during the time of the financial and economic crises of 2008 onwards. In many North Western European countries, especially in planning minded countries such as the UK, the Netherlands, Germany, Italy, Finland, and others, strategies of decentralisation and shared competences of spatial planning came up (Nadin et al, 2018). This decentralisation and sharing did not only occur due to financial constraints, but also with respect to the ongoing complexity and volatility of progress. A prominent example, for instance, was the idea of multi-level water safety (Dutch Ministry of Public Transport and Water, 2009; Edelenbos & Teisman, 2012; CIW, 2015). Originally regarded as an exclusive governmental activity, due to climate change and the impact of volatile and intense hazards, the governments recognized that the public authority would no longer be able to sufficiently defend its inhabitants and businesses against floods and droughts just with classical engineering by itself. Governments needed the help and collaboration of other stakeholders and domains to adapt to the changing situations by new means (see also elsewhere in this volume). The same occurred in other domains, like the regeneration of inner-city areas, (urban) food production, energy transition, eco-system services, social housing, public domain interventions, and even within mobility planning. Citizens’ science, community-led local developments, citizen initiatives, and so on flourished (Young, 2010; Sauerrmann & Franzoni, 2015; Boonstra, 2015; Van Brussel & Huyse, 2019). Again, new actors from the semi-public, civic, business and academic scene acquired a more prominent position within the field of spatial planning, thus enriching the traditional governmental-led spatial planning with new insights, options, and

possibilities. Nevertheless, it remained unclear if these innovations would be there to stay, or if governments would still cherry pick and/or even mould those proposals within their own pre-selected and presumed elevated perspectives, in the general interest of society (whatever “society” might mean within contemporary complexity and multiplicity).

As such there remains a thin, but still clear demarcation line between the ideas of co-production, co-creation, co-design, co-commission, etc. on one side (a.o. Jassanoff, 2004) and co-evolution on the other (a.o. Garnsey, 2006). Although they are often used together and sometimes even in alternating ways, they have very different intentions and directions. Co-production, co-design, and even co-commission start from and/or are initiated by presumed dominant actors (in this case governments) as *primus inter pares* themselves. As such, governments (and their planners) always decided inside-out about the course and implementation in the end (through their plans, subsidies, expertise, etc.) (Boonstra & Boelens, 2011). Co-evolution, however, would mean that one would start from a horizontal level playing field equivalence among the various public, civic, and business interests. Their interests could then co-evolve without any prejudice and preselected strategy, but towards a never-ending progress of undefined becoming (Boelens & De Roo, 2014; De Roo et al., 2015). Whereas co-production would resemble strategic planning (Albrechts 2006, 2013), co-evolution resembles a much more reciprocal adaptive planning (Davis, 2006; Sengupta, Rauws, & de Roo, 2016).

From that co-evolutionary perspective, the actor-relational approach of planning grew and evolved towards an interactive system between leading actors and factors of importance within evolving institutional settings (Boelens 2018, 2019; see also further on)

Theoretical backgrounds

The actor-relational approach of planning, however, is not a fixed action, mantra, or methodology. Instead, it is an attitude which (co-)evolves depending on specific themes, new insights, and alternating surroundings. Thus the actor-relational approach builds up, adds, penetrates, and even irritates other planning approaches that are grounded on multiple evolving theories, epistemologies, and even ontologies—and vice versa.

ACTOR

Starting from communicative, regime, and collaborative theories, a match was soon made with Actor-Network-Theories (ANT), since ANT focused on actors: humans and things alike, together known as ‘actants’. Major ideas derived from ANT are that actors act in a surrounding of other (latent) actors; actors continuously and reciprocally send and receive, thus actors act within a network. These actor-networks (or better: *actant-networks*, explicitly including non-human actors) are not fixed. They change, so the receiver can become a sender and vice versa, and other actors can come in or leave, transforming or ‘translating’ from one phase to another. In classical terms, Callon (1986) has distinguished four of those phases: *problematization* (when a problem or challenge comes up and is defined), *interessement* (where the problem or challenge becomes shared by others), *enrolment* (when ideas for solutions arise and a structure evolves to cope with them) and *mobilization of allies* (when a communal solution for all interests is chosen and put into a shared strategy, rule, or organization). In more social, or rather eco-political terms, Latour (2005) distinguished more or less similar phases some 20 years later: ‘*wonderment – consultation – hierarchy – institutionalization*’. For planning, each of these translations identifies various techniques and/or steps to mediate actant networks around “matters of concern”, that is gatherings of ideas, forces, players, and arenas in which ‘things’ and issues, come to be and to persist (Latour, 2005). In doing so, planners could act as *intermediaries* (moving information from the one to the other) or as *mediators* (mediating between the various interests of specific sectors (dealt with as actant-networks)). The actor-relational approach of planning has even made these actant-network theories operational, by introducing seven interactive and interchangeable steps (see Figure 1.1). Even more, referring to Deleuze and Guattari (1980) and Jean Hillier’s (2007, 2011) ‘*strategic navigation towards a speculative future*’, this approach contracts those steps into four kinds of decisive planning and mapping techniques, intended to bring about clear tipping points in the process (Sanders, 2009):

- *tracing actions*, exploring the potential of a site or planning challenge
- *mapping actions*, an educated matching of the potentials traced with possible actor networks
- *diagram actions*, following the transformations of actor networks and their influences
- *agency actions*, the binding of those moving actor networks, with laws, regulations, contracts, arrangements, etc.

These ideas stretch towards governance issues, while in our network society the willingness of one actor to act depends on the actions of another and another and so on, continuing in interaction. As such, the actor relational approach builds relations between theories, even when such relations might make theoretical diehards frown. One example of this is connectivity, defined in the differential system theory of Luhmann (1997). Although some would claim that actor-network theory couldn't be matched with such a system view on society, yet we would like to claim that systems could also be the *outcomes* of actor networking where context and identity, as well as elements and structure, reciprocally shape one another. According to Luhmann (1990), there is no such thing as a harmonious society. There is no point in society from which society can be observed in its totality. This is congruent with our previous statement that society is more and more without an *apex* or *center*. As such, society has become simply too plural, a-linear, volatile, and therefore complex. Thus, differential system theory regards it as essential to approach the complex reality with a number of autonomous and distinct subsystems, like the economic system, the legal system, the system of science, education, art, mass media, etc. in which specific actants act within a specific network. These subsystems are operationally closed by reducing the complexity of the environment, according to the structure and the internal and self-defined (institutional) codes of that subsystem. However, that doesn't mean that modern society would be highly fragmented in various distinct subsystems. On the contrary, the differential system theory regards reality as highly relational (Luhman 1997). Whereas context shapes identity, elements shape structure reciprocally the other way around; both realms of reality (system and context) are to be considered the outcome of transformations, and the starting point for new ones (Pottage, 1998). This would mean that each subsystem reflects on other subsystems, just like the economic system would respond to changes in the political system, law on morality, and mass-media on innovations in art. Moreover, subsystems can also interpenetrate other subsystems with their own codes and self-references, and they can also irritate them by making pronouncements or innovations, which need to be incorporated in those other subsystems in order to survive (Arnoldi, 2001).

We recall this more prominently in issues where a planning transition is needed, for instance regarding floods, climate change, service mobility, or energy transition. In order to be successful, planning could only intervene within these reciprocal (sub)systems of actors, laws, and factors of importance by subtle tactics and precise acupuncture to match these 'interests' or 'behaviours' in a

more resilient way (Lerner, 2014). Thus, struggling with climate change would be dealing with a complex adaptive system (see elsewhere in this book). Ideas about flood justice in Flanders, objections to evolving real estate shopping malls in urban peripheries, or objections to top-down infrastructure projects, would need a planner's role to irritate driving (sub)systems from within (again elsewhere in this book). They could move matters of fact to matters of concern as gatherings where new ideas and opinions could come in addressing things such as urban health or citizen's science. Even more, studying upcoming forms of urban do-it-yourself, (co-)housing, business improvement districts, temporary refill initiatives and the like, we discovered the potential self-organizing force of a multitude of actors. Here planners could try to create agency amongst citizens themselves to get a voice or even literally to survive (see also elsewhere in this book). Thus ANT opened up an ever-widening horizon of new insights, methods, and operationalization of the actor-relational planning approach of which the corners are still not fully explored.

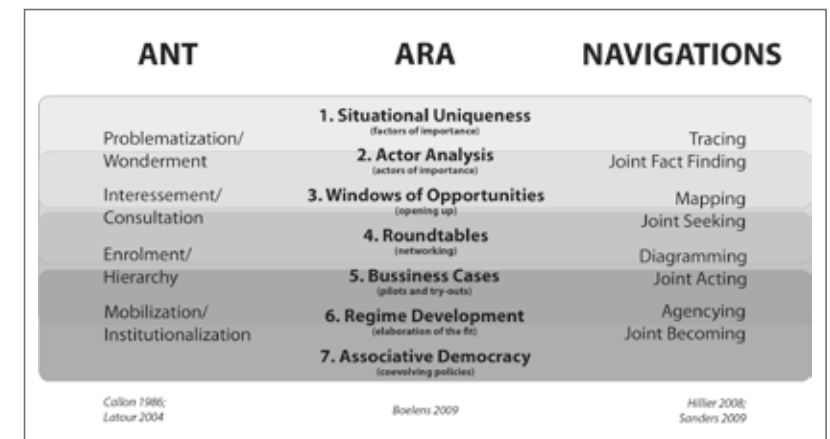


Figure 1.1: The seven steps in the actor-relational approach

RELATIONAL

The second strand of theories, which added up to the actor-relational approach to planning, contains post-structuralism and the idea of relational space. Post-structural theorists predominantly criticise structural theories for focussing too much on the truths underlying apparent features, trying to give these a specific and structured meaning, as a kind of absolute, inherent quality

(Smith, 2001). According to structuralists, a core feature in one place will have the same meaning in another place, as seen throughout history and projected into the near future. These structuralistic features have been and still are mainstream in planning, since jurisprudence is regarded as a core foundation of planning law and property rights—the so-called ‘hard planning’ as opposed to ‘soft planning’ (Faludi, 2010). In a similar way planners have become accustomed to starting from notions such as the good or just society, general wellbeing, the public interest, and subsequent strategic and even instrumental perspectives on space and time; thereby ‘interpenetrating’ the ‘soft planning’ from within. Each of these notions can easily be questioned and criticised, since what is good or just depends very much on time and place, or even the specific problem at hand. The same goes for the general wellbeing of a plural society, and for instruments, which could have different meanings or goals in different planning contexts. Post-structural theories therefore question the absolute valuations of these features. They are convinced that structuralistic approaches overlook the multiple meanings and modes of identification that emerge over time and within a certain place, depending on the various relationships with other features and meanings, and depending on their specific contexts (Belsey, 2002). An object inside or outside a museum for instance could be appreciated differently, although it might be the same object (see for instance Cultural Tourism: Bidet Museum, De Koninck N.V. 2002, Figure 1.2). In addition, a painting could have added value and esteem through time. Meaning would therefore not be intrinsic to the subject or space and time itself, but always relational: it receives meaning from the context in which it is located, and it influences that context in return.



Figure 1.2: The Bidet Museum (source: Guillaume Bijl, De Koninck N.V., 2002)

Following these post-structuralist ideas, Murdoch (2006) distinguishes *topography* from *topology*. While topography focuses on the detailed analyses or description of particular places, to mark them as different from other places, topology focuses on the relations between those places (*the hardware*), their specific uses over time (*the software*), and how they are organized (*the orgware*) to understand their quality or efficiency. In topology, therefore, the volatile and changing interactions between relations would define the identity of a place and would therefore enable studying the processes of spatial emergence. To give an example, most of us would agree that a station is not only a place, but also a node in a network. It is relational in the sense that the frequency of the train stops and the other stations in the network would define the potentials of the node in order to be complementary and serve as a part of an integrated network. Nevertheless, the station is also an actual place where people go to take the train, to stroll, or to use the amenities and services there, especially when it is a bigger or elaborated upon station. As such, the place would be used (and organised) differently in the morning, during the night, on working days, or during the weekends. A station is relational not only in space, but also in time. It is congruent with the turbulent nature of space-time and the social processes and practices that lead some places to flourish and others to die out. In general, there is a need for a local buzz in global networks (Markusen, 1996), to characterize the most prominent and successful places of our times.



Figure 1.3: A proposal for an Airport University, as an example of local buzz in global pipelines (source: Urban Unlimited, 2005)

Although such a local buzz in global networks would presuppose both topography and topology, as the buzz would both come from inside and outside its network, it is predominantly the (inter)relation between the two that would define the meaning of a specific place. Crucial for relational theorists, therefore, is that we should try to move beyond what they call ‘contained spaces’, which are confined for specific predetermined action (e.g. zoning). Instead we have to conceptualize space as ‘socially produced sets of manifolds’ (Crang & Thrift, 2000) to include not only the topography of space itself, but also the specific soft- and orgware changing over time. In this way, planning concepts must be seen as indefinite; ‘they must be open, adaptive and fluid, and their main purpose would be to *resonate* with changing circumstances and needs, instead of to *represent*’ a specific purpose (Thrift, 1996). As such these relational thoughts open a myriad of new ideas and possibilities of how to deal with actual planning issues.

In this book we will give examples about the (re-)clustering of peripheral retail on better (multimodal) connected nodes, to enhance the buzz of a location and make more revenue with fewer spatial burdens and traffic jams/accidents. But we will also present a dissertation about city-harbours, to enhance the mutual socio-economic benefits and added (environmental) value of the research and planning of structural, tactical, and strategic relational couplings between the maritime and urban economy. In connection with the differential system theory explained above, harbors can also be regarded as a specific subsystem with its own maritime codes, leading actors, and things like cranes, infrastructures, ships and the like—just as the adjoining cities next door could be regarded as such a subsystem with its own codes of conduct (meaning institutions), leading actors (mayors, businessmen, leaders of citizens groups, etc.) or factors of importance (geography, infrastructure, accessibility, brand). Moreover, each of these elements not only (re)constitute each other in their subsystems, but could also interpenetrate or irritate other elementary subsystems, which in turn would have to assimilate or innovate. Therefore a complex web of interrelations evolves between various leading actors, factors of importance, and codes of conduct, as well as within and between subsystems.

The same goes for Airport-City networks as presented in this book. Here we become aware that evolving techniques (e.g. sound measuring systems) or legislation (e.g. with regard to nitrogen levels) could have a major effect on the subject itself, but especially on the complex web of interrelations and the dynamic (de)couplings within. Nevertheless, this complex web can be

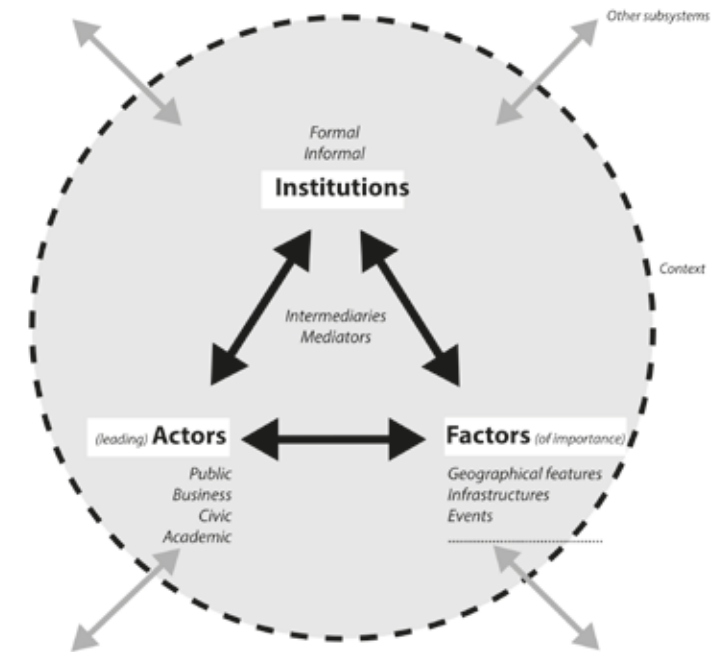


Figure 1.4: Scheme of an actor-relational subsystem

unraveled through an actor-relational differential system approach. Moreover, this approach shows where planning can be engaged 1) at the level of actors, factors, or institutional innovations themselves, 2) at the level of the interrelations between those elements within a specific subsystem (for instance harbors), or 3) at the level of the interaction between the subsystems (for instance harbors and cities). The same goes for planning urban networks (see also Alagic further on), the evolution of industrial districts (see also Gong further on), the interrelation between transport and land use (see Basheer further on), or interactions of subsystems in the housing market (see also Loris further on). Instead of molding planning issues within a preset confined platform for action, it could be better suited as an integrated part with what it resembles—real life. But that would also mean it would become more and more complex as well. Nevertheless, there are various ‘levels’ of complexity, and therefore several ‘levels’ of planning, depending on the object and subjects at hand. The most dynamic, volatile, and wicked would probably be the top-left corner, dealing with highly fuzzy objects and plural and volatile subjects (see Figure 1.5).

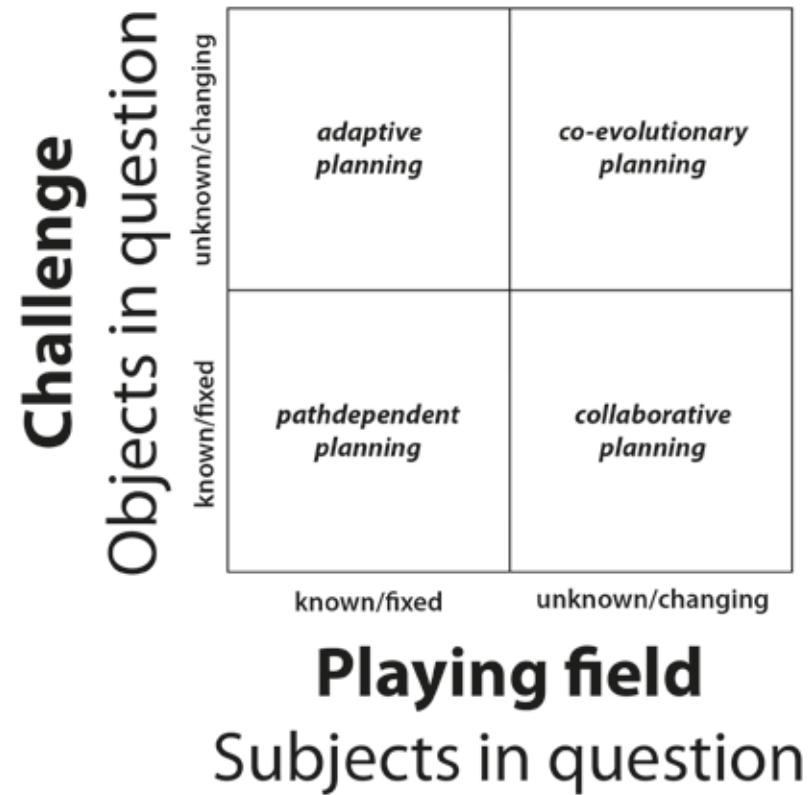
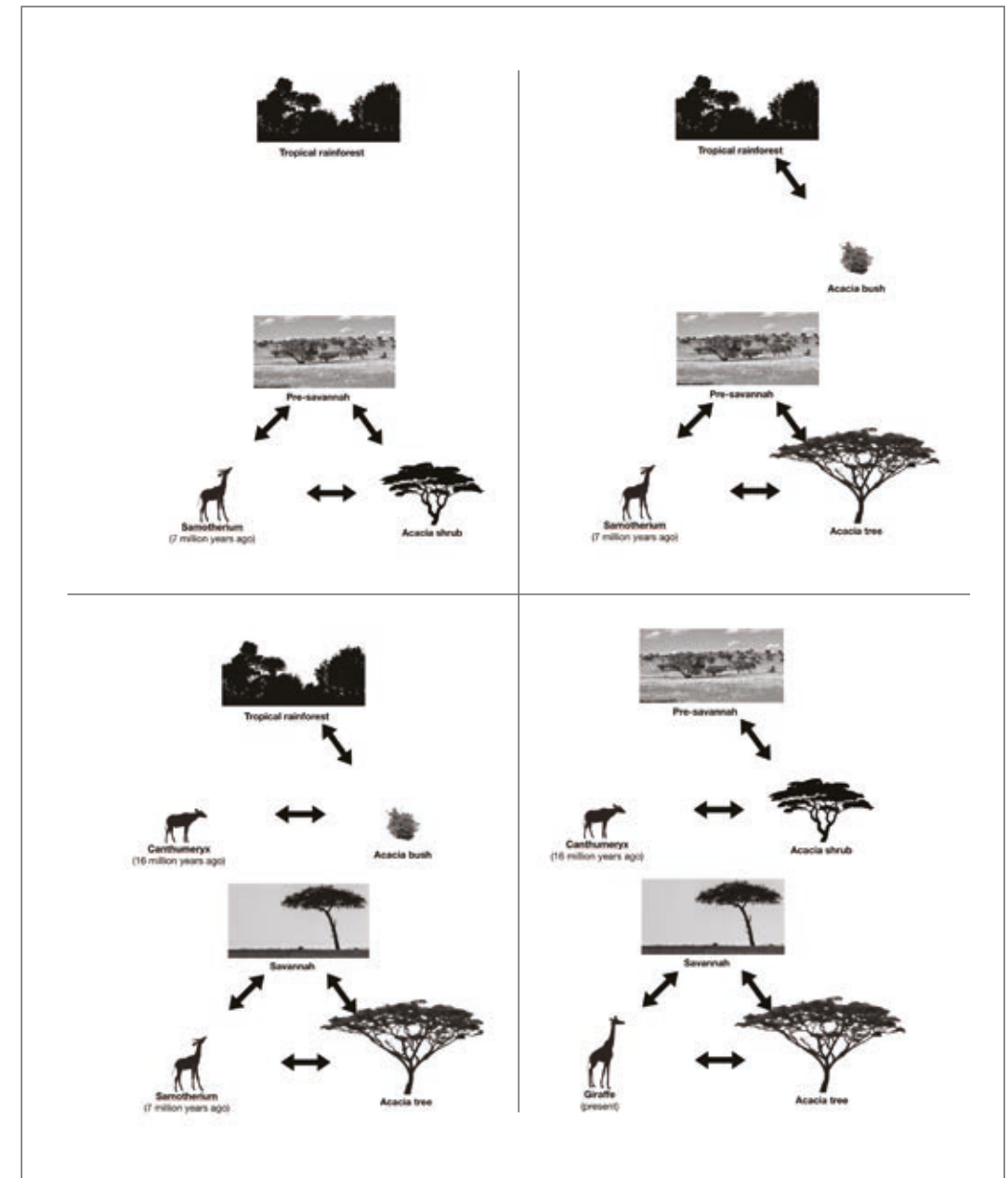


Figure 1.5: Four planning attitudes towards ranges of wicked problems

APPROACH

With regard to the third strand and connected to the above, time and again the actor relational approach turned on its steps and rethought preliminary ideas with regard to actor-networks in complex adaptive differential systems and the justifications of planners to intervene in these evolving interrelations. Some of these were the notions on resilience and co-evolution. While generalized Darwinism shows us a one-dimensional progress from inheritance, survival of the fittest, natural selection, and variation (Darwin, 1859), co-evolution is driven by similar, but multifaceted forces. It is not only about the natural evolution of a specific specie, but more about the co-evolution between various species which interact, and in turn change the environment of those



Figures 1.6: Co-evolution of the canthumeryx – acacia bush – tropical rainforest

species and therefore the context for other species to come in or die out, which in turn etc..... until some kind of new equilibrium is created, which could be disturbed again by unexpected forces from outside or within (Ehrlich & Raven, 1964; Barkow, 2006; Gerrits & Teisman, 2012). This coincides with the ideas of co-evolutionary resilience, which goes beyond engineering (stay balanced with all technical means at hand) and/or ecologic resilience (use the natural force and specific landscape to balance out). Co-evolutionary resilience tries to continuously evolve towards a state of tuned affairs between a multifaceted and a volatile set of forces, how durable or short that might be (see also Tempels & Davids hereafter). This is the optimum state of complex adaptive systems, wherein every solution for wicked problems poses its own problem(s) or challenge(s). Planning could try to intervene from the three levels mentioned above, but it always has complex adaptations tuned into this kind of co-evolutionary manner.

Therewith the approach in itself was fundamentally open to various ideas and theories, in order to be inspired by them, and interpenetrate or irritate them in return. According to post-structural ontology, its approach welcomes ontological difference, remains open to possibilities of surprise, and refuses to reduce features into fixed identities, whether yesterday, now, or tomorrow, prefixed or dynamically. The approach is essentially flat. It rejects any prefixed theoretical frame or epistemology, which should be better or more elaborated on to understand governance, society, or the world. In that respect, the aforementioned 'ideas' could be better regarded as composed methodologies, rather than as a theoretical framework.

This flatness of being is embodied in two fundamental claims (Bryant, 2011). First, and contrary to the dominant philosophy since Kant, with its focus on the interaction between humans and the world, a flat ontology doesn't make any pre-given difference between object and subject, nature and culture, hases and have-nots, etc. That doesn't mean that everything has suddenly become equal, yet that everything nonetheless 'equally exists' (Harman, 2005). Instead and according to the relational turn mentioned before, the focus would therefore be put on the specific interactions between object-subject, nature-culture, hases-have-nots, etc., and therefore would be specific to the situational networks instead of the particles themselves. Non-equality is not the essence of a feature, but the outcome of networks. However, contrary to Latour (2005), one should not focus on following the actors, but on following the networks instead (Boelens, 2011). Second, a flat ontology claims that the world or universe doesn't exist. There

is no such thing as a super-object, a super-container, or super-space within or whereon we act. Instead that object, container and/or space is dependent upon, and the reciprocal result of our actions. Therefore, there is not a world, but rather only specific actor-networks or logics of worlds (Badiou, 2013). Moreover, each of these 'worlds' would dynamically and situationally relate to other worlds, making the idea of a world as an organic and harmonious unit highly obsolete. Rather the world, context, or environment alike should be regarded as a volatile, dynamic, and multiple composition of being in assemblages of highly temporal or more or less structural couplings.

These features of a flat ontology would therefore also strike the two core principles of modern planning: i.e. holism and its social engagement. Elements wouldn't add up (let alone to more than its sum) and the planning of the sociality wouldn't make sense, but only the planning of heterogeneous associations. Instead of vivaciously striving for a harmonious point on the horizon, planning would become the down-to-earth networking of real survival.

A flat perspective on a flat metropolis

For the actor-relational approach, the three strands mentioned above (actor-network theory, relational planning, and co-evolutionary flatness) would constitute a new perspective on spatial planning, meaning that planning would get a horizontal perspective on society, instead of a vertical one. It moves beyond any prior, static, and pre-given categories, but would remain open to any specific circumstances in time and place and all (possibly moving or changing) interpretations of those. This would happen despite the fact that such a horizontal perspective already received fierce critique that it would ignore the mechanisms of causality (Stinchcombe, 1968; Smith-Doerr & Powell, 2005; Van den Berghe, 2018) or that it would also deny the importance and even existence of power and scale (Jones, Woodward, & Marston, 2007; Leitner & Miller, 2007; Brassier, 2007). Nevertheless, these critiques or proposals ignore the fact that this would swing us back to the age-old structuralistic approach, with its search for the ultimate center or truth, and its distinction between most prominent underlying and less prominent surface features. They ignore the fact that causality could also move flatly and horizontally between sender and receiver, or in horizontal networking of leading actors, factors of importance, and formal/informal institutional settings in an ongoing undefined becoming (see also the similarities and dissimilarities of Dutch en Belgian planning elsewhere in this

book). Moreover, power could also not be regarded as a pre-given hierarchy between governments and governed, or haves and have-nots, but rather as a relational set of doctrines (thus networks) between the powerful and powerless, which are never fixed, but always have to be reproduced *in actu* (cf. Poulantzas, 1978; Foucault, 1975; Jessop, 2008). Power relations could not only change, but also need not to be accepted as such, while context and interactions could be actively irritated or even interpenetrated to refocus those relations itself. Therefore power is not to be regarded as a cause, but rather as an effect of heterogeneous actor-networks (Latour, 1986).

The same goes for the notion of scale, since scale is very much dependent on the object of interest itself (e.g. housing, commuting, economy), like the perspective of the involved actors (e.g. estate agent versus home owner; employer versus employee; transnational corporation versus local firm, etc.). Scale is highly relational (see also Loris and Alagic elsewhere in this book), and could have many forms depending on the focus of the object and subject. Thus focus subject and object matters. Even more, the specific relations between object and subject become quintessential for the definition of the most comfortable geographic level to deal with. This of course can also change over time. Moreover, through this relational, 'horizontal' approach one can even deal with the emergences of multi-level governance.

Against this backdrop, and in reference to Basilico & Boeri (1997), Sieverts (2005), Secchi & Viganò (2011) and Dehaene (2012), the actor-relational approach has introduced the term horizontal metropolis, not so much in spatial or geographical terms, but again and especially in ideo-ontological, socio-economic and eco-political terms. The horizontal metropolis goes beyond any pre-given statements or prejudices that (in any case) compact cities are better than sprawl, that a scenic landscape would appeal in a better way to our needs than a chaotic or fuzzy one, that we would need landsparing instead of landsharing, and so on (Boelens, 2013). Instead a horizontal metropolis would rather deal with what there is and reconfigure those existent actor-networks towards new and possibly more co-evolutionary resilient arrangements. For example, through history deltas seem to be particularly leavened by this condition. Confronted with the ever changing conditions of tide, walking dunes, shifting river courses, raids, disappearing and subsequently reappearing urban settlements, etc. (Boelens & Taverne, 2012) men have always tried to survive through co-evolutionary processes of multifaceted and thus complex adaptive interactions with the always changing contexts of wind, water, and soil. Only

in recent times, since the Age of Enlightenment, one could have thought to finally overcome these obstacles in deltas through rational planning, only to be confronted with the impacts of climate change and the current plural and self-esteemed society which would finally make that kind of planning obsolete (see also the similarities and dissimilarities of the Belgian and Dutch planning further on).

From 2012 onward, this has been the central focus of the Centre of Mobility and Spatial Planning of Ghent University: a plea for an actor-relational flat approach for a horizontal metropolis (Boelens, 2013). This approach started from the three theoretical strands mentioned before, and tried to add, mould, and adapt these strands with new insights along the way. Here academic experiments and the educational programme proved to be quintessential, since peer reviews and critiques of colleague teachers and students massively contributed to the co-evolving ontologies. Moreover, within the Master Studios and Advanced Topics, scientific research and scholarly education were regarded as flat or horizontal: teachers helping students to grasp a better understanding of the delta metropolises or students bringing the teachers back to the ground. Both were applying theories in practice, making abstract theories more practical. This interrelational, multi-dimensional quest is still not finished, but is in an ongoing process of an undefined co-evolutionary state of becoming. Therewith this book is just a snapshot of that ongoing development, beyond even the initial actors themselves.

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INTRODUCTION

Planning the Low Countries: Understanding the similarities within dissimilarities

LUUK BOELENS & ANN PISMAN

A false start

Comparing Belgian planning with that of the Netherlands often starts off on the wrong foot. Fed by its achievements since WWII and further strengthened by planning theorists (see among others Faludi & Van der Valk 1994), the Netherlands is often regarded as a real ‘planning paradise’, while planning in Belgium would be considered the opposite; i.e. no ‘rule and order’, resulting in an ugly country with a highly dispersed urban sprawl (Braem, 1968). Although the article of Faludi & Van der Valk has already been criticized several times as highly misplaced (Korthals-Altes, 2006; Boelens, 2009; Moroni, 2015), this Dutch hauteur seems nevertheless persistent. It is even often used by the planning politicians themselves when they want to dispose of unwanted decisions: ‘we don’t need Belgian circumstances’ (e.g. the socio-democratic minister Caroline Cramer with regard to the proposed ‘relaxation of building permits’ in 2009; Dutch parliament against the plan of the liberal minister Melanie Schultz to open up building in some designated areas on the Dutch coastline in 2016). Nevertheless, it is also fed by the Belgian planners themselves when they speak in embarrassment about the ongoing Belgian sprawl and ribbon developments, or put forward unmaturing Dutch plan experiments as being worthwhile to pursue (see also elsewhere in this book). Nevertheless, the first NASA pictures by night, released from the early 2000s onwards, also present a regionally composed delta-area, which although in detail appears dissimilar, is also highly similar: a horizontal metropolis of small and medium sized cities dispersed over the countryside.

This 'horizontal structure' goes back to (pre-)medieval times, which despite ever changing borders of counties, duchies, republics or kingdoms, shows a (re) structured urban layout throughout the ages. It has even been mapped over time. A prominent example is the map of Frans Hogenberg (*De Leone Belgico* 1583), published in not so much a geographical, but rather a historic journalistic record of the revolt against Spain, by the Austrian historian Michael Aitsinger. The map in this first Eurodelta account symbolized the mutiny of several parts of current day Belgium, Netherlands, Luxembourg, and northern France in the shape of a lion, occurring in the coats of arms of 10 of the 17 revolting counties¹, as well as in those of William of Orange, the leader of the revolt. But other maps are included in the collection of 275 highly detailed topographical records of the so-called Austrian Netherlands, which were established between 1771 and 1778 under the leadership of Joseph de Ferraris, general of the Austrian artillery and field marshal in the southern Low Countries. In the northern part, General Cornelis Krayenhoff followed his example and made a similar portfolio of 16 detailed maps of the Dutch Republic, published between 1809 and 1823.



Figure 2.1: De Ferraris – detail Antwerp 1771-1778.

¹ Brabant, Flanders, Frisia, Guelders, Hainaut, Holland, Limburg, Luxembourg, Namur and Zeeland.

Both atlases represent a major period in each of the Low Countries' developments, since they both mapped in detail the area just before the end of the Ancien Régime, at the start of the Industrial Revolution. Although at the time, during the Napoleonic Empire (1794-1815) and the subsequent Kingdom of the Netherlands (1815-1830/1839), both parts of the Eurodelta were united in a short interbellum, this didn't result in a coherent vision about the spatial developments in the area. This took until September 1944, when a new intergovernmental cooperation was established in London by the respective governments in exile, first as a custom union for the post-war period, but later on as an economic union, and a loose cooperation with regard to justice, exterior affairs, and environmental developments. The latter resulted in the first overall spatial structure sketch of the Benelux countries (1986) and a decade later into a second one (1996). However, both documents have hardly influenced the spatial policies in the respective countries, partly due to the lack of concrete actions and project-oriented agreements, but predominantly due to the differences in mental maps and a communal story line (Zonneveld, 1997). Thus, the question remains of what has caused these peculiar dissimilarities within similarities.



Figure 2.2: Krayenhoff – detail Amsterdam 1809-1823.



Figure 2.3: The first Benelux structure sketch 1986 (source: Zonneveld in Bosma et al. *De regio van de stad* 1, 1997)

Methodology

To answer this question, we have followed the co-evolutionary scheme of the actor-relational approach (Boelens 2018, see Figure 1.4). Above we have roughly outlined a cartographic *institutional* history of (dis)similarities within the Low Countries, as a regular way of performing historiography. In this case, it shows an opportunistic process of repulsing and attracting institutional forces, whereby each part wants to uphold its petty cultural identity, but also acknowledges the need for cooperation if external forces give cause for it. It marked a kind of competitive collaborative (comcol) mentality (Boelens & Taverne 2012). And indeed small urban forces (or at its best those of small counties or duchies) were and are from the outset the main forces for economic and political en socio-cultural progress in this Eurodelta area.² However, in order to move beyond these apparent, more or less generic insights, we have to become aware that these institutional transitions hardly come from within. In general, they are interpenetrated or irritated from the outside-in by changing circumstances (factors of importance) or conscious and engaged (human) actors, often operating from different mental maps or lines of progress. Through those factors and actors of importance, institutions have and could evolve, enlarge, and combine with other areas of concern, which in turn would impact the (number or focus of) the actors involved, or the progress of things, in an affirming or restrictive manner. Actors, factors, and institutions in specific spatio-temporal situations therewith (re)constitute each other in their surrounding(s). To that effect, this small historic discourse of the (dis)similarities in the Eurodelta could serve as a first outline for a better understanding of the peculiar similarities within dissimilarities in this area.

² Take for instance Belgium/Flanders where major decisions on the regional level are regularly dependent on the voluntary support of the 300 municipalities in Flanders with 22,000 inhabitants; or the Netherlands where the interests of the G4 and G40 mid-sized urban nodes are usually echoed in policies on the provincial and national level.

A moral geography takes the lead

Initially, the first human developments in the Eurodelta were determined by its geography and environmental circumstances. As is well known, large parts of the Eurodelta (especially the estuaries of current West Flanders, Zeeland, Brabant, Holland, Utrecht, Friesland, and Groningen) are below sea level and have traditionally been regularly flooded by the sea and by its alternating sea-arms and rivers. This was a major restrictive *factor* for cultivation. Therefore, initial settlement patterns arose predominantly on the higher Pleistocene grounds, especially in the southern part of the Eurodelta. However, when the frequently flooded areas were dried up, these offered the most fertile lands for agriculture and trade. As such, continuous attempts have been made to tame

the water and experiment with first agricultural and then urban communities in the more demanding estuaries. The first inhabitants had to adapt themselves to the enduring changing natural circumstances as well as raids from the sea and rivers. But by the happily coinciding circumstances of the ambitions of the aspiring new Flemish graves, with enterprising monasteries and free-spirited serfs (who served as *leading actors* in this case), man was able to create more long-lasting dry oases in these estuaries. At first this was done through improvements in the drainage of the coastal areas of current North-West France and South-West Flanders; the so-called '*Waterings*' in Dutch, from the 10th century A.D. onwards. As a result of their success, these Waterings quickly evolved northwards into fully-fledged '*Waterboards*' and polders (Boelens, 2018). These Waterboards even became *institutionalised* organizations of several farmers, who voluntarily cooperated with regard to the construction and maintenance of dykes and water management systems, under the aegis of the respective local governors and under the lead of a periodically self-chosen *primus inter pares*: the so-called dyke-sheriffs ('*dijkgraven*' in Dutch). The surplus of food production resulted in small settlements of peddlers, who developed themselves into successful merchants and artisans through their networks³ with colleagues overseas. After the previous Waterings/Waterboards, they became the following new *leading actors* in medieval times. The Waterings and Water-



Figure 2.4: The moral geography of the Eurodelta

³ For instance, the Hanseatic City-network or the City-state networks of Genoa and Florence.

⁴ Verenigde Oost-indische Compagnie, West-Indische Compagnie and Middelburgsche Commercie Compagnie in Dutch.

boards were regarded as so successful that their institutionalized (self)organization served as a model for the *institutionalisation* of other evolving social and public bodies in the Eurodelta too, such as the municipalities themselves, trade organizations, agricultural cooperatives, protestant denominations, and later on even housing cooperatives, welfare organizations, and the like. In fact, the geographical conditions of the Eurodelta served as what the British historian Simon Schama (1995) called a '*moral geography*': a state of affairs where the landscape becomes imposed on by human actions itself. This phenomenon was not restricted to a specific count or duchy but spread across the entire territory of the Low Countries.

The railway split

This situation of highly similar landscapes changed for the first time due to the rise of industrialisation (with its generic 24-hour clock time and networked spaces; Boelens, 1996; Castells, 1998). Industrialisation started from the end of the 18th century onwards, first in England, then in Germany, and afterwards in the southern ranges of the Eurodelta. Initially the administration of the entrepreneurial King William I of the United Kingdom of the Netherlands (1813-1830/1839) focussed on the artisans and the trade assets of the pre-Napoleonic period, predominantly by digging new waterways to regain economic growth. The northern parts of the Low Countries still lingered path-dependently on the original economic successes of the VOC, WIC, and MCC⁴ during its Golden Age of the 17th century. In contrast, even during the Belgian independence process (between 1830-1839), the new Belgian administration put all its cards on industrialisation, including a massive extension of its railway network. In 1834, the young and aspiring *Belgian parliament* boldly decided to construct 380 km. of railway lines. One year later the first continental railway was opened between Brussels and Mechelen, thanks to pioneers such as Pierre Simons and Gustave de Ridder. By 1840 Ghent, Bruges, Ostend, Antwerp, and Leuven were connected to this first Brussels-Mechelen rail corridor. The lines towards Liège, Mons, and Kortrijk were soon to follow. Moreover in 1843, when the major North-South and East-West axes were complete, *private companies* were also allowed to use this network and construct their own rail systems in connection with this core network. Together with the massive modernisation of the *mining operations* in the Walloon coal basins, these railway policies were crucial for the industrialisation of the new Belgian country. As a result, by 1870 the Belgian state owned about 850 km. of rail lines, while private enterprises had



Figure 2.5: Density of rail between the Netherlands and Belgium

some 2,250 km. In order to create structure within this patchwork of railway track and railway services again, the rapidly extending railways were gradually nationalised, resulting in 5,000 km of state property and 300 km of private lines, which were at their height in 1912 (Van Der Hertten, Van Meerten, & Verburgt, 2001). In the meantime, the *National Society of Community Railways* (de 'Nationale Maatschappij van Buurtspoorwegen', NMVB in Dutch) was established in 1885 to open up the small villages and hamlets. By the end of the 19th century the NMVB operated some 4,000 km. and by 1945, when it was at its height, some 5,000 km. of lightrail (NMVB, 1981). Both heavy and light rail have made the Belgian rail network by far the densest in the world.

In comparison, the evolution of the rail network and (subsequent) industrialisation went in the northern Low Countries at a much slower pace. This was next to the path-dependencies of the administration of King William I mentioned above, also partly due to the mostly private-led construction of railways in the 19th century. Although the first rail line opened in 1839 between Amsterdam and Haarlem by the private *Holland Railway Company* (Hollandische IJzeren Spoorweg Maatschappij, HIJSM in Dutch), by 1880 the Dutch track length was not even half of that of Belgium, with a peak of around 3,000 km. in 1945. Moreover, at the time there were still four railway companies (*one public and three private*) operational in the northern Eurodelta, that only started to cooperate from 1917 onwards, step by step, under the umbrella interest group *Dutch Railways* ('Nederlandse Spoorwegen', NS in Dutch), until they merged into this association in 1938.

As a result, rail travel in the Northern Low Countries remained predominantly only accessible for the rich until WWII, while in the Southern part *the liberal and catholic party* collaborated to introduce cheap rail subscriptions from 1870 onwards. This was done so quickly and in such large numbers that it still hasn't met its equal elsewhere (Van Der Hertten, Van Meerten, & Verbeurgt, 2001). The reason for that was that the liberals wanted cheap labor, without bothering too much about housing and nourishment, since their workers could still cultivate land in the countryside next to the families' main industrial earnings. The Catholics wanted god-fearing villagers; and that was only possible if the workers came into contact as little as possible with socialist ideas in the industrial cities and continued to live in their villages under pastoral care and supervision. It marked the beginning of *Belgian state-subsidies* for individual households' mobility, which in fact still goes on today.⁵ As a result the major cities in Belgium were confronted much less with the consequences of the indus-

5 See for instance the discussion about company cars and the mobility budget in Flanders.

trial migration from the countryside as their Dutch counterparts were (see for instance Van der Woud 2010). The downfall was that the Belgian rural hamlets and villages grew much faster.

The housing split

Second, the similarities between the Dutch and the Flemish urban fabric changed significantly due to a so-called housing split. After successful socio-utopian examples in Woolwich, Chatham, and Lanark (since 1760), the *industrial workers* started to organise themselves in both the southern and northern parts of the Low Countries from the mid-19th century onwards. But partly as a result of the mobility split, their focus was completely different. Belgian workers mainly focused on cooperative food production, shops, welfare, and even culture and recreation (see for instance De Vooruit, 2013), whereas their Dutch colleagues predominantly focussed on cheap and good housing within the major cities. After similar examples in Arnhem (1851⁶) and The Hague (1854⁷), one of the first was the associative Building Society (*'De Bouwmaatschappij'* in Dutch), which was set up in Amsterdam in 1868. Its objective was to help workers to acquire their own home, using a system of contributions to collect enough start-up capital to develop projects that would then be rented out to members according to a waiting list, or a lottery system. The rental income earned would then be reinvested in other projects. Around the turn of the century there were some 40 such associations operational in the Netherlands (Kempen & Van Velzen, 1988). However, their output remained limited, with sometimes no more than a dozen dwellings. Faced with an increasing number of strikes during the crisis years of the 1890s and the entry of the *Social Democratic Workers Party (SDAP* in Dutch) into parliament after the elections of 1897, the government decided to pass a *Housing Law in 1901*, in which it started to experiment with more structural support for the first housing associations. Next to national funds, the municipal governments were encouraged to act as a financier and/or patron for co-operative housing associations to stimulate their social activities (Casciato, 1980). To be eligible for funding, the associations needed to meet a series of criteria for the hygiene of the dwelling, (over)population rates, periodic upgrades, rental rates, repayment requirements, maintenance, etc. Nevertheless, these conditions were still so attractive that around the 1920s some 1340 housing co-operations were operational in the Netherlands, often organized around local, religious, or ideological interests, and ranging from very small to very large organisations with thousands of dwellings in control. In the

6 Vereniging tot het verschaffen van geschikte woningen aan de arbeidende klasse.

7 Vereniging tot verbetering van de woningen van de arbeidende klasse.

meantime, in 1913, the Dutch government established an umbrella organization (*the National Housing Council*) to enhance cooperation and even fusions among these housing corporations. The Council urged the government to admit only those associations that served the social objectives to the upmost and not allow the smaller ones anymore. Although the rules were stricter, especially under the new Housing Law of 1921, the accredited Dutch housing corporations built more than 160,000 social dwellings until the start of the Second World War in 1940. As such, social dwellings represented nearly 15% of all building constructions in the Netherlands during that time (derived from databanks of CBS & NWR 2010).

In contrast, at the time, social housing in Belgium remained predominantly restricted to the National Law on Worker's Housing of 1889, which made it possible for private building societies to claim cheap funds from the governments' *General Savings and Annuity Funds (ASLK - Algemene Spaar- en Lijfrentekas* in Dutch). In this way some 300,000 social houses were built until the mid- 20th century, mainly individually terraced houses in the countryside. However, rents remained relatively high. Due to the devastation of the housing supply after the First World War, the government passed the Housing Law of 1919. As a result, the *National Society for Cheap Homes and Living Rooms (NMGWW - Nationale Maatschappij voor Goedkope Woningen en Woonvertrekken* in Dutch) was founded to build cheap rental homes for low-income households, with the help of cheap loans and technical assistance from the national government. Under this regime, and during the interwar period, over 60,000 social houses were built, although mainly near the industrial sites (Van Herck et al. 2016).

The Second World War proved to be an additional wedge in the housing policies of the northern and southern Low Countries. Due to the failing of *Operation Market Garden*, major parts of the Netherlands became the frontline of fighting for almost a year. As a result, the housing stock fell in the northern Low Countries by nearly 100,000 dwellings, and of the remaining stock, 41,000 were seriously damaged and 400,000 had suffered major damages. In total nearly 40% of the housing stock needed to be repaired or rebuilt. The first post-war (mainly *social democratic*) administrations thus declared the housing shortage 'the number one public enemy'. Given the scope of the problem, the *national government* even took a significant task in rebuilding. In its turn the national public servants appointed the existent *housing corporations* as the main executive organisations for this massive reconstruction programme, since

they had proven their skills in the pre-war period. However, in order to perform these tasks, the housing corporations had to leave their original ideological membership structure and needed to appoint newly built social houses on the basis of urgency, instead of local, religious, or political orientation. As a result, the housing corporations were professionalized and shifted from a self-organized communal system towards a landlord-tenant organization with a board and professionalized managers. Although the majority of post-war corporations presented this as a temporary measure, there were soon voices heard that this was in fact an ideal organization for an effective building industry. With the help of the corporations, the authorities proved to be very effective in raising housing construction to an unprecedented level; it was at its height in the beginning of the 1980s with around 120,000 each year, among which around 60% were social housing.

This was again completely different in Belgium. In the post-war years the mainly *christian-democratic administrations* marked social housing as an integrated part of a general housing policy that took shape in the context of the expansion of the welfare state. This housing policy was built on the basis of three laws—the *De Taeye Act (1948)*, the Brunfaut Act (1949) and the Slum Clearance Act (1953)—of which the first, made by the (Catholic) Alfred De Taeye,

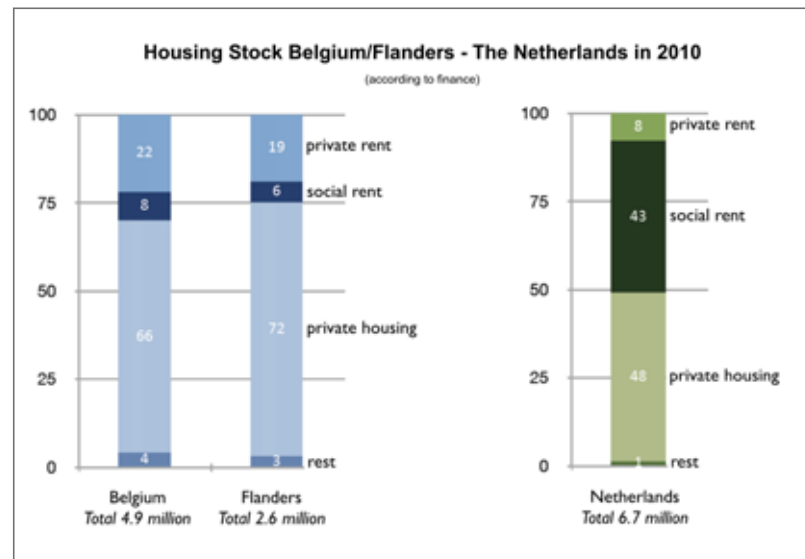


Figure 2.6: Comparison of Housing Stock in Belgium, Flanders and the Netherlands in 2010.

was undoubtedly the most influential. This law went back to or built upon the principals of the Housing Laws of 1889, revised by minister Romain Moyersoen in 1922, focusing on *substantial government premiums* for the acquisition of first homes, combined with cheap credit provisions from ASLK. The legislator tried to encourage as many families as possible to buy or build their own home, with hardly any requirements financially, ideologically, or spatially. The De Taeye Act also provided a *social purchase premium* for recognized construction companies, whereby—in addition to the Small Land Property companies (who by definition built owner-occupied homes)—the NMGWW developed an important activity in the area of homes for immediate sale. The policy focus in fact enhanced even further the massive acquisition of ownership of new single-family homes, also for social housing (Van Herck et al. 2016). Although its explicit purpose was to maintain social order and to boost the economy, the downside was that this housing policy led to the total fragmentation of the built-up landscape in Flanders, which was already affected by the local public transport system. In turn, in the Netherlands, the postwar entanglement of the interests between the government and housing corporations resulted in a more structured build up area by the end of the 20th century.

The economic split

A third reason why the Northern and Southern parts of the Low Countries developed into distinct directions is related to a so-called economic split. After the *fall of Antwerp in 1585*⁸, the northern parts entered the booming Golden Age, partially thanks to the welcomed new 135,000 migrants from Flanders⁹ and innovations in maritime transport. Contrarily, the southern parts entered a long period of stagnation or, at its best, slow growth. During almost 2.5 centuries the Belgian GDP per capita only grew some 40%, while that in the Netherlands grew with more than 240% (Maddison, 2003). Although the Dutch Republic suffered severe stagnations in the 18th century, too, by 1820 its economy was per capita some 40% larger than its southern counterpart. But this all changed from the 1830s onwards. In less than half a century, Belgium became an industrial superpower thanks to its thriving *steel, coal, and textile industries*. It then regained its early-medieval dominant position over the northern parts of the Eurodelta, since economic growth was no longer dependent on demography or migration but on productivity growth. Although the Netherlands tried to keep up from the end of the 19th century onwards, by 1910 the degree of industrialisation per capita in Belgium was almost double that of the Netherlands¹⁰. Furthermore,

- 8 For the Spanish, this was the crowning moment of a blessed military expedition which had begun six years previously.
- 9 Around 10-20% of the total respective Belgian and Dutch populations at the time and predominantly the most well-educated and economically well-to-do.
- 10 Some 51% against some 32%.

the prospects were in favor of the southern parts, since they had guaranteed themselves from 1885 onwards (first as a personal royal experiment and from 1909 onward as a more regular state colony) of a steady and cheap flow of raw materials out of *Congo*. Although progress fell back a bit due to the German occupations in the First World War and the subsequent economic looting by which the Belgians lost approximately 12% of their initial pre-war economic power (Kossmann, 1986), Belgium kept its dominant industrial position over the Netherlands, which still exists today. Nonetheless, something like ‘the law of the handicap of a head start’ (*De Wet van de remmende voorsprong* in Dutch, Romein, 1937) occurred here too. For instance, in the Netherlands around 1900, during the era of the so-called second industrial revolution, relatively new industries appeared such as margarine manufacture (Jurgens/Van den Bergh, the later *Unilver*), light bulbs (the *Philips* brothers), the petrol industry (Kessler/Deterding/Loudon, the later *Shell*) and others (see Wennekes, 1993), which still play a prominent role in present day global economy. Moreover, the divergent reactions to the agricultural crises of the end of the 19th century in both parts of the Eurodelta proved to be pivotal. Whereas Belgium sought its salvation in agricultural modernization through a complicated system of farmers’ guilds united in a federal Farmers Union (Boerenbond, in Dutch), that modernization in the Netherlands was achieved through a fairly sober system of area-oriented and sectoral agricultural corporations (Kossmann, 1986). This has led the Netherlands to a fairly high level of automated and efficient agricultural production, whereas it has led Belgium to more elaborated food process industries, under the aegis of (catholic) ‘guild masters’.

After the Second World War, these differences were only further strengthened. Since the free access to Antwerp was secured almost one year earlier than Rotterdam, *the allied forces* started to use this harbor as the main Gateway to Europe. This strengthened the further industrialization of Antwerp and its continental hinterland corridors, particularly along the Albertcanal which was finished in 1939, right before the outbreak of the War. Take, for instance, the automotive industry. Indeed Belgium could rejoice in an already extended breeding ground in this respect. Since before the First World War, due to its extensive metallurgic industries, Belgium counted almost 200 different car manufacturers, with renowned cars as the Minerva, Imperia, FN, Excelsior, Pipe, Germain, Nagant, and Métallurgique. But after the Second World War, and the subsequent Marshall program, *American car manufacturers* such as Chrysler, GM, and Ford further concentrated their continental production around their initial strongholds in the harbour of Antwerp, followed by Renault and even

Audi/Volkswagen in the Greater Brussels area, and during the 1960s Volvo in Ghent (Cabus, 2000). This further fuelled the political willingness to facilitate the automotive industry with improved infrastructure, financial solvency, and exposure. The Belgium *highway system* too became one of the densest in the world, *company cars* were subsidized, and the *Auto-salon* in Brussels became a prominent feature to enhance further purchase among the Belgian population. In addition, and in gratitude for the delivery of Congolese uranium for the US nuclear program during the war, the Americans invested in the *Centre d'étude de l'énergie nucléaire (SCK-CEN)*, one of the first continental nuclear research centres along the so-called Iron Rhine Railway (*Ijzeren Rijn*) Corridor. This enhanced further (fine-)chemical and pharmaceutical activities in Antwerp, De Kempen, and around Brussels (Puttemans, 2000). Moreover and after hosting the headquarters of the first intergovernmental organisation Benelux after the war, in 1958 Brussels won the competition against The Hague, Strasbourg, and Luxembourg to host the headquarters of the newly established *European Economic Community (EEC)*, with its initial member-states Belgium, Italy, France, Luxembourg, the Netherlands, and West-Germany. Although Brussels was declared winner after two voting rounds due to its innovative public-private bid, after severe objections from the president of France, the involved heads of state decided opportunistically to provisionally spread the location of the EC and Parliament over two cities (Brussels and Strasbourg) for the time being (Boelens & Taverne, 2012). Despite severe protests of the European parliamentarians, civil servants, and voters themselves, this situation still lingers today. But in addition, and due partially to the retreat of president De Gaulle from NATO, its headquarters moved from Paris to Brussels in 1967, making Brussels the indisputable administrative intergovernmental capital in the Cold War era of the continent. Without saying, this has made Brussels the main office centre in the Eurodelta, despite the present prime service economy of the Netherlands.

However, in comparison, the Netherlands also showed unprecedented growth rates in the postwar era of on average 4.2% in the 1950s and 5.5% in the 1960s, due to the extensive outward investment strategies of Dutch companies, the *Wirtschaftswunder* of Germany and the low wage policies of subsequent postwar administrations. Nevertheless, the *two oil crises* of the 1970s hit the Dutch economy hard, more than in Belgium. Whereas major industries went broke (for instance the coal mining, textile, metallurgic, and shipbuilding industries), the Belgium state tried to financially support distressed companies to uphold labor rates. This resulted in a doubling of the Belgian national debt

in less than 10 years. Moreover, and especially after the *second state reform in 1980*, the three regions each went economically more and more in separate ways. Flanders and Wallonia path-dependently still promoted their strong (respectively light or heavy) industrial bases, while Brussels pushed mainly its (inter)national strongholds in service. This divergence of interests (and political inability to cooperate) has become a major reason why Belgium still falls behind in attracting Foreign Direct Investments (ESPON, 2018). In contrast and especially from the mid-1980s onwards the Dutch administrations turned more decisively towards the new prospects of the global *neoliberalisation* trends, though 'translated' into a Dutch version with its age-old '*polder tradition*' of negotiations between employers, employees, and the public sector. Since then,



Figure 2.7: Economic-Geographic comparison The Netherlands-Belgium

there have periodically been ups and downs due to the internet bubble of the 2000s, the financial crises of the 2008/09s and the subsequent Euro-crises. But this has also resulted in a more or less steady growth of on average around 1.5% in the 2000s and around 1.0% in the 2010s, combined with a relatively low national deficit, inflation, and unemployment rate. At the moment there is a situation of relatively low national debt and low household savings in the Netherlands¹¹, whereas in Belgium it is exactly the opposite: high national debts and high individual household savings, due to the high rates of self-build single-family homes.

These divergent developments have also resulted in major economic-geographic differences across the four economic sectors. As regards the first sector, *agriculture*, the labor rate is more or less the same; in Belgium it is even slightly higher than in the Netherlands (1.3 instead of 1.2%, excluding the food processing industries). But its relative contribution to the national GDP and its added value is less than half of that of the Netherlands (retrieved from www.indexmundi.com). The downside is that the Dutch agricultural sector (with its re-allotments, horticulture under class, massive cattle breeding, chicken farms, etc.) has acquired a strong industrial appearance, whereas that of Belgium still seems to preserve its original mixed farming. However, due to the structural agricultural changes at the beginning of the 20th century (as mentioned before), the share of the food industry in rural areas in Belgium is twice as big as its northern counterpart (retrieved from agridata.ec.europa.eu).

With regard to the second sector, on average the rate of *industrial areas* in Flanders is almost 10 ha./capita, whereas in the Netherlands it is only half of that (that is some 5 ha./capita) (data banks from Flanders Region and the Statistical Bureau of the Netherlands). Nevertheless, the contribution to the national GDP doesn't differ at the same rate (i.e. 21.8% versus 17.8% respectively). This suggests that the available spaces for industrial activities are used far more efficiently in the Netherlands. Furthermore, the SER-ladder—provoking developments first within cities, then on existing industry parks and only third on green fields—is already in force from the 2009s onwards, whereas in Belgium the business interest organizations still demand a so-called 'iron supply' in order to anticipate timely on (nonexistent) sudden growth rates. Brownfields are therefore a major problem in Belgium, whereas in the Netherlands they hardly exist. With regard to the third sector, the economic history of Belgium has resulted in a highly concentrated *service layout*. Of the approximately x19 million m² of office-space in Belgium (on average some 1.7 m²/capita), the

¹¹ The latter is due to the massive mortgages in the Netherlands.

overwhelming bulk, more than 70%, is located in the Greater Brussels area, whereas only 11% is housed in Antwerp, 7% in Ghent, and hardly 2-2.5% in other major regional cities as Liege, Mechelen, Namur, Leuven, and Hasselt (see Figure 2.7). In respect to the aforementioned urban ‘comcol-mentality’ in Deltas, this is far more distributed in the Netherlands. Of the approximately 50 million m² of office stock in the Netherlands – on average some 2.9 m²/capita¹² – only some 12% is located in Amsterdam, 7% in The Hague, 6.5% in Rotterdam, 5% in Utrecht, and still some 2-2.8% in cities as Eindhoven, Haarlemmermeer, Arnhem, Groningen and other medium sized provincial towns.

The fourth sector (the non-commercial services, which in Belgium is still some 37% of the workforce) has turned downwards in the Netherlands toward hardly 30%, due to the neo-liberal policies of recent years. This has resulted in different *return on investments strategies*, including a geographically much denser employment rate. These rates are mainly located around urban and public transport nodes, whereas in Belgium daily commuters still flow massively in and out of the business districts of Brussels, similar to other large capital metropolitan regions, but without equal metropolitan transport systems.

The planning split

Against this backdrop it is remarkable that, at first glance, planning forces started off on a highly similar foot in both the southern and northern Low Countries. After first encounters of engineers, social utopians, hygienists, and philanthropic entrepreneurs, *Hendrik Pieter Berlage* is often regarded as the godfather of urbanism in the Netherlands (Bolte & Meijer 1981, Bock 1983, Van der Cammen & De Klerk 2012). The Belgian garden architect *Louis Van der Swaelmen* tried to proceed in his footsteps and even prepared with Berlage – during his stay in neutral Netherlands pending the First World War – the first ideas for rebuilding Belgium after the war.¹³ On returning in 1919 he even founded the interest association *Société des Urbanistes Belges (SBU)* together with *Raphaël Verwilghen* and launched its journal *La Cité*, in order to implement his ideas about the garden city in Belgium (Steynen, 1979). But in the meantime, planning ideas had already gone beyond that. In February 1929 *Joël Meijer De Casseres* introduced the term ‘planologics’ (logicus planum, or ‘planologie’ in Dutch), as an artistic-scientific answer to the transition from a mercantile towards an industrial society. It was congruent with the first ideas on *Raumplanung* and *Raumordnung* by Gustav Langen in Germany (1925/1926); Town and Country

¹² Due to the age-old more outward entrepreneurial orientation and the recent embracement of neo-liberalisation, some 70% more than in Belgium.

¹³ *Préliminaires d'art civique mis en relation avec le cas Clinique de la Belgique* (1916).

¹⁴ Mainly prepared by Hein Vos and Jan Tinbergen (the later Nobel Prize winner in economics).

¹⁵ For instance, the OREC was already abolished in 1939, due to the complete catastrophic output of its intentions.

Planning as a socio-graphic research discipline by Unwin, Abercrombie, and Geddes in the UK (1909/1915/1919); the need for a scientific-artistic discipline towards a planned society by Burnham and Bennett in the USA (1909); and even the economic-geographic five year plans by the Stalin administration in the USSR (since 1928). Also in Belgium, and next to the aforementioned NMGWW, a *Department of Destroyed Regions* (DVG in Dutch) was established within the Ministry of Interior affairs, under the lead of Raphaël Verwilghen, to steer the reconstruction of the devastations of the postwar period toward what he called ‘the right scientific direction’ (Zampa, 2003). Even more, and as a reaction to the World crisis of the 1930s, the Belgian Workers’ minister Henri De Mann founded the *Office de Redressement Economique* (OREC) in 1935 to execute his ambitious ‘Plan of Labor’ (Plan van de Arbeid in Dutch), which aimed for a structural reconstruction of the capitalistic economy, including a nationalization of key credit and monopolized industries (Van Temsche, 1982). At the same time in the Netherlands, a similar, but far less ambitious, ‘Plan van de Arbeid’ became operational¹⁴, since this plan only wanted to restore economic progress by major public works, in accordance with Keynes’ and Roosevelt’s New Deal in the USA and the massive public works in Nazi-Germany (Daalder, 2000). Similarly, the Dutch administrations didn’t establish new planning organizations right away, as they did in Belgium, but first established a more down to earth *State Commission in 1938* to check to what extent the Housing Act of 1901 was still satisfactory. In its final report, right before the Second World War in 1940, the Committee advised that the Planning Law of 1901, including its subsequent amendments of 1921 and 1931 were predominantly still in order, but there was a need for a national scheme that ‘*indicates the destination of the Dutch soil and that aims to promote a harmonious development along pre-defined lines*’ (retrieved from the National Archives in the Royal Library of The Hague).

These subtle but significant differences between the Netherlands and Belgium of the pre-war era became nevertheless pivotal during and after the Second World War, causing a fourth major split between the two countries. However, it started off on a similar foot, since the German occupying forces, according to their ideas of *Raumplanung*, installed departments for the national plan in both countries. Even though the Belgian planning organisations of the interwar period (NMGWW, DGV and OREC) had not been so effective in revitalization to the geography and economy and were as such even partly abolished¹⁵, the occupying German forces decided to keep or restore them and put them under an expected more efficient and operational Nazi rule. The prewar organ-

isations, including their staff, were accommodated within the so-called *Commissariat General for National Reconstruction* (CGLW in Dutch) under the lead of Charles Verwilghen, the older brother of the aforementioned Raphaël Verwilghen, who himself became director of the department of Planning, Urban Design, Architecture, and Monuments¹⁶. The Verwilghens, including their high-level staff members such as Henri Van de Velde, Stan Leurs and Renaat Soetewey, finally saw the opportunity to realize their pre-war ideals top-down. However, the departments run by Belgians were still operational executives of Nazi-dictated policies and planned mainly infrastructures and building projects to fulfil the needs of the occupying forces (see Uyttenhove, 1989). This was different in the Netherlands since there weren't any prewar planning organizations on hand to do the job. Therefore, it took some time before the *Rijksdienst voor het Nationale Plan* (RNP in Dutch) was established in May 1941, under the responsibility of the Secretary-General of the Ministry of Interior Affairs (mr. K.J. Frederiks), and under the direction of *dr.ir. F. Bakker-Schut*. Just prior to this, Bakker-Schut had published his PhD on *The National Plan* (1937) and had been active in the pre-war Committee about the matter. As a result, the establishment of the RNP actually followed the advice of this committee, although the service was cast in a slightly more authoritarian form that suited the new Nazi-administration. Moreover, The Dutch and German insights into spatial planning, economic recovery, and control mechanisms did not slip that much apart. Finally, the RNP was lucky with the direct Nazi-manager, *Hermann Roloff*, who loved the profession and appreciated Dutch expertise (Van Dam & Vuijsje 2012). But what was of prominent importance is that the RNP had to be built up from scratch, and as a result time and expertise were limited. Apart from studies and the building up of data-structure, the operational results where therefore meagre and mostly non-disputable, except for the railway line towards Westerbork, which served as a hub for the transportation of Jews towards the concentration camps in Europe. After the war, the RNP could tranquilize possible uproar that this was only a temporary provision, not part of the big picture.

In the postwar period, the RNP remained first as part of the Ministry of (Re)Construction (*Wederopbouw en Bouwnijverheid* in Dutch), and from 1963 onwards as a separate *Ministry of Housing and Spatial Affairs* (VRO in Dutch). In Belgium, however, the CGLW was dismantled and its staff fired as collaborators. Within this context and after their buildup of data-structure and first studies in the 1940s and 50s, the Dutch RNP and its institutional successors published an impressive range of white papers, including:

¹⁶ Next to the departments of Economic recovery and employment and War damage.

¹⁷ This was a distinguished location policy in regard to various mobility nodes: offices near railway stations, semi-offices near public transport and highway nodes, and T&D and industries near singular highway nodes.

¹⁸ Among which were the Spatial Planning Acts of 1965, revised in 2008, the additional Royal Decisions on Spatial Planning, and recently the General Environmental Act.

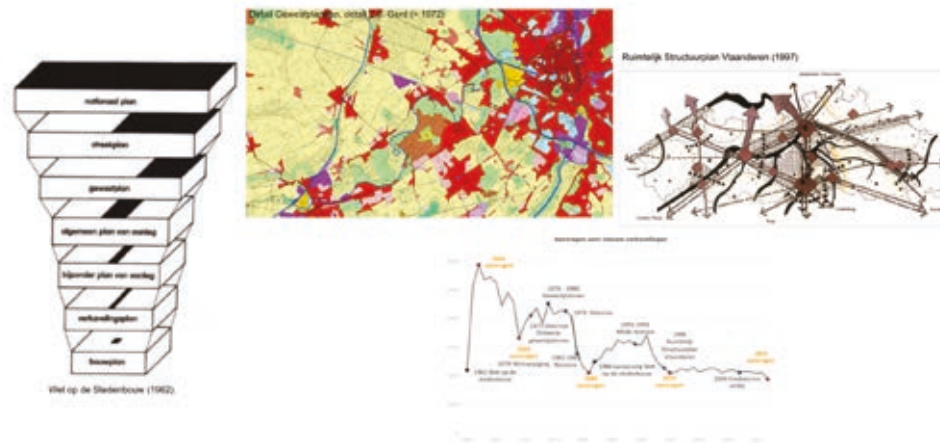
¹⁹ Named after the Fourth Report Extra on Spatial planning.

²⁰ Consisting of members of parliament from the three political families (Catholics, Liberals, Socialists), a number of senior officials from relevant departments and representatives of other ministers.

- the *First Report on Spatial Planning* (1960) with its focus on decentralization,
- the *Second Report on Spatial Planning* (1966) with its focus on bundled decentralization,
- the *Third (process planning) Reports on Spatial Planning* (1972-1983) with its focus on New Towns south of the virtual urbanization line Alkmaar-Arnhem,
- the *Fourth Report on Spatial Planning* (1988) with its focus on four Compact Cities in the Randstad, including two Mainports, the Green Heart open space and the ABC-location policy¹⁷,
- the *Fourth Report Extra on Spatial Planning* (1992), with its focus on Compact City planning in 11 key Urban Nodes, and
- the unfinished *Fifth Report on Spatial Planning* (2001), with its urban networks in red and green contours, succeeded by the *Report on Space* (2006) which promoted only a few key national issues, including a further decentralisation of planning responsibilities.

As a result of the latter, the original RNP/Ministry of VRO(M) was more and more broken up into parts. Hereafter only cross-ministerial successors saw the light in the form of the *Structure Vision of Infrastructure and Space* (2012) and the recent *National Environmental Vision* (2019). But through its additional regulations¹⁸, including the operational entanglements with the housing corporations, public private VINEX covenants¹⁹, the Dutch polder consensus model, hegemonic discourses, and ongoing focused collaborations with various interest organisations, these reports proved to be highly effective, too; at least until the 2000s, after which the implementation of national planning policies arrived more and more in disarray (Boelens & Jacobs, 2020). In Belgium, since the abolishment of the CGLW due to its NAZI collaborative brand, post-war planning has been continuously struggling for survival. Just after the War, in May 1945, an Urban Planning Board (*Bestuur van de Stedenbouw* in Dutch) was established within the Ministry of Public Works, with the commissioner-general in charge to refuse or grant building permits. In practice, he often left that to his provincial substitutes (Janssens, 2012). However, confronted with the unbridled construction boom of economic welfare since the Marshall program, the government decided in January 1957 (after the successful Dutch example in 1938) to set up a so-called *Joint Committee on Urbanism* (*de Gemengde Commissie voor de Stedenbouw* in Dutch²⁰) to evaluate the postwar reconstruction laws and to lay down the principles for a new urban planning law. The Committee had already reported in September 1957, but it took until April 1962 when the new *Law on Urban Planning* was approved in parliament, after several amendments. It stipulated the need for a national

BELGIË/VLAANDEREN



NEDERLAND



Figure 2.8: Planning systems compared

supervision on spatial developments, to be elaborated in provincial plans, which had to be ‘translated’ into 48 so-called Regional plans (*Gewestplannen*, in Dutch), whereby the successive local plans became mainly executive plans to implement the ideas in juridical outlines²¹. In addition, the new law provided many additional opportunities to steer spatial incentives or even fine and recall obstructions, but practice proved to be much more stubborn (Lindemans, 2012). Moreover, from the first state reform onwards, spatial planning became more and more the responsibility of the three regions (Flanders, Brussels, and Wallonia), first by separate secretaries of State, but from the second state reform in 1980 onwards, more decisively. The *National Spatial Planning Commission* (NCRO in Dutch) was split up into three regional committees and even several provincial committees, so there has never been a truly national overarching supervision for Belgium. Furthermore, the design of the provincial plans was delayed because there was not agreement on the final responsibilities of the provinces. The 48 *Gewestplannen* thus became the most decisive instrument for the Belgian planning system. For reasons of legal certainty and without direction from the planning levels above, these plans were not drawn up as intervention-oriented plans, but as area-wide plans for land use at the soil level. This brought up an old strategy for both municipal authorities and private individuals aimed at adjusting the land use in their own favor. In accordance with long-standing customs dating back to the Middle Ages, *clientelism* appeared again and hundreds of hectares of rural areas were massively ‘re-colored’ as urban areas in silence and haste (Allaert, 2009). Moreover, the so-called ‘fill-up rule’ (*opvulregel* in Dutch²²) from 1972 and the ‘mini-decree’ from 1984²³ contributed to further urban fragmentation and ribbon development. Although all of this was abolished in Flanders in 1993 and replaced by a new Flemish Decree on Spatial Planning in the late 1990s, the damage had already been done and new plans often remained a dead letter given the existent property rights. Thus, the long-awaited overarching Flemish Structure Plan (1997) was highly ambitious in its intent but remained an empty shell without predominant operational power. Its successor — the Flanders Spatial Policy Plan (BRV in Dutch) — which was originally by Law intended to be in power from 2007 onwards, started its design process 7 years later, but has for the moment only resulted in a strategic vision in general (2018), without concrete impact. For instance, the intention to phase out new constructions until 2040 is still not in place and was in fact already a mere formality from the beginning (Boelens, 2016). In the meantime, Brussels and Wallonia have been struggling with their own divergent planning processes during the last four decades, making an integrative or complementary planning strategy in Belgium non-existent.

21 Algemeen Plan van Aanleg, Bijzonder Plan van Aanleg, Verkavelingsplan, Bouwplan.
 22 Development between two houses is allowed, independent of regional plan destination.
 23 Buildings and companies that are not in accordance with the regional plan can nevertheless be expanded upon, rebuilt, or repaired.

Where are we now – the unbearable lightness of de Lage Landen 2020-2100

Above we have outlined four major reasons why the corners of the Eurodelta are geographically similar in part but are also highly dissimilar. Their specific environmental conditions (in a restrictive sense), but especially their adjoining moral geographies (in a prospective sense) seemed to (re)structure the various parts in the Low Countries highly similarly as a specific horizontal metropolis until present times. But we have listed four preliminary outlines – the infrastructure, housing organisations, economic strategies, and planning opportunities – which are to our opinion of major importance regarding dissimilar evolutions in detail. Moreover, above we have *italicised* the main institutions and (f)actors of importance which are pivotal for the divergence from the late 16th, to more importantly the mid-19th, and predominantly the mid-20th century and onwards. These factors of importance, leading actors, and institutions²⁴ have reconstituted each other continuously. For instance the specific estuarial conditions of the Eurodelta have led to the first public-private-people-partnerships to tame the regular floods and make the soil more fertile for continuous agrarian production, which has led to new institutions such as the Waterings and Waterboards, which served agrarian surplus value, the rise of new leading actors, and new institutional trade networks. These in their turn

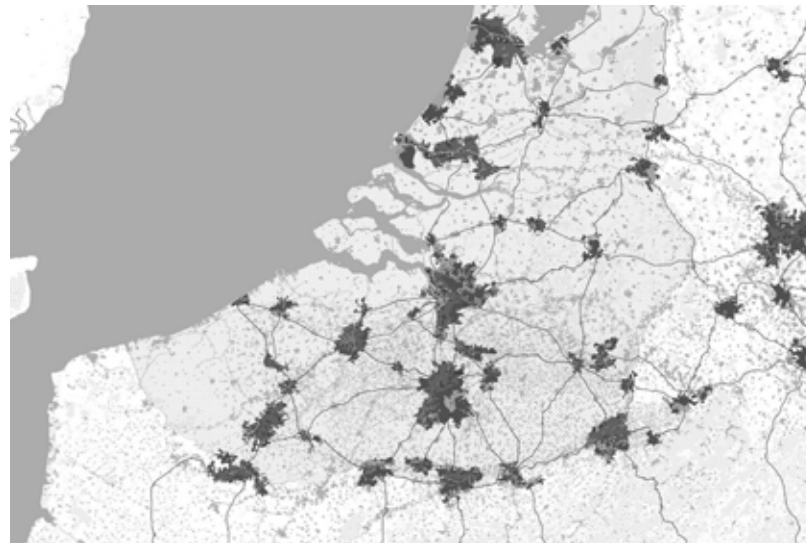


Figure 2.9: De Lage Landen 2020-2100, 2018 (source: AWB, 2018)

²⁴ Regarded in its specific academic sense as just the formal and/or informal rules of the game, distinguishable from the organizational sense of which professionals often speak.

²⁵ Note this is without Luxembourg and the Walloon, but more importantly, without the Brussels administrations.

made the Low Lands more attractive for other Kings and Emperors to conquer and try to tame them top-down, which in turn enhanced a revolt and rise of new leading actors with subsequently more entrepreneurial institutional forces and even a massive brain-drain from one corner to another one. This changed and became reinvented due to changing economic conditions, which etc...

Within these continuous (re)constitutive factors, actors, and institutional forces, planners did not play a prominent role until the beginning of the 20th century. Since then, new enlightened urbanists and ‘planologists’ came to the fore which believed that engaged and democratic government planning was in fact needed to guarantee a specific socio-spatial order. These Modern planners were even so convinced of their own right that they even prolonged their services under the regime of dictatorial administrations in order to realize their pre-war ideals for the time being, until their ideals would unavoidably uplift governors and their inhabitants to better reasoning. It is in fact this hauteur, including the triple failure of the enlightened reasoning as such (Horkheimer & Adorno, 1944), that made post-war administrations suspicious, at least in Belgium where politicians re-installed the pre-war planning practices. In the Netherlands this was somewhat different, not only because the planners didn’t do as much harm during the Nazi-regime, but more importantly since the specific Dutch-first preliminary outlines for more engaged policies in the pre-war and war period, could be used more effectively and to their own right by the new power holders after the war. Therefore, Dutch planners received the political benefit of the doubt, at least for an additional 50 years, to prove their added value for the *‘best conceivable interaction between space and society, such for the sake of that society’* (Steigenga, 1964). And looking backward, we must conclude that indeed subsequent planning practices have gained some impressive milestones. But in the meantime, the (re)constitutive, co-evolving forces of changing factors of importance, leading actors, and influential formal and informal institutions still made those vertical planning features (top-down and/or bottom-up) highly obsolete. At present, Dutch planning has become fragmented, decentralised, and one might even conclude ineffective.

Against this backdrop, the recent long-term Planning Vision for the Low Countries 2020-2100 of the respective administrations and national master builders²⁵, published in 2018, bears an unbearable lightness in at least four aspects. First, and despite the impressive steering and workgroup, supported by at least six consultancies and at least ten so-called ‘experts’ and many more participants of the involved countries, it is remarkable how little one knows

about the specific conditions and historic features of this Delta. The report states that since 1830 the Netherlands and Flanders have developed and applied diametrically opposed spatial planning and management philosophies, and that the challenge should be to search for a so-called ‘middle ground’ (*sic!*), without specifying what that would mean (AWB 2018; p. 20). A more pronounced and subtle analysis of dissimilarities within similarities²⁶ is swept off the table in one unbearably light superficial blow, without much insight or argumentation. Second, the report states that “we (apparently the government planners) have not yet succeeded in translating the general policy choices into concrete actions in the field. There remains a big gap between vision and practice” (De Lage Landen 2020-2100, 2018; p. 49). Next to the fact that this has been always the ‘sighing’ of Modern, structuralist planners for many decades, even in the Netherlands (see for instance Van der Cammen & De Klerk 1986, 2003, 2012), and due to the fact that the report serves only as a window dressing to actor-oriented approaches (without real inclusion), this statement remains unbearably light too while not providing any concrete proposals for efficient operationalization.

Furthermore, and in accordance with the above, the subsequent 12 strategies in 7 chapters remain unbearably light in a third place. Although the report states that “these strategies break up the overwhelming complex tasks of the future into manageable and feasible projects tailored to the needs of a decentralized metropolis”, they only touch the future challenges regarding sustainable energy, shared mobility, local food and circular economy superficially, without any ideas about the involved stake- and shareholders, and who or what should take the lead or be responsible.

Last and not least, and that’s why we actually refer to Milan Kundera’s famous work about ‘the unbearable lightness of being’, the report completely ignores the fact that Belgians and the Dutch (including their internal regional variations) have different and sometimes even opposing characters (and subsequent interests), but nevertheless are aware that they need each other to proceed in an ongoing globalized network society with ever more complex adaptative challenges with regard to for instance climate change, energy transition, circular economy, shared mobility, the post-corona queests. But in reference to the institutionalized differences there are only minor moments to deliver on that. And even these are here completely missed. As a result, the so-called vision remains just that — an idea of the authors and so-called ‘experts’ themselves — without any support of subsequent authorities or even interest groups in

²⁶ Let alone that planning ideas and practices only evolved from the beginning and especially mid-20th century onwards.

society. It therefore has no promise of a follow-up, let alone further ‘deepening’ towards implementation. But as mentioned in the introduction of this contribution, that kind of ‘lightness’ becomes not only apparent in this vision, but has been there for a long time, even within the work of elaborated planning theorists, practitioners, and other politicians. Thus, do we stick to this, and wait for the following ‘unbearably light’ moments to happen? Kundera’s novel decisively suggests that a commitment to the more truthful and real would not only be possible but also desirable. For that purpose, it would need more ‘heaviness’ instead of ‘lightness’. In our case this would mean that we have to finally break with the idea that planners (or architect-urbanists alike) themselves can present and sketch a better world for the progress of mankind based on their abilities of superficial design and planning, how engaged that might be. At its best, these remain appealing images of how it could evolve within a simplistic and ideal world, only evoking restless or repentant minds among leading stakeholders who are just equivocating. In contrast we have to explore more thoughtful and substantiated outlines. We agree that the future challenges of the Low Countries Vision are four of the seven, which have even been listed before (see Boelens, 2010). But in order to proceed we first have to understand the co-evolving (re)constitutive factor-actor-institutional forces behind each of these seven challenges and start to mediate or inform the one about the other, or intermediate between each of these forces towards a more sustainable fit (see also elsewhere in this volume). In this respect, this contribution serves only as a brief outline, which has to be deepened to the full. Moreover, it has to be accepted that planners could only fulfil a mediating (just moving information) or intermediating role (enhancing a better fit among and between the actors, factors, and institutions) in the matter, therefore stipulating their modest facilitating (instead of traditionally expected dominant) role in socio-spatial progress. But even then, they need to be aware in detail about the specific mental maps, forces, and lines of progress behind and between each of the actors, factors, and institutions involved: how they came about, how they are currently, and how they could move further along. Perhaps this kind of role might not be attractive for (national) government planners, or self-conscious architect-urbanist and national builders alike. But highly complex and adaptive forces of the Eurodelta won’t need grand or vivacious visions to be steered in one direction or the other. They could become pretty settled being moved into more communal commitment — meaning, in our opinion, resilient assemblages.

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ACTOR

Adjusted roles for conventional actors, as well as the emergence and entry of new actors within the spatial planning playing field.

Struggling with climate change – Dealing with a complex adaptive system

LUUK BOELENS

The message

More than 50 years ago, in April 1968, a group of thirty scientists, educators, economists, industrialists, and civil servants from ten countries gathered in the *Accademia dei Lincei* in Rome to discuss the environmental state of the world. Out of this meeting grew The Club of Rome, an informal international association of some seventy individuals with some twenty-five nationalities, that four years later presented their report about *The Limits to Growth* (Meadows et al., 1972). The report examined five basic factors that ultimately would restrain growth on this planet: population, agricultural production, natural resources, industrial production, and pollution. Based on a global model of the Massachusetts Institute of Technology (MIT), they reported that demographic growth and industrial production were the most dominant in this respect. Running several scenarios, they concluded that the world was unavoidably heading for its ultimate collapse well before 2100. In order to avoid that collapse and guarantee a kind of sustainable equilibrium between human activities and nature, they advised demographic and industrial capital growth to be restricted somewhat to the expected levels of 1975 and 1985 respectively, which would mean somewhere between 3.5 and 4 billion world inhabitants, with an average industrial output per capita of about 250-300 US dollars. The rest could follow from there.

Where are we now?

Nearly 50 years later, these ‘categories’ have doubled and even tripled (i.e. nearly 8 billion citizens and 750-800 US dollars industrial output per capita.) For the next 50 years the United Nations (2018) expect a growth of around

50% and 100% respectively; that would mean 4-6 times as much as the proposed levels by the Club of Rome. Although the report received major critiques that it was exclusively grounded on a predominant technical model and that they therefore had ignored the mitigating power of the ongoing social and technological innovations (e.g. Simon, 1981), the 1980s informatics-telecommunications revolution didn't result in more sustainable societies, despite hopeful expectations to that effect (see for instance Bell 1973, 1975; Toffler 1983). Rather on the contrary, the IT revolution enhanced an even more extensive global networked society (Castells, 1996), which in its turn has almost quadrupled Global Trade since 1985 (Ortiz-Ospina, 2018), and fivefold increased aviation transport towards some 4 billion annually¹. Despite major improvements in waste and resource management, the Earth's ecologic overshoot days have been brought forward from November to July in 35 years (derived from <https://www.footprintnetwork.org/>). At the moment we are using about 1.75 of Earth's capacity each year.

Unfulfilled promises

These changes didn't miss their effect on the Global Climate Change either. Human activities are estimated to have caused approximately 1.0° C of global warming above pre-industrial levels, which are likely to continue rising at current rates (IPCC, 2018). In order to restrict global warming to 1.5-2° C, the joint world nations have agreed in Paris (2015) to reduce the CO₂ emissions by about 45% from 2010 levels by 2030. However, at the moment of this writing (before the covid 19 break out) a big gap remains between these ambitions and the current national track records. Of the 43 developed and emerging economies listed in Annex 1 of the Paris Agreement, all but one (Turkey) are expected to have peaked their emissions by 2020. If we proceed this way, the planet's average temperature will probably even rise by 3.2° C at the end of the century (UNEP, 2018). However, it is not so much the expected average temperature rise, but especially the adjoining weather extremes, which are of major concern. Increasing Urban Heat Island Effects are to be expected in most inhabited regions, hazardous rainfall, sea-level rise, hurricanes, floods and avalanches in coastal and mountainous regions, and extended droughts and land fires in others. These extremes have already recently caused major threats for the permafrost, which upon meltdown will even double the amount of CO₂ in the Earth's atmosphere, including the release of methane; a powerful short-lived climate pollutant (Biskaborn et

¹ And again IATA (2018) is expecting that air travel will double in the next twenty years.

- 2 Although capital is proven to suffer from climate Change (Parks 2015)
- 3 Although the first are predominantly responsible for air travel (Boussauw 2017)
- 4 Although they predominantly use car travel to reach their manifestations (HLN, 30-01-2019)
- 5 Although they contribute importantly to the GDP
- 6 Although they are also dependent on their mobility patterns
- 7 Herewith he refers to the hypothesis of James Lovelock (1969) that the earth would be a self-organised, organic unity.
- 8 The latter has even calculated that adequate climate adaptation requires an investment of around 1.8 trillion dollars globally in five areas in order to generate a profit of around 7.1 trillion dollars. But because the cost-benefits are distributed amongst various actors, only democratic governments would be able to (re)distribute such a strategy.

al., 2019). Therefore several climate experts already claim that we will reach the decisive climate tipping points much sooner than expected (Williamson, Satre-Meloy, Velasco, & Green, , 2018; Steffen et al., 2018; Green et al., 2019).

Towards a flat climate ontology

Nevertheless in this context it is hardly effective to raise fingers to each other, as the green party did against the capitalists², the academics against the lay people³, the climate truants against the governments⁴, the governments against the major polluting industries⁵, the industries against the commuters⁶, etc.; we all are responsible, and climate change starts with yourself! Furthermore, it is also not as useful to focus on so-called generic psychological climate dragons to understand our climate apathies (Gifford, 2011); our incentives are all relationally dependent on each other's actions, highly situational in time and space. Moreover, and next to mitigation, climate adaptation has come to the fore as one of the most important planning challenges for future times; we need to deal with both in interactive ways. In addition, the weather and especially our climate are not so much complicated systems (wherein particles can be repaired to restore systems whole again), but they are complex systems wherein redirected particles relationally affect other particles, situationally in time and space. Therefore they influence the system in a highly volatile, fuzzy, and unpredictable way. Given the nearing climate tipping points, it is even questionable if we could repair and/or limit the effects of this complex climate change system by restricting the global warming up to 1.5 or 2 °C above preindustrial levels (Paris Agreement 2015).

Against this backdrop Bruno Latour (2015) has already compared the new climate challenges with his view of Gaia⁷. But according to Latour, Climate Change should not be mystified as a super-organism, a form of divine provision, or an earth that takes revenge on humanity, but rather as an unintended mess of individual intentionalities. Standing face to face with Climate Change (or Gaia for the matter) therefore creates a deep paradox: on the one hand we feel the compelling need to do something with climate change, but at the same time we also feel the radical uncertainty as to whether this will yield anything substantially (Pels, 2018). In order to unravel this mess we nevertheless have to be clear that it makes no sense to put all hope again on decisive all-encompassing policies of the 196 national governments and their global organizations (see for instance UNEP, 2018; Ki-Moon, Gates, Georgieva et al., 2019⁸). The

same goes for so-called ‘technological innovations’, which should do the trick. Given the aforementioned history of more than 50 years, we have to restrain high expectations of the results of those all-encompassing vertical planning strategies and innovations, since there is no central rule and order anymore, technical innovations have proven to turn into the opposite and climate tipping points and autopoiesis could go every direction. Dealing with those complex adaptive systems would rather need us to return on our steps towards the times before we made the split between humans versus things, nature versus culture, matters of fact versus matters of concern.⁹ We need to restart again from the entry and support of various sets of actants, to gain new insights, options, and possibilities in concrete and specific climate issues. We argue that if climate policies would persist in their vertical ontology, effective actions for both climate mitigation and adaptation are far away. Instead a flat ontology would mean that one would really start from a horizontal equivalence between the various human and natural interests (outside-in) and that these interests could co-evolve from there without any prejudice and preselected strategy towards an ever more resilient progress of undefined survival (Boelens & De Roo 2016).

The Flemish Think-tank on Climate Adaptation

Against this backdrop and at the request of the Flemish minister of environmental planning, from 2015 to 2018, the Centre for Mobility and Spatial planning chaired a Thinktank on Climate Adaptation. It invited some 40-50 prominent representatives of the Flemish business, public, civic, and scientific society to come up with advices and strategies to deal with those challenges (cf. Boelens, Allaert, & Walot, 2017). In six meetings concerning the Urban Heat Islands (UHI), Food, Safety, Accessibility, Economy, and Biodiversity, the Thinktank came up with more than sixty policy measures divided over six policy domains (see figure 11.1 in dutch).

Nevertheless, they also stressed that these measures have to be situationally combined in order to become effective. For that purpose, a business as usual (vertical) planning wouldn’t suffice, since climate change would essentially expose flat features. Therefore, planning needs to reinvent itself and come up with new approaches that could do the trick. In reference to first ideas for flat ontological planning strategies, (Boonstra, 2015¹⁰), they came up with three new tactical (instead of strategic) programs to enhance a broad support for climate adaptation throughout Flanders.

9 Somewhere during the Enlightenment; see also elsewhere in this book.

10 Although in this case specifically developed for planners interacting with civic initiatives.

Table 11.1: Sixty policy strategies for climate adaptation

Thema	Vraagstuk	Oplossing	Belemmering
UHI	Ventileren	Windgeleiding	Middeleeuwse binnensteden Erfgoed Veranderlijke windrichtingen
		Weghalen obstakels	Vaak nog nodig Verkeerswetgeving Kosten/pad afhankelijkheid
	Verharden	Grasbeton/steentjes	Niet voor zwaar verkeer Kosten Onderhoud
		Bedekking hoge albedo waarde	Onbekendheid Pas op termijn invoerbaar Kosten
		Innovatieve bedekking	Onderzoek nodig
	Vergroenen	Groen-Blauwe dooradering	Ruimte Kosten Tijd Pad afhankelijkheid
		Bomen plaatsen	Onbekendheid welke/hoeveel Pas op termijn effect Nader onderzoek blijft nodig
		Groene daken/gevels	Kosten Constructie Niet overal toepasbaar Onbekendheid met economische impact UHI
	Verwateren	Openhalen bedekte rivieren, beken, kanalen	Mogelijk conflict met huidige functie Kosten Pad afhankelijkheid
		Waterpleinen, Wadi’s	Onderhoud Beperkt bergingsvermogen
		Fonteinen, drinkpunten	Kosten
		Nieuw open water	Ruimte Veiligheid
	Doelgroepen beleid	Tijdige waarschuwing	Moelijk om doelgroepen te bereiken Onbekendheid wie Wet op privé-bescherming
		Inzet op specifieke wijken	Niet altijd bekend welke Breder onderzoek nodig
	Leefbaarheid	Eco-systeemdiensten landbouw/natuur	Landsharing/landsparring patstelling Betere kapitalisering van die diensten Vereveningen kosten/baten

Droogte	Waterberging	Waterhouderij	Ruimte Pad afhankelijkheid Coöperatie voor afname zekerheid
		Mijnwater 3.0	Initiële kosten Kwaliteit water Onbekendheid met energiemogelijkheden
	Grondwater aanvulling	Diepte-infiltratie	Nog niet echt (hoog)nodig geacht Mogelijk effect op kwaliteit
		Ontharden	Maar beperkt mogelijk in publieke ruimte Brede support van onderop nodig
	Vervorming infra	Reparatie tornado's	Kosten Adhoc inzet
		Levend materiaal gebruik	Kosten Pas op termijn effect
		Dubbel uitvoering gevoelige systemen	Kosten Niet overal mogelijk
	Droogvallen infra	Synchromodaliteit	Op punt zetten IT Platforms met bedrijfsleven nodig Alleen haalbaar met flankerende inzet
	Bederfelijke waar	Extra inzet op koeling	Kosten Extra belasting milieu
		JIT	Logistiek platform nodig
	Bos/natuurbrand	Extra alertsysteem (drones)	Kosten
	Extra bewatering	Smart farming	Pad afhankelijkheid Initiële kosten
		Aanbod-vraag afstemming	Handhaving Breed support nodig
Neerslag	Wateroverlast	Integraal bekkenbeleid (Bekkenwaterbank)	Bestuurlijke grenzen Verevening boven/onderloop Afgestemde meerlaagse waterveiligheid
		Meer inzetten op ecologische veerkracht	Ruimte voor de rivier niet altijd aanwezig Kosten/afstemming op flankerende functies Handhaving 'flood prone areas'
		Meer inzetten op socio-culturele veerkracht	Onbekendheid Verschuiving van verantwoordelijkheid Commons nodig voor waterrechtvaardigheid
		Incentives tot zelfinvestering	Te snel verklaren/inzetten rampenfonds Differentieel verzekeringsstelsel
		Sponge City	Massieve investering, dan wel Massieve support van onderop
	Extra erosie	Erosiehouderij	Nog niet eerder toegepast Niet op alle plekken mogelijk Aangepaste financiering aanleg/onderhoud Commons nodig

	Bereikbaarheid	Kernnet regio voor de auto	Onbekendheid Vereist vervoerregio Handhaving
		Kernnet op gewest voor het openbaar vervoer	Basismobiliteit Medewerking NMBS/De Lijn nodig Netgerichte aanbestedingen
		Synchromodaliteit	Op punt zetten IT Platforms met bedrijfsleven nodig Alleen haalbaar met flankerende inzet
	Verkeersveiligheid	Resistente bedekking	Kosten Pas op termijn effect
		Stormresistentie	Verwijderen vermijdbare obstakels Minder hoog groen langs hoofdroutes
Kust	Veiligheid	Hold the line	Civieltechnisch optimum Financiële kosten
		Advance the line	Kustmorfologie Toerisme Bad/woonplaatsen
		Retreat the Line	Bestaande functies Draagvlak Kosten verevening
		Diversificatie	Voldoende oplossing? Zwakste schakel bepaalt de keten
	Verziltig	Waterhouderij	Ruimte Onbekendheid
		Zilte teelten	Pad afhankelijkheid Initiële kosten voor transitie
Biodiversiteit	Gevolgen species	Klimaatresistentie	Onbekendheid Nader onderzoek nodig
		Bouwen met de natuur	Onbekendheid Landsharing ipv landsparing nodig Impact op kosten/tijd
	Schuiven seizoenen	Seizoen aanpassingen in landbouw en natuur	Nog veel ongewis Extra onderzoek nodig Vooral ook naar kosten en impact
	Verlies in specifieke ecosystemen	Daadkrachtig natuur adaptatiebeleid	Versnippering natuurgebieden Veel druk van andere sectoren
	Verlies streekidentiteit	CSA's e.a.	Onduidelijkheid over Klimaatimpact Mogelijke ongewenste bij-effecten
	Implementatie natuuradaptatie	Toevluchtsoorden	Nog niet geïdentificeerd Weinig aandacht
		Beheer over de milieugradiënten	Kennis Nader onderzoek nodig
		Natuur rampenplan	Nog weinig gehoor

		Geassisteerde migratie	Nog weinig gehoor
		Verhogen beheercapaciteit	Bewustwording vrijwilligers Meer professionele expertise nodig
Algemeen	Nog teveel verlies	Hergebruik stimuleren	Pad afhankelijkheid Onbekendheid Introductie grondstoffen paspoorts Recycle platforms
		Veranderingsgericht ontwerpen	Nog weinig bekend Nadere cases/voorbeelden nodig
		Stedelijk metabolisme	Nog weinig bekendheid Daarmee geringe implementatie
		Nieuwe verdienmodellen	Nader onderzoek nodig
	Extremen worden plaatselijker	Meer lokaal adequate weersvoorspelling	Nieuw onderzoek nodig Mogelijk bredere inzet vrijwilligers op het veld
	Te geringe klimaatreflex	Informatie en communicatie	Vaak nog te abstract Gedreven door de overheid Bredere inzet multi-media nodig

Conditions that open up

First the Thinktank proposed to install a condition for planning that opens up instead of closes. Rather than the regular zoning planning, which deals with frames, laws, and property rights of what is allowed or restricted for the greater benefit of all, this kind of situational planning is focussed on the awareness and enhancement of a great variety of stakeholders to take up climate adaptive measures (financially, in expertise, time, legislation, etc.). Part of this programme would for instance comprise:

- a. sketching various scenarios of what could happen in extreme weather conditions,
- b. discussing possible alternatives and good practices in this respect,
- c. suggesting payback effects of intended investments,
- d. promoting motives, and/or
- e. removing apparent (vertical) obstacles to adapt.

One example is for instance the Urban Heat Island study preformed for the municipality of Ghent in 2012-2013 (Maiheu et al. 2013). In that study we not only measured and modeled variations in temperature in various spots in Ghent and its surrounding country-side on hot summer days (matters of fact), but we also

confronted this with the socio-spatial variables in the various neighbourhoods of Ghent, in order to conclude something about the specific vulnerabilities to heat and possible adaptive solutions (matters of concern). Therefore, this study also opened up neighbourhood (and sometimes even quarter- and block wise) tailored planning proposals to be performed by the involved municipal departments in general, but also the inhabitants and concerned businesses alike. Both would be needed interactively to gain UH-resilience in Ghent.

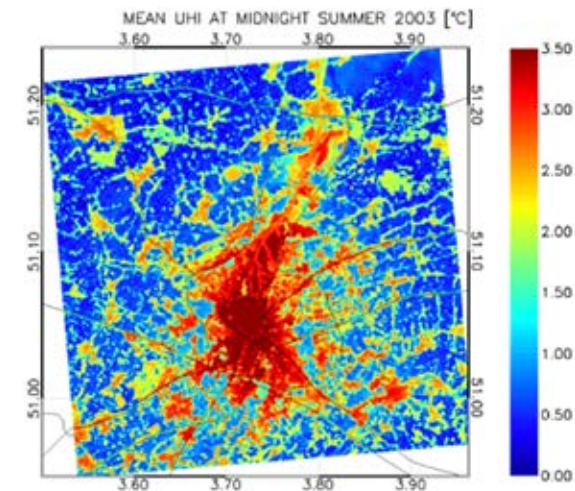


Figure 11.2: UHI-study Ghent

Navigating for a better fit

Second, the Thinktank proposed a ‘situational network’ for a better (climate) fit. Instead of climate adaptation planning induced by a central or scientific core, here the Thinktank proposed to install inter-municipal Flemish Task Forces Adaptation (FTFAs) to deal with the situational climate challenges in time and space. The main focus of these Task Force(s) would be to pitch area-, theme- or project-specific alliances for climate adaptation. In order to do that these Taskforces should operate relatively independent from the central administration to mediate between the various interests and concerns of adaptation towards a better fit. This ‘fit’ should be both focussed internally (between the various stake- and shareholders involved) and externally (with the volatile and ongoing changing weather situations). It would need a highly dynamic co-evolutionary planning, starting with the

regional interests and the return on investment means.

One example is the idea of water farms instead of agricultural farms in De Kempen, after the proposals of Aequator in 2010. This region in Flanders is well known for its droughts and falling groundwater levels during summer-time. Hence, we proposed to store water in rainy seasons, in order to use that in times of drought. In combination with algae cultivation, fisheries and bio-energy, we even discovered that this type of farming could become more profitable than corn cultivation. The return on investments could be calculated on some 3-5 years. Moreover, those water farms could also provide additional buffer capacity to avoid floods downstream and to enhance high quality water security for food processing industries nearby. Additionally, it could neatly fit within the original layout and landscaping of the small streams in the area.



Figure 11.3: Water farms De Kempen

Creating consistency

Third, the Thinktank also advised a *'planning art of improved consistency'*. The Thinktank concluded that not all spatial planning strategies in the various domains and levels of the Flemish administration (let alone in the Belgian, European, or Global ones) would mutually reinforce each other. On the contrary, the Thinktank concluded that in general and in reference to climate adaptation they would often oppose and countervail each other. However, to improve consistency, such a strategy wouldn't evolve from above or bottom up, based on a kind of structuralist idea of holistic progress.

In reference to the flat features of climate change they preferred a kind of 'art' that would enhance a general climate reflex in each of our planning actions, by involving as many stake- and shareholders as possible in reality and not as a lip service. In this respect, climate adaptation would no longer remain accommodated within a specific domain of administrations (as for instance in the environmental department), but would need to become the general outline of those administrations itself and therefore the concern of the involved societies and their governments and administrations through all levels. To that effect the Thinktank proposed the Flemish prime minister and the involved INGOs and CEOs in the Thinktank to take the lead.

A minor example in this respect is the recent planning practice in Antwerp. Although the municipality has developed an elaborated climate plan since 2011 and again in 2015, including UHI- and waterproof strategies, low-emission zones, advanced insulation and efficient heating systems, green energy, etc. (Antwerp 2015), the administration nevertheless decided more or less at the same time to cut down the age-old majestic trees along the inner circular road, to give room for an extension of the public transport system and underground flowing and parking for car traffic. Even more, the refurbishment of the squares above have gained a very gritty layout, apparently according to the latest architectural insights, but hardly resilient in respect to UHI-effects. At least within this project a general climate reflex is still far off.



Figure 11.4: Planning climate realisations Antwerp (source: City of Antwerp)

What next?

Although after the release of the Thinktanks report two years ago several inter-municipal communities have taken up the challenge to prepare climate adaptation programs themselves, the implementation of those programmes is hardly there. The rise of the climate truants and their exclusive focus on climate mitigation, including the subsequent elections and climate initiative of the Flemish Government Architect (2019) might something to do with this. A vertical strategy is apparently far more stubborn than the flat challenges to unravel Gaia would allow. Perhaps it might also be the fault of the Flemish Thinktank Climate Adaptation itself, since it specifically addressed the Flemish Minister for Environmental Affairs, due to her assignment of 2015, and not so much the other actors. Therefore, and astonishingly, the involved INGOs, civic organisations and key business sectors are still awaiting the first moves of the government before they will act. As such there is still a need for a co-evolutionary move beyond those one-directional path dependencies, so apparent in the recent call of Ban Ki-Moon, Bill Gates, and Kristalina Georgieva (2019). In order to address the new Gaia regime outside-in there is still a need for new revolutions in our attitudes and approaches of inclusive climate planning. It is high time for flat action beyond the engaged and well-meaning climate adaptation plans.

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Flood justice in Flanders

TOM GOOSSE

Introduction

Water is an integral element of any landscape. In human history, the hydrological cycle has influenced, or even steered, the development and organisation of societies. The 19th and 20th centuries have contributed by taking control over water through engineering and centralised infrastructures. This has led to a top-down, agency-driven, technological approach to dealing with water related issues. The scale, impact, and diversity of human activities have increased to such a level that each process within the water cycle is altered, bringing sometimes unexpected responses (Mahaut, 2009). Floods in Flanders, similarly, are caused by human activities that serve various public, civic, and business interests. As such, there is a growing awareness that Flemish FRM is a shared responsibility among various actors. A first step in this growing awareness was the setting-up of the *Commissie Integraal Waterbeheer* (CIW) in 2004, aimed at organizing an integral strategy among multiple governmental structures. Since the introduction of multi-layered water safety in 2013 (MLWS)¹, the idea evolved that the responsibility of taking measures against floods cannot solely be assigned to governmental structures. Today, it is increasingly recognized that various actors play an individual—yet complementary—role to build up effective flood risk management (FRM), and thus should share responsibility (Mees, 2017). Moreover, many studies have pointed out the importance of multi-actors' involvement in the FRM not only to increase its efficiency but also to enhance legitimacy in the decision-making process (Adger *et al.*, 2006; Bell & Rowe, 2012; Loux, 2011; Mees, 2017). Private actors located in floodable areas are important here because of what floods represent for them and their impact on the water cycle through the area they cover. But the actors that receive particular attention are the communities living in floodable areas, around 80,000 households according to CIW's last estimations (CIW, 2018). However, involving local communities in FRM comes with many challenges. For instance, very little is known about the population and private actors residing in floodable areas. Moreover, the public awareness and citizen involvement remain low in the decision-making process and

¹ The MLWS is a concept introduced in the Netherlands in 2009. It categorizes all flood risk management measures in three layers: prevention, protection, and preparedness. Each layer addresses a specific category of stakeholder, thus enhancing the scope of actors' involvement (VMM, 2014).

implementation of measures (Mees, 2017; Tempels, 2016). The question consequently arises whether this situation is a case of flood injustice or not. By flood injustice, we refer to the case where specific socio-economic groups of a population are more exposed to floods or have little or no influence on the FRM.

In order to provide an answer to this question, this paper explores the social characteristics of the Flemish population residing in floodable areas, first to increase the knowledge about the population living in floodable areas and second to investigate whether specific groups are disproportionately more exposed to floods than others. The results are subsequently discussed from the perspective of justice and the practical implications for the MLWS. Furthermore, we explore the potential benefits of the Actor's Relational Approach (ARA) in the decision-making process of the FRM in regard to our definition of justice.

Concepts of justice

When considering a concept such as (in)justice, general notions come to mind. Several definitions exist, each dependent on the perceptions and the moral beliefs of their thinkers. These definitions can be divergent. Determining precisely which standpoints are used can have deceiving consequences. When the intentions and perception of a reader are counter-positioned, conclusions are potentially subject to misinterpretations and misuses (Ikeme, 2003).

Studies exploring the concept of justice, for instance, make a distinction between procedural and distributive justice. Procedural justice focuses on equal rights and opportunities to every population group during a certain process. The distinction between rights and opportunities is in this case important. While all citizens can benefit the same rights to influence a decision-making process, some can nevertheless be disadvantaged by social characteristics (family status, origins, education level, etc.) that diminish their ability to do so. Distributive justice centres on an equal distribution of the benefits and burdens resulting from that process (Adger et al., 2006; Baden and Coursey, 2002; Hay, 1995; Ikeme, 2003; Mees, 2017). Flood injustice can further be delineated by defining (1) flood exposure as the burden and (2) the policies that lead to this flood exposure—land sealing, urban sprawl and climate change—as the process. Flood injustice can thus be defined as a situation where certain popu-

lation groups, disadvantaged by specific characteristics, are disproportionately exposed to floods and have little to no influence on the policies causing them (Maantay & Maroko, 2009).

The issue of being disadvantaged by specific characteristics does not speak for itself as the vulnerability of a population towards floods can be influenced either by the flood characteristics they are exposed to, and their individual abilities or the availability of societal mechanisms that lower the vulnerability. While definitions of flood injustice and exposure have been presented, vulnerability to floods still needs clarification. Hence, the characteristics causing certain population groups to be more vulnerable to floods needs to be clearly identified.

Vulnerability to floods

In 2008, Coninx & Bacchus pointed out a precious distinction between two definitions: vulnerability and scale of the flood's impact. According to the authors, when investigating what makes citizens vulnerable, one can distinguish environmental aspects, individual abilities, and societal mechanisms. First, the *environmental aspects* can be determined by flood characteristics such as flood exposure (To what extent can it potentially flood?), frequency (How often can it flood?), and intensity (To what height will the water rise?). However, while flood characteristics describe the environmental burden itself, not every individual in the population deals with it in the same way. Among the *individual abilities*, Coninx & Bacchus (2008) identified the ability of citizens to cope with, anticipate, resist, and recover from floods. Those abilities tend to be influenced by factors such as wealth (income), physical and mental resilience (age and education), and social capital (nationality and family status). On top of these environmental and individual particularities, societies tend to develop mechanisms that reduce a population's vulnerability to a certain problem. *Societal mechanisms* imply means such as emergency services, insurance systems, and access to or broadcasting of information. These different aspects of flood vulnerability are related to a wide range of layers of society such as environment, demography, or public services. Hence, information about them cannot be found solely from one specific source.

Flood characteristics: frequency, intensity, and exposure

The Flanders Environment Agency (VMM) is in charge of processing flood characteristics in Flanders. They defined two flood zones: effective vs. potential flood zones, with the prior being those with a higher risk and the latter with a lower risk. The effective flood zones are delineated through modelling based on a 100-year return period of events and renewed with local observations of recent floods. The potential flood zones are the observed natural flood zones based on the sampling of flood sediments but that were never recorded to have flooded (VMM, 2015). In short, the effective flood zones are the only ones factually exposed in the current circumstances. The potential flood zones could cause problems in upcoming decades. As no flood events have been recorded yet in these potential flood zones, this study focused solely on the effective flood zones. Unfortunately, no information is given concerning the possible intensity of these flood zones such as flood duration, height, or the water velocity.

Individual abilities: anticipate, resist, and recover

Information about the social diversity of a population is regularly collected by different public institutions. This information, translated into social data, can indicate the abilities of citizens to be flood resilient. For instance, citizens with a low income have a lower capability of affording changes to their house before and after a flood. Children or the elderly generally have less physical competence to cope with floods. Citizens with a low education level or with a foreign nationality can be less knowledgeable of the existing societal mechanisms that could increase their resilience. Single parents are often alone in dealing with the hazard, which leads to higher chances of having subsequent health issues and higher costs of recovery (Sayers *et al.*, 2007). The most accessible social data are registered by Statbel. The social data, collected every ten years, are aggregated per statistical sector. Statistical sectors are the basic measure for demographic statistics in Belgium and can be compared with census areas. These areas can represent a population varying from 0 to 6082 inhabitants of which information is recorded every ten years. This source offers a wide range of information about the potential vulnerability of a population such as age (younger than 15 and older than 65), wealth (median income, unemployment), education level (no diploma or primary diploma), non-Belgian nationality and family status (single parent household).

Social data is also collected per building blocks, which is a smaller geographic unit. With inhabitants ranging from 0 to 731, building blocks are more precise in terms of geolocation, nevertheless difficult to acquire. A lower diversity of information is available, with no information related to wealth, unemployment, and education, in order to respect privacy norms.

Societal mechanisms: insurance, emergency services, and broadcasting

A societal mechanism against floods is frequently dependent on different processes and factors. It can also have unexpected side effects. Societal mechanisms influencing vulnerability cannot solely be investigated through one or two sources; it requires an analysis of their effectiveness as well as their influence on different population groups and other societal mechanisms. For instance, the potential contribution of emergency services to flood justice is determined by the amount of training and preparedness of the crew and local volunteers; the crew's availability and accessibility; and the crew's equipment (Mees, 2017). The insurance systems can reduce the potential damage at the household level and, depending on the functioning working, can encourage or discourage further urbanisation in floodplains or incentivise protective behaviour (Tempels, 2016). The broadcasting of information concerning the potential occurrence of floods and the possible measures to counter them are available on the websites of the VMM and CIW but, as already stated, the public awareness remains low (Tempels, 2016). The potential side-effects and the effectiveness of these societal mechanisms are often dependent on local infrastructural factors, the cultural characteristics of the population, and the level dissemination of the information. This information, however, is very difficult to acquire both quantitatively and geographically. They are thus not part of the geographical analysis but included in the discussion.

Flood exposure of vulnerable population groups

In order to understand the distributive flood (in)justice of Flanders, the AMRP studied the spatial variability of the populations' vulnerability with statistical tests. This was done by using social data illustrating the potential individual abilities of a population such as age, wealth, education level, nationality, and family status. The statistical tests can indicate whether population groups with

a specific vulnerability are significantly more exposed to floods than other less vulnerable groups. With data gathered from the VMM for flood exposure, in this case the effective flood zones, and from Statbel for the populations' vulnerability, a large dataset of statistical sectors was created that comprises the 9182 statistical sectors of Flanders. For each of these sectors, flood exposure was calculated as the percentage of buildings in flood zones and compared with the different vulnerability indicators that were available in Statbel's dataset: the younger than 15 and older than 65 (%), median income (euros/years) and unemployed (%), percentage of citizens with no diploma or only a primary diploma, non-Belgian nationalities (%), and the single parent households (%). The Spearman's rho correlation coefficient test demonstrated that there were no vulnerable groups significantly more exposed than others at the level of statistical sectors and at the scale of Flanders.

The results can be further understood by looking at the map in Figure 12.1. As indicated by the Spearman's rho tests², no clear pattern can be identified within the wide mixture of coloured zones. It is only by looking closely, at a local scale, that small brush strokes can be observed and that the zones can be distinguished. For instance, by looking at the patterns of the single-parent household percentages in the cities of Antwerp, Geraardsbergen, and Ninove, one observes the overall higher rates in Antwerp (Figure 12.1). However, these vulnerable households are not more exposed than those in the other two municipalities. In fact, one particular sector in Antwerp, with more than 50 % of the single parent households, and two sectors in Ninove, with 20 to 50 % of single parent households, appear to be substantially exposed. These observations indicate that there are no clear distributive flood injustices at the level of statistical sectors and at the scale of the Flemish Region, while there are inequalities when looking at a local scale. In other words, examining the spatial variability of the Flemish population's vulnerability to floods can be compared with looking at an abstract expressionist painting of Jackson Pollock. By looking from afar, no pattern can be identified in the wide mixture of colours. The observer can only distinguish significant dissimilarities between zones of the painting by looking closer and thus identifying specific areas with high vulnerability. It implies that the disproportionality in the flood exposure of different population groups is dependent on the scale of observation and the focus area. The inequalities are particular to each municipality and feature a kind of authenticity that entails very specific challenges.

² The Spearman's r correlation coefficient is a statistical test to investigate the degree of relationship between two continuous variables, e.g. the percentage of exposed buildings and the different vulnerability indicators.

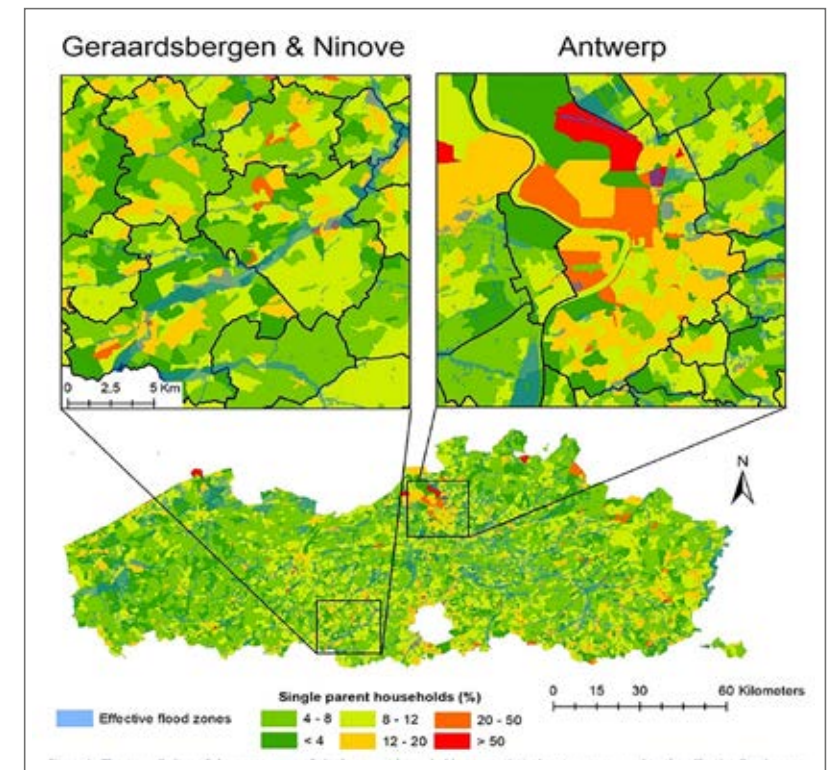


Figure 12.1: The overall view of the percentage of single parent households per statistical sectors compared to the effective flood zones at the scale of Flanders (map below) does not show a clear population pattern that reveals a higher flood exposure. When looking at the local scale specifically, such as Geraardsbergen/Ninove and Antwerp (maps above), more exposed sectors with a high vulnerability can be identified.

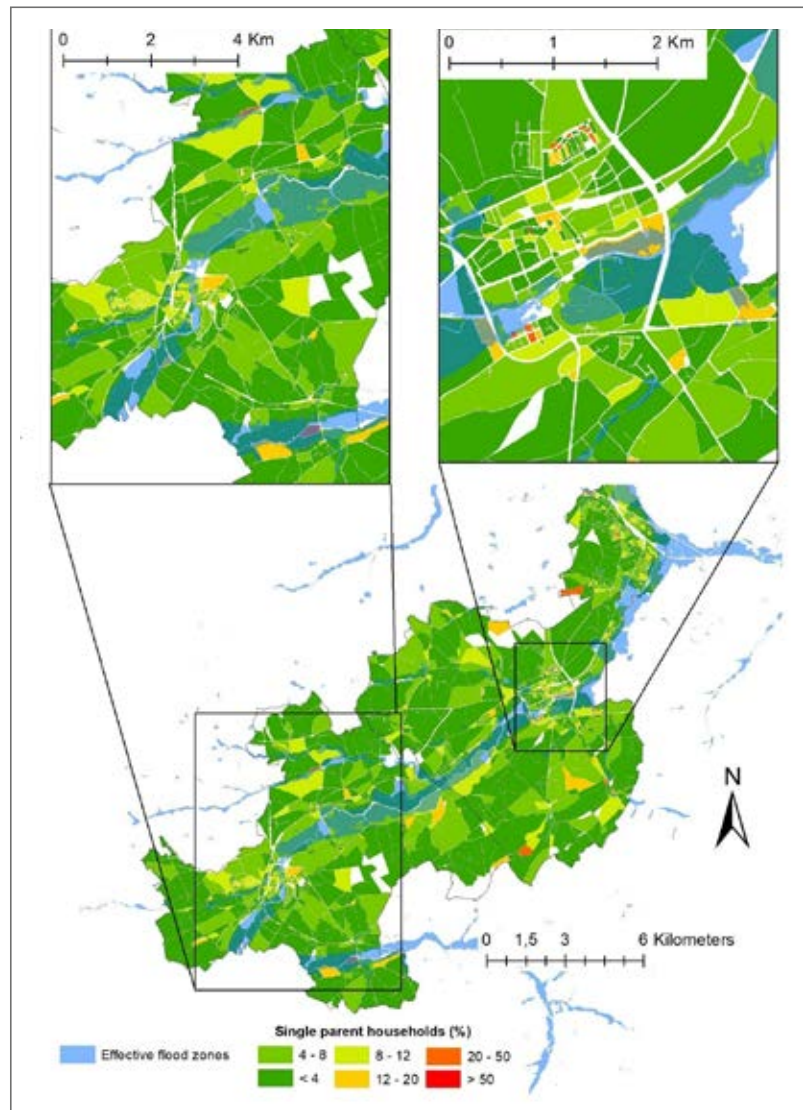


Figure 12.2: The percentage of single parent households per building block for the municipalities of Geraardsbergen, Ninove, and Denderleeuw (map below) show a more precise distribution of the vulnerability but different dominant percentages are noticeable compared to figure 12.1. Two zooms (maps above) allow identification of which vulnerable building blocks are particularly exposed.

Locally adapted approach

These local scale inequalities are more precise when observing the social vulnerability indicators per building block than per statistical sector. The Figure 12.2 features the percentages of single households per building block for the municipalities of Geraardsbergen and Ninove. It uses the same colour palette and classification as in Figure 12.1. Through a zoom in, several building blocks with a high percentage of single-parent households and high exposure are identified. Yet, by comparing the Flanders map of Figure 12.1 with the map on Figure 12.2, a difference in overall colour domination is noticeable, with the latter being “greener” – hence, with lower percentages. This fact is explained by the aggregation level of both datasets. The percentages at the level of statistical sectors do not take into account the variability within the statistical sectors. For instance, some building blocks with a high number of households and with many single-parent households can increase the overall percentage of the statistical sector. The other building blocks have relatively fewer households with lower numbers of single parents. In short, analysing inequalities in flood vulnerability at the level of statistical sectors needs to be done with a certain temperance before drawing conclusions. The map with statistical sectors does not necessarily represent the exact flood exposure of vulnerable population groups. While the spatial variability of the vulnerable population groups and their exposure can be examined more precisely at the building block level, this data is not openly available for the whole Flemish Region and needs to be requested from the local provincial department of statistics. Thus, specific areas of analysis have to be defined beforehand. Moreover, a certain variability is also present within these building blocks and a clearer glimpse of the local situation cannot be attained without direct input of the population and its local actors.

The Actor’s Relational Approach and distributive justice

The type of data and the concordant cartographic method used in this research divulged more specifically the situation in Flanders to floods in regard to distributive justice. We analysed which population groups are living in flood areas and whether certain vulnerable groups are more prone to floods than others. The analysis has shown that the type of vulnerability of the exposed population differs from one neighbourhood to the other. The actor-relational approach,

which allows integration of the specificities and assets of different actors, offers an interesting strategy to develop specific neighbourhood FRM. The ARA is particularly relevant to take into account the specific vulnerabilities of the exposed communities and the existing societal mechanisms already present in each area.

There are two main issues when investigating the distributive flood justice through the spatial variability of different vulnerable population groups. The first one is the lack of a clear view about the existing situation within the aggregated geographic units (statistical sector and building blocks). As shown by the comparison between the analysis of the statistical sectors and building blocks, the aggregation of population data causes difficulty in clearly distinguishing the exposed vulnerable groups from the non-exposed. The second issue is the plurality of vulnerabilities over the whole Flemish territory. Each local area is characterised by populations with specific individual abilities and by a certain level of efficiency of the existing societal mechanisms. This plurality leads to an absence of an overall distributive injustice for Flanders but implies specific inequalities at the local level that requires locally adapted approaches. The actor-relational approach allows the ability to answer these two issues in a certain way. By working with the local civic, public, and private actors, it provides a situation where an input of information about the social diversity within the geographical units is possible, consequently providing a clearer view on the local individual abilities of the population and their exposure to floods. It also enables a better understanding of the local efficiency of the societal mechanisms and challenges the actors are confronted with. A strategy could thus be developed that deals with these local distributive inequalities and problems.

The Actor's Relational Approach and procedural justice

As mentioned, procedural injustice implies that certain groups of the population have little or no influence on the decision-making processes that determine the FRM. Previous studies have already indicated that the general citizens' involvement in the implementation of measures remains low in Flanders (Tempels, 2016). The degree of citizen involvement is also dependent on their social capital, which is strongly influenced by their socio-economic status. The participation of minorities and less educated citizens seems to

be extremely difficult to organise and requires higher amounts of time and energy (Mees, 2017). This leads to a situation where flood-exposed areas with particularly vulnerable communities — in addition to having lower individual abilities to cope with, anticipate, resist, and recover from floods — potentially have lower social capital to influence the decision-making processes of FRM.

The exploration of distributive justice indicates that each area shows a uniqueness in the social vulnerability features of its population in the flood exposed zones. The process of establishing an effective flood resilience strategy — implying societal mechanisms — is thus dependent on both the local types of vulnerability, the available infrastructure, and the behavioural response of the actors to these strategies. From this perspective, procedural justice, the involvement of the local communities as well as private and public actors seems essential.

The ARA is thus an interesting tool worth exploring for potential development in locally adapted FRM and in answering the lack of procedural justice in Flanders. However, since there is a low concern of non-traditional actors for minimizing flood risks and the still persistent traditional perception of a single actor's responsibility, the active involvement of civic and private actors remains a challenge. Their interest to be involved in the processes of FRM is probably different in each area and requires additional energy and time to ensure their involvement.

Conclusion

This study focused on the flood injustice in Flanders through the use of different types of environmental and social cartographic data. It identified specific areas exposed to floods where the population is vulnerable due to social characteristics. These vulnerabilities reduce their ability to cope, anticipate, resist, or recover from floods. However, while these cartographic features represent valuable information, it has been shown that the data depicted on the maps still has its flaws because it solely depicts what its characteristics allow to depict. This fact inevitably needs to be considered when using the data.

Hence, social vulnerability maps could be used as a valuable tool to take a broad look at the challenges that specific areas are confronted with. Input of information concerning the population's vulnerabilities about the view-

points and the mechanisms to cope with floods from the communities and stakeholders can offer a clearer view of local distributive injustices. From the perspective of procedural justice, the active involvement of these communities and stakeholders is essential. Overall, the actor-relational approach could be a valuable tool to ensure this input and involvement.

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Collecting historic flood data in data-sparse areas – A citizen approach

HANNE GLAS & GREET DERUYTER

The challenge of collecting flood risk data

Worldwide, flooding is the natural hazard with the highest impact on lives and livelihood (Zwenzner & Voigt, 2009). Moreover, it is the most complex hazard to model and, due to the large amount of possible drivers, the most difficult to prepare for (UNDRR, 2019). An adequate estimate of the potential losses associated with flood events and the correct identification of high-risk areas are valuable tools in minimizing the costs and consequences of inundations as much as possible. Such flood risk assessments lead to more effective risk management and strengthen the resilience of a community (UNDRR, 2019). On the International Day of Disaster Risk Reduction 2017, United Nations Secretary-General António Guterres emphasised the importance of this approach as such: “The challenge is to move from managing disasters themselves to managing disaster risk” (UNDRR, 2018). While several adequate flood risk assessment tools are available for developed regions, these remain non-existent for most developing countries due to the lack of funds to acquire the necessary reliable and detailed input data.

The lack of accurate and detailed flood data is especially a hindrance to an adequate assessment. Traditionally, this location-specific flood data can either be derived from high resolution satellite imagery and aerial photography or acquired during fieldwork. In the latter method, water heights and extents as well as corresponding damages are registered during a flood event. However, both methods have important disadvantages and restrictions. (Glas, Deruyter, & De Maeyer, 2018) The affected areas are often inaccessible during a flood event, making the former techniques not applicable. The latter is too expensive for a developing country. Therefore, this research focuses on a third method to gather the necessary historic flood data: questioning the inhabitants.

Involving citizens to collect geographic data is not a new concept. Volunteered Geographic Information (VGI) is defined as crowdsourced geo-information, provided by a wide range of participants with varying levels of education, knowledge, and skills that produces novel, and often valuable, geographical content (Fast & Rinner, 2014). One of the most known and valued examples of VGI is OpenStreetmap. While citizen-led movements producing scientific hazard data during disasters and environmental monitoring projects that can act as a warning system for emergency response and for longitudinal scientific studies on hazards are increasingly common, (Hultquist & Cervone, 2018; Sprake & Rogers, 2014) the use of VGI to gather historic disaster data remains rather unexplored. Nonetheless, people living in flood-prone areas can offer valuable insights on water levels and associated losses of past flooding, as they experienced the inundation and its consequences first-hand.

The case of Haiti

Due to its turbulent history, characterized by a constant political instability that hindered economic and human development, Haiti is presently the poorest country of the Northern Hemisphere (Rossilon, 2016). Deforested plains encircled by steep mountains characterise the island state's landscape, as 63 percent of the country's surface has a slope of 20 percent or more. (Dolisca, McDaniel, Teeter, & Jolly, 2007; Rossilon, 2016) This topography and land cover also define the 222 km² large catchment of the river Moustiques, one of the only almost-permanent waterways in the rural northwest department, where the climate is typically arid (PROTOS, 2011). Nonetheless, in the hurricane season from August through October, the 20 km² large plain of the catchment (Figure 13.1) can receive as much as 600mm precipitation per day, frequently causing flash floods with devastating economic and human consequences, including damage to infrastructures and crops, livestock losses, human injuries, and even casualties (Government of Haiti, 2010).

Questionnaire setup

With the use of questionnaires, the almost 2000 inhabitants of the plain were questioned on historic flood events and the corresponding damages to their own properties. During 6 days in January 2018, 6 trained pollsters conducted the survey among all 294 households of the three villages in the plain: Baie

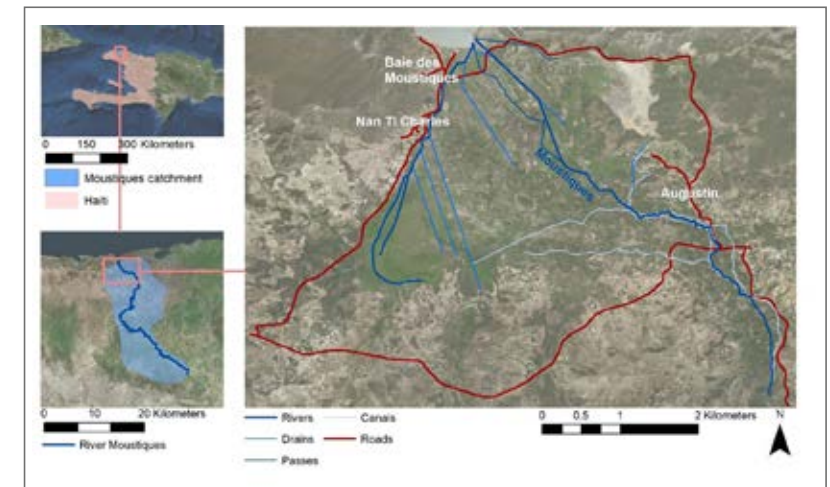


Figure 13.1: Overview of the plain of the catchment of the river Moustiques, located in the northwest of Haiti (source: Glas et al., 2018)



Figure 13.2: Aerial photo of Ti Charles and Baie des Moustiques (left) and residents of a fishermen dwelling in Baie des Moustiques (right). (Photographs taken during the fieldwork in 2018)

des Moustiques, situated at the coastline; the neighbouring village of Nan Ti Charles; and Augustin, located on the opposite side of the plain. The photographs in Figure 13.2 show the villages and inhabitants of the study area. The results of this survey were then processed into detailed, location-specific input data for a flood risk assessment.

The questionnaire was drawn up into six sections. In the first four sections, information on the day-to-day life of the questioned and his or her residence was gathered. In section 1, general information, such as name, age, and gender of the questioned was inquired, as well as the GPS location of the house. More detailed information on the household, such as number of people and their age, was gathered in the second section. Section 3 dealt with the possession of vehicles and section 4 with the agricultural activities of the household, namely possession of livestock and farmland. The last two sections of the questionnaire focused on the knowledge of historic flood events. The respondent was asked to indicate the flood height and the duration of the flood, as well as the corresponding damages to his or her house, vehicles, livestock, and farmland. While section 5 concerned the most recent flood in the memory of the respondent, in section 6 the same questions were applied to the most severe flooding in the respondents' memory.

From questionnaire to useable data

All of the 294 questioned inhabitants answered section 5 of the questionnaire on the most recent flood event. 53 of them also recollected a more severe event, which they described in section 6, leading to a total of 347 descriptions of 19 different historic inundations. Based on these recollections, location-specific damage functions were derived for four types of elements at risk: buildings, farmland, vehicles, and livestock. Damage functions are the link between the potential flood damage and the predicted water height in a certain location, expressed as a percentage of damage. A damage factor of 100 percent thus corresponds with the total destruction of that element.

Many people in the study area do not have the necessary education to adequately determine water heights in metrical units. Furthermore, some of the flood events they described were a long time ago, which complicates a correct recollection of the water height as an exact height measurement. However, people often recall the flood level vividly relative to their own body height. Even

in developed countries, people are more inclined to say the water is knee-deep than the water level is for example 46 cm. Therefore, the questionnaire respondents were asked to indicate the water level as they experienced it in their homes by using a figure of a person, which made it easy to indicate the water height as reaching to their ankles, knees, thigh, navel, armpits, shoulders, or head. Other options were no water in the house or a water level higher than the head. By using the average body measures for men and women, the indicated water levels were then translated into metrical units. In order to create the damage function for buildings, these flood heights were linked to the degree of damage to the structure due to that flood event. Here, four possibilities were offered: no damage, small damages, large damages, or complete destruction of the building. By combining the damage degree with the flood level for each building, a percentage of damage to residential buildings was calculated for each water height. This approach is shown in Figure 13.3.

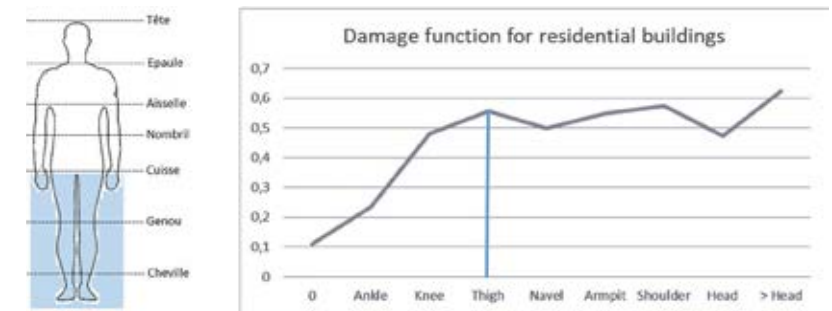


Figure 13.3: Figure from questionnaire to indicate flood height (left) and derived damage function for buildings with damage factors from 0 to 1 (right)

As expected, the created function shows that the degree of building damage increases with the water level, however, there are a few inexplicable peaks in the graph as a result of the uneven distribution of the number of flood descriptions per water height. While 201 people described a flood with water level 'head', only 18 described inundations with 'knee' or 'thigh'. Hence, the damage percentage for 'head' is a lot more averaged than the percentages for other water levels.

The damage functions for vehicles, farmland, and livestock were derived by comparing the situation before the flood and the situation after the event. The number of vehicles and animals and the total area of farmland before the inun-

dition were combined with the number of vehicles that were damaged, the number of animals that died, and the degree of damage done to crops to draft the damage function for each type. However, these functions did not show any trend. For vehicles, this is due to the low number of households that possess a motorised vehicle. Only one household owned a car and 17 owned a motor-cycle. While the numbers are representative, as they include all vehicles in the study area, they are too low to aggregate the results and create an adequate damage function. During the development of the damage functions for crops and livestock, it became apparent that a correct relationship between the flood height and the damage degrees was missing. The respondents indicated the flood height in their homes, but the farmlands and fertile grass areas where the animals are kept are located in the centre of the plain, outside the villages. Even though the damage functions could not be derived, the results of the questionnaires showed the high impact of flooding on the agriculture activities. In January 2018, a flood killed 58 percent of all animals in the plain and affected 72.25 percent of all crops. Shallot and plantain plants were indicated as most vulnerable to flooding.

Conclusions

The acquisition of flood data forms a major challenge in developing regions. In these areas, conducting questionnaires offers new possibilities, as it is a low-cost, fast, and targeted acquisition method that can provide information on historic floods that is otherwise non-existent. As the information can be gathered at any time, the need to perform real-time measurements during a disaster is eliminated. However, the data is subjective, as the memory of a person is not always an accurate and objective recollection of the event. This is inherent to the used technique, as Babbie (2013) defined the basic objective of a questionnaire as to obtain not only facts, but also opinions about a phenomenon from people who are informed on a specific issue (Babbie, 2013). Results should thus always be critically analysed, keeping the subjectivity of the respondents in mind. The first test was performed in the plain of the river Moustiques, only a few days after a severe flood event. The answers show that the inhabitants have a clear and complete recollection of that recent flood, while the answers given on older flood events were often incomplete and even inconsistent. Therefore, performing the survey soon after a flood event will enhance the reliability of the results.

This first test, where questionnaires were used to develop location-specific damage functions, clearly shows the potential of this type of citizen science. The generated damage function for buildings can be implemented in a qualitative risk assessment, where different degrees of damage are linked to a certain water level, rather than the specific percentages. In order to create damage functions for other damage types, such as crops and livestock, however, the questionnaire should be adapted, with a more direct link between the indicated water level and the land use type where that level was observed.

Future research should focus on techniques to create a more even distribution in the descriptions for flood height. This will lead to better averages and more representative damage factors for each water level. In this case study, 294 people of the total population of 1,848 was questioned. Increasing this number is a first step, but the setup of the questionnaire should also be evaluated to optimize the line of questioning. Adapting the questionnaire will lead to an increase in the valuable data that can be derived from the answers.

While this data acquisition technique offers indispensable input for developing countries, developed regions such as Flanders already rely on a large amount of detailed and accurate input data to perform a flood risk assessment. However, the use of questionnaires can benefit these regions as well. First, the results of a questionnaire can serve as excellent validation data, not only for water levels, but for damage degrees as well. Moreover, these degrees can be used to develop location-specific damage functions for crops, buildings, and roads, since the functions used in current flood risk assessment are derived from literature and are not always representative for the study area. A final benefit of this acquisition method is the active involvement of citizens. The questionnaire raises awareness of flood risk among the respondents and offers them a means to share their concerns on the subject. This leads to an empowering effect on the residents of the area at risk. This low-cost method thus provides a whole range of new possibilities to generate and validate flood risk maps, as well as to communicate flood risk with the population.

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Summary box

The plain of the river Moustiques, in the northwest of Haiti, suffers frequently from flash floods. This vulnerable and poor rural region has limited resources to minimize the costs and consequences of these inundations. Flood hazard risk assessments could offer the necessary information on the high-risk zones in the area and which measures would have the best effect. Detailed flood risk data is indispensable in such an assessment. However, the traditional acquisition measures are too expensive or impossible to execute in remote developing regions such as the catchment of the Moustiques. Therefore, this research focuses on a third method: involving citizens by conducting questionnaires to collect information on historic flood events. All 294 households that live in the plain were questioned. The questionnaire was drawn up in six sections. While the first four dealt with the day-to-day life of the household and agricultural activities, the last two sections zoom in on the knowledge of those questioned. Section 5 focused on the most recent flooding, while section 6 was composed with the same questions, but was concerning the most severe flood event in the respondents' memory. All answers were analyzed to derive location-specific damage functions.

These link the potential flood damage to the predicted water height in a certain location. For buildings, the degree of damage given by the questioned was linked to the water height indicated in his or her house. As such, a damage percentage was given for each water level, creating a damage function with a clear upward trend. These realistic percentages are useful in a quantitative flood risk assessment, proving the usefulness of this form of citizen science. However, due to the uneven distribution of the number of described flood events per water level, some damage percentages are a lot more averaged than others. Damage functions for vehicles could not be derived, due to the very low number of motorized vehicles in the study area. For livestock and farmlands, the damage degree could not be linked to water height, as the height indicated in the questionnaire was the flood level in the home of the questioned, while the agricultural lands are located in the center of the plain, away from the villages. These issues should be considered when evaluating and improving the questionnaire setup. Adaptations to the questionnaire will allow future research to derive more valuable and reliable data from this citizen-led data acquisition method.

Flood label – A new instrument to involve homeowners in flood risk management

PETER DAVIDS

Shifting responsibilities in flood risk management

Governments are struggling with flood risk management, particularly when it comes to pluvial floods that lead to local floods in neighbourhoods (Adikari & Yoshitani, 2009; IPCC, 2014). Traditionally, governments try to reduce the probability of flood events with dikes and other technical solutions. Influenced by the concept of resilience, flood risk management is becoming more adaptive, flexible, and dynamic (McClymont, Morrison, Beevers, & Carmen, 2019). The approach of risk as a calculation of probability and damage (risk = probability x loss) is leading to the introduction of new approaches, strategies, and actors in the field of flood risk management. To reduce the risk, one can also mitigate the potential damage, by 'absorbing' the floods in the city (Folke, 2006; Restemeyer, Woltjer, & van den Brink, 2015). For example: a homeowner could reduce potential damage by removing valuable furniture from the basement or by the installation of bulkheads and pumps. This means that flood risk management is no longer solely a governmental activity, as citizens can have an active role using their own measures to protect their property and therefore reduce flood damage (Mees, Tempels, Crabbé, & Boelens, 2016; White, Connelly, Garvin, Lawson, & O'hare, 2018). Based on an effectiveness/efficiency analysis, sometimes interventions at the local level (for example at residential buildings) are preferred over extensive spatial interventions (Hoss, Jonkman, & Maaskant, 2011; Kaufmann, Mees, Liefferink, & Crabbé, 2016). However, citizens are not always aware of their flood risks, lack information on how to protect their houses, or seem unwilling to take measures as they perceive flood risk management as a governmental task (Bubeck, Botzen, & Aerts, 2012).

New experiments on tailored flood risk strategies should be executed to inform, tempt, or oblige these residents to participate in flood risk management

(Bubeck et al., 2012). The concept of a floodlabel is an example that could help to get homeowners involved in flood risk management. A floodlabel is an informative instrument that qualifies a homeowners' property on the level of flood risk. However, in this paper we re-conceptualize the floodlabel beyond its qualities as a static informative instrument. The concept of a floodlabel that will be introduced below focusses entirely on adaptive behavior of homeowners. Nevertheless, from a relational perspective, behavioral change among homeowners is also dependent on the behavior of other actors (such as businesses and governments) in flood risk management. So to increase the effect of a floodlabel as a tool to get homeowners involved in flood risk management, we should also actively involve market and governmental actors. On top of that, we add a third layer hypothesizing that a floodlabel could possibly contribute to a more adaptive, flexible, and dynamic system of flood risk management. By changing the behavior of not only homeowners, but also the behavior of market and governmental actors, the dynamics of the system of flood risk management could change.

Floodlabel as an instrument for homeowners

Although a floodlabel is still conceptual, first experiences with the tool exist in Germany (called Hochwasserpas) and a similar concept will be tested in the Netherlands (called Bluelabel). In Flanders there are some experiences with tailor-made advice (Davids, Boelens, & Tempels, 2019). Although these concepts somewhat differ from each other, they all assume that tailored flood risk information could influence a homeowner, that private measures are effective as mitigation measures, and that homeowners have the capability to adapt their houses. For floodlabel this has resulted in three aims (Hartmann & Scheibel, 2016):

- **Context:**

Informing homeowners on flood risks for their property. A web-based self-check or flood information system (FIS) collects general but basic information about the surroundings and the building itself, such as information about previous flood events, distance to rivers, etc. Four main sources of flood events are considered: fluvial floods, pluvial floods, sewer backwater, and groundwater. Based on this data, the property owner receives a label.

- **Action:**

Suggesting to homeowners how to reduce their flood risks. Based on an experts' visit, the property owner receives hands-on (technical) solutions to mitigate flood damage. Solutions include the construction of barriers, backup valves, sealing of building openings, or special coating paint for walls as well as more practical suggestions such as moving valuables to a higher floor level.

- **Behavioral Change:**

Next to the mitigating measures, the property owner gets an indication of a higher label if the suggested measures are executed. This should trigger adaptive behavior among the homeowners, through the development of governance arrangements that link flood risk management with the label. These arrangements include incentives or instruments to force or tempt adaptive behavior, including facilitation and monitoring of the implementation. This requires the involvement of citizens (as they suffer the damage during a flood), governments (as the interest of an elected body is to care for their citizens), and market actors (for instance insurance companies that prefer to reduce vulnerabilities).

A floodlabel informs a homeowner of its flood risks and provides tailored solutions to lower the risk for an individual property. The concept follows Protection Motivation Theory (PMT) that describes how adaptive behavior is dependent on personal risk appraisals and coping appraisals. The willingness to adapt is first dependent on how homeowners appraise a flood threat, e.g. a homeowner's fear of and severity or risk for a flood. Second, it is dependent on a homeowner's ability to cope with it through self-efficacy or response efficacy, as well as the cost to respond to a flood event (Grothmann & Reusswig, 2006). Therefore communication on flood risk should focus on both flood risk information as well as the perception of adaptation and personal history and experiences (Koerth, Vafeidis, Hinkel, & Sterr, 2013). A floodlabel is more specific than flood risk maps. These maps only show risks for the surroundings of a house: the label includes the structure of the building in the risk calculations. In the case of a good label (low flood risks), this could be used as a unique selling point for the house. A low label (high flood risk) could put pressure on the owner to make the house more flood-resilient, based on tailored suggestions from an expert that comes with the floodlabel. Therefore, the concept of floodlabel is somewhat comparable to the European Energy Performance Certificate (EPC).

Experiences in Flanders on tailored flood risk advice¹ have shown that a significant group of homeowners with flood experience is more willing to adapt their houses after an expert visit (Davids et al., 2019). The experts were able to enhance awareness, provide information on possible tailored solutions, and improve the relationship between governments and homeowners.

Understanding the Floodlabel as a relational instrument

However, adaptive behavior is not solely dependent on the internal motives of the homeowners. The conceptualization of space of Amin and Thrift (2002) says that people, things, agencies, and their actions are influenced by space. But it is also the other way around: people, things, agencies, and their actions influence space. So spaces are primarily constructed through the relations among these entities and processes. Involved actors act in parallel, and mostly in unforeseen, non-linear, and spontaneous ways as a result of on-going changing circumstances. So behavioral change among residents in flood prone areas is also highly dependent on the (social and institutional) context and/or the actions of other leading stakeholders (Boelens & de Roo, 2016). The (lack of) adaptive behavior among residents in flood-prone areas is also highly dependent on social and institutional context, and therefore also dependent on other actors. Therefore, we should, for example, also focus on the interaction between residents and the government. Governmental action in flood risk management influences the residents' willingness to act and their behavior influences policy (Mees et al., 2016). Another example: the availability of flood insurance could influence the willingness to act (Filatova, 2014; Penning-Rowsell & Priest, 2015). The project leader of the tailor-made advice in Flanders provided suggested the advice would have been more effective if external parties had been strongly involved. According to the project leader of the tailored advice in Flanders, the advice could provide a firmer negotiation position for homeowners discussing insurance premiums with their insurance company (Davids et al., 2019). And this suggestion is just one of the market-based incentives that are possible to stimulate adaptive behavior. For the Dutch 'Deltaplan on spatial adaption' and 'National Climate Adaptation Strategy'² Bor and Meesters (2018) provided a wide range of hands-on incentives to apply in Dutch climate policies: exemption on taxes, VAT-modifications, subsidies, organizing cost-sharing, crowdfunding, donations in kind, and organizing financing schemes for common investments. Businesses can also contribute with resilient loans, resilient mortgages, or

- 1 A label was not settled in this experiment, but the expert advice is similar to the expert involvement in the floodlabel. See Davids et al. (2019).
- 2 In Dutch: Deltaplan Ruimtelijke Adaptatie & Nationale Klimaatadaptatiestrategie.

the previously mentioned modified insurance premiums. Based on the actor-relational analysis one could possibly discover what new incentives could be implemented. To achieve flood-resiliency, we should establish a strong network and coordination between the governmental, civic, and businesses actors. Floodlabel can become an instrument to initiate and support new interactions between multiple actors in flood risk management. Arrangements should be designed around the couplings between these actors and embedding the label within flood risk management and contextual governance.

Floodlabel to change the system of flood risk management

When understanding floodlabel as a relational instrument, it is possible to deploy the label to evoke change at the system as well. From that point, one should focus on the dynamic actor-relational interactions between these actors in flood risk management. According to Boelens (2018), institutional innovation occurs under the influence of subsystems, through irritations and interpenetrations from the outside in. The development of floodlabel as an instrument to communicate between a diverse range of actors, as described in the previous paragraph, could be these 'irritations'. The interpenetrations however, go even further. McClymont et al. (2019) suggests that a "fluid frontier" between top-down and bottom-up flood risk management is needed to boost a co-evolutionary process. A floodlabel combines top-down technocratic suggestions with local know-how of homeowners and their flood experiences. As a consequence, this could contribute to the redistribution of responsibilities among homeowners in flood risk management. These responsibilities should be shared among e.g. 'water managers, spatial planners, emergency planners, the insurance sector and citizens' (Mees, 2017, p. 144; Mees et al., 2016). The floodlabel could contribute to a co-evolving resilient process of becoming, contributing to a continuous and gradual transformation of existing structures and interactions among actors in flood risk management. For example: the floodlabel suggests adaptations in a house to reduce damage in case of a flood. To give extra force to this suggestion, couplings can be made with the insurance sector. This would provide lower premium costs, as the risk on flood damage will be reduced as well after adapting the house. Other couplings could be made with the mortgage industry, providing mortgages only to flood-resilient houses. In both cases, the insurer and mortgager request certification or warranty for the quality of the flood proofing measures and installation experts. This would

institutionalize and professionalize the industry of flood proofing. Moreover, insurance companies would not only be involved through recovery support, but the nature of their actions could become more preventive. This way, the responsibility of flood risk reduction is re-divided among many more actors than just the homeowner or government.

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Spatial planning in an age of active citizenship – Toward the art of creating consistency

BEITSKE BOONSTRA

The emergence of civic initiatives

Civic initiatives are increasingly popular in cities and regions across Europe. They come in different forms and shapes: citizen movements protesting against neoliberalist urbanization and mega-plans (Uitermark et al., 2012; Swyngedouw, 1997; 2005; Domaradzka, 2018); social or niche innovations providing civic-driven solutions to social issues (Moulaert et al., 2010); locally driven, user-generated, place-based and temporal direct actions reshaping urban space like Do-It-Yourself urbanism (Deslandes, 2013; Douglas, 2013; Talen, 2015; Finn, 2014; Iveson, 2013); collective actions such as urban commons (Borch & Kornberger, 2015; Iaione, 2015); or cooperative urban development (Patti & Polyak, 2016).

For a long time, civic initiatives were seen as marginal, at the most temporal, and often stand-in-the-way methods to achieve formally planned spatial development. Nowadays, however, civic initiatives are increasingly framed as providers of alternative and additional public values, services, and places in environments where public institutions fall short due to decentralization, austerity, and complexity. Planning scholars indeed argue that the “many changes by many hands”—in which no long-term and strategic plans, but individual, entrepreneurial interventions and direct actions play the main part—will stimulate the emergence of a more diversified, resilient community-based urban fabric (Talen, 2015; Savini, 2016; Folke et al., 2005; Armitage, 2007).

However, enhancing civic initiatives in ongoing spatial planning processes is not an easy task. Still, many spatial planning professionals tend toward participatory methods when interacting with citizens. Within such methods, citizens are

provided with formal procedures to influence policies of which the thematic, procedural, and geographical delineations are already pre-determined (Boonstra & Boelens, 2011). Civic initiatives are often too dynamic, multiple, and versatile to align with such prescriptive governmental-led processes. Moreover, civic initiatives are often carried out with deliberate hints of anti-professionalism and informality (Douglas, 2013; Talen, 2015; Douglas, 2013; Lydon & Garcia, 2015, Finn, 2014; Deslandes, 2013). They consist of hybrid, loose, and informal collaborations between citizens, artists, community workers, etc. and their objectives are rooted in personal, situational, timely, and local conditions. Moreover, their focus expands easily in social, geographical, and thematic terms according to the issues at hand (Gosewinkel & Kocka, 2006; Van Meerkerk, 2014; Boonstra, 2015). As such, the dynamics of civic initiatives are not easily connected to governmental processes focused on stability, accountability, regulation, and thorough decision making—even though governmental dynamics (political shifts, civil servant mobility) can be much higher than those of citizens, especially those with a high and long-lasting attachment to their working and living environment.

The question thus arises: what planning strategies would fit this age of active citizenship? How do these initiatives come to be, how do they interact with professional spatial planners and specifically local governments, and what can professional planners learn from the emergence of civic initiatives?

New practices, new conceptualizations

To answer this question, this chapter discusses the results of research conducted in the period of 2010-2015, shortly before the planning literature on civic initiatives and spatial planning boomed. At that time, several pioneering local and national governments in the Netherlands, the United Kingdom, and Denmark had already developed policies in support of civic initiatives. In Denmark, the long-standing tradition of Do-It-Yourself-together (especially in the housing sector) formed an interesting institutional environment to study civic initiatives for co-housing. In the United Kingdom, the Business Improvement District regulation (instated by New Labour in 2005, years before the famous Big Society was launched) formed an interested institutional environment to study entrepreneurial initiatives for neighborhood branding and public space enhancement. In the Netherlands, the municipality of Almere developed groundbreaking approaches to facilitate civic initiatives across

domains, and thus formed an interesting institutional environment to study civic initiatives in public space, co-housing, and entrepreneurs. Of those civic initiatives, twelve in total, their process of becoming was analyzed, with specific attention to planning practices. To study the emergence of these initiatives, the notion of “self-organization” was taken as the main theoretical guideline. This notion is derived from complexity theory and stands for the emergence of new order out of chaos, based on individual actions without central coordination or guidance (Cilliers, 1998; Heylighen, 2001; Teisman et al., 2009). This notion highly resonates with poststructuralist philosophy, which especially boomed in late 20th century France. Its philosophers – Gilles Deleuze (1994), François Lyotard (1984) and Jacques Derrida (1988) – elaborate on the notion of ‘becoming’ and the ‘becoming of a self’. Their philosophies have in common that they see the ‘becoming of a self’ as a continuous process that unfolds in full interaction with the environment. It is not predefined but develops along the way. Seen from that philosophical standpoint, self-organization would describe the becoming as an individual civic initiative in a complex and dynamic environment. Emphasis is then turned toward the process through which a civic initiative acquires meaning and relevance in the dynamic and complex environment of spatial development (Boonstra, 2015).

When following this post-structuralist interpretation of self-organization, resonance also becomes visible among the key notions within self-organization: autopoietic (self-referential and internally strengthening) behavior, dissipative (externally and diversifying) behavior, bifurcation (critical breaking) points and equilibria (temporary stable situations), and other post-structuralist conceptualizations of “becoming”. In some way this is also consistent with assemblage theory, that describes the becoming of an assemblage as an interplay between territorialization (homogenizing and stabilizing behavior), deterritorialization (diversifying and dynamizing behavior), coding (fixing identities) and decoding (rejecting defaults) (DeLanda, 2002; 2006; 2016). Furthermore, actor-network theory could be helpful in describing the becoming of a civic initiative through the phases of problematization (rejecting defaults), interesement (convincing and relating to new actors), enrolment (involving and fixing those actors in a role), and mobilization (acting as a whole) (Latour, 2005; Callon, 1984). Despite the many differences between these theoretical schools and their diverging ontological positions, in this chapter, once again, their similarities are stressed rather than their differences (See also Van Meerkerk et al., 2013; Boonstra & Rauws, *forthcoming*; Boelens, 2020 – introduction to this book).

A behavioral view on planning practice

To look more precisely into the practices of the aforementioned civic initiatives (three co-housing projects in Denmark, five business improvement districts in Birmingham, and four civic initiatives in Almere), a research framework was developed based on four forms of behavior and three intentionalities. The four forms of behavior are based on the resonance among theory on self-organization, actor-network theory, and assemblage theory, as described above and in the introduction of this book. The intentionalities describe what the initiative aimed to achieve in its environment, loosely based on the distinctions between strategies and tactics (Lydon and Garcia, 2015).

The four forms of behavior are: (i) Decoding, which stands for stepping away from the usual and the existing into a new and desired direction. Think of making explicit what should and can be changed, giving direction and goal to an initiative. (ii) Expansion, which stands for an external orientation, exploring new possibilities. Think of site visits, explorative conversations with funding agencies, drafting scenarios for the initiative, winning in expertise from professionals, and recruiting members. (iii) Contraction, which stands for an internal orientation focus on stabilizing, consolidation, casting boundaries, and establishing internal order and hierarchy. Think of appointing a board, deciding on a plan of requirements, and establishing internal working groups. (iv) Coding, which stands for the way an initiative uses external legislation, regulation, and references that can be regarded as normal. Think of using community legislation, complying to (or writing) a legal land-use plan.

The three intentionalities are: (i) Interfering for change – interventions aimed at changing perceptions and inciting others to take action. Think of tactical urbanism actions, the promotion of good practices, or the introduction of an experimental law. (ii) Networking for a fit – seeking an optimal connection between ideas and environment, aimed at materializing a project. Think of negotiations between a landlord and initiators or the attempts of civil servants to tweak a land use plan in order to accommodate an initiative that serves the general public interest. (iii) Assembling to maintain – attempts to safeguard things as they are and improve their conditions for the sake of their durability. Think of self-management of public spaces, neighborhood branding, or common activities to keep a community together. When combining these three intentionalities and four forms of behavior, twelve archetypical forms of self-organization can be identified (see figure 15.1). Through combining and shifting

Table 15.1. Twelve archetypes of planning (source: Boonstra, B., 2015, Planning Strategies in an Age of Active Citizenship: A Post-structural Agenda for Self-organization in Spatial Planning, InPlanning, Groningen)

		Behavior			
		Decoding	Expansion	Contraction	Coding
Intentionalities	Interfering for change	Showing what could be different in order to point out the need for a new direction.	Exploring different options and opinions in order to point out possible futures.	Emphasizing the like-mindedness and common ground in order to create support for a new direction.	Setting up rules and regulations in order to make change happen.
	Networking for a fit	Changing things and leaving behind old practices in order to move along and find a fit with the environment.	Exploring different options and opinions in order to move along and find a fit between the initiative and an environment.	Creating like-mindedness and common ground between the initiative and its environment.	Using (or tweaking) existing or new rules and regulations in order to find a fit between the initiative and its environment.
	Assembling to maintain	Defining what should be changed in order to maintain the quality and stability of the assemblage.	Disseminating and exploring different possibilities of and for the assemblage, in order to strengthen its stability and legitimacy.	Emphasizing the like-mindedness and common ground in order to maintain the stability and strengthen the durability of the assemblage.	Upholding rules and regulations in order to maintain the security and stability of the assemblage.

through these archetypical forms of planning, the civic initiatives acquire meaning, identity, and the ability to materialize ideas in continuously dynamic and uncertain environments of spatial development.

The art of creating consistency

Whereas at first, only the emergence, processes, and actions of the fourteen civic initiatives were mapped on this diagram, through their interactions with local governments, the processes and actions by those local governments became visible through the lens of archetypes. Then it shows that all these twelve archetypical forms of planning are equally performed by all actors, including professionals and lay people, public, civic, or business actors. This goes for the decoding in combination with interfering for change. This is applied by civic initiatives in the form of tactical and temporary interventions in space and by governmental planners who aim to change regular policy processes. It goes for coding in combination with assembling to maintain, which is

applied in the development of legal land use plans *and* by civic initiatives that agree on a legal form to keep the community together. And it goes for all archetypical forms of planning in between. As such, when looking at planning from a behavioral point of view, distinctions between professionals working for planning authorities and civic initiators become blurred, as *both* try to create meaning and reasoning in a dynamic and uncertain world.

Spatial planning scholars usually describe spatial planning as the practice of collaboratively formulating ideas for the spatial environment, the translation of these ideas to spatial visions and interventions, and the organization of resources to implement and actualize these interventions (Forester, 1989; Healey, 1997; Albrecht, 2006). With this scheme of archetypical forms of planning in mind, however, this research concludes that such a practice is also performed by civic initiatives. Civic initiatives are—as much as spatial planners working for governments—busy creating meaning in their spatial surroundings. Moreover, they must do so in an environment in which the resources for spatial interventions are spread over a large number of different actors. As such, everyone who takes a spatial – and to a more or less extent – collective initiative can thus be regarded as a spatial planner – which resonates with the idea of a flat ontology of planning, as described in the introduction of this book. So what can professional planners learn from the emergence of civic initiatives? Have they become obsolete in an age of active citizenship? Not in the least! When everybody who aims to physically change a working or living environment can be regarded as a spatial planner, *professional* spatial planners can complement these civic-led practices with the following activities:

1. Conditions that open up

The first activity is the creation of conditions that do not constrain but open up possibility spaces. This planning activity is related to the behavior of coding and (allowing for) decoding. Instead of developing (spatial, institutional) frameworks that delineate the freedom of civic initiatives beforehand, planners should perhaps pay attention to conditions that provoke agency (Hillier & Van Wezemael, 2012). Such conditions can be both generic (e.g. planning legislation) or situational (e.g. local planning issues and actors). By provoking agency, the likeability of the emergence of new initiatives increased, thus adding to the diversity and resilience of the urban system. This links closely to interfering for change but from an institutional point of view.

2. The need for navigators

The second and subsequent activity is to “navigate” between planning initiatives, related to the behavior of contraction and expansion. From the cases it becomes evident that the actors who contribute most to the robustness and resilience of an initiative are people who are able to connect. They are not just boundary spanners. They are people with the ability to think beyond their own self-interest and to empathize with other interests (Van Meerkerk, 2014) but do so with a strong sense of self and direction in which to guide their actions. Hence the term “navigator”: People heading for a certain end goal, but in a complex and ever changing environment without known or fixed paths and endpoints (Hillier, 2007). This links closely to networking for a fit.

3. The art of creating consistency

The third, and again related, activity is the art of creating consistency, related to all forms of behavior. This is consistency not in the sense of coherence and sameness, but in the sense of moving in the same direction. This consistency does not follow from disciplinary frameworks or inclusionary procedures, but much more from the ability to relate, to empathize, to build upon the performances of others, and to make strategies as open and known as possible (the twelve archetypical planning strategies can be instrumental in this). The art of creating consistency comprises that planners are able (i) to recognize the potentials of specific and detailed projects of civic initiatives for longer-term futures, (ii) to scan the various becoming selves and explore what potentials there are for consistency between civic initiatives, (iii) to think on how civic, public, and private interventions in space can add up to each other, (iv) to argue what areas could benefit from additional impulses for and by civic initiatives. This links closely to assembling to maintain and the search for coherence in diversity.

From the study of twelve civic initiatives against the background of pioneering governments developing policies to enhance them in the years 2010-2015, and with the analytical framework of self-organization and poststructuralist interpretations of the ‘becoming of a self’, a new perspective on spatial planning in the age of active citizenship came to light. This perspective comprises the ability of spatial planners to open the planning spectrum for many others, to navigate between these emerging others, and to empathize with the behaviors and intentionalities of these many others. The overview of the twelve archetypes can be instrumental in creating at least an awareness of these (and one’s own)

behaviors and intentionalities. Then, the potential for consistency can be recognized and acted upon. Moreover, through the art of creating consistency, planners can become even more active creators of the dynamic, diverse, and resilient urban system so envisioned by the protagonists of civic initiatives in spatial development.

Urban regeneration through self-organization: business improvement districts

In Birmingham (England), five Business Improvement Districts were established in the city center from the period of 2005–2015. BIDs are legal entities of entrepreneurs that organize a tax-levy among themselves, of which the revenues are reinvested for the improvement of their local business environments. BIDs are

elected by their members and renewed every five years and exist under a national BID legislation. The Birmingham city center BIDs are Broad Street BID (2005), Retail Birmingham (2006), Colmore Business District (2009), South Side BID (2010) and Jewellery Quarter (2012). While starting with a focus on safety, cleanliness, PR and marketing, these BIDs soon evolved towards an active engagement in the spatial development of the city center and the refurbishment of public space. They argued that a qualitative and well-functioning public space; good accessibility by public transport, car and pedestrians; and a reduction of vacant buildings would be a key towards a healthy local economy, and as such of benefit for the entrepreneurs within the BID area as well. Especially Colmore Business District grew strong in the public space: they initiated, lobbied, designed, and co-financed the refurbishment of Church Street Square. While before it was an underused car park, it is now transformed into a small pocket park and urban square with benches, trees, and greenery, especially well-used during lunch time. While initiating Church Street Square, the BID went through



Figure 15.3: Church Street Square by Colmore Business District



decoding by taking a stand against deprived public areas; expansion by lobbying with the City Council for public space improvements; contraction by forming a specific partnership with the City Council for Church Street Square and defining a design; and coding by co-writing the Birmingham Movement Strategy and Big City Plan. Meanwhile, the intentionality driving Colmore Business District was mostly assembling to maintain: strengthen the local business

Figure 15.2: BIDs in Birmingham city center, England, and their public space initiatives

environment and improve its overall quality and functionality. After this initiative, more projects for public space improvement were set up in collaboration between the Birmingham City Council and Colmore Business District – as well as with other city center BIDs in Birmingham.

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“My data are better than yours” – How environmental health experts have become new planning actors

THOMAS VERBEEK

When I started my doctoral research on urban planning and public health in 2010, I thought air pollution was one of the most straightforward ways that built environment characteristics, particularly roads, might affect public health outcomes. I envisioned collecting all (!) studies on traffic-related air pollution and expected to find some agreement on the distance-decay relationship of air pollutant concentrations along a busy road or on acceptable levels of air pollution. However, I soon found that I had been quite naïve and overly ambitious. First, the number of studies I encountered was enormous, making an exhaustive synthesis impossible, further complicated by the fact that ‘air pollution’ can represent a wide variety of pollutants. Second, I started to realize that every situation is different and that air pollution generated by traffic interacts with the environment in often unpredictable ways and with different effects on different people. Finally, I found very little correspondence between studies. They used different methods and indicators (for the same pollutants), interpreted their results in various ways, and had conflicting views on what would be acceptable levels. Yet they all had carried out a rigorous analysis applying scientific methods.

This observation has big consequences for the way we deal with environmental pollution and risk in our policies. It means that environmental knowledge claims can be contested, and that no representation of an elusive impact like air pollution will ever be completely unbiased and neutral, let alone come to a conclusion on the evaluation of what is an ‘acceptable’ level. Since environmental expertise has lost its innocence, environmental (health) experts have started to become actors in spatial policy processes, advocating their methods and assessments, sometimes conflicting with the authorities’ expert view on

the matter. Especially when citizens are actively or passively backed up by scientists in their environmental activism or resistance against certain projects or plans, this new role becomes obvious. Before further elaborating on this, I would like to go back to some of the sociological literature on environmental risk, providing a fascinating account of the ‘demystification’ of science, a concept that helps build understanding of the position of environmental (health) experts in policy debates today.

The demystification of science

The demystification of science and scientific methods is not a new phenomenon and has been discussed in academic literature for some time, particularly in the *risk society* literature. Two of its most prominent figures, Ulrich Beck and Anthony Giddens, discussed the way we (should) deal with the typical risks of modernity, which Giddens (1999) described as ‘manufactured risks’: risks created by the very progression of human development, especially science and technology. It is typical for these risks, such as air pollution or nuclear risk, to largely escape sensory perception. People therefore depend upon ‘second-hand nonexperience’ and science’s identification of risk causality (Eden, 1998). This ‘scientization’ of environmental knowledge goes along with a much more dialogic or engaged relationship with science and technology than existed in the past. People no longer simply ‘accept’ the findings which scientists produce, if only because scientists themselves frequently disagree with each other. Everyone now recognizes the essentially sceptical character of science, involving a process of constant revision of claims to knowledge (Giddens, 1999). In the same spirit, there exists great scope for critique and disagreement about what makes up a ‘good’ or sufficiently robust research design. In every measurement or analysis, methodological choices are involved that shape the scope and form of the evidence claims that can be made and the knowledge that is generated and not generated (Walker, 2012). Specifically with air pollution, this creates conflict between supporters of modelled data and those who only want to rely on monitored and measured data (Garnett, 2017).

Moreover, scientific expertise is always contingent on power and inevitably embedded in institutional, social, and cultural dimensions. Consequently, all decisions and regulations regarding risks such as air pollution are of a political nature (McKechnie, 1996). We have come to realize that it is impossible to define safe thresholds for an environmental toxicant, and that limit values only

establish ‘socially acceptable’ levels of risk (Boudia & Jas, 2014). Or to use Beck’s words, “how long poisoning will not be called poisoning and when it will begin to be called poisoning” (Beck, 1992, p. 65). The awareness of power relations in the production of evidence has also led both activists and academics to argue for and experiment with participatory, community-based research. This last point underlines the highly ambivalent meaning of the “demystification” of science. To contest a scientifically produced result or a scientific method, one must appeal to what one argues against—scientific rationality— because “so long as risks are not recognized scientifically, they do not exist” (Beck, 1992, p. 71).

Impact on spatial planning and infrastructure projects

At a practical level, this contestation of environmental knowledge, expertise, and “acceptable levels” has had an important effect on the debate on (traffic-related) air pollution in Flanders and beyond. While the negative health impact of exposure to air pollution has been known for decades, with evidence continuing to mount, it is essentially since the beginning of the 21st century that the direct connection between spatial or mobility plans and effects on air pollution and public health has come into the spotlight. In Flanders, the best example is the debate around and contestation of the Oosterweel Link project in Antwerp. While the original plans were mainly disputed because of concerns about the impact on urban development, after some years the predicted impact on public health became key in the public opposition against the project, with medical and environmental scientists playing an important role in contesting the government’s risk assessment, raising awareness, and empowering citizens (see box).

The Antwerp case shows that environmental expertise, studies, measurements, models, and even the experts themselves, have lost their neutrality and have become weapons in supporting or attacking policies and projects. One of the most contested policy documents in this case was the environmental impact assessment of the initial plans. For a long time, we have relied on the judgment of these kinds of assessments to evaluate and assess the environmental and public health impact of large plans or projects. In theory, these should be neutral evaluations, following agreed upon guidelines and protocols on how to measure and assess a certain impact. In Flanders, this environmental impact

assessment process is criticized for various reasons: it only leads to advisory and not legally binding recommendations, it is too environment-focused with no health experts involved, it does not always examine alternative options, it lacks a holistic perspective in which the interaction of different environmental impacts is taken into account, and it considers everyone as equally vulnerable. But even if all these remarks are put aside, what is easily overlooked is that the guidelines, protocols, and limit values themselves are the result of political and social agreement, and are not the ‘best’ or ‘only’ way of measuring and evaluating these impacts. While the highly skilled experts who write environmental impact assessments apply a scientific and rational approach, another assessment using different indicators, models, and limit values might be equally valid.

The contestation of environmental impact assessments is only one of the examples of how the demystification of science finds its way into local policy and planning debates. In general, this demystification applies to all data on environmental pollution or all environmental (health) risk assessments. What is measured—or not measured (!)—how it is measured, and how data is analysed, interpreted, and evaluated can always be contested. This means that environmental and medical scientists increasingly become actors in social debates or spatial policy discussions, not only defending their risk evaluation, but also making a case for their preferred methodology and data. The challenge is thus not to find the only correct representation of an environmental risk, but to get a certain method, analysis, and interpretation accepted by different stakeholders, and in this the aspect of trust plays an important role.

Citizens, scientists, and reflexive scientization

Local conflicts about environmental pollution or environmental risk, like the debate in Antwerp, are often portrayed as a conflict between the government and citizens. It is the authorities who are usually in charge of managing environmental pollution and evaluating risk, and who increasingly have to defend their data, methods, and risk assessments. Instead of sticking to protests against a project, which a government can easily classify as NIMBY behaviour, citizens increasingly consult scientists and experts themselves to make their case. These also apply a rational, scientific approach—like the government pretends to do—but often come up with alternative evaluations, using other data, methods, and limit values. When alternative expert evaluations align with

citizens’ concerns, their protest gains more credibility, making it much harder for the government to ignore. It means the so-called public-expert dichotomy has become fallacious with regard to environmental pollution and risk. A more important conflict is between experts and experts, since most of the time when policy makers hear from citizens on these issues, the citizens are in fact representing scientists (Tesh, 1999).

The increasing contestation of expertise does not mean it would be a good solution to get rid of all data, methods, models, and assessments. Appeals to a civic model of governance can all too readily be interpreted as calls for a flattening-out of knowledge claims, leading to a descent into relativity (Bickerstaff & Walker, 2003). Scientific methods still help us understand and interpret the world. However, we should be aware of the bias and arbitrary choices we make in every process of measuring, analysing, presenting, evaluating, and interpreting environmental pollution and risk. This aligns with what Beck (1992) called ‘reflexive scientization’, which means we should extend scientific scepticism to the inherent foundations of science and scientific methods themselves. Others go one step further and describe Beck’s ideas as insufficient, since science is still privileged over other ‘reflexive domains’ such as moral or everyday knowledge which would provide different perspectives on reality (Eden, 1998).

In conclusion, reflexive scientization opens new possibilities of influence and development in the processes of production and application of scientific results in policy processes (ideally complemented by local, contextual and active knowledge). In the context of a project or plan that has the potential of causing significant environmental impacts or jeopardising public health, it is not a good idea to simply rely on predefined guidelines, measurement protocols, and assessment frameworks, applied by experts in an environmental and health impact assessment external to the planning process. In my opinion, it would be much better to make the assessment of possible environmental and health impacts an integral part of the planning process from the very beginning. In the same way that different stakeholders discuss their needs, wishes, and concerns without a particular goal in mind in the beginning of a bottom-up planning process, the environmental health impact assessment ‘approach’ should also be up for discussion. This should (ideally) lead to agreement on what kinds of methods, models, and measurements should be used, and how the results will be evaluated in relation to other forms of (non-scientific) knowledge. It prevents the project from getting stuck in discussions on data collection, analysis, and interpretation later in the process and will focus the environmental health

impact debate on a collective evaluation of the risk and the consequences for the project or plan.

I think this bottom-up discussion on the environmental health impact assessment strategy should be open to all but must include at least three key groups of experts: the government's environmental impact specialists, environmental and medical scientists, and citizen experts. This recommendation significantly widens my initial focus on scientists as new planning actors, and while the two 'new' actors might have been involved in planning processes before, they were not involved in this capacity. This democratization of science in planning processes may be an imperfect solution, as there is no guarantee that a 'better' decision will be made, but the risk is worth taking since it might be the only way to overcome the current contestation of environmental health knowledge. Moreover, it could help close the circle of the demystification of science by offering citizens, in the words of Ekberg (2007, p. 360), "an opportunity to reclaim their competence in making critical judgments about acceptable levels of risk".

Scientists bringing air quality into the Antwerp urban development debate

The emerging importance of environmental and medical scientists in urban planning and policy is apparent in the debate on air pollution, urban planning, and infrastructure in and around Antwerp. Since the plans on the 'Oosterweel Link'— a multibillion-euro infrastructure project to close the circle of the Antwerp ring road—were presented to the public in 2005, a heated discussion has arisen which continues until today. While initial protests focused on the effects on urban development, with the community organization Straten-Generaal mainly resorting to legal challenges and detailed study of the plans, in 2008 Ademloos ("Breathless") joined the debate, focusing on the air quality and health impact of the plan with a mediatized campaign, quickly gathering significant public support. The growing awareness about air pollution led to increasing concern, and some years later the Ringland citizen project proposed an alternative plan aiming to convert the existing ring road into a tunnel before any new infrastructure would be built. For a long time, the government was unsure of how to deal with this new powerful activism and only after more than

ten years of discussions and delay, the major stakeholders finally came to an agreement on an alternative plan. The significant change of the original plans was made possible through the hard work of community organizations, with firm support from environmental and medical scientists. They influenced the policy debate

and empowered citizens in different ways, from more passive, indirect involvement at the

beginning, to more actively engaged interventions in recent years. Four different models can be defined as follows:

- First, scientists provided information without actively engaging in the debate. Ademloos, in particular, considered the collection and distribution of scientific information on the health effects of traffic-related air pollution as one of the key aspects of their strategy in gaining legitimacy and support.
- Second, some environmental health experts got more actively involved by contributing to public events organized by the community organizations. A good example is the first mediatized press conference of Ademloos in March 2008, where a statement on the predicted health impact of the project was presented on behalf of several prominent Flemish experts in fields of environmental epidemiology and toxicology. Another example is the regular "Horta evenings" – public meetings co-organized by Straten-Generaal, Ademloos, and later Ringland – at which national and international air quality experts were invited as speakers. Independent from the community organizations, some health experts engaged in the debate, illustrated by the open letter sent to national newspapers in May 2014, which was written

by five Flemish health experts who stated that installing a roof covering over the entire Antwerp ring road—the key idea of the Ringland collective—would save lives.

- A third way scientists got involved was by directly collaborating with community organizations without actively engaging in the debate. This happened at a later stage through crowd-funded studies commissioned by the “Ringland Academy”. A group of experts from the Flemish Institute for Technology (VITO) and the universities of Ghent, Leuven, and Hasselt were directly “hired” to evaluate the effects on the air quality and public health of the suggested alternative plan of installing roof covering.

- Finally, in more recent years, scientists started to collaborate with the public in citizen science projects, sharing part of the scientific practice with citizens to not only collect valuable data but also to build social capital and create awareness. In 2014 the “Airbezen” project, an initiative of the University of Antwerp and community group StadsLab2050, distributed 500 strawberry plants among citizens to measure air quality. In 2016, 2000 Antwerp citizens received air quality measurement equipment in the first “CurieuzeNeuzen” campaign, a collaborative endeavour of the Ringland Academy with the universities of Brussels, Antwerp, and Leuven. The findings were picked up academically but also actively contributed to policy debates on air quality and urban development.

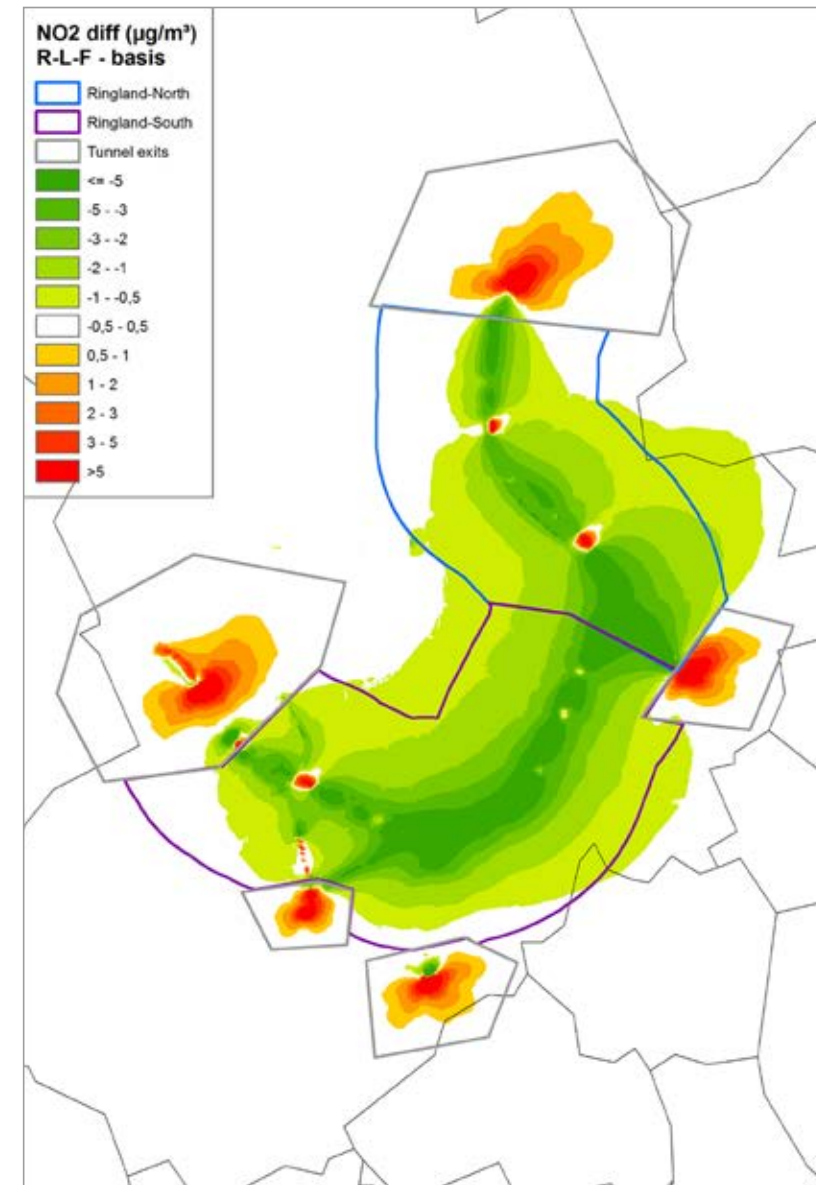


Figure 16.1. NO₂ difference of Ringland scenario (‘filtered tunnelled ring road’) compared with the basic scenario (‘open air ring road’) (source: Van Brusselen et al., 2016).

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The spatial planner as a mediator or as an actor? Looking back at the recent debate about new shopping malls in the Brussels periphery

KOBE BOUSSAUW & DIRK LAUWERS

The spatial planner: a mediator or an actor?

We can safely say that the era in which the rational planning paradigm was exchanged for a participatory, interactive and process-oriented approach is already several decades behind us. According to Campbell (1996), the not-so-new role of the spatial planner is first and foremost about being a mediator and a coalition builder, who mainly uses his or her substantive expertise as background knowledge that might help to direct decision-making processes in the best possible way. This seems to be a sincere principle. However, it is less obvious in practice than in theory. Campbell (1996) indeed indicates that planners should not only mediate but should also act as guardians of an overarching objective, which is sustainable development. Richardson (1996) adds that the communicative, Habermasian, approach to planning problems¹ ignores the strong tendency of reproduction of social power relations in spatial planning processes. Both authors thus provide an argument that explains why the spatial planner cannot merely act as a neutral mediator. This is because the planner might pursue a goal by him or herself, which is sometimes called ‘sustainability’ and at other times called ‘quality of place’. However, the planner is at the core of a complex multiplicity of interests that belong to different positions of power. Through pursuing transparency and balance, the planner will not necessarily serve all actors involved in accordance with established social positions and relations. Therefore, the planner as a neutral intermediary may be

¹ This was at the basis of the philosophy of structure planning in Flanders, which was institutionalized by the planning decree of 1996 (Albrechts, 2001).

a fictitious concept, and it might be expected that positions taken by planners will impact planning processes. In addition to the arguments put forward by Campbell (1996) and Richardson (1996), we would argue that planners have a research duty as well, and that the way in which planners deal with this task will additionally impact the planning process at stake. Even though Patrick Geddes' classic adage of 'survey-before-plan' (Hall, 1982, p. 12) is no longer viewed as the core of what urban planning is about, the creation of a solid knowledge base about the study area under scrutiny remains an important precondition for developing a qualitative plan. From the role as a researcher, the planner will not succeed in taking a perfectly neutral position and acting completely value-free, a reality that is generally recognized in the social sciences (Proctor, 1991), but is often not obvious for actors in a planning process. In what follows, the focus will be on the role of the planner as a researcher, but also as a mediator², in a planning process. We, the authors of this paper, see ourselves playing the role of planners-researchers, since we are ourselves located in academic research groups that critically study planning processes.

Uplace and the myth of sustainable mobility

From 2014-2015, the authors of the current chapter encountered themselves in the awkward position in which planners may find themselves when dealing with a sensitive planning case. The context of our story is the societal debate about three new large-scale shopping malls that were planned in the Brussels periphery at that time. The first project, Uplace (which has still not come about), was foreseen in the Flemish municipality of Machelen, near the outer Brussels ring road. The second project, Docks Bruxsel in Laeken, was opened to the public in October 2016. The third project, Neo on the Heysel exposition park, was still in the planning phase at the time of writing (2019). Uplace and Docks are initiatives of private developers, while Neo is managed by the Brussels regional government.

Of the three projects, Uplace has been the most controversial one, since it focused explicitly on customers living north and east of Brussels and was therefore viewed as a direct threat to the central shopping districts of a number of towns in Flanders. In 2011, several mayors of cities and municipalities in the north-eastern periphery of Brussels had publicly made it clear that they were against the project because they feared that it would erode their own centres. Opponents pointed to the strong car-oriented nature of the

2 A 'mediator' is actively engaging with a process, as opposed to an 'intermediary', which implies neutrality.

3 At that time, Ward had graduated as a geographer, and was pursuing his master's degree in urban planning. After having worked as a junior researcher at AMRP, he was employed as a mobility expert at Scelta Mobility, and later as a spatial planner at BUUR.

project, which would make congestion on the Brussels ring road even more problematic. In the project's environmental impact assessment report (project-EIA) that preceded the zoning plan modifications required in order to implement the project, solutions were proposed to anticipate the looming mobility problem. This would include the opening of a new railway station near the project and the construction of a new tramline.

By the end of 2011, a consensus was reached within the Flemish government on the project: the zoning plan ('spatial implementation plan' or abbreviated in Dutch: GRUP) that would make Uplace possible was definitively adopted, against earlier negative recommendations by the provincial executive. On May 30, 2012, the acting Flemish minister-president Kris Peeters defended the approval of the project in a news broadcast by stating that the accompanying measures relating to mobility would ensure that over time 40% of all visitors would arrive by public transport. This claim was based on the project-EIA, although it was consecutively received with scepticism on various public forums, including a current affairs item on a popular Flemish radio station.

For us as researchers in planning, this discussion comprised an important research question. How could it be that a project that was essentially focused on car accessibility, and located in a peripheral location near one of the busiest motorways of the country, would nevertheless attract such a large share of public transport users? Within the project "Steunpunt Ruimte", a research centre that was at the time funded by the Flemish government and focused on the analysis of polycentric urban structures, we seemed to have some time available to further investigate this issue. Together with Ward Ronse³, who was hired as a researcher for the project, we developed a statistical model that was nourished by modal split data of existing shopping malls and was aimed at predicting the modal choice of visitors that were about to visit all three future shopping malls in the Brussels periphery. From our analysis it became clear that the degree of embeddedness of the shopping mall under scrutiny in the urban fabric was a strongly determining factor. Based on our model, in Docks 65% of customers would arrive by car, a figure that would rise to 76% in Neo, and would be between 85% and 95% in Uplace. In the case of Uplace, our figures differed considerably from the estimates of the project-EIA. Upon review of the project-EIA, it appeared that the responsible consultant had used the Flemish traffic model, the logic of which led to a serious predicted effect of traffic displacement. In other words, the traffic model 'forced' potential shoppers to take the train or the tram, just because there was no capacity left

for their cars on the road. Consequently, the principles of the EIA analysis were not only debatable, they also gave rise to questions about the claim that a high proportion of 40% of public transport users, which was mainly expected due to congestion becoming even worse under future conditions, needed to be considered as a representative indicator of sustainable mobility.

We wrote our findings in a report for the research centre, and reworked the report into an English-language article that we submitted to the academic journal *European Planning Studies*, where it was published after having gone through a peer review process (Ronse, Boussauw & Lauwers, 2015). Given the potential news value, we also based an opinion article on the report that was published in a Flemish newspaper in October 2013 (Boussauw, Lauwers & Ronse, 2013).

How we became ‘invited’ actors in the process

Although those contributions were published about one year later, through the initiative of a journalist, the local government of the city of Vilvoorde, and a Flemish member of parliament, our study was referred to in the news. At the time, less nuanced headlines were used, including “Researchers struck down Uplace traffic study”. One thing led to another, and in January 2015 the Uplace company and its consultants invited us to their premises with the intention of discussing the differences between the project-EIA and our study. The meeting, which took place at the castle domain, that was in use as the company’s headquarters, turned out to serve two purposes. First, we got involved in an expert discussion on the robustness of our model and the validity of the data used. In fact, our model was based on a small but focused data set, while the official traffic model used a broader but clearly much less focused empirical basis where, for example, trips to a local bakery store were categorized under the label of general ‘shopping’ trips. In a second part of the discussion, however, the company’s CEO started to explain the possible harm we were causing to his business, referring to how painful it would be if our professional careers were hit if the company offered a thorough counter expertise. After having thought the arguments through, and contrary to what was suggested, we decided not to revise our research conclusions to please the developer. Although we were faced with methodological criticism, we believed that it did not detract from the critique that could be expressed with respect to the project-EIA itself. What followed was an invitation to a debate in the Flemish Parliamentary Committee

on Mobility and Public Works, where a counter study was released by the Flemish government administration. Subsequently, the Committee meeting was extensively reported in the press. Political reactions were numerous, mostly by opponents of the project. As researchers, we found this a unique experience, about which we wrote a separate paper that was published in the journal *Ruimte en Maatschappij* (Boussauw & Lauwers, 2015).

A declining base of societal support

However, the story does not end there. In February 2015, the Flemish government approved the proposal for another adaptation of the zoning plan, with the final goal in mind of being able to grant the construction permit required for Uplace. Consequently, the city of Vilvoorde asked us whether we would be willing to critically examine the future mobility effects of this newly revised plan. We had to reflect on this request. Our original study was inspired by a combination of fundamental curiosity and a tendency to critical reflection; in short, it was clearly an academic study. However, if we were to start working for a local government that had positioned itself as an opponent of the project, we could be sure that we would encounter difficulties with respect to claiming neutrality. On the other hand, we also thought about how supporting transparent decision-making and serving sustainability objectives are core tasks of the researcher, especially when active in the field of spatial planning. We were convinced that the original project-EIA was not critical enough, and therefore that at least a part of the process had been insufficiently transparent. Moreover, we shared the opinion with several critical voices that the development of new peripheral shopping malls was at odds with the sustainability objectives that the Flemish government had already included in their policy objectives on retail planning. It is indeed paradoxical that the Flemish government supported Uplace in 2015, at the same time when it was elaborating a new decree on integrated retail location policy, which was primarily meant to support urban core revitalization and to prevent new peripheral retail development. The previously approved Winkelnota (‘Shopping Memorandum’) (2010) had already stated that ‘retail needs to be as much as possible integrated in city and village cores, while affectation of open space should be minimized’, while the 2012 Green Paper for the Flanders Spatial Policy Plan stated that ‘outside settlement cores, no additional space can be provided for developments such as shopping malls’. Since the decision-making of the Flemish government itself was not consistent, we decided that our professional reputation would be better served by

responding to the request of the city of Vilvoorde, rather than by declining it. As expected, in our new report (Lauwers, Boussauw & Ronse, 2015) we found that the new zoning plan was not significantly different from or better than the previous version. The empirical basis of the mobility impact assessment that accompanied the new plan turned out to be very weak, the traffic indicators used were outdated, and the impact on congestion on the Brussels ring road was only partially reported. Moreover, it remained as unrealistic as before that a significant proportion of visitors would be convinced to come to Uplace by public transport.

This report was extensively discussed in the press, after which Uplace—not entirely unexpectedly—questioned our independence as researchers. Nonetheless, our report was read, and provided the basis for a number of additional objections against the project. After another series of procedures, in which both the zoning plan and the construction permit were amended, the plan was definitively annulled by a juridical decision of the Council of State in December 2017, followed by a revocation of the construction permit in October 2018. The press talked about the ‘definitive death blow to Uplace’. Meanwhile, political support for the project had already considerably declined, and the company Uplace had even reduced their number of employees.

It is now certain that Uplace will not be built in its originally envisioned form. Nevertheless, the company behind the project would still like to build a shopping mall on the same site, if needed in a slimmed-down form, and announced in early 2019 a new consultation process that might be led by Alexander D’Hooghe, the ‘intendant’ of the Antwerp Oosterweelproject for the completion of the Antwerp ring road. In any case, a solution needs to be found for the Uplace site in Machelen. From various angles, options have been suggested, ranging from an urban parcel logistics warehouse complex to an urban forest for the residents of Vilvoorde and the northern part of Brussels.

The spatial planner: from mediator to actor?

The question of the role that could—or should, when agreeing that planners need to take a normative stance when it comes to questions of sustainability or equity—be taken by the planner in controversial planning cases remains on the top of the agenda. Although the political opposition of a number of popular mayors and members of parliament had been decisive in the eventual non-

realization of the Uplace shopping mall, we as planners-researchers indeed supplied part of the ammunition that was used by them. We could have opted to keep low-profile, not participating in the parliamentary debates or supporting the position of the city of Vilvoorde, or even not engaging in any research that could be used in decision making on controversial construction projects. Being researchers in the discipline of spatial planning, should we only study planning objects and processes from a distance, preferably those that have occurred in a safely remote past? Or may we interfere with current planning processes, for example by pointing out that a problem can also be viewed from a different perspective that has not yet been addressed?

Although planners usually do not see themselves as researchers, we still think that we can link research on planning processes with the role of the planner itself. From John Forester (1988) we learn that planners can only be successful if they are committed themselves and dare to ask critical questions, even in a climate of serious political pressure and even within bureaucratic contexts. The planner has the task of both informing and detecting which actors may be exposed to forms of disinformation — a statement that we believe applies even more in an academic context. When we extend these statements to the study of planning processes, it becomes clear that the studied process itself will be influenced through the study of it.

At the beginning of this text, we made it clear that for us the planner is not an “intermediary”, who merely passes on information. The planner’s duties are about mediating, about distilling productive solutions from conflicting positions of actors, but also about bringing in his or her own expertise. Perhaps the planner’s role even exceeds that of a mediator, in the case of which the planner who takes his or her role seriously is just as much an actor in the planning process as the stakeholders are.

Based on the above considerations, we conclude that we would not have honoured our professional values and our mission as guardians of sustainability and quality of place by not engaging in the debate, and that our interventions were therefore legitimate. We would additionally like to conclude with a plea for a more active role for the spatial planner, a position that is clearly endorsed by the Flemish Government Architect, and others, at the time of writing (2019).

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Transport poverty scrutinized by mobility thresholds

ROB VAN DER BIJL

Introduction

Commissioned by the four major cities in the Netherlands (Amsterdam, Rotterdam, The Hague and Utrecht), Van der Bijl & Van der Steenhoven (2019) executed an empirical, 'ethnographic' inspired study of transport poverty in low income neighbourhoods within these cities (and a prosperous reference neighbourhood in each of those cities). Transport poverty is hard to grasp since it is not explicitly included in existing official data and its categories, nor is there full awareness of transport poverty in the collective mind of society. Therefore, for this study the existing data on transport poverty-related indicators (see below) was supplemented with ethnographic fieldwork in the form of in-depth interviews with key-experts, free conversations with various representative stakeholders in the case-neighbourhoods, spontaneous meetings, and ad hoc interactions on site. In this way, we studied mobility behaviours of actors within their own situations and networks.

As such, we have been able to define and elaborate on transport poverty into a series of factors that can have an adverse effect on those at risk for transport poverty from a social point of view. Finally, we have outlined a series of agendas based on which relevant actors, factors, and institutions can be identified for deploying necessary policies and solutions.

Thresholds impede mobility

Transport poverty is often associated with having inadequate means of transport, which complicates or even prevents people from participating in society. The UK served as a case in developing this definition (see Sustrans, 2012). A more elaborate definition of transport poverty is given by Kenyon, Rafferty, & Lyons (2002): *"The process by which people are prevented from participating in the economic, political and social life of the community because of*

reduced accessibility to opportunities, services and social networks, due in whole or in part to insufficient mobility in a society and environment built around the assumption of high mobility.” Various scientists from Australia, England, and the Netherlands that deal with topics like social exclusion and transport disadvantages—for instance Banister (2018), Bastiaanssen (2012), Currie, (2011), Lucas, (2004), and Martens (2017)—hold comparable views and use similar definitions of transport poverty. Additional research shows that factors like not owning a driving license, hence reducing one’s opportunities to get jobs, play a significant role as well (Fransen, 2017).

We have operationalized the ‘Kenyon’ definition of transport poverty with the help of a two-fold series of societal thresholds (respective external and internal thresholds, inspired by Karen Lucas). She emphasizes that limited transport options do not necessarily lead to transport poverty. She highlights that this is only the case once the two types of thresholds (i.e. disadvantage-factors) overlap (Lucas, 2012). This transport poverty leads to inaccessibility of destinations outside one’s own neighbourhood, with the ultimate consequence of social exclusion.

These societal thresholds are considered as the extent to which involuntary transport disadvantages (Jeekel, 2018) are present within a certain neighbourhood. These disadvantages determine the extent to which means of transport (car, public transport, bicycle, etc.) are insufficient or even unavailable for those who need these means to participate in society.

Based on transport poverty literature, we defined 10 of such thresholds. The first four (E1-4) relate to context (external thresholds, i.e. context factors regarding social disadvantages). The second batch of six thresholds (I1-6) relate directly to mobility (internal thresholds, i.e. mobility factors regarding transport disadvantages). Based on data analyses and ethnographic field work, we have analysed the degree to which these thresholds exist in the neighbourhoods discussed above.

EXTERNAL THRESHOLDS (Context Factors)

E1 – Demography and culture

Characteristics of the population and its (local) culture determine to a certain extent how citizens relate themselves to the outside world. Populations in

our case neighbourhoods have a predominantly non-western background (e.g. CBS (2014) for The Hague, 81%, against 9% for the reference). As such, and according to one of our oral sources, there is a strong inward-looking culture. *“The city too easily expects responsible parents, but those parents are also limited. The world is becoming small this way.”* *“People have turned their back to Dutch society. Incidentally, the reverse also applies,”* another source explained. Moreover, crime represents a problem in all of the case neighbourhoods. For instance, the Utrecht case city data (2017) show a higher crime share of young people from our neighbourhood compared to our reference (25% versus 15% respectively). These indicators reveal a high risk of cultural isolation and victimization which makes the population vulnerable to transport poverty.

E2 – Health and education

The physical and mental state of citizens determines their mobility opportunities. Someone who is unhealthy or poorly educated is most likely constrained in mobility options or even significantly immobile once mobility disadvantages (see internal thresholds below) cross their paths.

Many of our oral sources highlighted this overall bad situation. *“There is a lot of stress, since people suffer mental problems. Health of many isn’t very well. Social control is an obstacle of well-being.”* Moreover, data (CBS, 2014) show low levels of education. For instance in our Amsterdam case, the percentage of low-skilled school-leavers is 10,7% (against 3,9% for our reference case). Rotterdam also faces severe figures. According to municipal data (2014) only 47% of the young people successfully obtained a school qualification (against 77,8% for our reference).

E3 – Income and unemployment

Unemployment is also an unfavourable factor for adequate mobility. Our fieldwork shows there is omnipresent poverty in the case neighbourhoods, implying a severe risk of lack of sufficient transport means. Low incomes and relatively high unemployment are present in every case (confirmed in all official data). For instance, in the Utrecht case 35% of the inhabitants say it is difficult for them *“to make ends meet.”*

E4 – Housing and amenities

Our fieldwork in all four case neighbourhoods confirms the availability of reasonably good social housing, while daily amenities are present nearby, confirmed in many of our conversations with locals. Still, our local sources

emphasize the high rents. Another issue mentioned is the decreased accessibility of medical facilities and special schools due to scaling-up. The latter implies longer distances, hence higher risk of transport disadvantage.

INTERNAL THRESHOLDS (Mobility Factors)

I1 – Social safety and traffic safety

Our oral sources have confirmed that residents and entrepreneurs in the neighbourhoods are concerned about road safety and crime. *“Unknown, unloved.”* That may explain why social unsafety is a barrier for entering and using public spaces. *“Many residents do not even dare to use public transport.”* Traffic is seen as dangerous. Cycling is also considered as unsafe. Moreover: *“Stealing of bicycles is common. But here in our district only two police stations remained, while the city neglects maintaining law enforcement and fears costs.”*

I2 – Distances and barriers

Generally the risk of transport poverty increases as soon as the distances to be bridged become longer, or simply too long (physically and/or mentally), and barriers to be taken are higher or even too high (again: physically and/or mentally). However, residents shared a nuanced story during our fieldwork. *“Daily amenities are not far away, often very close indeed,”* they said. *“Many schools are also nearby, except some special schools.”* In The Hague, a group of somewhat older men confirmed that much low-skilled work is far away. Physical barriers play a minor role, except in Rotterdam where the high and steep bridge over the river Maas was mentioned in various conversations. Another oral source referred to jobs: *“Places to work or apply are often too far away, apart from the high costs of bridging the longer distances by public transport.”* Many conversations made it clear that generally the *“outside world”* is experienced as (very) far away. Mentally, distances and barriers appear very real.

Complementary to hard-official and soft-oral data, OpenStreetMaps has been used to measure a representative set of distances, e.g. jobs in the table below, showing nearby and far job destinations for all four cases (in this demonstration this is mirrored by bicycle ownership).

Table 18.1 – Distances to jobs

	Bicycle ownership case / reference ¹		Nearby jobs ²	Far jobs ³
Amsterdam	61%	72%	6,6 km.	14 km.
Rotterdam	53%	77%	3,4 km.	33 km.
Den Haag	60%	90%	4,0 km.	11 km.
Utrecht	88%	97%	3,3 km.	9,5 km.

I3 – Legibility and comprehensibility

Our oral sources confirm that the high illiteracy of large groups of residents appears to be a major problem. People have a hard time understanding or ‘reading’ the outside world and mobility systems. There is a lack of knowledge about how city and mobility ‘work’. In other words, the legibility of the transport system is insufficient.

The Dutch public transport debit card (*OV chip card*) turns out to be a barrier for many users. The system is complicated and not clear and understandable enough for alliterate residents from the case neighbourhoods. *“Such a card can be understood by students, but not by many mothers living here,”* emphasized a local source in The Hague. *“Moreover, there are too few charging points in the neighbourhood for those mothers.”*

I4 – Physical accessibility

When a mode of transport is physically inaccessible for a user (or difficult or hardly accessible), it immediately undermines its usefulness. Usually this factor implies technical-physical limitations of a particular mode of transport related to physical or mental disabilities of users. Indeed, in the conversations in which physical access is mentioned, our sources referred to non-user-friendly access of some local buses (though no data is available yet to confirm this in general terms).

I5 – Affordability

Affordability represents a key threshold since all modes of transport imply costs. These costs can relate to acquisition and maintenance of transport means. Particularly usage of these means requires money, for instance to buy fuel or public transport tickets. Unfortunately, many conversations showed that affordability of mobility is under great pressure. The costs of mobility

- 1 Based on various (e.g. municipal) data sources.
- 2 Relative to selected, central points in every case neighbourhood.
- 3 Relative to selected, central points in every case neighbourhood.

(public transport, car, etc.) represent a considerable financial threshold. This becomes clear with ‘the mothers’, *“since they are at the end of household’s financial pipeline”*. One of the sources: *“because in the end it always comes at the expense of the mother!”*

The word ‘expensive’ is mentioned frequently. According to figures of Nibud⁴, most households in the case-neighbourhoods cannot afford a car although, during fieldwork this issue is not openly and directly discussed with us (probably out of shame). However, the considered high costs of a bicycle have been mentioned many times. And most striking: the high costs of public transport became quite evident. *“My twelve-year-old daughter came home crying recently, because she also wanted a public transport card. But such a card is very expensive, too expensive for many. Parents sometimes are skipping parent conversations at the child’s school due to expensive public transport. For the same reason elderly avoid care,”* explained a local resident.

Nibud calculates household budgets. Their 2016 figures, for example, determine a standard minimum travel budget of 52 euros per month for an average households, which confirms the opinion of our sources that mobility is not affordable for many.

16 – Reliability

Usefulness of a mode of transport is compromised if its reliability cannot be guaranteed sufficiently, even if the mobility offer is considered or perceived as unreliable (rightly or not). The issue, however, is only mentioned by our oral sources if they complain about the unreliability of the neighbourhood bus or designated taxi services for the elderly to reach medical facilities (though no data is available yet to confirm this in general terms).

Transport poverty: a real problem

Our findings—the collected hard-data of official sources and the soft-oral-data acquired in the field—confirm the vision of Lucas (2012), that transport poverty only exists when the two types of thresholds (social and mobility related) overlap. However, in our research we noticed that there is often only circumstantial evidence for transport poverty as a real problem. Even though it is hardly possible to indicate transport poverty explicitly and directly, figures from the city of Rotterdam regarding general poverty allowed us to

⁴ The Dutch National Institute for Family Finance Information.

⁵ Funded by the Netherlands Organisation for Scientific Research (NWO).

compile a serious estimate. For the Rotterdam case-neighbourhood, it is likely that approximately 20% of the population actually is suffering from transport poverty, since the general poverty is high. Even a basic necessity of life such as housing has become unaffordable for many. According to the available figures (2014) 18% to more than 23% of the population in our Rotterdam case (thus average about 20%) were at risk of payment for their social housing rent. Thus, there is hardly any money for mobility left. Indirectly this estimate is conformed in the calculated very small transport budgets of Nibud, mentioned earlier.

Cycling as a solution?

It was not the intention of this research to identify solutions, but rather to create awareness of the *existence* of transport poverty within Dutch cities. During recent discussions on our work though, challenges for addressing transport poverty solutions (see also the European project HiReach that deals with ‘inadequate transport facilities’) got significant attention. For example, our fieldwork in the four cities revealed that many politicians and experts consider cycling as an innovative and also rather easy solution for transport poverty. However, our additional research for the Dutch ‘Fietscommunity’ (2016-2018)⁵ revealed a series of (institutional) factors and (human) actors which determines the way cycling mobility performs.

Cycling citizens first require two important features: property and skills (see the blue boxes in Figure 18.1). Next to being able to own a bike, without properties such as knowledge, information, cultural assets, social networks, etc., the ‘bicycle system’ (the black and red boxes) is hardly accessible, hence, the actor lacking these properties is hardly able to cycle. When the same actor is without particular skills, cycling is again a no-go area, since without technical and social skills, and without physical fitness or motivation, cycling is nearly impossible. The benefits of cycling are widely known and the opportunities for cycling are widely available in the Netherlands. However, that does not mean cycling is a matter of course for everyone. For those who are familiar with Dutch culture, who are used to Dutch traffic, and for whom their (urban) environment appears familiar, access to the bicycle system is a natural affair. For those who do not belong to that group, cycling can be a complicated and sometimes too difficult task. Similar obstacles – lacking properties, skills, or cultural familiarity – prevent (to some extent) usage of cars and public transport (and even walking).

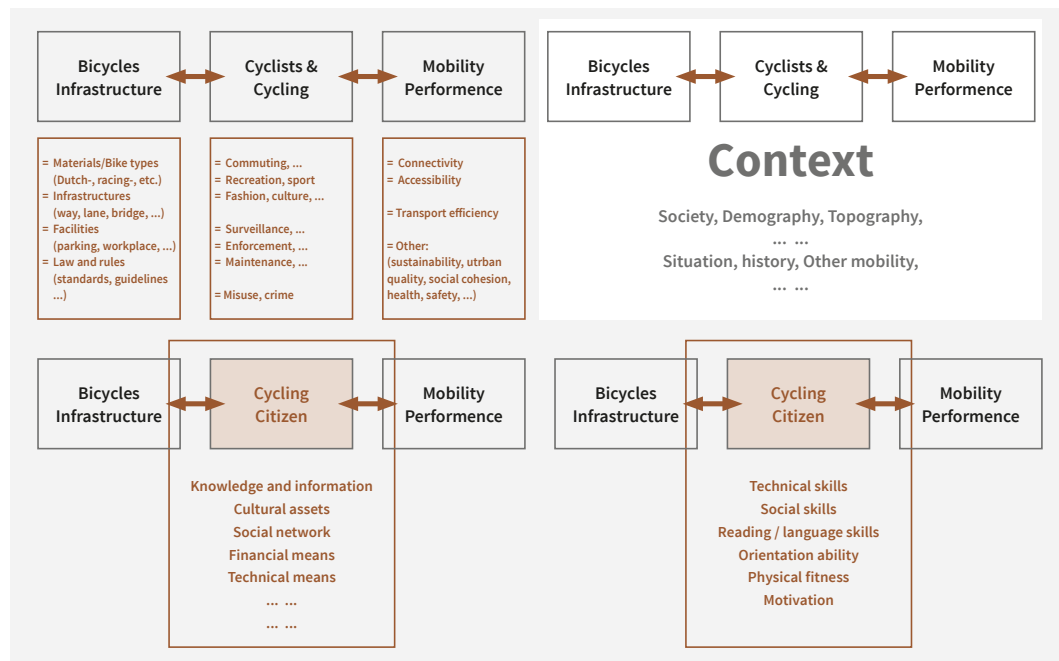


Table 18.2 – Cycling as an example (source: Rob van der Bijl, Fiets community, 2018.)

Towards solutions – Agendas

Our research shows that transport poverty is a multi-faceted problem, analogous to the mythological Hydra monster. The Hydra monster had several heads, and if one would succeed in chopping off one of those heads, two new heads would grow immediately. Transport poverty is also such a multi-headed phenomenon. It is neither intrinsic nor absolute, but relational in the sense of receiving meaning only from the context and from other subjects, and influencing them in turn (Boelens & De Roo, 2014). Our aim is therefore to activate, somewhere in the institutional world, a Herakles (either in the form of an actors or factors) who is able to find social and practical solutions against the multi-headed monster.

For future solutions to combat poverty, therefore, more than one agenda has to be drawn and no doubt new ones later. In our research we therefore proposed to the policy makers of the four cities we studied (Amsterdam, Rotterdam, The Hague and Utrecht) to compile at least three agendas, which immediately

identify the responsible institutions, namely municipalities and regions (or similar jurisdictions like borough, precinct, city, as well as transport authorities, including provinces). The three agendas:

- Reduce car-dependency and offer alternative forms of mobility;
- Improve public transport usability, that is, make public transport more affordable, understandable, and fair;
- Unlock the bicycle system by creating bicycle facilities and by offering bicycle information, education, and training.

These agendas can be elaborated based on the factors mentioned under the internal thresholds. In addition, each factor must be related to actors and institutions that are representative of the relevant threshold. For example: the safety factor related to the police as an actor and institutions such as the Dutch SWOV⁶ that are responsible for scientific research on road safety. Another example: when it comes to the affordability factor, several authorities are involved, such as the relevant ministries and (for the Dutch situation) the aforementioned Nibud, while, for example, a factor such as the public transport tariff structure is the prime responsibility of public transport authorities (e.g., regions or provinces).

A fourth agenda concerns the context elaborated based on the factors from the external thresholds, such as striving for balanced population structure, improving public health, offering better education, combating poverty, and creating jobs and social services. The municipal and national government institutions are leading here. This is not only to set up the context agenda, but also to connect this agenda to the three mobility agendas, because—bearing Karen Lukas (2012) in mind—the lack of this connection is precisely the cause of transport poverty. The key actor who should be subject at the heart of all conceivable agendas is actually the one who bears the risk of transport poverty. It would therefore do no harm, in addition to the agendas described here briefly, to draw up a fifth agenda with local programs in consultation and commonality with all local actors. In this way factors can be placed on the agenda that people already do control, or can take control over, so that government-related institutional dominance of the first four agendas is complemented by local empowerment. An inspiring example of this from the Netherlands is the now famous Mama Agatha’s cycling training for migrant and refugee women in Amsterdam Zuidoost (see the cycling documentary at YouTube) (Hindash, 2019), the European Inclusion program (see the web pages on the Horizon2020 site), or the success of citizens in our case neighbourhoods (see Box).

⁶ Dutch institute for road safety research.

Projects like Mama Agatha address crucial factors like cycling skills, or having stakeholders of the Inclusion project take responsibly care for many other factors (e.g. affordable public transport fares), again analogous with the Hydra myth. In this myth, Iolaos supported Herakles. Immediately when Herakles had cut off a head, Iolaos used his flame to burn the Hydra's flesh closed, thus preventing a new head from growing. Eventually, an actor-relational approach can reveal the way a Iolaos (like the little girl in our Rotterdam case-neighbourhood – see box) in connection with other actors could address the meaning and value of transport disadvantages and poverty. Moreover, these actors can identify factors and related institutions that bear policies and interventions in the fight against transport poverty.

“The bicycle is my mother’s car”

For this research we initially only used literature and existing data (e.g. Statistics Netherlands, CBS). However, we realized more was needed for a deep understanding of transport poverty. We turned towards ethnographically inspired conversations with residents and local stakeholders. During the preparations for our investigation, we got into a conversation in a street in the Bloemhof neighbourhood (Rotterdam) with a girl who turned out to have a beautiful Gazelle bicycle. She told us about her mother who also cycles, “... because the bicycle is my mother’s car.” That meeting (shortly afterwards with the girl’s mother too) impressed and inspired us to investigate the phenomenon of transport poverty mainly on the spot in conversations.

We are aware that such conversations do not produce hard, scientific evidence, but we are convinced that anecdotal results can be very powerful and useful.⁷ In this way we discovered that the social status of the car is high, otherwise the girl would never have compared her mother’s bicycle to a car. And we also learned that sometimes the bicycle is indeed an effective way to fight transport poverty. The girl with the Gazelle bicycle represents a wonderful example of a key actor who has managed to remove many thresholds’ obstacles (factors). Both the girl and her mother consider car-dependency as obvi-

⁷ Clayton Christensen, the author of *Disruptive Innovation and Competing Against Luck* (2016) puts those so aptly when he says that sometimes you need a few really in-depth data points more than you need tons of shallow data points.



ous and inevitable, yet the bicycle is recognized by them as a means of transport offering enough freedom to participate in society, that is, to go to school independently, to participate in the neighbourhood’s social life (only in the long run she will perhaps need a car or public transport to reach destinations (far) outside her neighbourhood). The fact that the girl considers herself transport-prosperous is of course because her mother, particularly, has taken care of removing the contextual obstacles (the factors of the external thresholds). The family is apparently in physical good shape, has sufficient income, is able to send the child to school, and able to allow her using amenities.



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INTERMEZZO

About tunnels and bridges – A column on tunnel vision and building bridges

FILIP BOELAERT

“Pulling off big investment projects is no longer possible in Flanders” is an often-heard statement. Whether it comes from governments — local or regional — or large companies and contractors, it is often felt that it has simply become impossible to bring major infrastructure projects to completion.

The fact that this is a general sentiment is shown by the completion of the North South Campines (Noord-Zuid Kempen) mobility project, the A11 trunk road between Bruges and Damme, or the Kieldrecht Lock and the second lock in Terneuzen. All of these complex projects were accomplished. But then again, where is the North South Link (Noord-Zuidverbinding) in Limburg, the Spartacus Line, or the Oosterweel Link (Oosterweel-verbinding), which were all announced decades ago? Every one of these projects has left us feeling these have not advanced by as much as an inch, save for the odd pointed announcements.

Recent evolutions, in combination with being a professional with in-field experience for over 20 years, urged me to reflect on whether accomplishing important infrastructure works has really become impossible. Or is there still a way of getting things done? Throughout the narrative of this paper, I hope to show the evolution from the infrastructure project as a technical complexity to a societal challenge: from strictly technically oriented design to a design that values actors and important contextual relations.

Why does one project manage to get to the finishing line where others do not? How has the garnering of public support evolved over the past two

decades and which lessons can we draw from this for future reference? I got my first taste of public support as a mobility guidance officer for various municipal authorities in East Flanders. Our job was to assist these local authorities in drafting their mobility plans and preparing local infrastructure projects. The mobility covenants which had been introduced in the late 1990s required stakeholders to be consulted: a novel concept for the administrations and local authorities at the time. Derived from a technocratic design model, which had already evolved from the master designer (engineer) to a multidisciplinary team, this concept demanded an open attitude towards stakeholders, ranging from business owners, to cyclist and pedestrian associations, to local community organisations. There was still no active consultation or dialogue. What we did have were presentations held at local community centres about projects that had been worked up in detail by this time, and for which we already had a set of technical specifications. The set up: three tables lined up next to one another on the stage, manned by the engineer in charge, the consultancy firm, and a local politician. In the room, local residents turned up to find out what was going to happen with their street. At most of these explanatory gatherings, emotions ran high, with people not believing how planners had failed to take their interests into consideration. Design aspects like livability or accessibility were relatively new concerns and often difficult to translate in a road project. Looking back at these meetings now, we can only wonder how these were even possible, more so as there was an obviously huge mismatch between supply and demand. The supply was seen as a marvellous project ready to be put into action in the minds of the authorities, which all too often failed to address very concrete and even relatively minor issues raised by those in attendance. It turned out to be an approach rooted in the past: without an analysis of the stakeholders, without dialogue, and without co-creation. Even town hall meetings in the recent past show that they are sometimes still being held in much the same way.

A few years later, in 2002, I became involved in the Oosterweel Link project¹. “It will be interesting,” they said. “A project the likes of which this country has not seen. And we are working on creating public support,” they said. Sixteen years later, I think I can testify that this project indeed was and is unprecedented. It is one of the biggest infrastructure projects in Europe with an estimated length of more than 10 km and a budget of 3,4 billion Euro. But I can also testify that our vision on how to build support at the time got it terribly wrong. The project was designed by a handful of audacious

1 The Oosterweel link project aimed to close the Antwerp ring road (R1), originally through a tunnel under the Scheldt river and a bridge above the northern docks of Antwerp. Through the years, the design changed into the tunnel crossing the Scheldt river and a tunnel complex in the northern docks. www.oosterweelverbinding.be

2 stRaten Generaal is a civil movement in Antwerp, acting on liveability in the city. It started as a movement to prevent trees from being cut and acted against the masterplan for the ‘Kievitplein’. www.straten-generaal.be

engineers at Roads and Traffic administration - Antwerp Division. Model calculations had shown that mobility requirements in the wider Antwerp region were such that the ring road needed to be completed in a closed loop. The shortest route turned out to be best performing in these calculations and is still known as the Oosterweel Route (see figure 19.1). Engineers and planners realised this was not an everyday project and felt the need for broader consultation. A States-General on the organisation of mobility in Antwerp was instigated under the auspices of the then Governor Paulus. The members of the States-General were representatives from what might be termed the established authoritative stakeholders in the mobility domain. Public authorities and representatives from employee and employer organisations, nature conservation associations, and other interest groups were given the opportunity to put forward their views. The States-General showed a considerable degree of consensus on the expediency of the project and it looked as though a broad coalition was in favour of the Oosterweel Link. Within the various authorities, there was a commitment to organise broad-based consultation. In the awareness that a project like this was not going to solve the mobility challenges Antwerp faced by itself, an ambitious Antwerp master plan was prepared. This masterplan implied nature development, new cycle links and tramway extensions, and a new design for the Antwerp ring road.

The Antwerp master plan task force gathered all authorities to discuss the implementation of this master plan and the Oosterweel Link project. These talks created a lot of concerns: Concerns for which the engineers time and again came up with solutions for. These solutions in turn kept driving up the price of the proposed link, and this greater cost went on to cause grounds for concern. At the City’s request, a tunnel engineering study was carried out, which would show that a tunnelled alternative was almost infeasible. Again, we witnessed a largely technical process for which the solutions proposed were equally technical, worked up in detail and approved at meetings with experts. At the time it seemed as if stakeholders were heard and consulted. But this was only the case for government actors and the acknowledged social partners. This kind of stakeholder analysis was quite limited and proved not to be complete in the years to come.

Around the same time, in 1999, stRaten Generaal² (Streets-General) first reared its head, along with the ‘de Ploeg’ local residents’ association, manifesting themselves as the people’s movement that worked to counteract

the plans for Kievit Square (Kievitplein). Following lengthy discussions, which even went all the way to court, they managed to reach terms with the project developer on the investments to be made at Kievit Square. Some years later, in 2005, stRaten Generaal also focused its attention on the Oosterweel Link project, coming up with a plan B, which would evolve into the Meccano Route (cf. figure 19.1).

The combination of political concerns over the cost for the Oosterweel link, local politicians with concerns over the planning development of the Antwerp quarter known as ‘Het Eilandje’³, the proposals from stRaten Generaal for the Meccano Route (cf figure 19.1) and the protracted duration of the procedures combined into a heady cocktail that nearly brought the bridge down. Confronted with alternatives and questions, complex technical studies and statements of grounds were devised in the belief that the Oosterweel Link project was a good project that simply had to be

3 ‘Het Eilandje’ is the northern part of the Antwerp city center, where the city center and the southern part of the port meet ‘Het Eilandje’ is the northern part of the Antwerp city center, where the city center and the southern part of the port meet.

implemented. ‘Good’ meant that it would solve most mobility problems in the Antwerp region. The proposals from stRaten Generaal and the authorities alike were often highly technical, so much so that one could be forgiven for thinking that the experts were trying to convince each other of their own alternatives, whereas many people barely seemed to understand what the whole thing was about.

Then, around 2008, another people’s movement came in, named ‘Ademloos’. Their main focus was on the fine particulate matter that traffic was set to cause on the new link, thereby affecting Antwerp residents’ living conditions. Doing this, Ademloos succeeded in translating a highly technical discussion into a discussion on livability. This was no longer a technical mobility discussion, but was all about the health of the citizens living alongside and around the route. It led to a broad-based front of concerned citizens headed up by the two people’s movements, which fomented the debate resulting in a referendum under the slogan “Vote the bridge underground”. Many people were unaware that the actual question posed was a very different one⁴. The referendum drew the required minimum turn-out, with over half the voters taking the view that the City should deliver a negative opinion.

In the days following the referendum, the Flemish government was prepared to abide by the referendum’s outcome⁵. It also tried to engage in concertation with the people’s movements through the DAM⁶ working groups. During these working groups, it seemed as though the centre of the debate revolved around a dispute between two grassroots movements and the authorities. The grassroots movements were represented by few versus very ample government delegations, the former not having all the necessary information and the latter owning all research results. It turned out to be a dispute in which neither of the two parties felt understood by the other party and which consequently did not leave any room for dialogue or consultation, let alone a solution. As time went on, these consultations reached a deadlock, leaving a deep rift between the people’s movements and the authorities. The authorities devised a tunnel solution in which the people’s movements again felt uninvolved. 2014 saw the arrival of Ringland as an idea on a beermat, which in no time launched the concept of improving the quality of air for Antwerp residents by tunnelling in the ring road while simultaneously returning the considerable amount of space taken up by the ring road to the city’s citizens. From the outset, Ringland combined various areas of expertise in the way it set up its campaigns, which promptly reached a very

4 ‘Should the City of Antwerp return a positive opinion regarding planning permission for the Oosterweel Link at the route between Zwijndrecht/Linkeroever and Merksem/Deurne as currently planned?
5 Declaration bij Kris Peeters, minister president on October 22 on coordinating the project by the government itself.
6 DAM stands for Duurzaam Antwerpen Mobiel (Sustainable Antwerp Mobile).

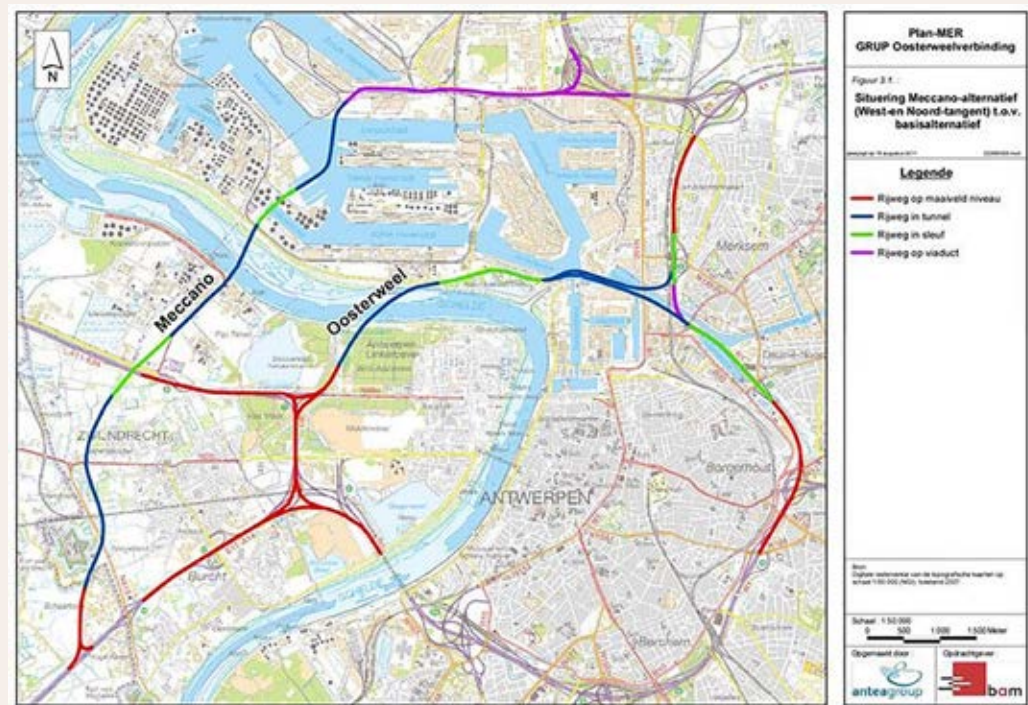


Figure 19.1: overview of the Oosterweel link and the Meccano trajectory (source: BAM)

high number of residents and attracted the support of a lot of famous local Antwerp faces. Later on that same year, the tunnelling in of the ring road was even enshrined in the Flemish government coalition agreement. The grassroots movements, Ringland, stRaten Generaal and Ademloos soon found common ground in a shared purpose. Sadly, this latest development initially did not do much to ease the strained relations between the authorities and the grassroots movements. A further element of debate was added to the agenda: how to tackle the overall mobility issue in Antwerp. This discussion was approached from a fairly technical perspective by the authorities, whereas the grassroots movements—unlike any of the other parties—managed to put across what they were seeking to achieve for the benefit of the city’s residents. The government was still mainly seeking to realise the Oosterweelverbinding, insufficiently taking in account the new actors with their call for liveability and health issues.

To the Flemish government that came into office in 2014, it became clear that new ways had to be adopted to find a solution. The search for an ‘intendant’ for the Oosterweel Link and the tunnelling in of the ring road resulted in the appointment of Alexander D’Hooghe. D’Hooghe is an architect and town and country planner with a proven track record of complex projects in the US, the country where he is also working. His biggest asset was the fact that he was totally unconnected to any of the parties, even though his appointment by the authorities landed him with a semblance of partisanship at the start. Upon his appointment to the post, he demanded and was given a fair degree of leeway to take initiative and to conduct his communications.

The intendant embarked on a series of intense talks and consultation sessions, which saw him mapping out all stakeholders involved in the process in detail. Gradually, he managed to gain the trust of the grassroots movements. Oddly, this was the first time a stakeholder analysis had been performed in such an exhaustive and detailed manner. To this comprehensive stakeholder analysis, D’Hooghe added an analysis based on game theory. In doing so, he not only succeeded in charting who plays a role in the entire narrative, but he was also able to estimate which positions each of these stakeholders was set to assume. He pulled off his first breakthrough by reaching terms on the preservation of Sint-Anna woodland⁷, thereby laying a controversial issue to rest which had been smouldering for a good few years by then. By the same token, he laid the foundation for further consultation on the Oosterweel Link and the tunnelling in of the ring road.

⁷ Announced on 29/9/2016, see <https://www.overdering.be/2016/09/27/doorbraak-sint-annabos/>

⁸ Toekomstverbond Antwerpen was announced and signed on March 15 2017. www.toekomstverbond.be

In the spring of 2017, with the Flemish government and the grassroots movements gathered around the table, the intendant was able to announce the Future alliance for Antwerp (‘Toekomstverbond’)⁸. The Future alliance entailed an agreement on an Oosterweel link as the city ring road, a port route for through traffic, an ambitious modal split and the tunnelling in of the ring road. But above all, it meant that the authorities and the grassroots movements were engaging in genuine dialogue again. In the months that followed the official announcement, the implementation of the covenant was monitored as part of a step-by-step consultation process. At these consultation meetings, the authorities, the grassroots movements, the City, and the Flemish government sought solutions to bottlenecks in the implementation of the alliance agreement. First and foremost, efforts were made to build sufficient mutual trust to discontinue the ongoing court procedures.

Often these were difficult talks but, in the end, they did result in the juridical procedures being dropped by November 2017. The main obstacle in these talks—which continues to apply to this very day—was the quest to strike the right balance between the responsibility authorities are required to assume and the remit of the grassroots movements to remain truthful to their principles. On the side of the authorities, this manifested itself in the desire to move forward quickly with the Oosterweel Link project and the selection of the first projects to tunnel in the ring road, with the awareness that the other undertakings set out in the Future alliance had to be honoured too. The grassroots movements, for their part, needed certainty as to the eventual Oosterweel Link, the tunnelling in of the ring road, and the achieving of the ambitious modal split and liveability ambitions that had been pledged. The search for this balance is still ongoing and is likely to continue for as long as the Future alliance is being implemented. To the various parties, this is a new reality that demands a constant quest for equilibriums and solutions. And even though the process culminated in the design of a tunnel project, it is safe to say we moved from a tunnel vision towards building bridges between parties involved. This would not have been possible without the extensive actor analysis performed by the intendant.

This process has sparked a new remit within the Mobility policy area as one of directorship of processes rather than as the party that executes projects: from project leadership to project or even environmental management, which—in the latter case—also sees the Mobility policy area take on a process guidance role. The remit of this director or process guidance entity is to stop

reasoning from a specific (technical or legal) expertise and instead to seek the aforesaid balanced setting from a discerning and detailed stakeholder analysis.

By subsequently engaging in dialogue with these stakeholders, the various parties acquire insight into and empathy for goals other than those that were originally held out as part of their own project. This dialogue also gives all stakeholders a due understanding of the complexity these projects often involve. Through this dialogue, mobility, spatial quality, and liveability may be combined. And even though views will continue to clash at times, practice shows that solutions can be achieved that deliver gains for the various parties. The earlier on in the process the stakeholders engage in dialogue, the better that differing concerns can be considered, and the easier it is to step away from appraising and criticising projects and processes to move towards forms of co-creation.

The main challenge now is to transpose the concept of this directorship to the way in which complex projects are tackled (and translated in the relevant decree) in the transport regions and develop the concept of basic accessibility⁹. Basic accessibility is the Flemish government's bid to tackle the concept's maturing process in respect to mobility more at the regional level within the fifteen transport regions. These are piloted by transport region boards, in which all local authorities and the Flemish administrations engage in dialogue on the regional mobility vision and investment projects. This will entail discussions on priorities, with the awareness that the demand will invariably outstrip the resources available. This means choices will need to be made. Bearing this premise at the back of our minds, the main challenge is to turn the way in which the transport regions work into a success, and in doing so to draw lessons from the Antwerp mobility narrative. The importance of a detailed stakeholder analysis, a judicious estimation of the various interests and options, and a sufficient degree of open dialogue are vital to making this project into a success.

⁹ Basic accessibility is the new multimodal transport concept in Flanders, comprising public transport combined with sharing systems, private transport, etc. It is set to be a demand-driven transportation concept for the whole of the Flemish region. www.vlaanderen.be/basisbereikbaarheid



RELATIONAL

Changed relationships between actors, the entangled complexity and interdependencies of various spatial systems.



FlugHafenCity Hamburg – Adaptation of the urban fabric between the city and airport towards urban growth

RAINER JOHANN

Hamburg city-airport – an outstanding airport

¹ The 'FlugHafenCity' Project (FHC) was a research project that the Department for Urban Planning at HafenCity Universität Hamburg (HCU) undertook from 2017 to 2019. It was co-financed by the Hamburg Department for City Planning and Housing and the Department for Business, Transport and Innovation together with the Hamburg Airport operator. The terminology of FlugHafenCity refers to the transformation of the former back-to-back spatial relation of Hamburg's inner-city seaport and the city-centre towards an urban Waterfront, the "Hafen-City".

This contribution is concerned with the linkage of the city and airport in The Free and Hanseatic City of Hamburg. Contemporary planning and development of both cities and airports are characterised by Modernist dichotomous thinking and a spatial separation of the two entities. Many European cities separated themselves from their airports in favour of larger international airports in the hinterland. These large international satellite-like airports in the hinterland of European cities developed into huge multi-functional complexes similar to city-centres and were thus called 'Airport Cities', as settlements around the airports rapidly became more urbanized (Güller & Güller, 2003; Schaafsma, Amkreutz & Güller, 2008; Johann, 2009; BBSR, 2011; Roost & Volgmann, 2013; Schlaack, 2015; Van Fassen & De Jong 2016).

In this context, The Free and Hanseatic City of Hamburg followed an atypical path. The city operates its air transport infrastructure 7 km away from the city-centre as an international city-airport. Despite the spatial integration of the airport into the city's territory, the airport is a physical barrier. The urban fabric and many settlement areas around the city-airport are perceived as having the status 'locked-out of development' because of the airport's operations. This condition is a paradox given that Hamburg is a socio-economically growing German metropole. In an attempt to help make the physical gaps between the airport and the city sustainable and to adapt resilient urban fabric around the city-airport for growth of the city of Hamburg, the research, planning, and design project FlugHafenCity (FHC) was initiated¹. FlugHafenCity laid out a relational spatial transformation of the settlements between airport and city

and suggested an opening up to the spatial development lock-in through an actor-relational approach.

This chapter first reconstructs the research outcome of the analysis of the co-evolution of the airport and city in Hamburg. The co-evolution of city and airport unfolds the gaps in the urban fabric and the ‘locked-out of development’ status of the settlements between airport and city. Second, this chapter presents workshop findings and insights on which urban design interventions are developed to bridge the physical gap between airport and city and open up the spatial development logjam.

Hamburg Airport Fuhlsbüttel: A building and an airfield in the urban fabric

At some distance to Hamburg’s city centre but within its urban territory in the district Fuhlsbüttel, city planners and architects planned and built on a green-field site around a grass field Hamburg’s first “airfield” at the end of the 1920s (Johann, 2016b, p. 82). At that time, cities incorporated numerous lands, and aviation was a new phenomenon. Its infrastructure was small and easy to integrate into the existing urban fabric. The airfield had one main building that was designed as part of the city architecture with a brick facade.

Airport Kaltenkirchen: Planning a pure infrastructure and satellite in the city’s hinterland

In the post war period, many German cities planned to relocate their airfields as aviation became a nation state driven means of transport and the steady growth of air travel with jet-engine aeroplanes produced a number of conflicts with the inhabitants of the surrounding areas (Johann, 2016b, p.86). To solve these problems, nation state and federal states formed alliances to build large-scale national infrastructures as new satellite airports farther into cities’ respective hinterlands. For the spatial implementation of national infrastructure projects, the 1960s spatial planning started playing a dominant role whereby national law made top-down planning regulations legal (Sieverts, 2011, p. 7). But still, satellite airport planning procedures took decades and their success was unforeseeable. In Bavaria, for instance, the planning of a new airport—Munich—in the city’s hinterland ‘Erdinger Moos’ succeeded, but the

new airport plan outside the city in Hamburg, 28 km to the north in Kaltenkirchen in the state of Schleswig-Holstein, failed in 1983 (Johann, 2016b, p. 98). The three state-alliance of the city-state of Hamburg together with the state of Schleswig-Holstein and the German Federal State broke down and the spatial planning procedure was stopped. Local civic and business societies in both Hamburg and Kaltenkirchen protested strongly against this new national satellite airport project (Johann 2016b, p. 102). The primarily rural population of Kaltenkirchen was afraid of the socio-ecological risks and impacts, such as noise and associated traffic. This was the first time in the planning and development of the airport that economic and ecologic interests with regard to aviation collided. In Hamburg, business groups wanted to keep the airport within the city limits so as not to lose easy access for business activity and tax revenues of the airport operator and other airport-dependent companies.

Airport Hamburg as a city in the city

As consequences of the failed satellite airport project in Kaltenkirchen, and in comparison to other German cities, Hamburg diverged from the usual path of developing an international airport. From the 1980s onwards, Hamburg Airport took an active role and formulated its own development strategy of the “*airport as a city in the city*” to adapt the existing airport site in Fuhlsbüttel to the changing dynamics of air transportation and the future growth of aviation due to the successful liberalisation of the European civil aviation market (FHG 1988). Hamburg-based architects designed an entirely new, huge airport complex on the site of the existing airport and its former forecourt (Johann 2016b, p. 114). It replaced the brick airport building with huge terminals, containing piers, a shopping mall, restaurants, office spaces, and multi storey car parks. The architecture of the airport complex was intended to represent aviation and air transportation through its construction of glass, steel, and roofs shaped like wings (Johann, 2016b, p. 116). For better infrastructural connection of the airport, a four-lane link road from the national highway was built which created a physical barrier between the new airport terminals and the settlements of Fuhlsbüttel. In the 1990s, a second development strategy was finished, which included a second Terminal, additional new piers, an Airport-Hotel on top of the airport car-parks, an Airport-Plaza, and a public transport connection to the city-centre (HAB, 2010, p. 157). By 2011, the transformation of Hamburg’s former airfield in Fuhlsbüttel to a city-airport in Hamburg, according to the needs of modern air transportation, was finally expected to be completed. This physical adapta-

tion of the airport in combination with larger and low-noise airplanes resulted in the international city-airport Hamburg serving around 17 million passengers in 2018 compared to 6 million in 1988 (FHG 2019, p. 2; FHG 1989, p. 4). Today, Hamburg Airport figures as the fifth biggest German airport in terms of passenger numbers specialized in and focussing on mainly European destinations with direct flights.

Hamburg city-airport creates its own periphery

Geographically, Hamburg's Airport is located in the city, within Hamburg's administrative area, but in a rather suburban periphery. Throughout the successive adaptation of Hamburg's airport to the fast-developing air-transportation sector, the airport's surroundings have urbanized expansively, if in physically low density. From the 1980s onwards, Hamburg's Spatial Planning Department zoned the majority of settlements between the airport and the city under restrictive regulations (Johann, 2016b, p. 118). In the zones underneath the flight paths, these planning regulations constrain maximum building heights, prescribe noise protection measures, and limit further settlement developments and sensitive land uses such as housing. The restrictive regulations are in line with national aviation acts and air-traffic-noise acts in order to avoid conflicts between the airport operator in the city and its citizens (principally disaster risk and aircraft noise). By doing so, Hamburg prevented further development around the city-airport and created a new kind of periphery within the urban fabric, a so called city-airport periphery.

The city-airport's periphery is facing major challenges

According to its operators, Hamburg-Airport has seen continuously growing passenger numbers and the forecast for the coming decade is around 28 million per year (UNICONSULT, MKmetric, 2012; FHG, 2019). Hamburg's long-term strategy is to retain a city-near airport and to work to improve its 'city compatibility' (Senate Hamburg, 2015, p. 33). Simultaneously, the city itself is also growing strongly; forecasts anticipate between 50.000 and 100.000 additional inhabitants by 2030 (FHH, 2014). Therefore, Hamburg plans to develop around 10.000 new apartments per year (FHH, 2016, p. 2). Even in the surroundings of the city-airport, outside of the noise zones, new multi-sto-

rey housing projects are being built (FFH 2018, p. 21). The increase of air transportation and the socio-economic growth of the city of Hamburg led to major challenges with the airport's surroundings (Johann 2016a).

These challenges are first that traffic congestion and a lack of airport parking jeopardise access for its passengers. Second, a lack of necessary improvements to the public transport network compromises local movement for employees and residents around the city-airport. Third, the shortage of available and useable land in the city-airport's periphery denies space for the expansion of local businesses, existing settlements, airport-parking, or new housing amongst the flight paths. And fourth, numerous urban design potentials exist in public spaces around and along the traffic axis to the airport.

For the Hamburg Spatial Planning Department, managing these major challenges and unlocking the blocked suburban city-airport periphery for further developments is very complex. The major challenges reside in crossing administrative borders. Administratively, the city-airport's periphery is vertically organised and falls within two municipalities, Hamburg and Norderstedt in Schleswig-Holstein; within Hamburg it is also further divided by spreading across two districts. Spatially, there are very few greenfield areas in the suburban city-airport's periphery. In terms of planning, the airport's surroundings are an underlying factor in restrictive planning zones. And conceptually, the modern dichotomous thinking of airport and city remains, as Hamburg's Spatial Planning Department perceives the *city-airport solely as an island, separate from and without its surroundings* (FHC, 2018).

Reflecting on the concept of the *FlugHafenCity* and proposing the *Fuhlsbüttel Landungsbrücken*.

Based on the findings of the relational historical research and looking into ways to unlock the development in the city-airport periphery, manage the major challenges, and relink the fragmented urban fabric, the FHC project drew on an Actor Relational Approach of Planning (Boelens 2009, p.187). The FHC project turns the modern "inside-out" self-perception of Hamburg's Spatial Planning Department role into a contemporary "outside-in" by organising workshops with stakeholders from district planning authorities, the airport operator, and actors from the business community. The informality of an academic independent workshop allows for a horizontally equivalent basis, crossing administrative borders and disciplines, bringing different participants together and leading

to discussion. For instance, the discussions make the existing conflict visible between the local district planning authorities and the international operating business community (FHC, 2018). The concept of the *FlugHafenCity* was appreciated by the service sector because of its reference to internationally known *Airport-City* developments. The representatives of the district planning authorities, however, could not identify with this analogy, cause the term *Airport-City* refers to huge multi-functional complexes attached to satellite-like airports in the hinterland of European cities. With this insight, the FHC project finally proposed a mixed-use urban intervention between the city-airport terminal and the settlement of Fuhlsbüttel outlying the flight path, following a more locally related concept, the so called: “Fuhlsbüttel-Landungsbrücken”². This proposed urban development project overcome spatially and conceptionally the gap between ‘City’ and ‘Airport’. Physically it bridges the separation of the four-lane road and adds and re-creates a city-airport-forecourt to the neighbourhood and by doing so it breaks within the dichotomous thinking of both entities. This first urban development project idea that is rolling out of the FHC project can become a stepping stone for Hamburg’s developing path to a relational plan, resilient design, and adaptive city and airport for its growth and future evolution.

² St. Pauli ‘Landungsbrücken’ is a representative building complex and infrastructure node from 1907 between the port and the city of Hamburg in the district St. Pauli, a landing place for passenger ships and station for public suburban railway with a public square, snack bars and little shops.

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The adaptive airport – Resilient futures for Amsterdam Airport Schiphol

BART DE JONG

Introduction

Amsterdam Airport Schiphol is the main airport of the Netherlands and is ranked 3rd in Europe and 11th worldwide in terms of passengers. In 2018, the airport used almost 500.000 air transport movements to connect an astonishing 71.1 million passengers to 327 destinations. Dazzling, buzzing, and never asleep, the airport has all the characteristics of a modern metropolitan area. Contemporary airports function as dynamic nodes where local and global interests meet in an unparalleled fashion, shaping complex socio-spatial relations between—and giving meaning to—place (De Jong, 2012). Concerning the planning and spatial expansion of airports, in the early days of aviation, discussions were only focused on technical questions. Since the introduction of the jet engine from the 1960s onwards, noise hindrance and carbon footprint awareness now receive some attention and are regulated more durable through policy measures. Therefore, growth strategies in terms of more air transport movements and more passengers become less evident throughout the years as a greater importance is attached to ecological sustainability.

And this discussion only becomes fiercer today as a new generation arises. A generation with the likes of Swedish Greta Thunberg, the Dutch Marjan Minnesma, or the Belgian Aruna De Wever, that goes on climate strike, organises itself through increasingly professional grassroots movements, and uses words such as “flygskam” (flying shame) to describe the move away from air travel because of its negative impact on the environment. Amidst this changing discourse, airports also need to redefine their position. Their planning and spatial expansion is no longer about air transport movement alone, but about innovative and existing heterogeneous associations that go beyond growth versus sustainability. Is it possible for planners and policy makers to *explore*

potential new routes beyond the explicit goals of so-called command-and-control governance (Boelens & De Roo, 2016)? This chapter tries to answer this question. First, I will briefly introduce the decision-making process concerning Amsterdam Airport Schiphol. Next, I will explain why it is not sufficient in overcoming political deadlocks with regard to the divergent but mutually intertwined ambiguities of facts and values. Finally, I will show how planners and policy makers can move toward concrete associative opportunities, and communal and co-operative valorisations beyond political agendas and/or plans.

Indecisive and incremental: governing Amsterdam Airport Schiphol.

Since noise hindrance around Schiphol found its way onto the political agenda, numerous collaborative bodies were installed to deal with the intricate task to balance economic growth and ecological sustainability. The Alders table, which was founded in 2006, is only the latest example in this sense. This consultative body, chaired by the former minister and socio-democrat Hans Alders (hence Alders table) consisted of representatives such as KLM Royal Dutch Airlines, Royal Schiphol Group, Air Traffic Control of the Netherlands, two ministries, several municipalities, and local residents. For the very first time, inhabitants were a formal part of a collaborative body concerning the planning and spatial expansion of Schiphol.

The Alders table had to formulate advice concerning the ability to come to a 'better' utilization of environmental standards and to underpin these suggestions with an environmental impact assessment. This had to be done in combination with the formulation of nuisance-restrictive arrangements and measurements to improve the environment surrounding Schiphol. The parliament demanded that these arrangements and measurements had to be institutionalized in one or more firm and maintainable covenants. In other words, it was about the possibility to utilize the environmental capacity of the airport in a more efficient way and at the same time secure future capacity and spatial developments (De Jong, 2012).

In October 2008, after two years, the Alders advice was presented to the responsible minister, who spoke of a historical achievement. It was never before seen

that so many different actors around Schiphol had reached an 'unanimous' agreement about the future planning and expansion of the airport. The outcomes of the negotiations were therefore widely perceived to be a success story. However, in 2012 I concluded that the success of the Alders table is highly questionable (De Jong, 2012). The political deadlock was covered only by a hardly resilient *cloak of mutual conformity* (Boelens & De Jong, 2014) Eventually the Alders table even served as a condensed multiplier for newer and sharper controversies. Why was this so?

The decision-making process of the Dutch airport is experienced as indecisive and incremental as it is imbued with social and technical uncertainties. There is a multiplicity of one-issue stakes while, at the same time, there seems to be a disagreement about normative elements, cognitive elements, and uncertain knowledge. This leads to complex and unstructured problems. Consultative bodies are created to tackle these complex and unstructured problems; they consist of involved actors with a certain amount of expertise, as these issues generally have a highly technological character. However, members of this small group of experts all have meaning and value that are fixed and securely anchored in their own histories as well as in the histories of their surroundings. This leads to situations in which planners, architects, engineers, technology users, or other groups are constrained by fixed ways of thinking and interacting. Therefore, as the actors disagree on normative and cognitive presumptions and are constrained by their own fixed ways of thinking and interacting, it becomes difficult to bring about changes that lie beyond the scope of this particular way of thinking (Boelens & De Jong, 2014). Steering and intervening by governments (dictating or forbidding for instance) can trigger unintended negative effects and leave opportunities unutilized. Moreover, policy measures can influence the public opinion and thus public support for future developments. As a result, and instead of support and resilient solutions, political deadlocks often emerge. It becomes obvious that it no longer makes sense to approach Schiphol as a clear and unambiguous technological object that can be governed by means of technocratic and prescribed procedures, zoning plans, mitigation proposals, and so on, which is exactly what all involved actors at the Alders table have been doing for the last 12 years. As a result, in January 2019, Hans Alders decided to give his assignment back to the Dutch national parliament (De Jong & Van Faassen, 2019). He concluded that all involved actors could not come to an agreement concerning the future growth of the airport. And so, the political deadlock remained.

Introducing new Actant-Networks: towards an adaptive airport.

Thus, even the Alders table did not succeed in dealing with the impasse in the planning and policy-making process concerning the future development of Amsterdam Airport Schiphol. However, a more actor-relational approach could prove effective: one that goes *beyond the plan*, and leads to new, exciting, and surprising heterogeneous actant-networks and recognizes the fundamental openness of the future and the multiplanar characteristics of time, space, identity, power, and representation that make up this openness. Rather than creating the illusion of certainty, the actor-relational approach embraces shared uncertainties triggered by socio-technical systems and the spatial juxtaposition of contesting spaces and practices. We must go *beyond the lock-in*, as pointed out by Boelens & De Roo (2016), and towards new deals with innovative urban businesses, citizens, and local and regional authorities. This would involve a search for new resilient assemblages of heterogeneous co-evolving actant-networks and creation of *Planning Living Labs* (Boelens & De Roo, 2016) on specific issues and challenges in the airport region. It would also involve assemblages that spread beyond political parties and legitimate authorities, emphasizing the need for procedures to be more open to debate, more welcoming towards emerging groups, and more attentive to the organization of the expression of their views and the discussions they call for (de Jong, 2012).

In 2016, to celebrate the 100th anniversary of Amsterdam Airport Schiphol, we presented several resilient futures for an adaptive airport (De Jong & Van Faassen, 2016). Without focusing solely on the economic development versus ecological sustainability discourse, possible creative combinations—increasingly relational and actor oriented—could secure the future of Amsterdam Airport Schiphol. Let me introduce three examples that are all actor-relational to a certain degree as they do not focus on planning or the formal institutions, but *aim to identify possible actors, stake- and shareholders who may be ready to associate and invest around common opportunities, possibilities, and/or themes from the ground up* (Boelens, 2009).

Tranquillity by design: because of the technocratic focus on noise, hindrance, and restrictions, regulatory landscapes formed by contours come into existence. These contours are very rigid, cutting through the landscape, indifferent to local variations in the urban morphology. However, it seems strange that in an airport region, there is no attention to architectural and landscape

interventions to improve the soundscape. Martijn Lugten (2019) concludes that by applying a combination of urban and architectural design strategies, as well as by adding natural features such as moving water and visible green, the soundscape quality can improve drastically. Good and careful design can contribute to a reduction of the sound exposure and noise annoyance, and thus create new building opportunities around the airport that are still experienced as pleasant and eventful (Lugten, 2019: 154). The airport operator can even consider building houses as a new business model.

Schiphol as a National Park: the by-product of all regulations is what Boucsein et al. (2017) call the *Noise Landscape*. They define this landscape as an urbanistic accident: *never planned for and hardly expected in modern planning: most airports were initially built in locations where airport noise and urban life were not expected to come into conflict anytime soon* (Boucsein et al., 2017). The Noise Landscape seems to elude the imagination of planners and policy makers, who see non-spaces, all sorts of heterotopias, wastelands, or backyards that lack quality. Therefore, the Noise Landscape is filled up with traffic infrastructure, back-office parks, and low value industrial estates. Also, the Noise Landscape is usually not an easily accessible landscape because of traffic infrastructure and security-related architecture such as fences and ditches. At the same time, the open landscape that is located rather centrally in the city-region, is unique. Considering multiple networks of associations respecting different spatialities and temporalities with different opinions and interests, as well as the issues, themes, and organizations emerging from them, could transform the Noise Landscape into a National Park: a vast and open green space with room for sport, recreation, nature and art, with an airport in the middle.

Airport Laboratory for sustainability and circularity: Schiphol covers almost 3000 hectares in the municipality of Haarlemmermeer. For security reasons, most of its territory is off limits and underutilised. Schiphol could set up the world's first airport lab, focussing completely on sustainable solutions and the circular economy. Working together with renowned universities from all over the world, this airport laboratory could become a poster child for Dutch innovations in the field of sustainability and circularity. The airport itself can become completely circular by investing in business models instead of products. They have already implemented *circular lighting* by Philips, where you buy light and not lamps. Other opportunities could revolve around mobility. The airport can experiment with driverless buses and mobility as a service. There are numerous agricultural innovations that can be devised (De Jong & Van Faassen, 2016).

Miscanthus, also known as elephant grass, can be used to make building materials, for instance. Salt farming is seen as a necessary new practice for a changing climate. Vertical gardens could be an interesting concept to explore around the airport. And how about growing all onboard meals next to the runways?

Conclusion

With an excessive preoccupation on hindrance by aircraft noise, all policies concerning Schiphol have so far focused on perceived hindrance and restrictions or restrictions because of perceived hindrance. This has led to highly regulatory, prescriptive, and viscous policies and procedures. Therefore, the decision-making process concerning Amsterdam Airport Schiphol has become a trench war between actors in favour of and against growth. Taming this complicated situation by clear-cut planning concepts and approaches will not solve the political deadlock. The assemblage of Amsterdam Airport Schiphol is not just social but also material and involves the heterogeneous ecologies of entities acting at sites and contexts of practice. There are multiple enactments of Schiphol and the major challenge is to understand how these multiple geneses are articulated, concealed, exposed, and made present or absent by various actant-networks (De Jong, 2012). When planners and policy makers facilitate specific heterogeneous processes of spatial becoming, promises and new enactments are made visible. By introducing new actant-networks and stepping outside of your comfort zone, it is truly possible to create resilient futures for an adaptive airport.

Schiphol at sea

During its 103 years of existence, the location—or relocation—of Schiphol has always been part of a more fundamental discussion *about the long-term future of aviation in the Netherlands and the kind of aviation infrastructure that was deemed necessary in order to facilitate the emergence of this desired future* (De Jong, 2012). In 1937, founding father of Royal Dutch Airlines KLM, Albert Plesman, suggested to close down Schiphol and build a new airport in the middle of the Netherlands, close to The Hague and Rotterdam. Surprisingly enough, inhabitants living in the direct surroundings of Schiphol were protesting to preserve the airport at its location in the Haarlemmermeerpolder. During the 1970s, the plan to relocate Schiphol to sea—or at least to open water—emerged for the first time. The national government researched the opportunity to build a second airport in the Markermeer. This area was secluded, so noise hindrance was considered as a non-issue and the airport could operate 24/7. However, because of the economic recession of the 1980s, the national government cancelled the research programme. In 1999, however, the national government decided to limit the growth of Schiphol Airport at the current location in the short and medium term. Therefore, a research programme was established to investigate the potential of an offshore island in 2025/2030. Several North Sea island alternatives were presented. The Schiphol Group played an important role in this research as Schiphol was in charge of exploring the operational, logistical, and financial effects of different options for an airport in the North

Sea. The Schiphol Group concluded that the North Sea alternatives contained very high financial risks. In the end, just as in the 1980s, an externalized entity *haunting the collective* (Latour, 2004), proved to be the final nail in the coffin. As a result of the attacks of 9/11 and the impact on aviation, the programme bureau was dismantled by the national government.

But yet again, in 2019, the North Sea alternative is back on the political agenda. In the age of Anthropocene, the public opinion about airports is slowly but surely changing. The resistance against expanding Amsterdam Airport Schiphol is growing. Therefore, in October 2019 the Dutch parliament even organised an expert meeting on the subject. And thus, the controversy became tangible again through documents, reports, opinions, meetings, maps, and graphs about ecology and morphology, birds and flight safety, accessibility and operational integrity, noise hindrance and so on. The sum of associations results in a colourful and accentuated landscape. Will all human and non-human associations connected to Schiphol at sea become stabilized and bona fide members of the collective? Or will the actor-networks be contested by uncertainties, resistance, and ambivalence and never reach closure? That remains unclear at the moment. But what we do know, thanks to Callon (1986) and his paper *Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc Bay*, is that we should never ever underestimate the power of sea life!

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Ports and Cities – A tense but evolving relationship

LUUK BOELENS

Setting the scene

The interaction between (air)ports and cities has from the beginning been a major issue within actor-relational research. It started off with the main port policies of the Dutch government in the 1980s (Boelens & Jacobs, 2020), among others addressing new ideas regarding city port policies (Atzema, Boelens & Veldman, 2009), and landed provisionally with the PhD of Van den Berghe (2018): *Planning the Port City*. The main issue with all these milestones was that although ports have historically played a key role in the economic progress of their host cities, this relation has become increasingly troublesome in a post-industrial context. Host city regions increasingly experience ever more burdens from their (air)ports, against ever lesser profits in geographic, economic, socio-cultural, and institutional terms.

Geographically, and for obvious reasons¹, ports moved away from their host cities, leaving behind massive brownfields, which had to be revitalized by their original host local authorities (Bird, 1963; Hoyle, 1989; Ducruet, 2011; Hein, 2013). For some cities, these brownfields proved to be a major asset in compact city and vibrant waterfront developments. But recent ESPON research about *Sustainable Urbanisation through port city Regeneration* (Gensheimer, et al., 2019) showed that not every municipality is successful at meeting these urban revitalization promises.

Economically, and due to ongoing industrialisation, automation, and throughputs, port regions experience increasing environmental burdens and traffic jams, while these are not compensated with big growth in terms of number of jobs or added value. Economic benefits of ports often spill over to other regions, whereas negative impacts are still localised in port areas (Notteboom & Rodrigue, 2005; OECD, 2014).²

- 1 Mainly deep-sea access, spatial scarcity and environmental pollution.
- 2 For airports this is not (yet) the case, but the history and regional development of airports is much younger than those of seaports.

Socio-culturally, before the start of the global networked society (Castells, 1996), the major stakeholders and trans-national corporations were often deeply rooted in the port area itself. They even invested in that urban region in return for philanthropic reasons or just to suppress social unrest. Thus, ports became intensely interwoven within the urban life and urban fabric itself (Van de Laar, 2004). But since the 1980s, due to the global economy, the carriers as well as the port operators and industries became part of or were even acquired by global alliances and lost their original local roots.

Last but not least, *Institutionally*, to meet these global economic demands, the often municipally-owned and locally-driven port companies were reorganized towards more or less independent Port Authorities with stock-holders and their own Supervisory and Executive Boards, from the 2000s onwards. Therefore the original strict municipal control over its port operations diminished or became shared with other maritime stakeholders (Kreukels & Wever, 1998).

Including environmental issues, such as increasing hazard risks, noise, and climate change, the public support of and license to operate (air)ports has become increasingly under threat.

An actor-relational refocus on port-city interfaces

Thus many ways the original strong ties between ports and their host cities were increasingly broken. The interests of both moved more and more in separate, some would even claim opposite, ways. Others began to wonder why self-assured cities would even want to host ports, given their increasing local burdens, with ever less global-local (glocal) profits. They increasingly wondered openly if it wouldn't be better to refocus on a more promising, digital, or smart urban agenda (OECD, 2014; RLI, 2016; Steltman 2018). Nevertheless, others claimed that in a globalized, networked world, freight transfer has to be facilitated somewhere, and that logistics would still be of main importance for, if not the local, then at least the regional, or even (inter)national economy (Kuipers & Van Elslander, 2015; VNO-NCW, 2015; Kuipers et al., 2018). Even more, not facilitating maritime logistics at the historically best spots, and redirecting them to more underdeveloped regions, would have every trait of an unbalanced NIMBY strategy (Meersman, Van De Voorde, & Vanelslander, 2014).

In order to move beyond this unfruitful conceptual discussion about brain- or mainports, the actor-relational approach proposed to start from the basics of the port-city discourse and move from there (Boelens, 2008, 2011). It proposed to refocus on the actual actor-relational economic foundations and dynamic of the post-industrial urban and maritime economy. In doing so one could possibly discover where new couplings between those divergent economic systems arose or could be possible again. In this sense, *the* urban and *the* maritime were regarded as different domains, or differential subsystems one might say (see also Luhmann in the introduction), with their own sets of (institutional) rules, leading stake- and shareholders, and factors of importance. Nevertheless, some factors (like general economic growth, welfare discussions, climate change, etc.) could affect both domains, while leading actors in one domain could be of main importance for the other, thereby interpenetrating or irritating the other subsystem. Precisely over here there could evolve new and more specific couplings of ports' and cities' interests, and therefore possible new post-industrial port-city interfaces.

Karel Van den Berghe (2018) distinguished here *tactical couplings*, which explore new interactive possibilities within specific groups of stakeholders, *strategic couplings*, which materialize those upcoming relational processes in specific projects or interfaces itself, and *structural couplings*, which institutionalize those activities on a (sub)system level and therefore endure the interfaces in their environment. Each of these three coupling mechanisms would therefore also create three new arenas in the port-city interface based on discourse, physical networks, and/or new organizations. The most endurable would be that which could count on all three domains.

Outlines for new port-city interfaces

Therewith the new port city interface is not one but many; nor fixed, but open and evolving; and neither geographically demarcated in a specific area, for instance on specific in-between areas of ports and cities.³ Rather to discover the new post-industrial interfaces of ports and cities, it is of central importance to 'track and trace' emergent actor-networks of socio-economic port-city assemblages to get a better understanding of which future socio-economic policies to pursue. Planning could play an important role here if planners would move beyond the traditional geographical focus of their profession and refocus on a mediating (moving information from the one to the other) or intermediating

³ See for instance the failed city-harbour projects of Rotterdam and Hamburg (Stadshavens, 2010-2019; Hafencity 1997-2025), at least in respect to the intended new interaction between an urban and maritime economy.

role (bringing partners together in old or new crossovers) in post-industrial port-city interfaces. The first actor-relational experiment in this respect explored a new economic-institutional repositioning of Mainport Rotterdam. It was grounded on the new (co)evolutionary economic insights at the time (Boschma & Frenken, 2006; Frenken & Boonstra, 2007; Boschma & Martin, 2010). Against this backdrop strategies of co-siting, co-sourcing, and co-flowing were distinguished (Atzema et al., 2009). Co-siting implied the **physical** crossovers between different urban and maritime businesses by using surplus residual or reserve capacity for new economic functions. Co-sourcing opted for **functional** crossovers between various urban and maritime business activities through the joint use of similar production means. Last, co-flowing focused on new **networks** between various urban and maritime business activities by bringing in- and outgoing information and knowledge flows together. Each of these strategies were discussed in bi- and trilateral talks with the CEOs of leading firms about food, fine-chemicals, circular economy, and knowledge intensive business services, including their practical implications. From there the researchers developed various urban-maritime couplings in these sectors to pursue in a Quadruple Helix of the public, business, civic, and academic society (Atzema et al., 2009, 46-58). Although these windows of opportunity met wide support from the leading businesses and research institutes, they also needed a back-up through institutional rearrangements of the Port Authority (PA) and the municipality itself, beyond the existent Landlord model of the PA, and beyond the demarcated borders of the municipality itself (Boelens, 2011). At the time, this proved to be too ambitious, since the PA of



Figure 23.1: Co-siting, co-sourcing, co-flowing Rotterdam

Rotterdam just stabilized his institutional organization. Nevertheless, since then these preliminary ideas have resulted in new openings in the making: Roadmap Next Economy, Port XL, Blocklab, Smartport, etc. (TIR Consulting, 2016; Witte et al., 2018; Boelens & Jacobs, 2020). At the moment of this writing, these are being implemented even further.

The second actor-relational research presented in this chapter (other evidences are given elsewhere in this volume) is the PhD dissertation of Karel Van den Berghe regarding *Planning the Port City* (2018). This research was an extended track and trace of evolving and possible new port-city interfaces in the steel and car manufacturing and in the bio-based sectors of the wider regions of Amsterdam and Ghent. It presented detailed relational geometries (see figures) in each of these cases on in/output and energetic relations, on R&D, services, membership, and shareholders relations, including an overview of

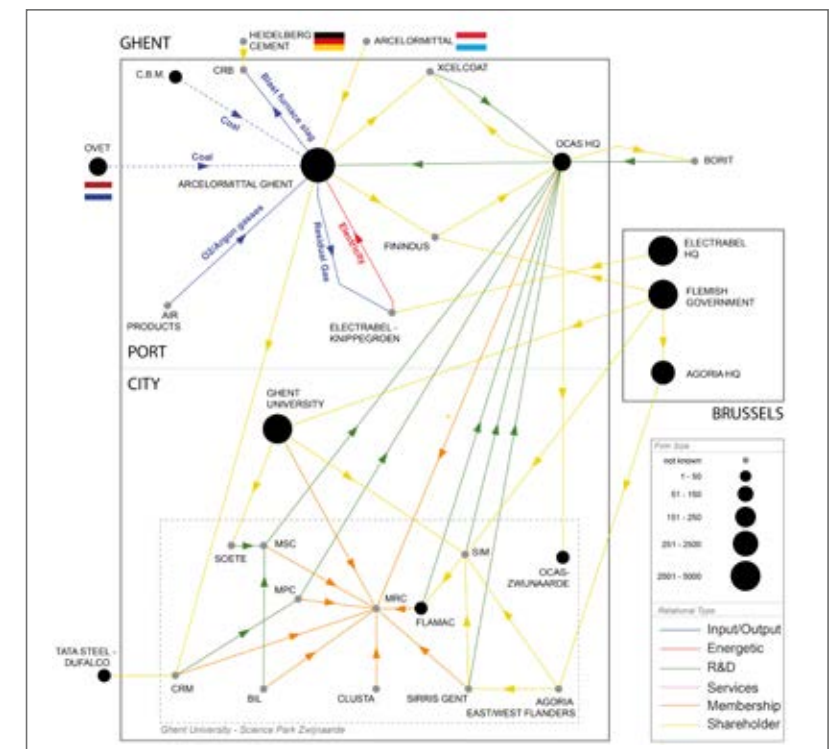


Figure 23.2: Relational geometry Steel manufacturing sector Ghent

(source: Van den Berghe, 2018)

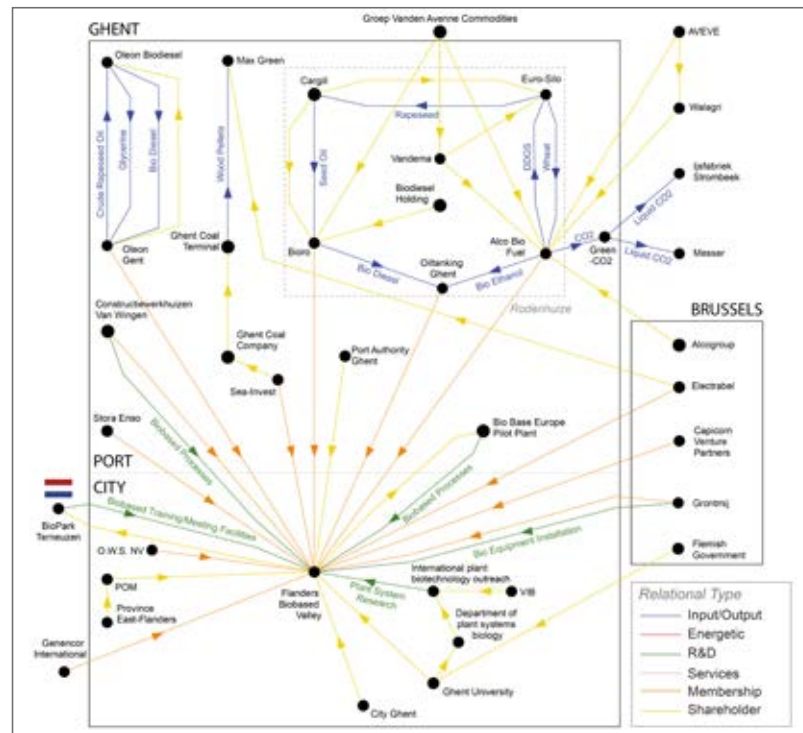


Figure 23.3: Relational geometry Bio-based sector Ghent

(source: Van den Bergh, 2018)

existent and evolving coupling mechanisms between the urban and maritime economy within each of these domains. Although each of these overviews were in fact snapshots at a given place in a specific time, these detailed insights allowed comparison of various situations in an actor-relational and evolutionary economic sense as well. It allowed distinguishing evolving new interfaces between the urban and maritime economies, especially in the steel manufacturing and biobased sectors in Ghent. However, here the research showed that these evolving port-city interfaces have not (yet) led to an institutional coupling. Various leading stakeholders perceived this (still) missing institutional element as an important constraint for the further development of the port-city-interface. Due to the 'dual' differential system of ports and cities (whereby port authorities should indeed remain focussed on attracting global production networks, and cities should remain focussed on facilitating the knowledge economy and living conditions amongst others), it is implied that there is indeed no actor responsible to address the interests of the port-city interface in itself (Van den

Berghe, 2018, 249). Or in other words, for the port-city interface there is not a clear or genuine problem-holder. But there is still a need to interpenetrate or irritate the one and the other, to establish a new port-city subsystem in itself. Here the port-city planner as a mediator might come in, in order to provide a platform or addressee for other actors in this respect.

Where are we now – challenges for the future

Where are we now, after almost two decades of actor-relational (air)port-city research? First, the insights in this tense relation have increased immensely, in generic as well as in concrete terms. In addition, promising ideas have been developed to meet these multiple port-city challenges in specific cases. These have already proven to meet the interests of various and engaged leading actors. However, in order to become implemented, they have to be 'translated' to the next institutional level. There is a need for new multi-lateral organizational (even if only temporary) platforms moulded around specific port-city opportunities and adjoining actor-relational alliances. In respect to the port-city interface in Rotterdam, we have therefore already proposed to split up the traditional Landlord Port model in various institutional arrangements — or perhaps even commons — around 'Port operating', Co-sourcing', Co-siting small', 'Co-siting big', Co-flowing' Taskforcing' and 'City-Harbouring' (Atzema et al. 2009, 81-84). For Ghent it would possibly mean that new institutional platforms are to be facilitated by the Municipality, Port Authority, or University itself around Biobased and/or Metallurgic (recycling) opportunities. The new challenges with regard to the Roadmap Next Economy, Port XL, Blocklab, Smartport, etc. in Rotterdam could need that as well to become effective. Therefore the port-city interface has reached the next level. The vocabulary has been developed and the opportunities and challenges have been put on the agenda of several stakeholders. Of course, there are no one-size-fits-all solutions and one needs to apply models to the specific situations and opportunities from actor relational researches as mentioned above. But there is a real need to institutionally press forward toward new rules and organizations in port-city interfacing. For that purpose, there is a need for new relational actors to enter the scene, because planning, as many other factors, can't act alone.

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Application of an actor-relational approach in Bus Rapid Transit-land use interaction

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World population is growing at a rapid rate and most of this growth is conspicuous in cities. According to UN Habitat, 54% (4 billion) of the world's population is living in urban areas and is expected to double by 2030 (UN, 2016) which necessitates new sources of mobility. Consequently, governments are spending enormous capital to provide efficient modes of transport. As such, Bus Rapid Transit (BRT) has gained popularity around the world. Especially in underdeveloped countries, its cost effectiveness compared to expensive rail and Light Rail transit (LRT) systems stimulated the implementation of BRT.

“Bus Rapid Transit (BRT) is a high-quality bus based transit system that delivers fast, comfortable and cost-effective urban mobility through the provision of segregated right of way infrastructure, rapid and frequent operations, and excellence in marketing and customer service” (Wright & Hook, 2007, p. 11).

BRT provides similar travel characteristics to those of rail (e.g. comfortable, frequent, and reliable) at a much lower cost than that of a bus (Cervero, 2013; Deng & Nelson, 2010). BRT has transpired as a low-cost substitute to expensive LRT and Metro systems. The development cost of BRT is ten times lower than that of Metrorail systems (Suzuki, Cervero, & Iuchi, 2013) and four times less than that of LRT (Cervero, 2013). Currently, 169 cities worldwide have implemented some sort of BRT system which carries approximately 33 million daily passengers (Centre of Excellence for BRT, 2020).

The researchers suggest that investment in public transport has impacts on neighboring areas (Banister, 2007; Cervero & Dai, 2014; Pagliara & Papa, 2011). The link between transport investment and urban development has been the

focus of researchers in the last two decades (Cervero & Kang, 2011; Hass-Klau, Crampton, & Benjari, 2004; Knowles, 2012). They focus on various types of externalities attached to transport investment such as land use development, travel behavior, economic development, and many others (Kimball, Chester, Gino, & Reyna, 2013; Knowles & Ferbrache, 2016; Pagliara & Papa, 2011; Rodriguez, Vergel-Tovar, & Camargo, 2016). The externalities attached to transport investments are important to consider as these can become a source of funding for other transport projects. Moreover, urban development benefits can help in the creation of sustainable neighborhoods. In spite of these arguments, empirical evidence investigating the impacts of BRT on surrounding areas is limited. If we go into more detail, the impacts of BRT are interrelated (e.g. BRT > urban development > change in travel patterns) and no specific study has been carried out to explore the nature of the interrelationship among differing impacts of the BRT. Therefore, we need to unfold the motives and processes linked to BRT investment and specific characteristics coupled with its impacts.

The impacts of BRT vary in different urban settings. For example prominent land use impacts of BRT can be observed in Curitiba, Brazil however, no such impacts were evident in case of BRT in Ahmadabad, India. In the case of Bogota, the urban development impacts of BRT are highly context-dependent and change over the entire length of corridor. Therefore, it was worthwhile to consider a case for discussion. Subsequently, BRT Lahore, Pakistan is the focus of this discussion.

In the case of bus rapid transit (BRT) in Lahore, 2 government agencies are responsible for urban development with fuzzy jurisdiction. Similarly, over 10 government agencies are working for the city's transportation management, policy, and operations. This fragmentation not only results in duplication and inefficiencies but also makes it complicated to study interaction between transportation-land use. Similarly, BRT investment has been done without considering its external land use benefits. The complexity coupled with BRT systems in Lahore encourages us to consider it for this article.

In this article we will discuss different theoretical models proposed to express relationships between transport and urban development in general. It seems that present models are more general and do not sufficiently describe the interrelation between BRT investment and land use seeing the complexity of the situation. Therefore, in this article we focus on the complexity of BRT and land use interaction and consider whether actor-relational approaches (ARAs) can be used to explore the BRT impacts and complex BRT-land use interaction.

Bus Rapid Transit, Lahore

Lahore is a historical city and shares its roots back to 630 AD. Lahore is the capital of Punjab province and the 2nd largest city of Pakistan having a population of 11,126,285 (11.1 million) (Pakistan Bureau of Statistics, 2018). Lahore spans over an area of 1,772 square kilometers and is the hub of economic activities in Punjab Province. A sharp growth in personal vehicles was observed between 2001-08 as registered vehicles increased by 294% during this period. The rapid growth of personalized vehicles (1.9 million vehicles in 2008) resulted in congestion and long delays (increased travel time). To reduce congestion in the city and to fulfill the mobility needs of residents, the government decided to implement its first mass transit

system (BRT) in the city, which became operational in 2013. At the initial stage this corridor was planned for a rail base system. However, due to financial constraints, the Punjab Government decided to build it as a BRT. The BRT route stretches over a length of 27 km (Shahadhra-Gajjumata) with 27 stations. The project cost was approximately 29.8 billion (\$ 303.6 million) (Centre of Excellence for BRT, 2020) with average daily ridership of 133,319 (PMA, 2019). However, no land use policy was devised to streamline urban development in the areas served by the BRT. Despite any land use policy, major urban development activities were observed along the corridor after the development of BRT.

Present models of transport-land-use interaction:

According to Giuliano (2004) in an urban setting the association between transport investment and land development is a continuous process as shown in Figure 24. Investment in transport improves the accessibility which is then capitalized on through urban development benefits which ultimately alter the travel patterns of people. This cycle is continuous. Higgins et al. (2014), identified six factors that influence land development as a consequence of a rapid transit service. These factors include transit accessibility, positive growth and demand, positive social conditions, positive physical conditions, land availability, and complementary planning.

Instead of a simple linear relationship as presented in Figure 24., the relationship between transportation, travel patterns, and land development is of an endogenous nature and there are countless exogenous factors which influence these interrelations. The factors related to travel patterns may include socio-demographic characteristics and attitudes. Factors related to transport invest-

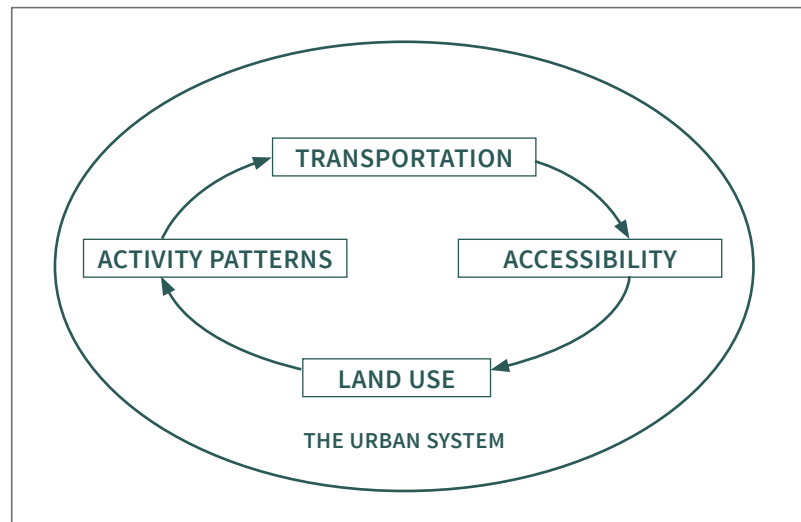


Figure 24.1. Transport and Land use Connection

(source: Giuliano, 2004 by Higgins, Ferguson, & Kanaroglou, 2014)

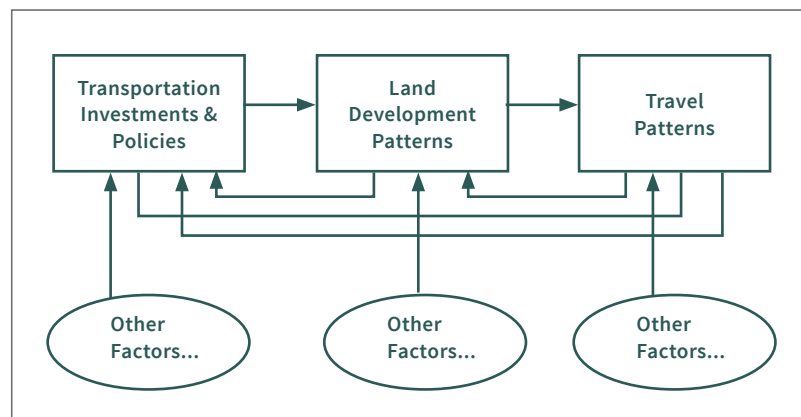


Figure 24.2. Complex links between Transportation and Land Use

(source: Handy, 2005)

ment and urban development may include political forces and land use policies (Handy, 2005). Moreover, these interrelations are not as simple as they seem to be; rather these interrelations are more complex as there are more numbers of actors and factors involved in this process as shown in Figure 25.

The complex link presented here does not reflect on the intermediate process which triggers urban/land development after investment/improvement in transport. Involvement of different people/agencies and their choices make this link between transport and urban development complicated. These models do not express anything about the conditions or factors which are prerequisite for any land value or land use change (Cervero, 1984; Knight & Trygg, 1977; Vessali, 1996).

Moreover, actors and institutions have an important role to play in transport-land use interactions. The poor coordination between different actors (actors related to transport and land use) often results in negative spill-overs and inefficiencies. In reality, decision making is distributed among many actors and jurisdictions. Therefore, there is need for more complexity-sensitive approaches to explore different actors involved, factors influencing each component, and their interrelations. According to Luhmann (1997), to deal with this complexity it is appropriate to approach the complex and volatile reality through distinct and autonomous subsystems. For this purpose, it is necessary to study how each system (transportation, urban development, economy, and travel behavior) works, which factors and actors are important and how these systems are governed.

Therefore, we build our study based on the concept of Luhmann and Post-structuralist theories. According to these, a society (system) is composed of different (sub) systems, such as a political, economic, or legal system. Communication or relations within systems can be considered as a basis for assessment of operations of that system (Mattheis, 2012). Therefore, it is necessary to know what constitutes systems of transport and urban development and how these systems interact with each other. If we apply these theories to understand the interrelation between BRT investment and urban development we can conclude that there are different sub-systems in an urban setting which interact in different ways. Moreover, to study the overall system of urban transitions we need to study the interrelations between different sub-systems. However, before exploring the nature of interaction between different sub-systems we also need to focus on constituting elements of these sub-systems which are elaborated on by the actor-relational approach (for details see Chapter 1 of this book).

The phenomenon of innovation (e.g. introduction of BRT) and the interaction between different sub-systems has great implications for transport investment. Inducing any change/innovation in transportation (sub)systems would

affect the other (sub)systems such as urban development, economy, and travel behavior. Innovation is referred to as the application of a new system or product to cater to the market demand (Maranville, 1992). As in the case of transport it can be viewed as the implementation of a new transport system like Bus Rapid Transit (BRT) in Lahore. This change in society may occur because of the actors, factors, or institutions involved. So, actor-relational approaches could help to better understand how systems of transport, urban development, and travel behavior are constituted and how these systems are interrelated. The following is the example of what constitutes transport and urban development systems in the case of BRT Lahore.

BRT Lahore from the perspective of an actor-relational approach

The transportation and urban development system from the perspective of an actor-relational approach is presented in Figure 26. There are numerous actors, factors, and institutions involved. When we have a close look at the subsystem for transportation it has transportation plans and policies (institutions) to control public and private transportation. Under these institutions (transport master plan) the BRT system was proposed. These policies triggered implementation of the first BRT system which directly influenced the actors involved. Some of the actors changed their travel patterns and this resulted in inclusion of new actors (e.g. metro bus authority). New feeder routes were also introduced in the vicinity of the BRT corridor. As transportation and land use are highly interrelated, innovation in the subsystem of transportation induced changes in the urban development sub-system. Investment in BRT influences the perception of people and a change in development is then observed along the corridor. So, it can be seen through ARA how different systems are constituted and how they are working in an urban setting. Through this approach the different actors can be identified, and their role can be studied in a more appropriate manner. Some of the actors (government agencies) have overlapping jurisdiction and roles which further complicate the situation. The figure can help identify the actors with overlapping roles and their activities can be managed to streamline the work of different sub-systems. Moreover, people's transportation behavior has an important role which can be accommodated through active involvement of these actors using ARA. When it comes to the interrelated process that influenced people to change their behavior, this can be mapped through inquiries.

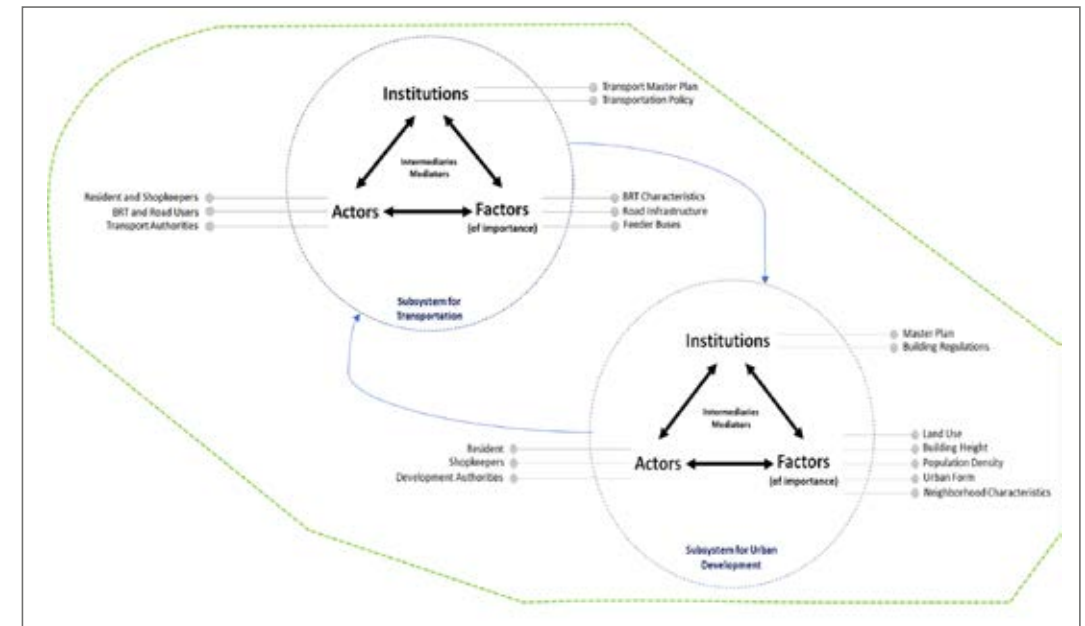


Figure 24.3. BRT-Land use interaction in Lahore

In the existing case, BRT Lahore has influenced the urban development patterns, economy, and transportation modes. It is important to identify these impacts in the creation of sustainable neighborhood and transit-oriented development. A more complexity-sensitive approach like an actor-relational approach can help to better understand different sub-systems and the interrelation between them. The example presented above shows the interrelation between BRT and urban development. But in a broader spectrum, transport investment also influences the economy as well as social aspects, and these can also be studied through the application of an actor-relational approach. The actor-relational approach can help to identify important factors in each system and their interrelation with other systems. This is necessary to explore transport-land use interaction in the case of Lahore and has mostly been ignored in past studies. Thus, in such complex situations like in Lahore, the actor-relational approach not only provides a way forward where one can study different complex systems and the interrelations among them but also provides the way to improve the interrelation of different sub-systems. ARA delineates the process of studying various systems and sub-systems first through identification of components of a sub system (including actors, institutions, and factors) and secondly by evaluating interrelations among several sub systems.

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Emerging Regional Assemblages – Exploring the co-functioning process of emerging regions and formal planning

ALDA ALAGIC

The concept of assemblages has been used for various purposes in social theory and spatial planning (De Roo *et al.*, 2016; Farias *et al.*, 2010; McFarlane, 2009; Van Wezemaal *et al.*, 2016). It describes the process of drawing together elements (*people, materials, objects, nature, and technology*) into seemingly stable entities. According to DeLanda assemblage means ‘*the action of matching and fitting together a set of components, as well as the result of such an action: an ensemble of parts that mesh together well*’ (DeLanda, 2006, p. 1). By unpacking the concept of assemblages, we learn that it is characterized by emergent relations and produced through interactions among a diversity of actors (people, organizations, and institutions). As such, assemblages provide a conceptual lens and an empirical method to study organizations, cities, regions, and institutions within their relational contexts (Farias, 2011; McFarlane, 2009; Monno, 2016). In that sense, using assemblages as a concept can provide a way to avoid representation of cities and regions as static objects and fixed places and shift attention to processes of constant change, emergence, and transformation (Allen *et al.*, 2007; De Roo *et al.*, 2016; DeLanda, 2006; McFarlane, 2009).

The concept of assemblages is particularly useful in unpacking the emergence of regional collaboration networks gravitating around certain themes and topics. The aims of regional collaborations can differ highly among various contexts and may include, for example, networks aiming for the reduction of CO₂ (Energy Regions, NL¹) or development of meaningful ethical and juridical control of systems in Artificial Intelligence (AI)². As different as these are, the initiatives they have in common address specific (emerging) issues and aim at steering or triggering new trajectories of regional development. As such, they can have a profound impact on the use and organization of space. In line with

- 1 Governance Initiatives within Regional Energy Strategy, the Netherlands – <https://regionale-energie-strategie.nl>
- 2 Regional Collaboration initiated by Netherlands Organization for Applied Research (TNO), University of Amsterdam and Dutch National Research Centre for Informatics and Computer Science <https://www.tno.nl/nl/over-tno/nieuws/2019/10/samenwerking-tno-uva-en-cwi-onder-noemer-meaningful-control-of-autonomous-systems/>

continuously emerging issues, various networks for collaborations have also proliferated in the last few decades (Boogers *et al.*, 2016; Huggins *et al.*, 2017; Keeble *et al.*, 2017; Traag *et al.*, 2016). They are characterized by functional relations between actors who prioritize meaningful collaboration above institutional and organizational boundaries. Rather than describing such regional initiatives as processes within demarcated territories, emerging regional initiatives can be better perceived as assembled geographies – defined by network processes in relation to their socio-spatial contexts (institutional, infrastructural, historical, cultural, geographical, etc.) (Boelens, 2009; McFarlane, 2009; Metzger, 2013). Conceptualized as assemblages, regional networks for collaboration, constituted by relational processes that claim space and express identity, can be seen as emerging regions (McFarlane, 2011). Some scholars stress how spatial planning activities play an important role in such emergent (regional) environments while at the same time planning activities struggle to deal with their fluid and volatile characteristics in relation to their formality and territorial approaches (De Roo *et al.*, 2016; Metzger, 2013; Rydin *et al.*, 2016; Van Wezemael *et al.*, 2016). To understand processes of emerging spatialities driven by networks and processes in relation to formal governmental planning processes (in this case for regions), Allmendinger *et al.* (2015) have differentiated between ‘hard’ and ‘soft’ spaces. According to them, hard spaces, or the statutory spatial development, are characterized by political action and coordination of policy implementation (from national to regional to municipal developmental plans). On the other hand, they perceive soft spaces as asymmetrical network processes moving through and cutting across the formal arena of planning. Additionally, soft spaces are characterized by fuzzy boundaries and network processes driven by negotiation, debates, and interpretation (Allmendinger *et al.*, 2015). However, in practice both hard and soft spaces cannot be seen apart from each other but are conditioned and influenced by each other. For example, a proposition coming from a civic grass-root initiative can be recognized as meaningful by governmental officials and result in reallocation of governmental funds towards similar initiatives and changes in zoning plans allowing them to thrive.

With Assemblage Theory we can bridge soft and hard spaces if we conceptualize them as distinctive but connected provisional wholes. From this perspective, assembly processes co-function and take place on and between various spatial entities and scales bridging them through functional relations between the actors (DeLanda, 2006, Van Wezemael, 2008). In this context, we address the emergence of the regional cross-border colla-

boration around high-tech research and development within the Eindhoven-Leuven-Aachen Triangle (ELAt). ELAt emerged in the beginning of the 2000s as a regional collaboration network contained by a diversity of actors (business, government, knowledge, etc.) striving to address an economic crisis impacting the city and region of Eindhoven. From this example we can learn how different regional assemblages emerge, connect, and influence each other; which conditions lead to spatial propositions and interventions; and what role spatial planning plays during the assembly process.

Emergence of regional assemblages

Assemblage Theory helps us to understand and study how different meanings, interests, and motivations – stemming from participating actors coming from different contexts such as hard and soft spaces – interact; get accepted get rejected, and changed; and become merged. All this is with the aim to intervene in a (collectively self-proclaimed) meaningful way within their socio-spatial environments. The extent to which regional propositions, coming forth from various forms of collaboration, are accepted and further developed, depends on the capacities of the actors to enroll allies to pursue the proposed regional idea. In other words, some regional ideas may stick, whereas others may dissolve (Metzger, 2013). This means that emerging regions are interdependent with, and co-evolve with, their socio-spatial context, in which existing networks of institutions, firms, and organizations, as well as non-human elements such as technology, infrastructure, telecommunications, and built and natural environments, play a role (DeLanda, 2006). In the following paragraphs, the conditions under which such co-functioning processes develop, are demonstrated through the emergence of the regional assemblage ELAt. The research was conducted by means of semi-structured in-depth interviews with the focal actors and an extended literature review of governmental documents and newspaper articles.

The birth of the Open Innovation Assemblage: Axis Eindhoven-Leuven

The emergence of the ‘high-tech region’ ELAt (Eindhoven-Leuven-Aachen-triangle) was triggered by the economic decline in the city of Eindhoven, Netherlands. In particular this economic decline involved the disassembly of Philips’

production lines (van Teeffelen, 2003) and relocation of its headquarters to Amsterdam (The Associated Press, 1997). Once a global leader in electronics, Philips found itself losing that position as new managerial systems of open innovation were entering the arena of technological innovation (Chesbrough, 2003). Thanks to the presence of the Philips' factory and laboratories in Leuven, the representatives learned about an already implemented open-innovation concept through their relations with 'Interuniversitair Micro-Electronica Centrum' (IMEC) in Leuven (Claes, 2000). As part of an assembly process initiated by Philips with the aim to learn about the open-innovation process, a functional regional axis between the two cities emerged. The axis involved an increased mobility of researchers, knowledge, and ideas revealing an emerging regional soft space: open-innovation assemblage. It included spatial adjustments of IMEC's and Philips' buildings to facilitate the daily exchange of scientific employees (CTO Philips, July, 2012).

The birth of the Brainport Governance Assemblage

The declining economy and the innovating power of Philips directly affected the city of Eindhoven. Local governmental institutions were confronted with increasing unemployment with all associated consequences. Economic decline was a condition that motivated formal governmental institutions to open up to new forms of collaboration in different directions. One direction of collaboration led to an assembly of the city of Eindhoven and twenty-one adjacent municipalities into a regional governance initiative called Eindhoven City Region (SRE). This regional assembly was complemented by a regional economic strategy stemming from a second form of collaboration between the city of Eindhoven and representatives of the knowledge institutions (Technical University Eindhoven and Fontys University of Applied Sciences) (Horizon, 2002). To operationalize the economic strategy, a new regional developmental agency was set up: the Brainport Development Agency. Here we observe the emergence of a distinctive regional governance assemblage (Brainport) defined by the collaboration of the twenty-one municipalities and knowledge institutions with the specific goal to trigger new economic activities and developmental trajectories.

3 Triple Helix: university-industry-government collaboration model.

4 Actors include representatives of Philips, Municipality of Eindhoven, Interuniversitair Micro-Electronica Centrum (IMEC), Eindhoven University of Technology (TU/e), University Leuven Research and Development (LRD).

5 At this point in time, the participating actors included representatives of the following: IMEC, Philips, TU/e, Brainport, City Region Eindhoven (SRE), cities of Eindhoven-Leuven-Aachen, Aachener Gesellschaft für Innovation und Technologietransfer mbH (AGIT), KU Leuven and Leuven Research Development (LRD), Philips Leuven and Aachen, LifeTec Aachen-Jülich, and Leuven. Inc.

The merge between the Open Innovation and Brainport Assemblages

As part of Brainport's Triple-Helix³ strategy aimed at reversing the economic decline, representatives started to organize roundtables and facilitate debates among local governmental, business, and knowledge actors. The input from the first assemblage of Philips representatives who were advocating open-innovation environments found fertile ground at these roundtables (Project Leader ELAt, at Brainport, April, 2012).

Subsequently, a new assemblage emerged, containing a heterogeneous network of various representatives⁴ coming from the earlier described Brainport Assemblage (representatives of the municipalities and knowledge institutions) and Open-innovation Assemblage (business and technology actors) (idem). The presence of Philips in Leuven and Aachen created conditions for actors to establish relations with business, governments, and knowledge actors in those two cities⁵. However, to convince the relevant actors in Leuven and Aachen of the economic and technological value of collaboration, the leading actors presented their collaboration as "regionally interconnected open-campus" in the three cities (CTO Philips, July, 2012; Head of Business Development, AGIT, July, 2012). Additionally, the collaborating actors acquired Interreg III funding (Manager International Affairs, City of Eindhoven, May, 2012). Translation of the regional concept towards one including the cities of Eindhoven, Leuven, and Aachen in the shape of a high-tech region ELAt created an important condition leading to the acquirement of the funds.

Therefore we can observe that crucial steps in the assembly process *did* involve spatial planning activities, more specifically spatial analysis (*spatial development and path-dependencies, where and how we are (dis)connected in space*) and spatial conceptualization (*shared identities and imagining the future space occupation*) (Brainport Development, 2008a, 2008b, 2008c). Importantly, the outcomes of such spatial planning exercises were strongly responsive and sensitive to the relational contexts of the actors they desired to involve. Thus, the concepts changed in accordance with the interests of the expanding assemblage.

Spatial Interventions

The assembly process of ELAt resulted in various transformations of the environment. The Philips campus was transformed to a High-tech campus for Eindhoven, which attracted the settlement of various technological firms⁶. One of the first institutes to settle on the campus as a result of the collaboration between IMEC and Philips was the open-innovation center Holst, which was pursuing innovation and development in the field of Wireless Autonomous Sensors for flexible electronics. Today there are 185 companies and institutes at the campus accommodating 12.000 researchers. Also in regard to the national spatial policy, ELAt was recognized as an important region and the National Spatial Policy Document (2004) refers to the emerging region as follows:

“In the Netherlands the majority of R&D activities are generated in the region of Eindhoven/South-west Brabant (ca. 40% in 2004). The region is at the center of the knowledge triangle: Eindhoven-Leuven-Aachen. As such the region Eindhoven is of particular importance.” (Ministry for Housing Spatial Planning and the Environment, 2004, p. 79)

Moreover, the regional idea of open-innovation processes among the three cities was accepted and aligned with formal municipal zoning plans and allocation of funds (e.g. the evolving zoning plan for a ‘High Tech Campus’, 2009⁷). Subsequently, these policy documents enhanced the financial, institutional, and spatial conditions required by ELAt to set off new activities pursuing technological innovations and knowledge production, such as the setup of KIC locations⁸ by the European Institute of Technology in the region.

However, when the Interreg funding stopped after four years, the ELAt assembly process also came to an end. This shows that the financial means made available by the European Commission were a crucial condition in keeping the assembly process at work. It also shows that the leading actors of ELAt did not pay that much attention to strategies that could have contributed to the financial sustainability of their initiative.

⁶ e.g. Shimano, NXP, IBM, Intel, TomTom

⁷ <https://www.yumpu.com/nl/document/read/20322027/1-in-leiding-2-wettelijk-kader-gemeente-eindhoven>

⁸ A Knowledge and Innovation Community (KIC), is a highly autonomous partnership of leading higher education institutions, research organisations, companies, and other stakeholders in the innovation process that tackles societal challenges through the development of products, services, and processes and by nurturing innovative entrepreneurial people. (<https://eit.europa.eu/what-are-kics-how-do-they-work-where-can-i-find-information-about-kic-model>)

Conclusions

Assemblage theory enabled us to follow the emergence and development of the ELAt assemblage from its specific socio-spatial context. This way we were able to circumvent the concept of a region as a fixed territory and to respect the dynamic geographical and thematic boundaries of evolving regional network processes. Following the development of the initiative we discovered that regional ideas and concepts were changed and transformed in accordance with the developing relations. More precisely, regional conceptualizations were part of the strategies developed by the leading actors to contribute to the assembly process. For example, the concept of regionally-interconnected open campuses in the three cities created appealing conditions for the actors from Leuven and Aachen to connect and invest in the emerging regional assemblage. The conditions were referred to by interviewees as promising possibilities for meaningful collaboration in their respective fields and increasing competitiveness of the proposed region to which they started to belong. Later, as a means to attract the Interreg funding, the regional assemblage was portrayed through the concept of the triangle between the cities as an assemblage with capacities to connect and transform the soft (meaningful collaboration in business and knowledge) and official planning policies and development.

From the case of ELAt we learn that spatial planning activities play a crucial part in the creation of conditions for soft spaces to emerge, develop, and connect to hard spaces through enrollment of relevant and diverse set of actors. Additionally, the actors’ planning activities focusing on the spatial dimensions of the collaboration (imagining the region, conceptualizing, and analyzing functions and relations in space) are complemented by strategic enrollment strategies of relevant actors. For this to happen, the leading actors in ELAt showed the capability to understand and translate the interests of relevant actors into strong and evolving socio-spatial conceptualizations of the region. This kind of planning is part of the assembly process and shows how emerging regions and formal spaces of planning and policy (European, national, and local) co-function with, depend upon, and enable/constrain each other.

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The concept of a housing market arena

ISABELLE LORIS

This chapter presents the concept of a '*housing market arena*', which offers an alternative to the concept of a '*housing market area*'. The latter has proven to be problematic in the practice of housing policy, since it is based on definable and well-defined geographic contours. Therefore, the ongoing debate about "which scale level is best" continues to feed the debate, while the dynamics in the housing market are many times more complex and multiple than with structuralistic geographical approaches. The concept of 'arena' seems to be more suitable in this respect, since it deals better with the multiple dynamics and the behavior of actors, who play a significant role in the housing market. Thus, this chapter also shows how geographic and actor-relational research methods could be combined, in order to present a more comprehensive picture of an issue in need for concrete tools in housing and spatial policy.

How to deal with housing policy and spatial planning goals on a supra-local level

There is an ongoing debate in Flanders (Belgium) about how to deal with housing policy and spatial planning issues on a supra-local level (see e.g. Somers (2019), Schraepen, De Rynck, and Voets (2018), Vanderstraeten and Van Hecke (2019), Ceuppens and Ryckewaert (2016)). Due to this, various intermunicipal collaborations have been set up for diverse reasons (e.g. coordinating waste, care, law enforcement, spatial planning, public transport, etc.). Nevertheless, the autonomy of the municipality remains dominant in each of these intermunicipal companies. The weakest link, therefore, makes the strength of the chain and can always obstruct common goals for a larger region. Here we might point at the spreading of social housing between a (poor) city and its (rich) fringe, or at the suppression of building plots in the rural area to sustain inner city locations in the core city region. A supra-local approach could bring solutions for these kinds of problems, but each municipality is then treated as

equal, or is rewarded according to its specific individual stake. Therefore, those solutions often remain empty. The question then remains: “*On which supra-local level should one act?*” Ryckewaert, Van den Houte, Brusselmans, Hubeau, and Vermeir (2018) argue that there is a need to deal with housing policies at a regional level that comprises the core city as well as its fringes. After all, issues of spatial planning and housing do not stop at the borders of the city, especially in a peri-urban region like Flanders. The ongoing suburbanization in Belgium would make such a regional approach necessary (Charlier, Debuissou, Hermia, & Pelfrene, 2019). In this respect the Flemish government has recently implemented ‘mobility regions’ (*vervoersregio’s*) on which they not only want to organize public transport policies, but also spatial planning issues, like housing. But the latter are in fact much larger than cities and their fringes. Therefore, for housing dilemmas they have introduced housing market areas (*woonregios*) to deal with these specific issues. But these can vary a lot in their geographical layout due to differences in methodological techniques to constrain them.

Housing market areas in Flanders

The concept of housing market areas was introduced throughout Flanders for the first time by Van Nuffel (2005), based on earlier work by Thissen (1995). It defines a ‘regional housing market’ or even ‘regionalization of the housing market’ as “*a concept that shows intertwining or urban and rural areas in the network society and draws attention to the structure behind the distribution pattern of land prices. (...) A regional housing market comprising the area around an employment center and considered as a residence by families whose members work in the employment center*” (Van Nuffel & Saey, 2006). Not so much the price level, but the price gradient of and around the larger cities is important. The definition of housing market areas was therefore based on land prices, commuting, and migration. As such, housing market areas may partly overlap (Figure 26.1). Therefore more recent updates are to be found in Van Meeteren et al. (2015), and in a more limited form in Arts, Boussauw, and Loris (2014); Arts et al. (2011); Soresma (2009) and SUMResearch, Sint-Lucas Architectuur Brussel-Gent, and KULeuven (2012) (Figure 26.2). But the demarcations of these areas are more or less limited to the processing of commuting and/or migration data. This is also related to the approach to migration basins from Willaert (1999) and Willaert, Surkyn, and Lesthaeghe (2002).

Nevertheless, we find precursors of these approaches in the urban-regional approach of urban regions (Van Hecke E. & Van der Haegen H, 1997), spheres of influence (Thill, 1985), and nodal regions (Cabus, 1980). For an overview, see Schraepen et al. (2018). In this respect and in Flanders, a number of studies were conducted about housing market areas, where an actor-network approach was applied, although to a limited extent. This concerns the definition of the housing market areas in the provinces of West Flanders, Limburg, Flemish Brabant and East Flanders (Atelier Romain, 2018; Atelier Romain & Buur, 2018; SUMResearch, 2015; SUMResearch et al., 2012). On the basis of interviews with real estate agencies, the analytically obtained housing markets were tested by the actors in the field (i.e. real estate agents and policymakers at the local, provincial, and regional level (Figure 26.3)).

As a result, various geographical approaches to housing market areas and associated commuting areas or migration basins appeared. The figures 26.1-3 only give three examples of housing market areas in Flanders (Belgium). But in congruence the examples below mainly show that **the** housing market does not exist and that temporal aspects also play a role (along with methodological differences). The scale on which housing policies are proposed remains very dependent on the method used, who was doing what, and the time at which the analysis was made.

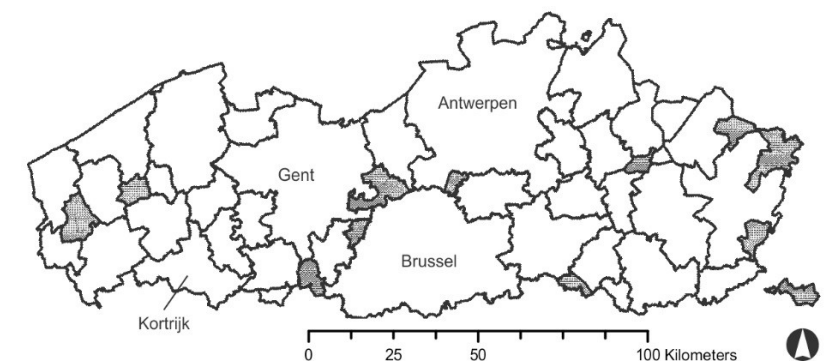


Figure 26.1: Housing market areas in Flanders (gray is not assigned). (source: Van Nuffel, 2005)

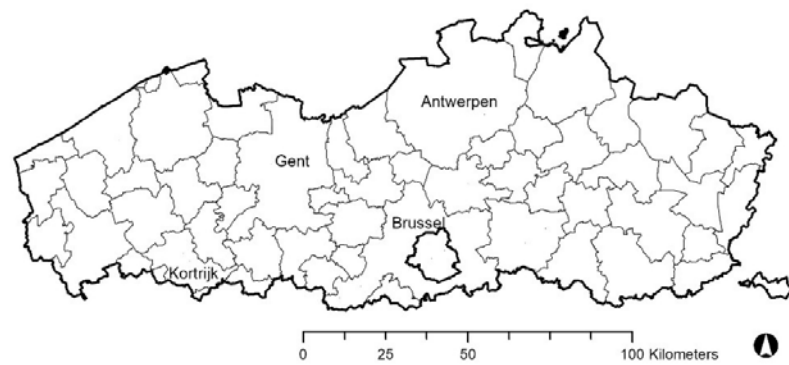


Figure 26.2: Housing market areas in Flanders. (source: AnteaGroup and UGent, 2011)

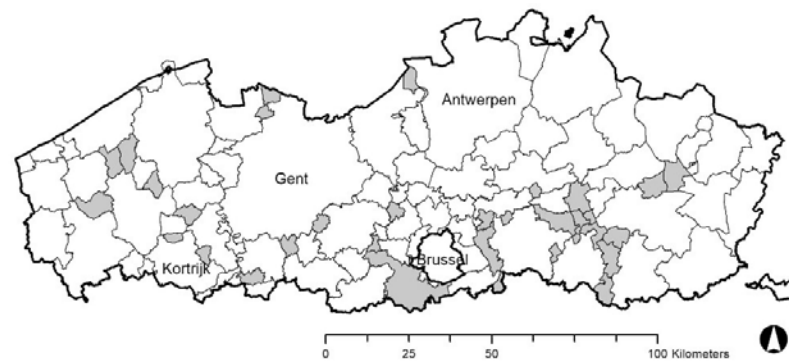


Figure 26.3: Housing market areas in Flanders. Gray zones overlap. (source: SUMResearch, 2015; SUMResearch et al., 2012; Soresma, 2019; Atelier Romain, 2018).

The stubbornness of housing market areas

Nevertheless, an approach that deals with housing market areas remains stubborn. And there are various reasons for that.

Planning reasons

From a planning point of view, a territorially differentiated policy in Flanders (Belgium) can be pursued by means of structural plans at the Flemish, provincial, and municipal level. Together with implementing planning instruments

such as spatial implementation plans or regulations, spatial accentuation can be pursued and area-oriented considerations can be made: e.g. where to densify, where new housing developments are foreseen, where open space is to be safeguarded, etc. However, the structural plans that establish a vision of the entire territory are not binding for the citizens. The licensing policy, which ultimately matters to the citizen, is of a generic nature: every rule applies to the entire Flemish territory. This is not desirable in order to pursue an area-oriented policy towards housing, but also towards open space, economic developments, etc.

Political reasons

From the instruments of housing policy, there is a plea for a more territorially differentiated policy. Ceuppens and Ryckewaert (2016) argue that it is necessary to scale up the housing policy with “*government-strong city or housing regions with regional development around an urban core*”. This, the researchers argue, “*because of the complementarity between the urban and rural regions, the fiscal balances between the two, the avoidance of mutual competition (e.g. by attracting wealthy residents), and the sustainable organization of mobility*.” The supra-local approach is also a starting point of the White Paper Spatial Policy Plan (Vlaamse Regering, 2016) where the idea of *transport regions* is to achieve supra-local program assignments for living, working, facilities, activity, etc.

Demographic reasons

Demographic issues and the associated spatial assignments take place on different scales. First at the building level with regard to the transformation of the home into, for example, a multi-family home or cohousing project. Such a transformation is clearly underway in Flanders. Second, the assignment plays a role at the neighborhood level. Challenges lie in the allotments of the 1960s and 1980s, but also in the 19th-century belts of the cities. The neighborhood level offers the ability to fulfil other tasks such as energy (heat networks and energy districts), mobility (development around public transport hubs), public facilities, etc. We know from practice that housing issues and housing dynamics are not limited to individual municipalities but play supra-locally. The same applies to the economy and mobility. Just think of commuting regions and migration basins. The local scale is not the ideal scale (as it is too small), neither is it at the provincial nor the Flemish level (too large). A more city-regional approach is recommended. There are various reasons to support a city-regional approach above a local housing approach (at the municipal level). This makes it possible to work out a vision for a wider region in terms of housing

and spatial planning. It means that we can be selective in the places where we want to intensify or develop. This goes against the spreading logic of the local plans that provide the way for possible expansion. The advantages of working with housing market areas seem to be obvious. City and its surroundings are viewed together in terms of current functioning and policy. Strategies for the housing market, therefore, need to go beyond the city *sensu stricto*.

Some cracks

International literature, however, points out cracks in this approach. These mainly focus on deficits with regard to scale of the housing market, the functional and spatial cohesion, and housing market dynamics.

Scale

In international literature, a distinction is usually made between regional and local housing market areas. Regional then refers to large entities on the scale of Flanders, for example. Local is used to indicate housing markets at the level of municipalities. For the intermediate level, we speak of sub-regional housing markets (city-regional scale). This level corresponds to what regional housing markets are called in Flemish literature (*regionale woningmarkten*). But this intermediate level proves particularly hard to define in a structuralistic manner.

Functional cohesion

Furthermore, a housing market area is often regarded with a certain autonomy in terms of migration and commuting, for instance. In other words, commuting and migration are the largest *in* the housing market area and the smallest *with other* housing market areas. But is this really so? According to Jones (2002), a range of studies have taken the travel-to-work areas as the basis for a housing market area. In the so-called access space model, households trade off journey-to-work costs for housing expenditures and are based on the assumption of employment concentrated in a center or sub-center. He notes that this is potentially an impediment to the application of the model where there is long-term decentralization of employment from the city center. Using such models can be problematic in Flanders as it is a region characterized by urban sprawl (Vermeiren, Poelmans, Engelen, Loris, & Pisman, 2018). Sprawl is partially caused by the fact that as household income increases so does its demand for space (Hincks & Baker, 2012).

Spatial cohesion

In addition, the housing market area is often regarded as undelimited and hanging together without any gaps, although housing market areas can overlap. But Islam and Asami (2009) give an overview of the main streams in defining and delineating housing submarkets, making a difference for major perspectives. The first one is a definition based on a topographic or geographic boundary, assuming that each house within it possesses the same characteristics. Others have derived the definition from the quality of the houses. Such a difference between data-driven methodologies (statistical analyses) and a priori definitions (spatial decisions) is also found by Wu and Sharma (2012). They note that a priori classifications are often static in nature (e.g. zip codes) and cannot capture all the dynamics of housing sub-markets. Data-driven classifications, however, are based on statistical data analyses which can account for a multitude of attributes simultaneously, e.g. structural, location, and demographic attributes. This methodology tends to be, according to the authors, more objective and can account for temporal dynamics as real estate data are typically updated in a timely manner. A combined model of spatial boundaries, housing characteristics, and socio-economic dimensions are seen less as a solution because they should give a spatially fragmented submarket structure. They therefore develop a spatially constrained data-driven methodology for submarket classification through incorporating housing's structural, location, and demographic characteristics.

Housing market dynamics

A housing market area is characterized by a balance in prices, by housing dynamics, and by a certain segmentation of the market (rent, purchase, and new construction). Demographic trends lead to changes in demand in housing. It is important to attune supply with this demand. The question arises whether the housing market will spontaneously provide this supply or whether steering (from a planner's perspective) is necessary. Planning, as well as the building process, are slow processes. Anticipating these future developments is important. But attuning demand and supply is not easy, as demography, lifestyles, and working careers change fast. The problem with tuning demand and supply is the relative immutability of the built environment opposite to a high degree of variability of society (Musterd, 1996). But each phase of life differs the need for housing. A single young person will have different housing needs than an older single. Moreover, young people move more often because they experience many changes in working conditions and household conditions.

Introducing housing market *arenas*

Housing market areas have, as described above, a purely descriptive character. But the market itself is highly volatile, complex, and dynamic. In order to deal with the misfits of the housing market area approach, we probably need to reset our perspective from the ground up. This is because we also discovered that behind each of these dynamics a wide range of various actors are hiding at the demand, supply, and distribution side of housing markets, each with their own interests and needs. Nevertheless, they are also highly interdependent upon and interact with each other. Therefore we came to the hypothesis that instead of dealing with fixed housing market areas, it would be possibly better, more focused, and dynamic to deal with housing markets as *arenas* instead. Here various actors interact, influencing the outskirts of this arena as being influenced by it. Working with **housing market arenas** could possibly coincide better with the dynamics in the housing market and takes into account the actors, factors, and institutions that play a role in the housing market area (see also elsewhere in this volume). Therefore a broadening of the definition of housing market areas to housing market *arenas* seems appropriate. Not only the dynamics of the housing market must be given more attention ('it is more than just price or the interplay between demand and supply'), but the emphasis on regulations and on actors is also important. Housing market areas are geographical areas where the *actors* (buyer, seller, tenant, landlord, real estate agent, plan initiatives, etc.) meet. It is also a place of dialogue. Understanding housing market dynamics as such is thus essential to comprehend spatial patterns and developments. Understanding these developments is, in turn, important for policy making at influencing these in the housing market. This intervention happens within a framework of existing regulations (*institutions*) and a field of *actors*, considering other *factors* such as demand, supply, location, price, quality, etc. Government intervention can ameliorate certain aspects of market failure (Siembieda, 1994).

The relational space and housing market arenas

Relational space

This idea doesn't stand alone, but in fact builds on or is part of a broader understanding of the relational ontology of space, as described in this book. As such, housing market *arenas* undoubtedly have a spatial dimension. Space, in turn, consists of entities and processes and influences these housing markets

arenas. Moreover, these entities and processes come together in relationships. Space, according to Murdoch (2006), and in reference to Massey (1991), is made from relationships. "Space is relational" (2006: 21). Distinguished spaces are therefore only a snapshot of processes and relationships. They are not permanent but are constantly being (re)created and are (re)creating.

As such, a housing market arena is a space that can take place on different scales, and is the product of interrelations. Those interrelations may already exist or have yet to be made. That is why they are open processes that are often 'unfinished'. Spaces, and therefore housing market arenas, are meeting places where relationships are intertwined (Massey, 1991). They are more dynamic than they are static. Conflicts can occur when relationships try to displace each other, or consensus can arise as alliances are forged. A certain force or power also emerges from these relationships. Spatial relationships are also power relationships: power relationships in a political sense, but equally power as exercised by planners. The specificity of each housing market arena therefore has to do with the constellation of those spatial relationships and power relationships. The structure of the space and its definition is an effect of relationships; it also determines its scale. So, if we 'follow' the network, we can trace the processes that shape the space, i.e. the housing market arena.

Actors, factors, and institutions

As stated in the introduction, relationships are made by **actors** (human and non-human). Actors are the bodies or persons involved or playing a role in the housing market, its development, and the dynamics in it. It is also necessary for actors to perform an action. The actors move both in a *supply side* (formed by municipalities, social housing, project developers, etc.), a *demand side* (determined by growth in demographic developments, prosperity, migration, etc.) and in a *distribution side* (the fit of supply and demand formed by policymakers, real estate agents, financiers, etc.) (Figure 26.4). But as actors are also inhuman other significant **factors** are important, which might relate to the political-economic cycle, the socio-cultural cycle, and the spatial cycle. These actors and factors always operate, circulate, and interrelate within a certain context determined by the rules of the game; e.g. **institutions**. By this we mean the whole of regulations (formal) and norms and values (informal). They determine the set of rules and mutual agreements within the housing market arena.

In this way a housing market arena can be understood as the interplay of these three aspects—*institutions*, *actors*, and *factors* (Figure 26.5). They determine

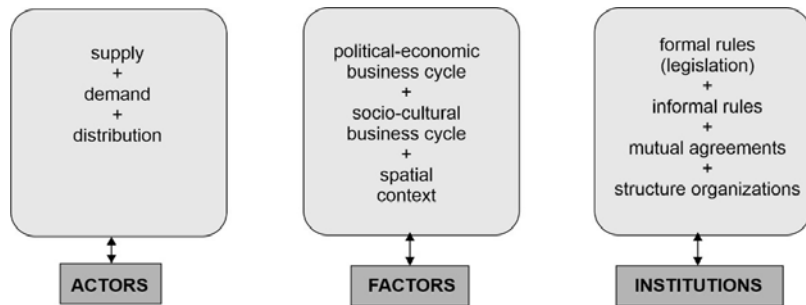


Figure 26.4: (a) actors, (b) factors (c) institutions. (source: Own elaboration, 2019)

the way in which housing market areas manifest themselves (Figure 26.5). The same actor can take different positions in the different sub-markets. A landlord, for example, is a provider of a property on the rental market but may as well be asking for a house on the buyers' market. According to Vastmans, Helgers, Damen, Goeyvaerts, and Buyst (2016) the real estate market consists not only of sub-markets and segments, but also of regional markets that interact with each other. Changes in some sub-markets or regions through these interactions affect the rest of the housing market. Housing market arenas therefore differ from region to region. The questions then become: "How can you bring about those changes? Which interventions are needed to achieve a desired spatial effect?"

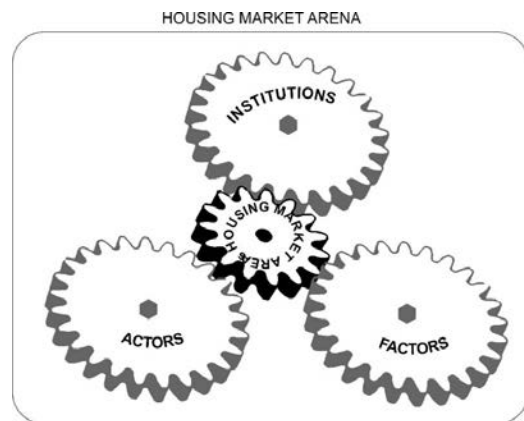


Figure 26.5: The arena of a housing market area as an interplay between actors, factors, and institutions. (source: after Boelens, 2018)

Factors of importance in Belgium

In order to answer this question preliminarily, we first delved into the factors of importance for an housing market arena approach. These factors include aspects of 'speed of sale' (how fast a property is sold or rented out), house prices, the relative number of transactions, relative population growth, and migration patterns. All these factors vary over time, which means that the dynamics in time and space also change, due to changing interests and needs of the actors and stakeholders involved. Nevertheless, a snapshot gives a picture of some of the spatial patterns (Figure 26.6) and gives a first impression of possible housing market arenas.

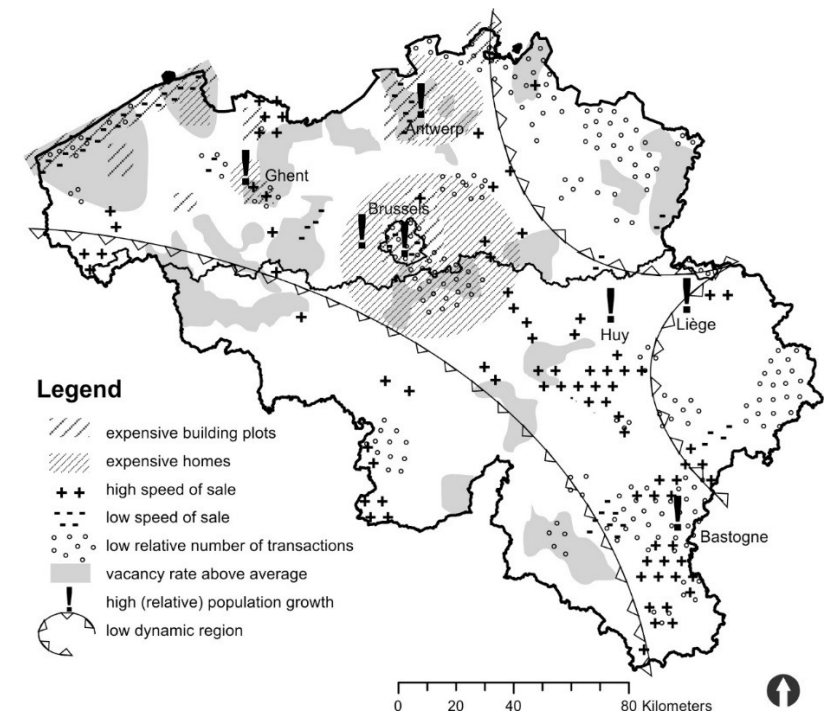


Figure 26.6: Schematic map of housing market dynamics in Belgium (2014). (source: Loris and De Decker, 2016)

First there are the cities of Antwerp, Brussels, and Ghent with their suburban edges. They come up as expensive. The city centers are characterized by an above-average frictional vacancy (this is the % of houses that is for sale or for rent at a certain moment). The population growth is large. The residential neighborhoods south of Ghent, east of Antwerp, and east of Brussels (with many expats), are typically expensive neighborhoods where wealthy people live. Moreover, the coast stands out. There is a relatively low number of transactions. Apparently, apartments here are more difficult to sell because the speed of sale is low. This is related to the second homes and holiday homes by the sea. The age of the patrimony also plays a role: many of the buildings date from the 1970s and are due for replacement. These buildings sell less rapidly than more recent ones. Finally, the area near the Grand Duchy of Luxembourg is also striking. Few properties are sold, and if they sell, they sell quickly.

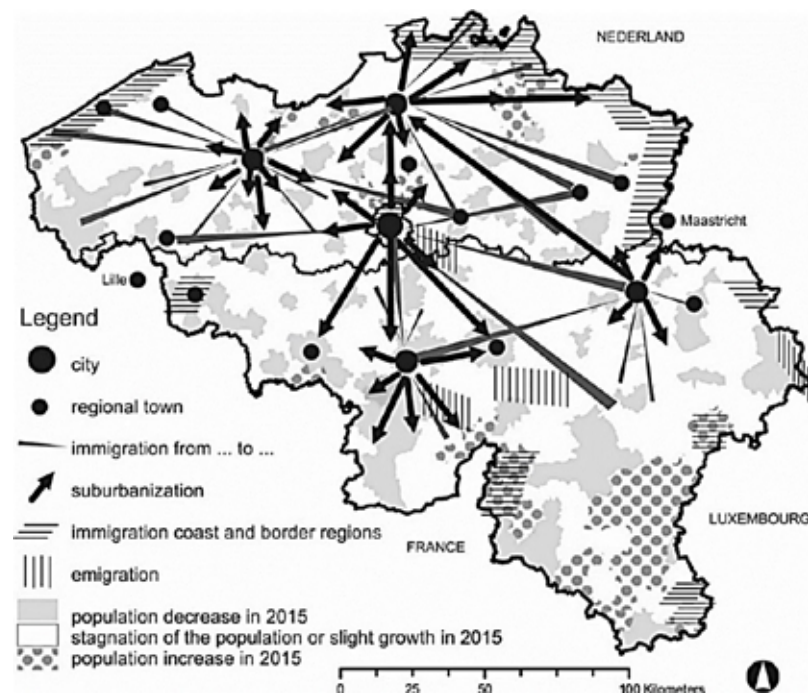


Figure 26.7: Migration flows from and to the most important cities in Belgium in 2015. (source: own elaboration based on data from the Research Centre of the Flemish Government, 2017)

In addition to these cases, most of the western part of Wallonia and the eastern most part of Wallonia and of Flanders have a tame market. In between, a few specific cases stand out, such as the area around Huy with its strong population growth and fast rate of sale. The Dender Valley, on the other hand, is characterized by a frictional vacancy above average and a low speed of sale. The frictional vacancy is also above average in the neighborhoods of Tournai and Saint-Hubert.

Comparing this map with the map of migration patterns shows a number of similarities (Figure 26.7). The big cities all know the phenomenon of suburbanization that puts pressure on the housing market in their city edges. The same effect can be analyzed on the coast. The cross-border migration between the Netherlands and Flanders in eastern Belgium is less noticeable on the map with the housing market dynamics. This is perhaps the result of a recent shift in the intensity of the migration prior to 2014, which relieves housing pressure in the border region. It can be assumed that the pressure to the north of Antwerp, a region with high asking prices, will continue, because of the cumulative effect from the suburbanization of Antwerp, an endogenous population growth, and the migration flows from the Netherlands.

Actors in the housing market arena of Flanders

These factors of importance are the result of how housing actors act, but they also influence their actions in return. Therefore these matters of fact become matters of concern (Latour, 2004). In order to analyze how this happens, we have interviewed major actors and stakeholders within Belgium about these matters of fact, what they think of them, and how these have or are influencing their behavior, thereby turning these 'facts' into matters of concern. Moreover, interviewing the actors regarding the housing market arena of Flanders (Figure 26.8) provides insight into their position in relation to supra-local cooperation, the concept of the housing market arena, and their (possible) role in this. For that purpose and next to demand, supply, and distribution, we have interviewed academic, public, business, and civic actors.

On supra-local cooperation (in housing market areas)

From the academic world, it is pointed out that collaborations between housing actors take place at a sub-regional level, i.e. within the housing market area. It is also at that level that intermunicipal partnerships are set up. For the time being - and partly due to the subsidy policy - these only occur between municipalities that lack a certain administrative power to implement an active

housing policy. These collaborations can be seen as a reflection of future mergers. To date, such partnerships have mainly been developed in the provinces of Antwerp and Flemish Brabant and to a much lesser extent in e.g. East Flanders.

About the housing market arena concept

The design of a housing market arena is regarded as interesting by scientists because the concept of an arena places the emphasis on dialogue and co-production. This co-production also explains how this actor proceeds in real life practice.

Furthermore, within the housing market arena, various models can be analyzed: e.g. the role of the VMSW (Vlaamse Maatschappij voor Sociaal Wonen) could be taken over by the housing market arena with regard to the exchange of the 'binding social objective' (BSO). This is a minimum of social housing a municipality requires for their territory. According to the definition of a housing market area, since they form a region around a city, and since the BSO is often already achieved within the city so they are exempt from creating additional social housing, an agreement can be made so that the city still takes on part of the BSO of the rest of the region. The capacity is usually greater in the city to achieve this.

About the role of the actor in the housing market arena

Moreover, in reference to the above and next to the academic actors, each of the interviewees foresees specific roles for themselves.

First, the government authorities see their role as small (SARO (Strategische Adviesraad Ruimtelijke Ordening), i.e. advising on policy with an impact on spatial planning) or limited to creating frameworks (Agentschap Wonen Vlaanderen). These can be both regulatory and financial, thus facilitating a smooth operation of the housing market. The government allows housing actors and municipalities to implement their own policies (within those frameworks). Rather than directing, she will facilitate.

Two roles are put forward by researchers: on the one hand, the role as a researcher and the substantiation of simulations and projections (data-driven research), and on the other hand, engaged or action-oriented research in which the researcher can fulfill specific roles. The Living Labs example used in the context of housing markets is cited to indicate that the researchers cannot act as an interested party or as a coordinator.

From the civic side, we interviewed the BBL (Bond Beter Leefmilieu) and the VVSG (Vlaamse Vereniging voor Steden en Gemeenten). The BBL mainly seeks and enters into collaborations with pioneers in society. This can include governments but also companies. Their actions are aimed at governments (Flemish government, provinces, and municipalities) and not at housing market areas. The VVSG is a member association that wants to inspire, provide good examples, inform and hold discussions, raise awareness, and lead the way for the troops.

From these first preliminary inventories, we can draft a first idea of a possible actor arena for Flanders. Here we can possibly distinguish various roles (Figure 26.8):

- Substantiation (researcher, university, expert);
- Networker (searching and entering into partnerships (e.g. BBL));
- Adviser (advising on policy with an impact on spatial planning (e.g. SARO));
- Forerunner (sensitizing and inspiring supporters (e.g. VVSG));
- Frame Creator (aimed at offering instruments (e.g. Agentschap Wonen Vlaanderen)).

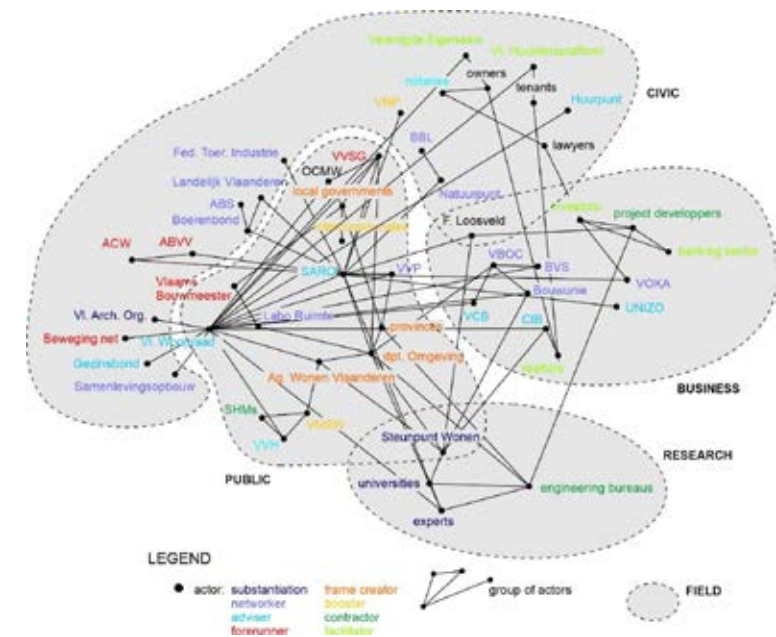


Figure 26.8: Preliminary scheme of actors in the housing market arena of Flanders. (source: Own elaboration, 2019)

In addition, one can think of:

- Booster (actively set out to conclude alliances, (e.g. VRP (Vereniging voor Ruimtelijke Planners)));
- Contractor (the person who makes the difference in the field (e.g. project developer)); and
- Facilitator (mediates in the housing market (e.g. real estate agent)).

Conclusion

Housing market areas are classically, and even then mainly from an economic point of view, defined by statistical analyses of data on house prices. Sub-markets (rent, purchase) are part of it. Migration and commuting are also added from a geographical perspective. All these conceptions try to propose area-based definitions. Two major weaknesses in these approaches are, on the one hand, the lack of insight into housing market *dynamics*, and, on the other hand, a lack of insight into *how actors or stakeholders play a role* in these housing markets, and how they are defined in return. The institutions also have to be further clarified in this context. The concept of the *housing market arena* might provide an answer to this.

Housing market arenas have not yet been defined in Flanders to date. And housing market areas even less. As indicated in this chapter, there are a number of limitations. Nevertheless, it is interesting to look at the results of traditional research on how these might evolve from matters of fact to matters of concern based on a housing market arena approach. The complexity of the housing market arena in Flanders is shown in an initial scheme of actors involved in this arena.

There is a need to delve into this further, especially concerning the specific roles and possible interactions between these actors. The same applies to the institutions. Thus, this draft will be further elaborated on. Nevertheless, we have the following in-between conclusions. A number of councils or committees apparently play a leading role in the actor network (SARO, Vlaamse Woonraad, VBOC) together with the research center Steunpunt Wonen. The Department of Environment and the Flanders Housing Agency are also positioned between these actors. In addition, some 'end-users' are somewhat alone in the network (owners, tenants), measured by the number of mutual relationships. The intensity of the relationships (how strong they are) needs further investigation.

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Actors in the creative transformation of an industrial area in Gongshu, Hangzhou

JIAJIA GONG

Introduction

The Grand Canal, as the sole waterway connecting 20 cities from the north to the south of China, not only guaranteed the country's political and economic stability, but also promoted the development of exchanges and cooperation along the canal. As such, it became the economic and cultural corridor during the Sui Dynasty (7th century AD) (Huang, 2015). However, over time its function was replaced by coastal waterways after the late Qing Dynasty (the 1850s). During the first half of 20th century, the cities along the Grand Canal, particularly the cities south of the Yangzi River, underwent a process of industrialization. Some cities, for instance Suzhou, Wuxi, Changzhou and Hangzhou, became the core areas of the national industries in China. Due to the advantage of water transport and the large amounts of available land, a large number of state-owned light industry companies were formed along the canal as public-private joint ventures after the founding of the People's Republic of China (P.R.C., from 1949). Since 1958, they were formed by state-owned heavy industry enterprises influenced by the Great Leap Forward (Zhu, 2007). During the 1990s, the traditional industries in cities began to decline. Consequently, the question on how to renovate these areas became a priority for many cities.

In China, it is normal to demolish industrial plants and construct new buildings with new functions on the same spot. However, different approaches emerged as well, inspired by, for example, the experience of the regeneration and gentrification of SoHo, New York. (Shkuda, 2016) Hangzhou is among these cities, where some of the traditional industrial plants have been transformed temporarily into creative and cultural industrial parks and consequently now form a creative and cultural industrial agglomeration. Although lessons from foreign examples provide alternatives to the more traditional practices of demo-

litions, the institutional backdrop in China (for instance the land tenure and urban planning and administration system) is different from other countries. Therefore, this article raises the question of what dynamics occur in the transformation of traditional industrial clusters into creative and cultural agglomerations in China?

Literature has been published discussing cases such as the “798 artistic area” in Beijing (e.g. Kong, 2009) and “M50”, “Tianzifang” and “1933” etc. in Shanghai (e.g. Gu, 2014). White and Xu (2012) for instance, have investigated the roles that cultural organizations and practitioners play in the cultural policy process. However, this literature hardly addresses the actors’ relations and the evolution of these relations during the formation of such creative and cultural hubs, which actually shape the industrial landscape and the urban morphology. Thus, this article will explore the formation of the creative and cultural agglomeration of Gongshu district in Hangzhou and elaborates on the roles the leading actors played within this transformation process.

Case introduction and analytical method

Hangzhou is located at the southern end of the Grand Canal, which is surrounded by large numbers of industrial buildings. Most of these buildings are in the Gongshu district. Various stakeholders have been involved in transforming these areas from a traditional industrial cluster into an agglomeration of creative and cultural industries, both of which shaped the city at the same time.

To learn about the dynamics and evolution of the creative and cultural industries in the Gongshu district, we interviewed the official representatives of the Gongshu creative and cultural industries administration office and some of the creative and cultural industrial park operators. We studied the policies and documents from the local government. Additionally, we visited the firms in some of the industrial parks and did a questionnaire among the managers of the firms.

Numerous actors were involved in the transformation, but not all the actors were of equal importance at every stage of the evolution (Boelens, 2010). We will identify the leading actors who had the voice and action to drive the transformation. Since the leading actors vary from time to time, different phases of

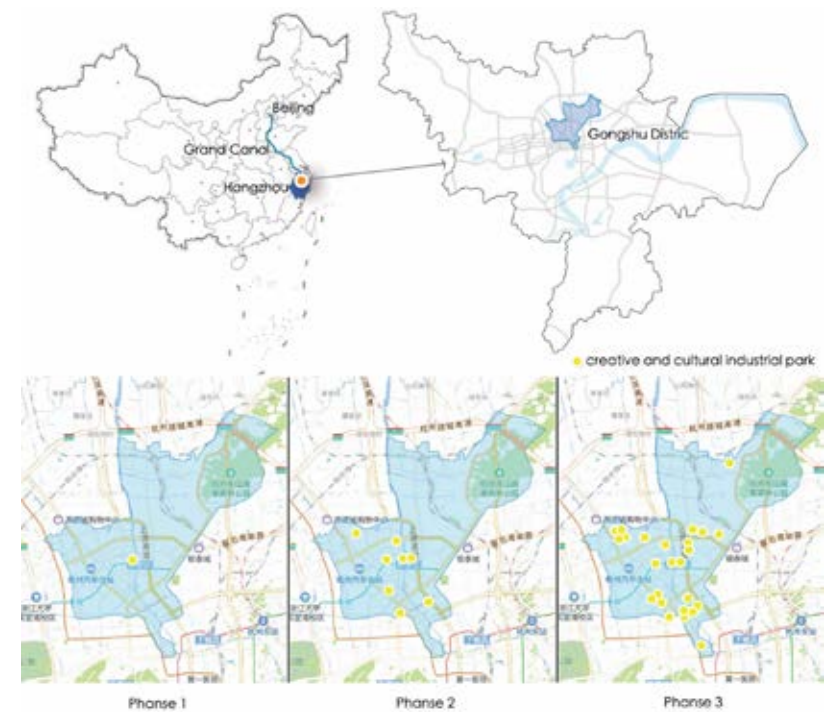


Figure 27.1. The case location and the phases of its development

the transformation can be recognized. There are three phases of the development of the creative and cultural industries in Gongshu district according to the number and the activeness of the leading actors. In each phase, the relations between actors were different as well. From this analysis, we will elaborate on the various roles taken by the involved stakeholders. We will then identify the driving actions that played the most influential roles in the transformation progress to understand what the leading actors have done and how they have affected the creative and cultural industries and changed the space as well as how the institutional context made these roles possible.

Case study

Phase 1, Emerging Phase

The start of the evolution from old industrial buildings to a creative and cultural agglomeration in Gongshu district was the transformation of the nylon plant of Hangzhou Blue Peacock Chemical Fiber Co., Ltd. on the west bank of the Grand

Canal into LOFT49 in 2002. This became a small-scale experimental cluster for artists and designers. When this creative space was first produced and tacitly acknowledged in the traditional industrial area, it became the first step in the emergence of the creative transformation.

Du Yubo, one partner of DI design, was the first one who discovered the space and settled the DI design company in the nylon plant. Then a group of artists and designers, for example the famous interior designer Sun Yun, the photographer Pan Jie, the Ceramic Artists Dai Yuchun, and the painter Chang Qing, located their start-ups here within half a year. In 2004, the government planned to expropriate and transfer the site of LOFT49. The profit the government could make from the expropriation was about 300 million RMB (about 40 million euro). However, the famous artists, designers from LOFT49, and the media, such as the local newspaper and TV programs who were against the idea of the government, put forward their appeal to keep LOFT49. With the attention and support from the public and upper governments, it was ultimately reserved as the industrial cultural heritage of the city and developed as an example of Hangzhou's creative and cultural industries.

In the emerging phase, the leading actors were the plant owner, the artists, the government, and the media representing the citizens. The plant owner and the artists were the importers of the creative and cultural industries in this traditional industrial cluster. The government had its routine to promote economic and urban development which opposed the importers. The media represented the citizens who were concerned about the sustainability of the cultural and economic development, which meant they supported the importers and objected to the government's decision.

Phase 2, Initiative Phase

The success of LOFT 49 inspired owners of old buildings and the entrepreneurs who wanted to operate a creative and cultural industrial park, which started the initiative phase. From then on, Gongshu district witnessed the growth of the transformation from old industrial plants into creative and cultural industry spaces. By the end of 2009, 7 more sites apart from LOFT49 had been formed from traditional industrial plants.

In the firm initiative phase, the leading actors were the plant owners, the artists, the operators, and the government. The plant owners worked with the artists or professional creative and cultural industrial park operators to develop such

parks. The government, instead of inhibiting them from replacing the plant with creative and cultural industries, tacitly approved the transformation in some areas.

Phase 3, Co-development Phase

With the prosperity and the development of the creative and cultural industries in Hangzhou, the government was aware of the lag of the administration, which could no longer meet the needs of the development of the creative and cultural industries parks and firms, nor the city itself. Consequently, two levels of the creative and cultural industry administration offices were set up in 2008 that were responsible for the promotion of the development of creative and cultural industries, including releasing policies, coordinating with other government departments, and providing financial support. At the end of 2008, Opinions on the Implementation of Developing Cultural and Creative Industries (hereafter Opinions) by Hangzhou government had been released, allowing the temporary use of the industrial buildings as the office for the creative and cultural industries, which could be extended conditionally after five years of transformation. The Opinion was the turning point when the initiative phase was shifted to the co-development phase.

In 2009, a creative and cultural industries agglomeration named YunHeTianDi was officially formed by the Gongshu creative and cultural administration office, which consists of 10 old industrial plants along the Grand Canal. Today, after 10 years of development, there are 18 parks included in YunHeTianDi, and more have been built recently. This form of development became a model of agglomeration for the Zhejiang province. The office initiated two alliances: the creative and cultural industries alliance and the intellectual property protection alliance. The latter brought the government, the firms of creative and cultural industries, and the operators of the individual plants together. Beside the parks of YunHeTianDi, there are now more parks and buildings that are actual assemblies of creative and cultural and related companies throughout Gongshu district. Not only the old plant buildings, but also the residential areas have been recently transformed. The transformation of the traditional industrial plants finally pushed Gongshu district to be a perfect accommodator for creative and cultural industrial companies.

In the co-development phase, the leading actors were the government, the operators, the owners of real estates who needed transition and revitalization, and the firms who were related or not related to the creative and cultural

industry. The government was responsible for the policy making, industry development supporting, and urban development management. It also funded some creative and cultural industries parks. All the leading actors co-developed with each other. When the operator of the Yuangu creative park initiated the service standard of creative and cultural industrial parks, it attracted more related companies to locate there, making it more competitive than other parks, which in turn inspired the government to issue the first official service standard of creative and cultural industrial parks in China with the contribution of the Yuangu creative park and some leading operators of the parks. Some operators tended to accommodate a certain percentage of firms unrelated to creative and cultural industries, thereby developing a different model for creative and cultural industrial parks. For example, Jianhua creative park claims that about 30% of firms are unrelated to creative and cultural industry, which is effective to hedge risks. But other operations deliberately keep the purity of the park to strengthen their competitiveness and the popularity in certain branches of creative and cultural industry.

The dynamics of the evolution

In 2000, Hangzhou implemented the industrial adjustment strategy that encouraged the stated-owned industrial enterprises that lacked competitiveness and that were on the verge of bankruptcy, to withdraw from the market or transform their business. Due to the harsh policy, stated-owned industrial enterprises had no choice but to seek for changes to maintain the operation of the company at the lowest level, and use their buildings as a resource to gain economic profit. At the same time, since the Fifth Plenary Session of the 15th CPC Central Committee put forward the development strategy of cultural industries, more and more start-up enterprises have been established. These enterprises are generally small in scale, weak in revenue capacity, and confronted with high pressure of survival. Thus, they need to find cheap office space that can meet their professional demands. The state-owned industrial enterprises provide the ideal entrepreneurial space for the group of start-ups with low rent, flexible space, and reasonable locations. The group of start-ups provides the state-owned industrial enterprises with profits and transformation beyond the maintenance of operation. These endogenous and exogenous factors led to the emergence of LOFT 49, sowing the seeds of transformation from traditional industries to creative and cultural industries in these areas.

The economic benefit is better compared with other kinds of transformation or with no transition for the traditional industrial plants. Although the land expro-

priation can temporarily make more economic income for the government, the industrial relics have precious cultural value. No matter the government or the plant owners, the creative and cultural industrial firms or the citizens, they all want to make more profit, including economic profit and cultural persistence. Thus, LOFT 49 could be reserved after negotiation between the leading actors. The feasibility of using old industrial plants to develop creative and cultural industries has been confirmed from the public to the government, which encouraged more professional operators and artists to participate in the transition. The operators needed to update the basic infrastructure, such as the power supply system, communication network system, and so on, but since there is a risk that the government could expropriate the land whenever the urban development requests, the investments of such updating initially only met the basic needs for offices. Due to the limit of operational capability of the transforming enterprise, they had to reduce the rent of the rooms, which subsequently led to a clustering of creative and cultural start-ups along the Grand Canal in order to reduce their costs.

Moreover, we can distinguish three main affective actors in the evolution: the operators of the parks, the firms located in the parks, and the government. The three actors coupled together: when one actor accelerates its growth, the other two actors have to adapt to it. During the development of the individual creative and cultural industrial parks, the service was upgraded and standardized in some parks, which was imitated by other parks. As a result, the whole service level of the creative and cultural industrial parks is upgrading. The actions from the operators and the demands from the firms located in these parks encourage the government to keep initiating policies and organizing meetings and conferences to support the growth of firms and the park operators. These firms are growing, and the demands on the environment, communication with others, financial supports, and so on increase. The creative and cultural parks have to innovate and upgrade their software and hardware to meet the increasing demands of the firms located in the parks and the standards from the government, which increases the competitiveness of the parks themselves.

Conclusion and discussion

After a decade of co-development in the district, some firms and operators could not catch up with others and disappeared, while some succeeded with the cooperation with other actors and strengthened their competitiveness. Since the creative and cultural industries flourished in the district, it became the core area in Hangzhou city, gaining more revenue and at the same time

acquiring the financial support from upper governments to improve the city infrastructure and facilities. The transformation is no longer limited to the traditional industrial area but shows its potential in the urban revitalization in many other areas.

The transformation from traditional industry plants to creative and cultural industrial agglomeration was derived from the transformation pressure on the traditional firms: the more or less accidental event that a creative and cultural industrial firm located in a plant. The firms were the most important actors that promoted the development of the creative and cultural industries at the beginning. However, in later phases, the activeness of government rose and became vital for progress after a certain period of disordered development. The government organized the creative and cultural industries firms and the operators of the so called creative and cultural industries parks in an ordered and efficient way and provided financial and social support for them to develop their competitiveness.

This kind of development is a combination of bottom-up and top-down. The government permits the explorations and self-organization of the firms themselves to a certain degree when the transformation begins and takes over the responsibility of organizing thereafter, which enhances the efficiency of the transformation. However, finding the right moment to take over responsibility is very important. The best way of development may not yet exist if it's too early, and the development of certain industries may shrink and even withdraw from the market if it's too late, since the self-organization is not efficient enough to generate a robust industry.

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INTERMEZZO

Telling (Promising) Stories – Observations on the Rise and Fall of the Mobiscore in Flanders

SUZANNE VAN BRUSSEL

This chapter is in response to several recent (and less recent) observations of current events that, due to the introduction of the Mobiscore, have caused a lot of commotion in Flanders. The Mobiscore is a score developed by researchers of TML, as commissioned by the Department of Environment (Flemish Government). It provides an assessment for each house or plot showing the accessibility of facilities on foot or by bike. The score was extensively reported by the press and heavily targeted to social media users in the area. At the time, I had just finished my PhD about the governance of a more sustainable mobility, asking for a more actor oriented approach. The Mobiscore sounded promising to me in the beginning but soon I was stunned about the way the introduction of the score went down.

I would like to present my observations from my experience from both my work as a post-doc spatial planner/researcher with a specific interest in sustainable mobility, as well as my personal interest as an eco-conscious urban dweller in the everyday quest for more consistent behaviour, more quality of life, and a sustainable future.

Many compatriots struggle with this eco-conscious behaviour, as is seen by our ecological footprint being on average higher than in neighbouring countries. Two underlying elements always come to the fore: the high household energy consumption and the high number of vehicle kilometres per inhabitant. The latter is largely linked to the residential choice: Where do we want to live? And

mainly: how can we get from where we live to work, shopping, recreation, etc.? This basal choice influences and even limits possible travel alternatives and therefore also drives our travel choice behaviours.

To reduce their ecological footprint, many people need to be triggered from the start: in their choice of residence. This is why the Spatial Development Department launched the Mobiscore in mid-2018 under the motto: “Searching for a house—first check the Mobiscore”. It is not the first ‘score’ that has been launched to adjust people’s behaviour, as the energy score and the nutriscore (nutrition score) had already been established.

“The Mobiscore is a score that assesses for each house or plot how accessible facilities are on foot or by bike”

(translated from Departement Omgeving, <https://omgeving.vlaanderen.be/mobiscore>).

For spatial planners, the Mobiscore does not tell a new story, considering that the logic of Spatial Policy Plan Flanders (Beleidsplan Ruimte Vlaanderen, BRV) aims at a higher spatial efficiency by focusing on accessibility and level of facilities for assigning future developments. However, this message was designed to reach a wider audience by taking the shape of a straightforward score.



Figure 28.1.: Widget of my personal Mobiscore (source: <https://omgeving.vlaanderen.be/mobiscore>)

A quick check of my Mobiscore results in a score of 9.4/10 (see figure 28.1). After all, I live in the city, close to numerous shops, services, and other facilities, and I’m a stone’s throw from where I work — it’s a distance that takes me barely ten minutes by bike. Above all, I have access to several public transport services (bus, tram, and train), so my Mobiscore is very high. For others – mainly ‘countrymen’ – the score is much lower, to their surprise and frustration. Almost immediately after the Mobiscore was launched publicly, people were already arguing about the score, even protesting it. Critiques came from citizens who did not understand why their Mobiscore was so bad. Some disagreed as

“there are schools and shops in their neighbourhood”, or they fulminated that it was unbelievable or even ridiculous, pointing towards the ever-declining bus services in the neighbourhood which lower their Mobiscore. To top it all, the Mobiscore had the potential for some fiscal repercussions as well (KBA, 19/06/2019, De Standaard), just like the energy score (or EPC-value) relates to the housing prices, for instance. Remember the slogan? “Looking for a house – check the Mobiscore first”. However, that political statement was soon taken back, as the opposition to it rapidly rose. Or in the words of Mooijman (2019):

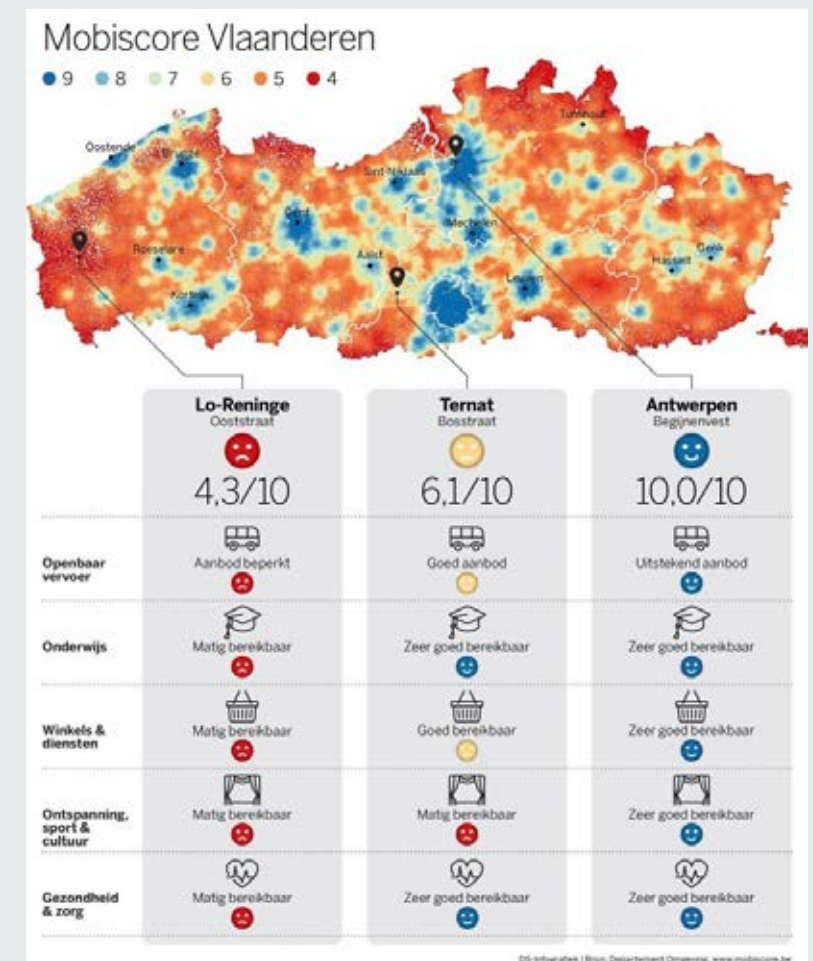


Figure 28.2: The Mobiscore in Flanders (source: De Standaard, 18/06/2019, source: Departement Omgeving)

“The Mobiscore hits an open nerve”. Danneels (2019) confirms that many Flemish people consider themselves environmentally conscious, as long as they do not have to change their behaviour. However, explicitly pointing this out to them means putting yourself in a difficult position. Indeed, the reactions to the Mobiscore on social media went a little off-road. Some people felt validated and others just felt attacked. In his column appearing every other day in De Standaard newspaper, Wouter Deprez even described the short but heavy introduction of the Mobiscore in the Flemish press and media as having deepened the gap between ‘city dwellers’ and ‘rural people’ (Deprez, 2019 in De Standaard 20/06/2019, p.3).

Some critical reactions were of course to be expected, but I must say that I hadn’t seen such a massive reaction coming. After all, the Mobiscore is an indicator composed of several underlying, mostly geographical or mobility-related indicators (e.g. proximity of facilities, presence and service level of public transport services). In other words, with some simplification, it creates a general image of reality. It summarizes the characteristics of neighbourhoods with regard to mobility services, available (daily) facilities in the residential area, etc.

In retrospect, Mooijman (2019) would have sold the story of the Mobiscore differently. While it should have been a tool to encourage a behavioural change and more conscious choice behaviour, it has become a value judgement. As such, the score completely misses its goal. Instead of being encouraged to think about the ecological impacts of our residential choice, it now threatens to become a source of anger, discontent, and frustration. As such, other (irrelevant) storylines come into existence, such as the proverbial gap between city dwellers and rural dwellers. Although city dwellers have higher Mobiscores, when it comes to air quality scores, the ‘rural people’ are winning, if we continue that duality.

It seems as if some things, (e.g. our travel behaviour and residential choices) are simply not to be touched. Think for instance of road pricing schemes or the tax shift that are still dead after years of research and negotiations. But how do we change the paradigm that has locked public administrations into catering for the public expectations? The question then is how we can prevent certain choice behaviours from becoming undiscussable or unnegotiable, without lapsing into a war of fixed positions (De Standaard, 5/07/2019)?

In my opinion, we need stronger stories that create a broader context and encourage people to participate. The focus needs to shift from what goes wrong to highlighting the goals we want to achieve and how we can achieve them. The transition has to be feasible for everyone. For some planning practitioners, their work mantra is: “We have to tell them a story, a story that even our grandma would understand.” This phrase might be a cliché in the planner’s world, but it is true. If we want to change things, whether it is about redesigning a neighbourhood in conjunction with the inhabitants, developing a housing plan for a municipality, or finding an interesting spatial programme compromise with real estate developers, we have to tell promising stories to get people’s attention first and keep them engaged along the way. We need to balance the story for this diverse palette of stakeholders.

So what makes this book the place to discuss why planning is about telling satisfying or promising stories? I like to compare telling satisfying stories with the act of carefully developing an actor-network, in which the general public or the target audience becomes involved. In the 1980s, a few sociologists shed their light on this networking interaction. They considered or even conceptualised everything, whether material (product) or immaterial (idea or process), as the result of an elaborated network. Callon (1984) for instance described the scallops and the fisherman in the bay of Mt-Briex. The theory conceptualises four overlapping phases in which the dynamic actor-network is being shaped and reshaped: (1) the problematisation phase, (2) the inter-essement phase, (3) the enrolment phase, and ultimately, (4) the mobilisation of allies. All of the phases are feeding the actor-network and are indispensable for its development.

Although the theory originated from the sociological field, it has been widely and enthusiastically adopted in various research domains, including the field of spatial planning. The actor-network theory (ANT) analyses, in retrospect, how certain products, projects, or ideas have become the way they are. The theory gives insights into how people try to get their ideas one step closer to realisation, thus making it applicable in multiple situations. It can, for instance, trace how inhabitants of a neighbourhood try to get their issues on the agenda. As such, it is a valuable tool or perspective for spatial planners, as they want to merge different spatial claims and aspirations in their neighbourhood designs and spatial visions.

The story usually starts from setting the scene, picturing the problem, or raising the issue on the public agenda; this is a very important step as informed people make smarter choices. This phase is called the problematisation phase. Why is it important to elaborate on the bigger picture—to raise a specific issue or problem? Because this is the first step to create the necessary support base. To get the people's interest, the story of the spatial planner must connect to the knowledge, experience, and background of the target audience—they have to see how they fit into the story. In absence of this connection, the actor's interest evaporates, which makes the actor-network non-existent. In the case of the Mobiscore, neither the broader context, nor the purpose was described. People could just look up their personal Mobiscore, and if they were really interested in a better understanding, they could possibly find the link to the scientific report with the underlying assumptions and calculations behind the score, and even more important, to the actual purpose of the score: informing people about the consequences of their residential choice or location with regard to accessibility and ecological impact of their travel behaviour.

In absence of a more clear and nuanced communication of the score, a decent start for the Mobiscore-story, the actor-network was not able to reach out to the general public. And since this first acclimatizing step somewhat failed, the second step of holding the attention and triggering the audience to stay involved – to think about their residential choice and the related consequences – can be considered almost non-existent. The Mobiscore somewhat divided the general public into city dwellers with a high Mobiscore and rural dwellers with a low Mobiscore. That tenor did not invite people to become part of the discussion or to become interested in the developing Mobiscore-actor-network. In this so-called second interessement phase, literally referring to the in-between position of the actors with the central problem or theme, the problem or project (e.g. the residential choice and related travel behaviour and accessibility) is framed within a whole network of other people, visions, studies, etc. catching as much references as possible to trigger potential relevant actors – in our case, the general public. Those references connect everything that 'is out there' and that fits the spirit of the planners (ad)venture with the general public. In fact, at this point the planner tells the story so that it belongs to its audience. Nevertheless, when it comes to behavioural discussions, people are very reluctant to start critical self-examination/self-questioning. In that respect, connecting to broader and more general issues such as health appears

helpful, as this is a generally accepted value. Another way to get people started or motivated and to raise the importance of the problem on their personal agenda is to invite them to conduct or be involved in science projects.

Citizen science (CS) projects deliver an important added value: they not only contribute to science, but also, and above all, to the knowledge building and insights of the participants. Examples are the *CurieuzeNeuzen* research project in Antwerp (Van Brussel & Huyse, 2018) and later all over Flanders¹; the *Airbezen* project², both for measuring and registering air quality; and the *Straatvinken*³ project for measuring the modal split of our journeys and relating it to the well-being of local residents (Daeninck, 2019). CS-projects are a very promising medium to build people's insights and knowledge with respect to a certain problem, which often gives them the motivation and means to start a closer self-examination, which eventually can lead to behavioural adaption or change.

As the role or the position of the actors with respect to the problem/raised issue becomes clearer when discussing CS-projects, we are arriving at a third ANT-phase: the enrolment phase. The storyline specifically addresses the audience, which then senses a certain responsibility to take action. In the case of Mobiscore, by visualising accessibility of services and public transport, we highlight the travel options and needs that a residential choice will bring. Expounding on those is a first important step to let people think of their choices, which all too often are the result of autopilot behaviour.

- 1 CurieuzeNeuzen is a citizen science project measuring the ambient air quality (NO_x-concentration) related to traffic in and around Antwerp. Later, the project was repeated and extended to the whole Flanders region. The initiative for CurieuzeNeuzen came from Antwerp University, De Standaard, and the Flanders Environment Agency (VMM) with the support of the Flemish Institute for Technological Research (VITO), HIVA-KULeuven and Kariboo. (<https://curieuzeneuzen.be/>)
- 2 Airbezen is a citizen science project measuring the air quality (particulate matter concentrations) of neighbourhoods and cities by means of strawberry plant leaves and their PM-capturing capacity. Airbezen was the result of a collaboration between Stadslab 2050, Antwerp University and many volunteers. (<https://www.uantwerpen.be/nl/projecten/airbezen/over-airbezen/>)
- 3 Straatvinken is a Citizen science project measuring the modal split in the province of Antwerp and relating it to the well-being of local residents on an annual basis. Straatvinken is a collaboration between the Ringland Academy, Straten Vol Leuven, the University of Antwerp, and HIVA - KU Leuven, and is supported by six(???) partners (Argenta, Gazet van Antwerpen, Province of Flemish Brabant, Spaced, Datylon, and Bagaar). (<https://straatvinken.be/resultaten-2019/>)

Discussing and (re-)defining roles allows the web of the actor-network to grow and reach some kind of stability. To get even more robust, the actor-network can benefit by being backed up by allies. The mobilization of allies is the fourth phase in building the actor-network and focuses on telling the story in such a way that it envisions opportunities or win-wins to attract allies from other fields. The Mobiscore actor network could for instance be directly linked to the BRV-logic (see earlier) or could relate to the debate on road pricing and the transition to sustainable mobility. As such, it is clear that the residential choice and mobility options (Mobiscore-story) are no self-contained story, but it are linked to broader societal trends and discourses. This is developed as a nudging tool to stimulate smarter residential choices, just as there have been other attempts and scores to trigger people and 'nudge' them towards more desired choices (e.g. regarding nutrition, energy-efficiency) in the past decade. Scores are an interesting tool to address people quickly in this world full of clicks. This straightforwardness is at the same time a pitfall. People often do not take the time to analyse context and read the accompanying texts and assumptions. They just want to see their score; they want a message that is ready to eat. And when this message is not what they'd expect, they refuse to eat it. Instead they protest their score and fail to connect with the bigger picture, of which the score was only the introduction/the eye-catcher. As a result, we as planners risk losing essential steps in raising awareness and building the actor network. This was at least the case with the 'Mobiscore', which somewhat disappeared into the background as quickly as it had risen.

We can conclude that when the story misses its start, fails to speak the language of the audience, or when it's incomplete (ie. skipping one of the afore-mentioned steps), the actor-network evaporates or sometimes never even develops. In the case of substantial transitions, it is important to build the story carefully from the beginning, making sure to address all of the actors and take them beyond a war of 'fixed positions' to an extensive self-questioning in which their autopilot choice behaviour can be discussed. The development of an actor-network may of course be hindered or counteracted by stories and discourses that send perverse incentives (e.g. the sustained subsidizing of salary cars, the lowered investments in public transport, etc.). Those stories do not connect to the discourse of the Mobiscore, or at least do not guide the audience in the same direction at all. As a consequence, certain stories often seem not very promising, or are confusing and renders actor-networks vulnerable in their turn.

The fact that a few months after the launch we hardly heard about the Mobiscore illustrates that the story was not yet finished, the audience did not feel correctly addressed, and it was not the right time. It is time to tell the story as if it were for our grandmother, in the dialect she speaks, and with the context and references she understands. Let's actor-network our way through from the very beginning!

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APPROACH

New tools, methods and approaches to bring actor-relational planning to the fore and set in motion new dynamics in planning processes.



A difficult process towards cross-sectoral environmental policy in Flanders

ANN PISMAN

Since the Town and Country Planning Act of 1962, in (Belgium and) Flanders, active work has been done on spatial policy by, among other things, drawing up regional and local zoning plans (gewestplan - BPAs), but since the 1990s also by developing spatial structure plans (structuurplannen). Meanwhile, environmental policy (in a very strict meaning of the term 'environmental') is being actively pursued based on the decree on environmental policy, particularly by drawing up environmental policy plans.

Spatial quality was an important concept in spatial policy at an early stage, when referring to aesthetic aspects. In recent years, the concept has been broadened to include environmental quality. However, measuring and monitoring environmental quality is not easy because the concept is multidimensional and to a large extent subjective and context-specific. The concept of environmental quality can be a useful concept in the future exploration of environmental planning. Currently, environmental quality expresses the ambition of spatial policy but also of health and environmental policy.

The Spatial Structure Plan for Flanders described the concept of spatial quality as "the appreciation of space. (...) Spatial quality is not primarily about the quality of the object itself (the intrinsic characteristics of a landscape, of a city center, of an urban space, etc.) but about the value that is attached to it. This appreciation is largely determined by the involvement of the assessor (resident, target group, community, etc.) and not by the characteristics of the space itself. This appreciation is socio-cultural and therefore time-dependent." (Ministerie van de Vlaamse Gemeenschap, 2004, p. 562). In terms of content, the concept was linked to purely spatial, physical elements such as building density, interweaving, architectural qualities.

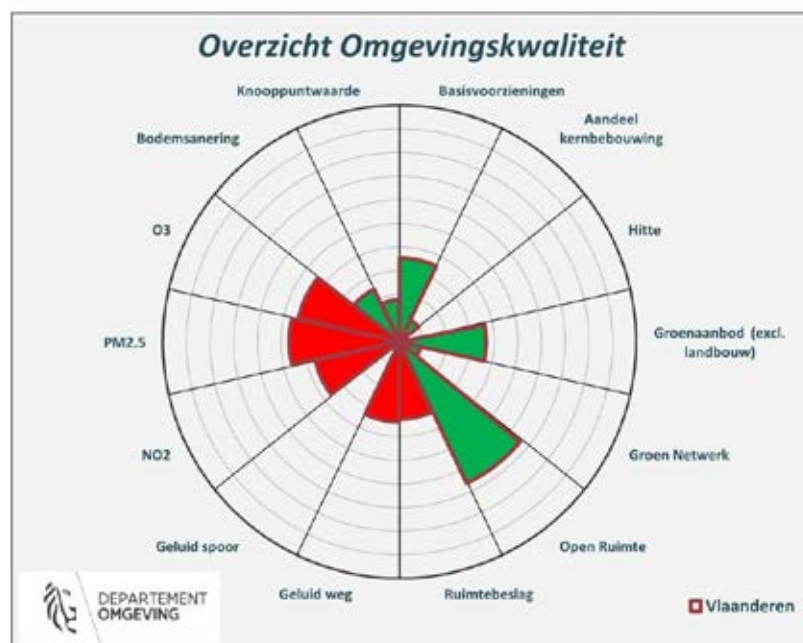


Figure 31.1 Overview of indicators of environmental quality in Flanders, 2017 (source: Vranckx et al., 2018)

In this paper we try to answer the question if there is currently in Flanders a direction towards an integration of spatial and environmental planning issues, as well as planning tools and instruments, by analyzing recent studies about new organizational structures and renewed instruments. The object of this integrated planning is the physical living environment, defined as a coherent system of layers and (a)biotic flows between stocks within these layers. Buildings, infrastructure, water, and nature are all stocks within this physical living environment, and these stocks change over a period of time and through interaction (flows). The environmental policy focuses on (the state of) the physical living environment and on the organization and development of society in terms of their impact on this physical living environment. In recent years, there has been a change in terms of content and administration. The concept of environmental planning and spatial development was launched in the 2014 Policy Memorandum on the Environment (Vlaams minister van Omgeving Natuur en Landbouw - Schauvliege, 2014). In 2017, the new Department of Environment & Spatial Development was officially launched. The former departments of Spatial Planning (RWO) and Environment, Nature and Energy (LNE) have been

integrated. The department's core mission is to develop an integrated environmental policy for space, for the environment, climate, energy and the green economy (Departement RV en Departement LNE, 2017).

Initiated by the European level

Viewing environmental policy as an integration of spatial and environmental policy, is largely driven by the European Union. There are many examples of European initiatives that substantively broaden the spatial theme to more environment-oriented themes: European (Subsidy) Policy, in general, often places the emphasis on integrated (cross-sectoral) area development; Cohesion policy focuses on border areas, macro-regions, cities and smart regional specialization; the European Rural Policy focuses on participatory rural development; the Urban Agenda for the EU strives for a more consistent European policy with a major impact on cities, and so on. (Departement Ruimte Vlaanderen, 2017)

Influenced by European directives on environmental impact assessment (Europees Parlement, 2001, 2014), a more integrated policy and planning process will be rolled out in most countries and regions when this directive is implemented, taking all environmental aspects into account. In Flanders, spatial planning and environmental assessment have both, separately, been developed during the past 20-30 years. The coexistence of spatial planning and environmental assessment, as was the case in Flanders, does not exist in most countries or regions. In comparison with other European countries, the shift towards integration occurs relatively late in Flanders, maybe because of the strong and separate development of each policy theme. Overall, various forms of policy integration or the pursuit of a common policy agenda are clearly noticeable in the planning policy in the European countries. The agenda is to promote better cooperation across administrative borders or with other government sectors such as environmental policy or regional development (Nadin et al., 2018).

State of the art of the integration of environmental and planning policies within the Netherlands

In the Netherlands, the change from space to environment is also being felt, both in preparatory research and policy development and in the instruments.

The following is a (very) concise analysis: In 2002, the Netherlands had a domain-specific Spatial Planning Bureau (Ruimtelijk Planbureau), responsible for the analysis and evaluation of spatial policy. In 2008, the Spatial Planning Bureau merged with the Nature and Environmental Planning Bureau (Natuur en Milieuplanbureau) and the Environmental Planning Bureau, and an independent research institute in the field of the living environment, nature, and space was created. In addition to the Netherlands Environmental Assessment Agency, the Netherlands currently has two other planning agencies: the Netherlands Bureau for Economic Policy Analysis (Centraal Planbureau) and the Netherlands Bureau for Social and Cultural Planning (Sociaal en Cultureel Planbureau) (Dammers, 2017). Spatial policy was originally developed by the Ministry of Housing, Spatial Planning, and the Environment (VROM), but in 2010 it was integrated into the Ministry of Infrastructure and the Environment (IenM) (merged with the Ministry of Transport, Public Works, and Water Management). Recently, spatial policy was placed within the Ministry of the Interior and Kingdom Relations. Space has been integrated into one of the Ministry's seven directorates, namely the Directorate-General for Governance, Spatial Affairs, and Housing. As a result, 'space' is no longer a clearly defined ministerial competence and the term 'spatial planning' is no longer explicitly included in the title of the Ministry.

In terms of instruments, the Environment and Planning Act is the flagship of environmental thinking in the Netherlands (www.omgevingswet.nl). The Environment and Planning Act, which is expected to be implemented in 2021, integrates several laws in the field of the physical living environment. These include subjects such as construction, the environment, water management, spatial planning, the preservation of monuments, and nature. The old laws are mostly sector-based. With the Environment and Planning Act, the Dutch government wants to make the legal system 'simply better', but de facto spatial instruments and instruments from other policy areas are being integrated.

State of the art integration of environmental and planning policies in Flanders

As stated before, the integration of environmental and planning policies in Flanders is fairly recent; it was launched in 2014 and implemented in 2017 through the new Department of Environment & Spatial Development. From then on, many actions were undertaken to define the object of integrated

planning. In 2015, IdeaCONSULT was commissioned by the Flemish Department of Spatial Planning to carry out a study on the content and organization of the environmental policy. The researchers propose to use the following definition for environmental policy:

“Environmental policy is: framing policy, which sets the context for space questions from the various sectors; and development-oriented policy, aimed at realizing the policy ambitions in the field of space and the environment (in conjunction with other perspectives) (Knotter, Van Herck, & Vanoeteren van IDEAconsult, 2015 ,p.5, translation by author).

For the framing role, especially, the integration of space and the environment has a potentially strong added value through the development of a single integrated framework with regulations in the field of space and the environment. From the point of view of the development role, the added value of integration is somewhat less pronounced, but it is also potentially present. The environmental policy can be operationalized through multidisciplinary and domain overarching projects and programs that result in new forms of organization such as project or program teams. From 2015-2016, SumResearch in cooperation with Ghent University and Atelier Romain (SUMResearch, 2016), studied the potential harmonization of net land claims and takes of many Flemish policy areas. This ultimately resulted in nine selected fields of opportunity for cross-sectoral policy coordination, as follows:

- Focusing on a spatial strategy for renewable energy production
- Developing 'qualitative spatial clustering'
- Managing the spatial impact of housing needs
- Facilitating economic activities by mixed land use
- Steering regional climate adaptation
- Setting the agenda for climate mitigation
- Integrating the regional open space policy
- Broadening water management policy
- Working towards environmental quality

Recently, five integrating themes for environmental planning in Flanders were identified (Lefeber, 2019): energy landscapes, healthy living environments, resilient soil and subsoil, well-accessible housing, and sustainable circular economy. These themes are more specific than the fields of opportunity selected by SumResearch and can result in new forms of organization such as project or program teams.

Focus on environmental tools and instruments

One of the most striking trends in recent years has been the thematic broadening of spatial planning to the environment, particularly in the application of tools and instruments (Pisman, Vanacker, Willems, Engelen, & Poelmans, 2018). It is part of a global European trend that is increasingly striving for common policy agendas across the various policy areas (Nadin et al., 2018). In recent years and months, many planning instruments in Flanders have been changed (Pisman, 2017).

No more spatial structure plans but more general policy plans

Since the decree on spatial planning in 1996, spatial policy in Flanders has been laid down in terms of content in spatial structure plans (Van Butsele et al., 2017). At the end of 2017, the plan figure of the structural plan is replaced by the 'policy plan'. 'A spatial policy plan consists of a strategic vision and one or more policy frameworks which together provide the basis for the desired spatial development. The spatial policy plan has the intention to lead to effective changes on the field. The strategic vision includes a long-term vision for spatial development. A policy framework contains operational policy choices for the medium term and action programs for a theme or for a region. Policy frameworks describe, among other things, how and with whom the desired spatial development will be realized (Een ruimtelijk beleidsplan bestaat uit een strategische visie en een of meer beleidskaders die samen het kader aangeven voor de gewenste ruimtelijke ontwikkeling. Het ruimtelijk beleidsplan is realisatiegericht. De strategische visie omvat een langetermijnvisie voor de ruimtelijke ontwikkeling. Een beleidskader bevat operationele beleidskeuzes voor de middellange termijn en actieprogramma's voor een thema of voor een gebiedsdeel. Beleidskaders beschrijven onder meer hoe en met wie de gewenste ruimtelijke ontwikkeling wordt gerealiseerd)' (Vlaamse Regering, 2017).

It is remarkable that the new planning instruments do not yet refer to the term 'environment', but instead explicitly refer to a spatial policy plan. Contrary to the definition of structure planning, it is striking that the concepts of 'spatial structure' and 'elements determining the structure' have been replaced by 'spatial development'. Spatial development is defined in the White Paper of the Flanders Spatial Policy Plan as the result of cooperation between governments, social organizations, citizens, and businesses. (Departement Ruimte Vlaanderen, 2017). Since reference is made to several actors, actors outside the physical space policy area will potentially be involved and environmen-

tal aspects and themes can be introduced or added. In the future it is inevitable that 'environmental policy plans' instead of 'spatial policy plans' will be developed, as this is announced in the policy note of the Minister. At present, however, there are no known initiatives to change the legal context to make this possible.

Environmental permits instead of building permits

The single environmental permit came into force on 23 February 2017. It replaces and combines the current building permit, the socio-economic permit, and the former environmental permit (Vlaamse overheid coproductie van het departement Leefmilieu Natuur en Energie en Ruimte Vlaanderen, 2016). The legal construction behind this new instrument is complex. The philosophy is much easier. The applications for mixed projects requiring a permit that involve both urban development and socio-economic activities and activities with a potential environmental impact are successively submitted together, subjected to a single public inquiry, dealt with in a single round of opinions, and decided jointly with one and the same competent authority.

Extensive integration of environmental and spatial planning instruments (MER-RUP)

On 1 July 2016, the Flemish Government ratified a decree that integrates the environmental impact assessment and other impact assessments into the planning process of a spatial implementation or zoning plan (RUP-ruimtelijk uitvoeringsplan). Over the past five years, many (parts of) the implementation plans have been suspended and destroyed by the Council of State, which highlighted the inadequate relationship between the zoning plan and the environmental impact assessment (MER-Milieu Effect Rapportage). The most important principle of the new legislation is the realization of a single process (and regulations) and the integration of all necessary impact assessments. In this process, more emphasis is placed on the participatory character (population, advisory bodies, other actors) through informal participation tailored to the process and two formal consultations. For each plan, the aspects (environment, appropriate assessment, water testing, etc.) that need to be considered in the process will be examined. Ultimately, the necessary impact assessments will be coordinated. The changes in the regulations for spatial planning processes will make it possible to examine environmental aspects, especially space and the environment, but also other aspects such as water, mobility, etc. simultaneously, and at the right time in the planning process, to include the results of the research and participation in the final implementation plan.

The difficult road trip to an integrated, cross-sectoral environmental policy in Flanders

Finally, all these studies and efforts for a new organizational structure, and renewed instruments, should contribute to an integrated, cross-sectoral environmental policy. The analysis in this paper shows that many steps have already been taken, including the restructuring of the organization and the development of a number of crucial new tools and instruments. The initiative of the Environment and Planning Act in the Netherlands also deserves to be followed up in Flanders. The current new instruments in Flanders aim at environmental thinking, and often integrate existing procedures, but are currently translated into legislation in a very complex way, therefore an administrative simplification is required.

Some insights from the analyses may be useful to continue working in the future, such as the suggestions to work with transversal projects and programs and to work in an even more place-based manner.

Today, however, there is still a major challenge in terms of content. On 30 November 2016, the Flemish Government approved the White Paper 'Flanders Spatial Policy Plan'. According to the Flemish Government, this White Paper is seen as a 'first step in environmental thinking'. However, the further elaboration of the White Paper in the Flanders Spatial Policy Plan has failed in recent years. The operationalization of the development principles of the White Paper in an integrated spatial and environmental policy is the challenge for the future. The further implementation of the concept of environmental quality (see box) also fits within this substantive challenge for the coming years. Hans Leinfelder's thesis on the Plandag in 2015 is still relevant: "The environmental policy discourse is mainly created by first changing the procedures and only then thinking about the content (Het omgevingsbeleidsdiscours komt (..) vooral tot stand door eerst de procedures op de schop te nemen en pas dan te denken over de inhoud)" (Leinfelder, 2015).

Concurrently, consensus is growing on the importance of an actor-relational approach to develop a successful cross-sectoral environmental policy. This would include the tools, instruments, and other aspects of the institutional context; the physical living environment; as well as the leading actors who will be needed to accomplish the narratives of the White Paper.

Case: from spatial quality to environmental quality

Recently, by order of the department of Environment & Spatial Development and to gain insight into environmental quality on a regional scale, 'miROK': a measuring tool for regional environmental quality within Flanders, was developed (Vranckx, Hamsch, & Bomans, 2018). This can be seen as a first attempt to address environmental quality in a more integrative and scientific context. The regional environmental quality is measured by a set of 14 indicators. These are indicators that come from the initial environmental domain and refer to noise and air pollution, the risk of heat stress, soil pollution, etc. But these indicators are also related to spatial characteristics such as the number of buildings situated within the city or village centers, the presence of facilities and public transport, etc.

The instrument gives a good overview of the objective component of environmental quality but does not offer a solution for its subjective

and context-related aspects. The interpretation of the quality of the environment in a particular place is not easy and gives rise to new but interesting discussions among experts. In urban areas, for example, traffic-related noise and air pollution by NO₂ are relatively high on average, yet these environments are seen as the preferential residential environments to be developed for the future. Further densification of these urban environments without actively working to reduce air pollution is no longer an option. At the same time, the individual appreciation of environmental quality must also be considered. Those with an urban lifestyle may not mind living further away from open space, in an urban environment, with more noise pollution, if this is compensated by a higher range of facilities and high-performance public transport within walking distance. In order to make this type of assessment, further research is needed, in which the actor-network approach can provide interesting insights.

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The actor-relational approach in Flanders – Meeting the practice of political service

TRISTAN CLAUS & BEITSKE BOONSTRA

Toward non-governmental-led spatial planning

As stated in the introduction of this book, the actor-relational approach was initially developed within the specific Dutch planning context of the 1980s-2010s. In this period, the traditional strong dominance of the public sector in determining spatial developments in the Netherlands was increasingly challenged by calls for multi-stakeholder governance and citizen participation. Following this trend, the actor-relational approach held a strong opposition against unilateral government-led spatial planning. It advocated for a shift in planners' views: no longer governmental-led planning with minor influence from society, but the other way around: a multitude of private and civic stakeholders engaged in planning, with the government in a mere facilitating role. *“[The actor-relational approach] starts from neither a governmental viewpoint about planning, nor the need for a periodic renewal of existing plans. On the contrary, it starts from a problem definition, a perplexity ventured by stake- and shareholders in the business and/or civic society”* (Boelens, 2010, p. 46).

In the actor-relational approach to planning, seven steps are distinguished that guide professional planners along this outside-inward path. In the first two steps, the planner would define non-governmental focal actors, unique core values, and primary leading actors within a certain area or around a certain planning issue. Leading actors (actants) are thus found among investors, project developers, tourist entrepreneurs, other businessmen, retailers, agrarians, and representatives of interest groups. They are carefully selected by the actor-relational planner based on their internal motives, objectives, and drives in order to obtain heterogeneous and cross-sectoral alliances. In steps three and four, the planner would organize bilateral talks and round tables in the search for opportunity maps and potential business plans (see Introduction elsewhere

in this book, figure 1.1). The public sector and governmental agencies would then only be invited *afterwards*, at step five, when the first opportunity maps are ready to be shared. The public sector is asked to support the translation of these opportunities into business cases and pilots, and to help in institutionalizing and anchoring these opportunities in new spatial regimes such as cooperatives or other forms of an associative democracy (steps six and seven). Following these seven steps, the actor-relational approach advocates a leading role for those non-governmental (civil and business) actors, in order to eventually reach a balance between actors in the business, public, and civic society. If the fundamental incentives like money-making, vote-winning, and interest sharing respectively were all taken into account in a well-balanced way, spatial planning could truly contribute to the *“best conceivable interaction between space and society, such for the sake of that society”* (Steigenga, 1964), and contribute to the overall resilience of our living environments.

As within the Dutch context of the early 2000s, governmental actors and the public sector in general held strong positions within the spatial domain. This non-governmental, or at least not-only-governmental approach fit well with the specific time and place in which the approach was developed. But, as argued by Boelens and Pisman (see elsewhere in this book), this approach fits closely with the historical ontology of the Low Countries (as the collective name for the Netherlands and Flanders): a so-called “horizontal metropolis” characterized by its many competitive and collaborative small urban forces, entrepreneurial and free-spirited mentality, rich culture of public-private-people-partnerships, and governmental institutions that emerged out of societal interactions (as opposed to state-led power imposed on society). As such, it is only a matter of logic that the actor-relational approach expanded its influence and research area to Belgium and more specifically Flanders as well.

However, no one can deny that, despite the many historical ontological similarities between the Netherlands and Flanders, some diametrically opposed spatial planning and management philosophies have emerged over the last two centuries as well. This has resulted in highly different conceptions of the relation between individual property rights and the public interest and the role of plans (area-wide in Flanders or intervention-led in the Netherlands) (Boelens & Pisman, this volume). Such differences influence the way in which an actor-relational approach gains shape in the actual practices of spatial planning.

In this chapter, we specifically explore how the involvement of local politicians in spatial developments influences the applicability of the actor-relational approach within Flemish spatial planning. After analysing the main differences of local political involvement in spatial development, we speculate on what these differences might mean for planners who aim to apply the actor-relational approach within a Flemish context.

Local politics in Dutch and Flemish spatial planning

The role of local politicians in spatial development is indeed very different in Flanders and the Netherlands. We discuss two features that – in our opinion – have shaped these differences: the size of municipalities, and the local political system and its influence on spatial planning.

Concerning the differences in size. In the Netherlands, there are 355 municipalities for a population of 17 million inhabitants, with an average number of 44.000 inhabitants per municipality (with the largest municipality being Amsterdam with 845.000 inhabitants, and the smallest municipality Schiermonnikoog with 941 inhabitants). In Flanders, the average number of inhabitants per municipality is exactly half as much as in the Netherlands. It has 6,6 million inhabitants divided among 300 municipalities (with the largest municipality being Antwerp with 525.000 inhabitants, and the smallest municipality Herstappe with 89 inhabitants). As such, Flemish municipalities are significantly smaller than in the Netherlands. Moreover, in Flanders 40% of all inhabitants live in rural areas with a population density of no more than two inhabitants per hectare (Pisman et al., 2018). With such small numbers of inhabitants, the number of local politicians is rather small as well (e.g. Herstappe has, besides its mayor, only two aldermen). It goes without saying that in many of these small municipalities the local mayor and aldermen have a close connection to their citizens (De Kinder, 1997), much more than in the larger Dutch municipalities.

Concerning the local political system and its influence on spatial planning. In the Netherlands, local elections take place every four years. Based on a coalition between several political parties (together forming the majority), aldermen are appointed by the local council. The mayor, however, is appointed by royal decree for six years, a period which can (and often is) renewed by the local council without a maximum number of periods. Moreover, the political influence of the mayor on policies and practices is very limited. And

even though aldermen and the mayor hold official authoritative power, the administration has significant influence over decisions taken, as civil servants both prepare and implement them. Aldermen and the mayor hold authoritative power concerning spatial plans, policies, or interventions. However, for any decision taken, aldermen are obliged to request content-related advice from their administration, and they are only allowed to divert from such advice on legitimate (and written!) reasoning. The municipal council subsequently holds the aldermen accountable for decisions made. As a result, when citizens in the Netherlands want to influence municipal decision making, they predominantly reach out to the administration and its civil servants.

In Flanders, mayor and aldermen are also the decisive actors in the issuing of building permits, with an obligation to ask content-related advice from their administration. Diverting from that advice – the so-called ‘overruling the advice’ – does not happen frequently. This is often simply because it is well-founded or trusted, but also because overruling could provoke a perception of favouritism within the local society (Claus & Leinfelder, 2019). In Flanders, municipal elections take place every six years. The candidate with the most preferential votes usually remains or becomes the mayor. In that sense, it is the local politician’s job (mayor and aldermen) to obtain and maintain a strong bond of trust with its citizens in order to get (re-)elected. In order to do so, some of them hold open day once a week. Citizens can come by to have a chat about small personal problems like a neighbourly dispute or a building permit for a garden shed, but also big plans, ideas, or views on the area are discussed. As politicians might benefit from favouring requests of certain groups of citizens, decisions on plans and permits easily become driven by an electoral logic, and politicians might use their power to bend the administration’s advice in a way that follows the same electoral logic (Claus & Leinfelder, 2019). As in the Netherlands, both mayor and aldermen are supervised by the municipal council. The difference, however, is that in Flanders both mayor and aldermen take part of that same council. The practice described above is called political service: an informal, not-entirely-legal (but certainly not illegal) approach to helping individual citizens, by bypassing general rules (Depauw, 1996). It is the set of activities that a political representative performs on an individual basis for the client or clients through a personal relationship – with an asymmetrical balance of power – whereby the elected politician uses his influence to provide the client(s) with all kinds of favours and services (Dekeyzer, 1989, p. 11). Political service is an often-occurring practice within spatial planning in Flanders (Claus & Leinfelder, 2019).

A happy but transformative couple

To begin with, political service has its advantages. By acting as a ‘refined social worker’, it is a way for local politicians to keep their finger on the pulse of society. They get to know the individual needs of the population or perceive the counterproductive or even repulsive consequences of their policies after which they can make adjustments. Political service can thus be seen as an informal form of participation for the citizens who are entitled to vote, often with more results than through the more established channels of participation (Depauw, 1996; Poggi, 1983). In the Netherlands, residents who aim to influence spatial developments need to find their way through the local administration first. This is a task often only feasible for those who already have some experience with bureaucratic language and logic, e.g. higher educated and well-resourced people. In Flanders, political service seems to have a different relation with the level of education or socio-economic status. Claus and Leinfelder (2019) perceived that some politicians tend to mostly help those who don’t have the knowledge or resources to use the formal way. In that sense, the locally political-driven culture of Flemish spatial planning could theoretically even align well with the basic premises of the actor-relational approach, that society – in this case individual residents – should be well-balanced within spatial developments, and that public actors, e.g. local governments, have a role in facilitating this balance.

On the other hand, there is a down-side to political service as well. Spatial decisions made based on political service can easily disrupt or delay the normal decision-making process within the municipal administration (De Becker, 1984; De Winter, 1983, 1981; Huyse & Poulet, 1974; Rawlings, 1990). Citizens who take the formal path, and therefore do not invoke political protection, see that politically supported dossiers are often dealt with faster and at a higher level (Rawlings, 1990; Claus & Leinfelder, 2019). Besides, since political service is not the most transparent way of participation, no one is ever assured if they are being threatened equally. Furthermore, local service-giving politicians often lose vision on the overall spatial development in their municipality. They are taking over the civil service’s operational role by limiting their actions to solving acute problems among its clients (Stoop 2000), causing a spatial policy defined by a sum of individual interests, rather than the public interest (Claus & Leinfelder, 2019). This way, political service can not only obstruct the necessary long-term vision but can also create a conflict between politicians and civil servants (Renard, 1995; Claus & Leinfelder, 2019).

Since the actor-relational approach holds a strong opposition against unilateral government-led spatial planning, pleads for a societal-driven approach instead, and thus proposes a deliberate suspense of involving the public sector in emerging spatial regimes, it could also offer a way to leave the deficits of political service behind. We think that the benefits of political service—or at least the open doors for individual interests with Flemish planning that exist through political service—should be well-balanced against the down-side of disrupting spatial planning in the overall public interest. As such, we argue that the actor-relational approach and the seven steps it proposes could do well in Flanders, although this would be in a different way than was done in the Netherlands. First, the actor-relational approach could open doors for other non-governmental parties that could have been neglected otherwise, and secondly, it could bring, in the long term, a much more strategic perspective. This would not just be by emphasizing the civic-led direction of spatial planning, but rather by emphasizing the long term collectiveness that emerges from the production of opportunity maps, business models, spatial regimes, and associative democracies. Local politicians do not have to close their doors towards informal forms of participation that political service offers, but they should complement this by using more transparent ways of participation, or even better: by looking at what the citizens actually need as a *collective*, potentially together with the private sector and business actors and start the planning process from there.

In addition, a remaining issue we would like to address is that political service might disrupt normal municipal decision-making processes as well as disrupt actor-relational planning processes. For that matter, we think that the actor-relational planner should at least be aware of if and what kind of political service is being given. When Boelens (2010) developed his actor-relational perspective, he acknowledged factors/non-human actors as crucial elements in the emerging planning regimes of human actors, shaping their objectives, developments, and results. In line with Rydin (2010), we think that, in addition to non-human actors/factors, the non-human socio-technical system – in our case the local political and planning system that allows, and perhaps even relies on political service – should be taken into account. In other words: political service is an actor too. The idea of having it represented as an actor, ANT, opens up different views on social and deontological acceptability. For one, political service could mean no more than listening or providing information to a citizen, while for others it could be referring to the competent authority or carrying out an intervention themselves. Maybe then, the actor-relational approach

can support politicians in connecting their usual way of providing service to individuals to societal collectives and longer-term developments as well. And if private and civic actors get on the same page with public actors, maybe governmental parties can even be included earlier in the actor-relational planning process. Because, for better or for worse, ultimately, they get to decide.

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Planning for flood resilience – Reflections on a co-evolutionary approach in practice

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Introduction: co-evolutionary planning for flood resilience

Managing flood risks has both a technical side (big infrastructures) and a social side (people affected). In a context where engineering alone can no longer provide all the answers (Jha, Bloch, & Lamond, 2012; Schanze, 2006; Vis, Klijn, De Bruijn, & Van Buuren, 2003), these two worlds need each other. The EU Floods Directive (Directive 2007/60/EC) joins these two worlds by considering prevention, protection, and preparedness in flood risk management (FRM) plans. This means that not only are a variety of measures in the fields of hydrological structures, spatial interventions, and emergency management applied to deal with floods, but also the involvement of different actors, such as citizens, local policy makers, and so on is considered (Bubeck et al., 2013; Hegger et al., 2016; Mees, Tempels, Crabbé, & Boelens, 2016). Managing flood risks is no longer the sole responsibility of water managers: in the face of increasing flood risks, land users, water managers, and spatial planners are all expected to contribute. Traditional technical solutions can reduce flood probability, while citizens can reduce their vulnerabilities (Adger, 2006), leading to an overall decrease of the total flood risk.

Each of these actors individually contributes to the development of flood risks in co-evolution with each other and their given context (Tempels, 2016; Tempels & Hartmann, 2014). As such, flood resilience is determined by the overall outcome of the co-evolutionary interactions between these actors. However, as land users often show a low concern for minimizing flood risks, spatial developments often aggravate flood risks. Looking at resilience from this co-evolutionary perspective, the challenge is to align these individual strategies and actions to deal with flood risk so that the overall outcome becomes more resilient.

Based on empirical findings in case studies, Tempels (2016) defines two levels of interaction that determine the choices made by individual actors. By intervening at these two levels, policymakers can navigate existing co-evolutions and make them more fruitful. The first one is the direct, active contact between actors through communication, agreement, collaboration, etc. A policy maker could intervene at this level through what we call co-evolutionary interventions: by putting himself in contact with the actors and actively working with them to achieve goals of flood resilience. The second level of interaction is the indirect effect of the context that influences an actor, such as rules, economy, etc. By setting conditions, such as subsidy schemes, a policy maker can encourage or discourage certain practices. The co-evolutionary approach proposed by Tempels (2016) was the starting point to develop further research on tactics to engage and activate citizens in managing flood risks, in order to come to shared responsibilities in FRM. This research discusses the findings of two projects that test direct and indirect ways to engage citizens in contributing to management of flood risks: the FRAMES project, focused on co-evolutionary interventions, and the Floodlabel project, exploring the tactic of setting conditions. In this article, we discuss some of the challenges and lessons learned as we came across in these pilot projects, in order to further develop the implementation of a co-evolutionary planning approach for flood risks.

Pilot work

In the period from 2016-2019, the authors were involved in two projects aimed at increasing the engagement of citizens in managing flood risks in the Dender basin area (Belgium): the FRAMES project, in collaboration with the Province of East-Flanders, and the Floodlabel project. In the box, the outline of the two projects is described. Both projects use different methods to explore means of increasing the involvement of citizens. The FRAMES project aimed to involve citizens directly in the development and implementation of flood resilient measures. Planners from the province were involved in direct dialogue with other actors and tried to engage with them in collaboration (i.e. co-evolutionary interventions). While the FRAMES pilots were aimed at direct interaction, the Floodlabel project is geared toward indirect interaction. It provides homeowners with technical information, with the expectation that this will help homeowners to take flood risk management measures on their own (i.e. setting adaptive conditions). The findings discussed draw on the experiences from these pilots.

Frames

(Province of East-flanders and Ghent University)

Pilot description

Three experimental pilots in the cities of Ninove, Denderleeuw, and Geraardsbergen were set up as part of the FRAMES project (Flood Resilient Areas by Multi-LayEr Safety). The province actively involved local communities and other stakeholders in jointly setting up and collaboratively executing on concrete spatial solutions to minimize flood risks, adapted to the local context. This was done through workshops with communities, one-on-one meetings with local stakeholders, group meetings, etc. The process was open, meaning that the citizens were involved in defining the problem and coming up with possible solutions, in order to guarantee a shared approach.

Research

The goal of the scientific work done in the FRAMES project was to develop knowledge on how governments can encourage and support projects that are set up and implemented by citizens through collaboration, negotiation, and participation. This was done through action research.

Lessons learned

A prerequisite to involve citizens in FRM is awareness of the flooding issue, as flooding is still considered more of an exception than a recurring event. The pilot shows that direct interaction and the approach taken in the pilot

is very limited as a tool to raise awareness and is more effective in areas where awareness is present. The openness of the process created a certain level of unease or even distrust among some citizens, but especially among other policy makers, as they were confused about the outcome. The lack of predefined roles, however, is specific to co-evolutionary processes, as it is important that all stakeholders take up ownership over the process. However, it was sometimes hard to reconcile this with the public responsibilities of policy makers. The concept of shared responsibilities in managing flood risks is generally accepted, but collaborative practices that could support this, complementary to publicly maintained levels of protection, have not yet materialised in people's perception and the institutions' modus operandi.

Developing accurate technical knowledge to support optimal solutions discussed in the community-based process also proved to be challenging. Calculations that weigh costs and benefits of physical measures take time, while community processes need to keep their momentum in order to succeed. The diversity of stakeholders and communities also meant different agendas and expectations of the process. As the traditional top-down approach is still broadly anchored in the institutional way of working and people's perception, it was difficult to convince or explain the benefits of this horizontal participative approach. It required a lot of preparation and time in developing a proper communication to acknowledge the needs and expectations of each stakeholder.

Floodlabel

(Ghent University in cooperation with University of Natural Resources and Life Sciences, Vienna and Utrecht University)

Pilot description

In the municipalities of Beersel, Sint-Genesius-Rode, Sint-Pieters-Leeuw, Lebbeke, and Geraardsbergen, the Flemish Environmental Agency (Vlaamse Milieumaatschappij) offered free technical advice on individual flood protection to about 285 households in flood prone areas. By informing citizens about their personal flood risk, the VMM wanted to support the implementation of individual adaptation measures. The report provided households in flood prone areas with a free technical analysis of the flood risk on the individual house level, both in terms of exposure and vulnerability, and a list of potential technical measures to decrease the vulnerability of the house.

Research

The Floodlabel project investigated the effects of introducing a label that describes the vulnerability to flooding of an individual house and potential measures tailored to the specific situation to lower its vulnerability. Research was done on the roles and attitudes of different stakeholders involved in the development and

implementation of such a flood label (residents, market parties, and policy makers). The goal here is to analyse the effects of such a flood label on individual adaptive behaviour, including its embedding in governance arrangements for the implementation of the label in policy. This research was executed through interviews and surveys with the involved parties.

Lessons learned

The advice raised risk perception and awareness among homeowners. However, the project merely served as information to those who were already eager to adapt their house to flooding (Davids, Boelens, & Tempels, 2019). Nevertheless, many participants still expected the government to act and did not accept or understand their personal role in flood risk management. This stand-off was partially broken by the communicative role of the expert. Participants of the project highly valued the communication with this expert. For many, the expert was the first one that listened to their personal story, which resulted in a combined local and expert expertise and more mutual understanding and willingness to act. To trigger more adaptive behavior through a floodlabel, one needs to build a governance network involving actors through rules and regulations, market mechanisms, or other win-wins (see the contribution of Peter Davids in this book).

Experiences in the pilot projects

The pilots show the importance of the social dimensions of FRM and spatial planning. The engagement of citizens in managing flood risks is inevitably dependent on the social characteristics of the area. Moreover, spatial planning sets a specific legislative context in which these practices are to be implemented. In what follows, we discuss some of the elements that determined the level of success in the pilot projects regarding awareness, ownership and roles, timing, combining expertise and skills, and goal setting and expectations.

Awareness

While water managers and spatial planners are convinced that FRM is a shared responsibility, this is not often the case for citizens. Water managers cannot implement this discourse of sharing responsibilities on their own; they depend on citizens and local actors. Within the pilots, it was difficult to convince stakeholders to take measures if they did not feel an intrinsic need to do so.

Awareness is a key factor that influences the willingness of actors to take responsibilities in FRM. Raising awareness is a larger societal process that requires other expertise and tools, such as campaigning and education programs. Awareness often increases with (recent) experience with flooding, which is outside of the control of flood risk managers. And even then, assessments of local risk based on experience often underestimate the impact of rare events (Burningham et al., 2008). While it is virtually impossible to create these circumstances of raised collective awareness, planners can prepare for them. If they have the appropriate knowledge, experience, and political will the moment a window opens for the discussion, the transition to sharing responsibilities will happen faster.

Ownership and roles

In the FRAMES pilots, ownership and roles were often fuzzy. This often clashed with the (hard, but sometimes also implied) obligation that governments have to provide services to their citizens: in this case protection against flooding. Therefore, governments might want to retain control over the process to guarantee the outcome and safeguard the common good and thus retain their legitimacy and accountability. Especially when it comes to protection measures, there is a certain fear of opening up in favour of other FRM strategies. Often, protection is seen as the minimum, and all other strategies as complementary and therefore not strictly necessary. However, it is hard to share responsibilities

with other actors if they feel they have no ownership over the process. However, citizens often expect governments to manage flood risks for them. They often only take action out of frustration about the way the government handles FRM or based on the belief that the government has failed overall.

Furthermore, governmental institutions are often bound to internal procedures and predefined tasks and responsibilities, which—despite the good intentions of working together—impede collaborative approaches. Involving other stakeholders in managing flood risks requires a certain degree of organisational flexibility.

Timing

In order to share responsibilities in FRM, technical knowledge and insights (e.g. on cost-efficiency, effectivity of measures) and social aspects (e.g. willingness, ownership) need to come together. However, it was difficult to align the timelines of knowledge development and citizen engagement. Reviewing different options can take months or even years, while in the meantime, citizen engagement declines. The availability and (fast) accessibility of technical expertise proved to be indispensable to convincing citizens to stay engaged.

Furthermore, all stakeholders had their own timeline, with deadlines set by directives, internal functioning, elections, etc. This created a lot of uncertainty within the project and complicated project planning. While it might not be possible or necessary to establish a shared timeline, it is important to build momentum and keep momentum going once the project is running in order to keep everyone engaged.

Combining expertise and skills

When combining different types of measures, the question is not only what (technical) solutions are most effective or cost-efficient, but also how responsibilities are (re)distributed when local measures are preferred over large scale flood protection. In order to implement such local measures, the tasks and responsibilities of each local actor still need to be defined. New questions arise about how to involve and motivate actors, build trust, understand what is fair, and decide who pays. The answers to these questions go beyond the skills and expertise of water managers and planners. To find answers to these questions, we have to combine flood risk knowledge with financial, legal, behavioural, and social expertise, in relation to the local context (Davids, Boelens & Tempels, 2019). In taking a co-evolutionary approach, it is important to not only consider all these different types of expertise, but also successfully bring them together. For this, a soft skillset is needed that reflects the plurality

of the field and enables people to come together and exchange ideas. When introducing the discourse of accepting flood risks instead of fighting the water and sharing responsibilities, it was difficult to move the discussion away from blame and shifting responsibilities toward focussing on a hands-on attitude of solving flood risks together. This means that experts have to communicate responsively. Some citizens understand that floods happen and that they can start adapting and protecting their property more effectively. Others still count on governmental interference. This makes a flood risk expert more than a technician, but he represents the idea of flood resiliency towards citizens.

Goal setting and expectations

In the FRAMES pilots, it was not always clear for citizens and other stakeholders what the aim of the project was since there was no pre-defined process and outcome. Indeed, defining the output of the process and sharing responsibilities to achieve this is an inherent part of the horizontal co-evolutionary approach. However, this triggered uncertainty related to what the added value of the process was and how they would be heard. This led to doubts about whether the process would effectively result in a useful output and made citizens and stakeholders hesitant to engage. Exploring windows of opportunities where different stakeholders can find a common ground and set up an overall achievable goal requires ‘a leap of faith’ from all parties, i.e. confidence in the added value of this approach and a certain degree of trust to share information.

Convincing stakeholders to engage can be challenging and time demanding. However, once a stakeholder has a clear interest in the project, progress can be made very fast. It is thus of high importance to understand where their interests lie and what the added value of a participative process is for each stakeholder individually.

Towards a new agenda for co-evolutionary planning

While it might be slightly uncomfortable, co-evolutionary planning interventions hinge on the engagement of other actors and opportunity. On the one hand, the level of engagement achieved between different (types of) stakeholders can be fostered through policies, methodologies, and approaches that respect the different stakeholders involved and their reality. On the other hand, opportunity is partly dependent on coincidental alignment of the different dimensions, for example the occurrence of natural events and the different partners’ interests within and outside flood risk management.

Sometimes it might be more effective to set adaptive conditions. Changes in the rules and financing of how floods are managed can alter expectations, awareness, and attitudes, and as such set the scene for direct interaction later on. This can be particularly useful when it proves to be challenging to connect the technical and social worlds of FRM in direct interaction.

To conclude, change can be achieved through both direct intervention and setting adaptive conditions. Successful direct interventions can question – and in the long term change – regulations, while new regulations can influence the attitude of actors in FRM projects, making them more open for direct interaction. As such, both strategies are complementary: whereas indirect steering invests in a long-term mentality and behavioural change, direct steering could have a stronger impact in the here and now, creating mutual understanding between actors through active communication. It is a process of trial and error in which multiple options are explored and the most successful ones are replicated. Through careful monitoring and conscious choices, resilience could then be increased by making the interactions between the different actors mutual and their context more productive, so that the individual actions not only avoid counteracting each other, but in the end produce an outcome that is greater than the sum of parts.

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Anticipating culturally resilient transformation in Mariënborg, Suriname

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& MARCIANO DASAI

Context and method

As in many other Latin American and Caribbean countries, among the prime issues in Suriname are housing shortages¹ and high poverty rates. Relief cannot be solely expected from the State, whose organisational and servicing capacity is limited (ERM 2017, p. 21, Heirman, 2019). If families want to improve their housing situation, they have to take initiative themselves. Due to the absence of structure or zoning plans, land rights are given to individual parties as a favour or simply on request (ERM 2017, p. 22). Moreover, land for housing development is often appropriated in an informal way, since land ownership control is weak and enforcement is rare. These individual ad hoc actions are causing immense sprawl, leading to ribbon development of small farmsteads along roads and rampant suburban allotments around Paramaribo and in the countryside. Yet these rural environments contain rich and unique reminiscences of Suriname's development history, laid down in a range of both urban and rural vestiges (e.g. industrial artefacts, water management infrastructure, buildings and sites of plantations, or bauxite mining sites). Tapping into the collective memory, this heritage could yield culturally resilient urban transformations, as it offers significant opportunities to alleviate housing shortages and, specifically, for the development of sustainable and inclusive, community based city- and eco-tourism. However, the manifold opportunities are largely ignored; this heritage is neglected and abandoned both by the government and the civilians. Therefore, it seems appropriate to stimulate the reuse of heritage by both governmental and private actors.

Deploying the potential of heritage in culturally resilient urban transformations in vulnerable neighbourhoods is the aim of the research unit ISTT (Inter-

¹ In 2004 there was a housing shortage of 2581 houses in the urban area of Paramaribo, and in 2012 the shortage was 4801. This is leading to families living in overcrowded situations (Heirman 2019 based on Mencke 2016). In 2017 of the 58.825 houses in the district Paramaribo, 21.256 houses needed big repairs and 504 houses were beyond repair. In the district Comwewijne, of the 1212 houses, 518 houses needed big repairs and 13 were beyond repair (ERM 2017).

national Studies for Territories in Transition)². This unit set up the research project **PLatform for Activating Networks for Cultural Resilience**³ (subsidized by VLIRUOS between 2016 and 2017, and from 2017 to today without subsidies). Since previous project trials of ISTT were conceived to be initiated by the government which then failed to implement them, the Living Lab methodology, based on Boelens' Actor Relational Approach and Living Labs (Boelens, 2009, Boelens et al. 2016, Boelens & Goethals, 2016) seemed more appropriate to apply to the issue of sprawled urbanisation in Suriname. This methodology aims at shifting spatial renewal agency from the government to collaborations among citizens, companies, and government. During a Living Lab, planners and designers activate and mobilise social groups that can form strategic alliances, depict spatial solutions, investigate financial, juridical and organisational feasibility, and evolve together with stakeholders and experts on operable civic projects (Boelens, 2009; Boelens et al., 2016; Boelens & Goethals, 2016).

Four planners' activities are deployed to move actors into action for institutional change: *tracing, mapping, diagramming and agencying* (Boelens et al., 2016; Boelens & Goethals, 2016).

- *Tracing* is about tracking of qualities, problems, causes, chances, and stakeholders (owners of problems and solutions) in a region. Tracing encompasses bilateral talks with actors and searching referential projects.
- The *Mapping* activity comprises designer depictions of spatial chances and solutions and the investigation of the financial, juridical, and organizational feasibility of the solutions in a business case. The chances should be open enough to be adaptable to new actors and precise enough to genuinely

2 The interdisciplinary research unit ISTT (International Studies for Territories in Transition) at the Antwerp University is an initiative of the Master Programme Architecture joined by Urbanism, Strategic planning, and Heritage studies. Its research is focused on shifting building cultures and spatial transformations in post-colonial non-Western contexts (Morocco, Egypt, Suriname, Nicaragua, and Brazil). The goal is to instigate sustainable urban development in real life situations of vulnerable neighbourhoods. Spatial opportunities are used to make fragile actor networks more accountable and action oriented. The method is action research, executed by master thesis students during internships of two to three months. In order to be successful, each research project goes on for several years in which each year new teams of UA and UNICAP students capitalize on the results of the previous team.

3 Plan4CuRe (PLatform for Activating Networks for Cultural Resilience) is a VLIR-UOS-SI project on development aid in Suriname that was carried out by ISTT between January 2016 and December 2017. The project's goal was to stimulate cultural resilience in Suriname by the reactivation of cultural heritage as a sustainable resource for urban and regional development. For the method used in this project see footnote on ISTT.

4 Eline Blom, Nathan De Feyter, Martijn Willems, Luwalhati Peeters, Celine Voorspoels, Dieuwke Cappaert, Aline De Bruyne, Adriana Smets, Emma Claasens, Flore Cotton, Caroline Thaler (Mariënborg) Pia Looz, Sander Velmers, Nathalie Janssen, Renée Feenstra, Nina Hooyberghs, Lisa Molemans, Stijn Coekaerts, Juliette van Baar, Mathieu Moyson, Mirte van Dooren, Tom van Vilsteren, Minne Somers, Eline Hertogs, Lotte Groven, Birgit Grootjans (Moengo).

5 Menouschka Baldwin, Felicia Somoredjo, Louferinio Royanto (Mariënborg) Kevin Sapoen, Hateem Kasnawi (Moengo).

6 Professors: Johan De Walsche, Marciano Dasai, Hans Martinus, Angelika Namdar, Sigrid Heirman, Dirk Laporte, File Hanjoul, Marleen Goethals.

make a resilient match. A second step is to find complementary actions that upgrade small local actions in systemic innovation.

- *Diagramming* is about building up solid actor networks using an iterative set of round tables and adjusting business cases to the suggestions of involved stakeholders. During this process, business-cases become more concrete and achievable. By jointly looking for mutual matches of interest and possible added values, the actor network becomes real and stronger.
- *Agencying* is developing procedures and agencies that can facilitate similar co-evolution processes in other settings.

Experiments with Living Labs are not only happening in Europe. The "multi-stakeholder participation" deployed in recent best practices of slum improvement in Nairobi and Lima is based on principles that are similar to the living lab approach. "Multi-stakeholder participation" is defined here as an 'open, transparent and iterative design process that harnesses a community's social, political, and economic capital and know-how, while involving the technical knowledge of design professionals, the political will of local government, and the investment capacity of the private sector. A successful project requires the full and active participation of residents, from conception through implementation and into long-term operation' (Odbert & Mulligan, 2015: 178). The authors add two more strategies to their slum improvement approach: "Sectoral Integration" - the combination of physical, social, and economic strategies in a single intervention - and "networked change": addressing macro-scale issues, such as watershed improvement or poverty alleviation, through a network of micro-interventions (Odbert & Mulligan 2015, p. 178-179).

These strategies are applied by ISTT in two case studies on the countryside of Suriname: the bauxite mining company town Moengo in the Marowijne district and the kampong of the former sugar cane plantation Mariënborg in the Comewijne district. Kampongs are rural villages evolved out of housing areas for foreign contract workers on the former plantations in Suriname.

The research team consists of master thesis researchers of the Master Architecture⁴, Urbanism and Spatial Planning and Heritage Studies (University of Antwerp), and bachelor students in Infrastructure from the Anton de Kom⁵ University in Paramaribo (ADEKUS) and their promoters: professors from UAntwerp and ADEKUS⁶. ADEKUS professor Marciano Dasai has contacts in Mariënborg and is very committed to the perpetuation of the Javanese traditions in Suriname. The research is performed during an internship of two to three months for

Belgian students in Suriname. Students carry out bilateral contacts while their professors join them for the overarching, multi-lateral actor workshops. The goal is to inform and instigate culturally resilient and sustainable spatial transitions that are respectful to cultural heritage in real life situations and transform fragile actor networks into accountable and action-oriented actor networks. Such projects can only be successful if the research goes on for a long enough period. Therefore, the research started in 2016 and is still in progress. Each year, new teams capitalize on the results of the previous teams. This ensures continuous interaction between student-researchers and local stakeholders and stimulates the development of shared ideas. Commitment by local governments and civic stakeholders is fostered, encouraging implementation of the projects they share. Below we describe the living lab of the Kampong Mariënborg.

Kampong Mariënborg Lab

The former sugar cane plantation Mariënborg is situated at a distance of 35 km from the capital city Paramaribo, across the Suriname river, in the rural district of Commewijne. In Commewijne, ribbon developments and dispersed allotments have spread rapidly since 2000, when the Jules Wijdenbosch bridge, connecting Paramaribo with Commewijne, was built⁷. While suburbanization is rampant, renewal of plantation kampongs in this district lags behind. Kampong is the name for traditional informal settlements in Indonesia. This settlement type was introduced in the Surinamese plantations by Javanese people working there as contract workers between the 1890s and the 1930s. After completing their contract, they received land rights to build small farmsteads on the plantation. The history of the kampong of Mariënborg is slightly different, because it evolved from a series of wooden barracks built between the drainage canals by the plantation owner. Javanese contract workers appropriated the houses after the closing of the sugar cane factory of Mariënborg and adapted them to their cultural traditions. Nowadays the kampong in Mariënborg is a vulnerable neighbourhood inhabited by a few remaining former Javanese contract workers and their descendants, as well as immigrants recently arrived from Haiti and Guyana. The original wooden barracks evolved into larger timber and brick houses, but Javanese traditions of collective life and open space rituals still prevail: most of the parcels are not fenced, turning their canopied doorstep seats (emperan) towards the street. The kampong consists of a primary school, mosques, and a few grocery stores. New allotments developing around Mariënborg contrast with the kampong: there are no canals between parcels, gardens

⁷ The population in the district Commewijne grew from 24649 in 2004 to 31987 in 2012, a growth of 26,1%. Continuing growth could lead to 49000 people in the district Commewijne in the year 2030 (Bureau of Statistics, census 2004 and census 2012).



Figure 34.1 Areal photograph with situation of Mariënborg (source: Google Earth, 2019)



Figure 34.2 Wooden barracks built between the drainage canals in the kampong of plantation Geyersvlijt around 1915 (source: Augusta Curiel, Stichting Surinaams Museum)

are fenced, and streets have sewage pipes. Demolition and replacement by a 'normal allotment' lacking Javanese socio-cultural traditions, is threatening the old kampong.

Tracing

We set up the living lab in 2016 with a team of three UAntwerp and four ADEKUS students. The focus was on the conservation, densification, and renewal of the kampong as a valuable and lively core for the surrounding allotments, while sustaining the Javanese socio-cultural traditions. The development as a tourist site connected to the already occurring visits to the ruin of the old sugar cane factory and the staff village was a second focus.

A first round of *tracing* with observations of the kampong, data collection and bilateral talks (with inhabitants, governmental actors, teachers, and the leader of the community group), made clear that cheap, quick, hands-on solutions allowing citizens to improve sanitation, potable water supply, and flood protection were in high demand. Since for many families growing vegetables and fruits in their gardens or in peripheral 'kostgrondjes'⁸ was an important means of livelihood, it was established that short supply chain agriculture, directed to nearby cities, could offer opportunities for this community. Moreover, the community group dreamed of a farmers' market. And finally, it became increasingly clear that heritage qualities worth rehabilitating did not lie in the precarious kampong houses, but rather in the correlation of collective space with Javanese social habits, and in the plantation's landscape, carved with wide and narrow canals punctuated with locks and pumping stations. One of the prevailing problems for the community is the regular flooding during heavy rainfall that became more frequent and more intense during the last decade. Therefore, the revaluation of the canal system not only strengthens collective memory but climate resilience as well.

These insights led to the identification of four project themes and gave way to a new task division in the student team: two students decided to further focus on the history of the kampong and on a tourist kampong trail, two students on new socio-cultural infrastructure, two students on the sewage and water system, and one student on new housing developments combined with short supply chain agriculture. In what follows, we will briefly discuss the latter two projects on which work has proceeded until today by new teams of students or by other actors.

⁸ "kostgrond" is the Dutch term for a plot of subsistence farming.

Tracing, mapping and diagramming

The *tracing* activity was continued with a more focused spatial analysis and interviews with stakeholders, discussing the project themes and their possible solutions. This was followed by the collection of international referential cases for each theme and design explorations (*mapping*). The internship of the UAntwerp students was finalized with a public workshop in Mariënborg in which the provisional results of the analysis, the design explorations, and the referential projects were discussed with residents, their community leader, and government parties.

The four project themes were accepted for further elaboration. A few weeks later the weekly Sunday Mariënborg Farmers' Market was already in business underneath the existing roof of a public recreation hall. Apparently, the living lab activities had roused the latent idea. Surinamese student team members helped the community with designs for the market tables and the spatial lay-out of the market. The committed ADEKUS professor Maricano Dasai acted as a go-between. In the months that followed, students in Suriname and Belgium further elaborated on the designs and business cases.



Figure 34.3 Interviews with stakeholders (source: ISTT, 2017)

Renewal of the drainage system

This project is about the renewal of the original kampong drainage and irrigation system and its adaption to urban uses and small-scale agriculture (Baldwin, 2017; Blom, 2017). A dike and a ring canal provided each plantation with separate discharge into the river, while smaller, perpendicular canals drained into the ring canal. The barracks were built around 1890 with small pathways and footbridges allowing access to them.

Nowadays the water quality in the canals of the kampong is very bad because domestic wastewater is discharged in it; the use of septic tanks is not generalized. During heavy rainfall and high tide, the streets and the gardens of the kampong are regularly hit by flooding from the dirty canals. Under ‘normal’ circumstances though, the old drainage system is very versatile as it can also store rainwater during periods of high tide, when discharge in the river is not

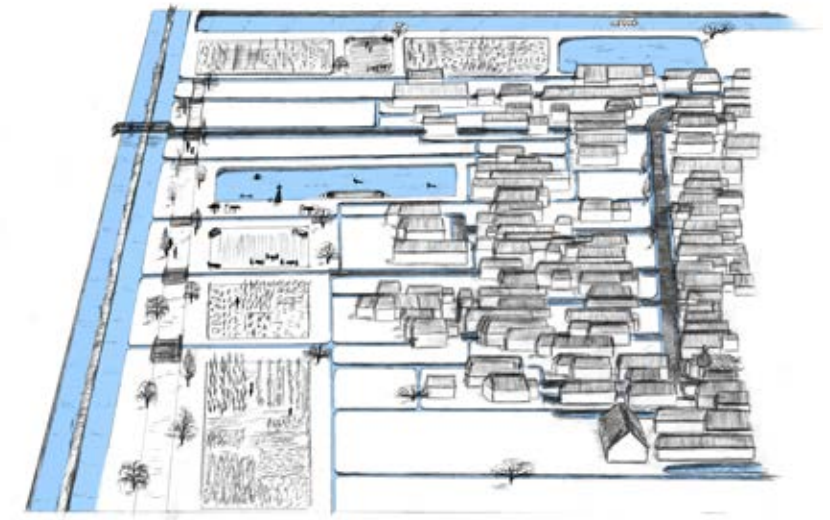


Figure 34.6 Concept drawing of the re-activated water structure as a backbone for new development (source: Blom, 2017)

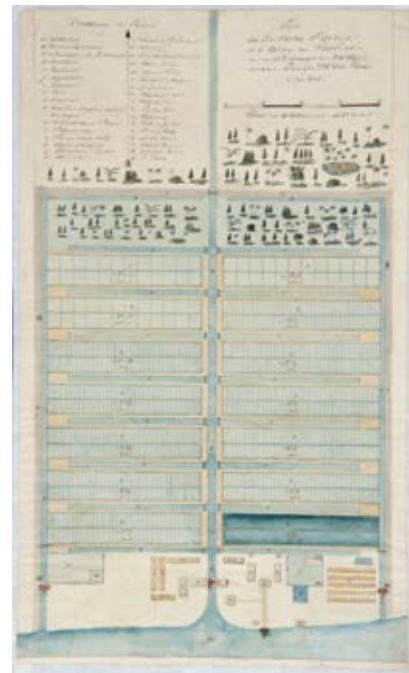


Figure 34.4 Typical drainage structure of a sugar cane plantation in Suriname (Collection Nationaal Museum van Wereldculturen. Coll.no. (source: TM-H-3350)



Figure 34.5 Mapping of the relicts of the former canals (source: Blom, 2017)

possible. Bad maintenance of the canals reduces the flow section of the canals. Lack of awareness among the residents and weak control of drainage regulations further contributes to the increase of the flooding risk: residents fill canals to enlarge their properties and to create parking spaces for their cars. One canal contains drained source water from inland wetlands and is used by residents to collect water for domestic use, as there is no public potable water supply. Since a development cooperation project for potable water supply is on the way, we decided to focus on the drainage and sanitation of the kampong, thereby providing residents with sufficient non-potable water and reducing their dependence on costly tap water.-

Mapping of the relicts of the former canals led to considering the reinstatement of the former drainage system by reopening filled canals. The project proposed several scenarios for the installation of rainwater retention, septic tanks, helophyte fields, and purification ponds. The different scenarios articulated either more individual or more collective solutions, always maximizing the use of rainwater to minimize costs when the tap water system will be in business. Ponds were to contribute to the irrigation of new collective urban agriculture fields. A natural swimming pool and recreation paths along the canals were considered (Baldwin, 2017; Blom, 2017). Finally, designs for



Figure 34.7 Above: Re-activation of the existing canals, funded by UNDP as a result of the Plan4CuRe living lab. Right: Residents working together in the renewed shared space of the canal. (source: Dasai, 2019)

the location of this infrastructure, cost estimations, and a proposal for an organisational structure were produced. In the academic years 2017-18 and 2018-19 new student teams elaborated on more precise designs for the open space and the canals in Kampong Sawa, a separate neighbourhood in Kampong Mariënborg, giving special attention to the patterns of use in the public, collective, and private domains (Cappaert, De Bruyne & Smets 2018; Claassens, Cotton and Thaler, 2019).

The Kampong Sawa designs were a follow-up to an official meeting, where interim research results were discussed by the professors with the political leader of the district, officials from ministries, and the leader of the community group. This meeting raised the latter's enthusiasm and led to a pilot for the installation of septic tanks, the digging of a connection to a principal canal and a cleaning campaign of Kampong Sawa's canals. Technical aspects and images of possible layouts for the open spaces were discussed in neighbourhood meetings with the residents. Grants from the Japan-Caribbean Climate Change Partnership were arranged, and the implementation started in the beginning of 2019. The residents of Sawa agreed to carry out a large part of the work themselves. The work was done based on the cultural concept of Gotong Royong, in which local societies work together to improve their living conditions, a cooperative Indonesian tradition nearly forgotten by the locals and tapped into by the project.

Today the canals in Sawa are cleaner and families are reorganizing their parcels. Families having their houses on both sides of the canal transformed the rear side of their houses into a shared space on the canal. But in the meanwhile new challenges have appeared. Only a small part of the former drainage system is working again, so in order to really protect against flooding the complete former drainage system needs renewal. Therefore, the roll-out of the lab to the entire kampong of Mariënborg is paramount. The pilot's success can help to convince their neighbours. Another challenge is how residents of Sawa can be encouraged to take responsibility for the maintenance of their drainage system. An experiment with an elected maintenance board, supervised by students and professors, is now in progress. Crowd funding, also pertaining to Gotong Royong, will ensure the necessary monthly resources. Last, and definitely not least, the wide-spread use of herbicides, pesticides, and fertilizers in Suriname's agriculture, which continue to threaten bio-diversity and health, takes challenges to another level.

Renewal of the plantation system: from extensive sugar cane to intensive small-scale agriculture

A second project theme investigated by the research team deals with larger scale challenges and requires another level of accountable actors. Although Suriname imports food, fertile former plantation grounds remain uncultivated, since they are too argillaceous for heavy agricultural machines. As the planta-



Figure 34.8 New typology for small and mid-size peri-urban farmstead (source: De Feyter, 2017)

tion grounds lack economic return, the drainage system is unlikely to receive proper maintenance. The government has no means and residents are reluctant to maintain these, since the sewage of new housing areas doesn't require such recurring labour. Therefore, the project sets out to further develop the existing home-based agriculture economy, restoring the *raison d'être* of the drainage system and producing new revenues on the former plantation (De Feyter, Peeters & Voorspoels, 2017). Small-scale cultivation doesn't require heavy equipment and is in line with the historic landscape characteristics. The kampong's farmer's market can become its home base.

An allotment of small farmsteads, similar to the existing roadside farmstead is proposed on abandoned plantation fields, adjacent to the kampong. This agricultural model thrives on cheap ground within driving distance from Paramaribo and is considered a cultural asset in Suriname, with the ability to provide for the livelihood of numerous families, stopping the rural poor from heading to slums in the capital (ERM, 2017, p. 143).

Integrating the farmsteads inside the plantation results in a more compact spatial model, with full- and part-time farmers living near the kampong, keeping surveillance on their crops against theft. The allotment is framed by the existing canals, to be used as an irrigation system, for water retention and for drainage alternately (De Feyter et al., 2017). The urban farmstead development turns into both a housing strategy and a renewal of the plantation economy, while maintaining the area as green, open, and permeable; conserving the valuable landscape; maintaining the canal system; and protecting the village from flooding.

The farmstead development can provide the kampong with a more diverse range of housing types. The short chain agricultural development can turn Mariënborg into a self-sufficient and lively centre in the Commewijne district (De Feyter et al., 2017).

Residents responded with vivid interest to these ideas and the research team continues its efforts. As the project was recently included in an action plan for the sustainable growth of Paramaribo, commissioned by the Inter-American Development Bank, the search for suitable actors can now acquire more momentum.

Discussion

The projects described above demonstrate how Living Labs in countries where authorities fall short can contribute to a better life situation for vulnerable communities while preserving and valorizing heritage characteristics. By tracing and mapping, the kampong lab research team discerned pressing issues with flooding and sanitation, as well as hopeful initiatives in spatial practices and part-time agriculture. For all these, the canal system inherited from the plantation itself offered solutions. The students' frequent contacts with residential groups created a buzz, accelerating long-dormant ideas into realization (the farmer's market), and increased the community's revenue. Through discussing propositions with actors, disseminating telling images, and studying elaborate business cases, awareness grew of the resilience of the inherited landscape and of the community's ability to take agency for it, which resonated with the age-old communal work culture *Gotong Royong*. This establishes hope that neighbourhood organisations can be accountable for maintenance and further expansion of canal renewal, becoming a motor of "networked change".

The Mariënborg projects elucidate the importance of well-supported community leadership and social capital. In other projects of the research unit ISTT, in the former bauxite company town Moengo, home to many citizens victimized by the Surinamese Interior War (1986-1991) many of whom only recently moved in, such supported leadership is badly missed. Therefore, implementation of suggested projects still fails. Even as we learn to know the community better and living lab activity raises growing interest, alliances that are taking the agency to improve living conditions in Moengo haven't arisen so far.

Also for Mariënborg, the allotment project proposing small farmsteads and a regional agricultural centre is still in its infancy. Before parties accountable for the solutions can be identified, the ownership of the proposed farmland needs clarification. In a country where legislation and administration fall short, this is less easy than could be expected. Uncertainty about owners' rights is likely to hamper citizens in collaborating on communal projects for the improvement of their living conditions. Meanwhile, ISTT's Living Lab planning approach has been notified by the Inter-American Development Bank, who invited ISTT to draw an Action Plan for Paramaribo's sustainable development. In this plan, living labs are proposed for a range of projects. The research team has adopted this new track to try to identify the accountable parties still missing for the Mariënborg plantation farmstead project.

There can be no doubt that the Belgian Master students and Surinamese Bachelor students are pivotal persons during living lab sessions in Suriname. As the initiators of real-life actor networks and relevant project ideas, their commitment is vital for these action research experiments in complex situations with extremely limited resources. Therefore the living labs in Suriname are not only a way for students to acquire international and intercultural competences, but also an opportunity to perform service learning at the universities, fostering sustainable change in vulnerable neighbourhoods in developing countries.

Anticipating culturally resilient transformation in Mariënborg, Suriname: A student's testimony

NATHAN DE FEYTER

As a final diploma student of the Master of Architecture at the University of Antwerp, I was part of the first group of students to participate as student-researchers in the fieldwork undertaken at the Kampong of Mariënborg in 2016. I stayed in Suriname for ten weeks. During this period, I tried to understand a country that is substantially different from my own. The first weeks were overwhelming: losing time on practical matters and feeling like an intruder met with suspicion threatened my own over-ambitious expectations. I only made progress after losing the fear of failing my own ambitions. This took time.

Our research was structured following the four activities of the Urban Living Lab methodology developed by Luuk Boelens e.a.: *tracing, mapping, diagramming, and agencying*. As pioneers to work in Mariënborg, the *tracing* phase was critical to define the main interests and concerns of the inhabitants and understand the Kampong, trying to get rid of the Western idea of the ideal neighbourhood.

During our visits to Mariënborg, we were always accompanied by local students from the University of Paramaribo, which made us more approachable and less invasive. The fact that we spoke the same language played to our advantage and the local students eased the

process of assimilation, as we didn't know which parts of the plots were perceived as private or whether we had to accept or refuse a proposal or gift to be polite.

We started our fieldwork by simply walking around and talking to people, explaining the purpose of our presence. We started making small drawings, went to buy drinks in the local supermarket, and had lunch in the local warung. The next day we took a guided tour in the abandoned sugar factory, as recommended by a man we met the day before. The guide Sukardi, a well-known figure in Mariënborg, was happy to respond to our interest in the Kampong and showed us his house and introduced us to his neighbours. This set off a train of events. After a while, when we started recognising (and meanwhile became) familiar faces, we started taking pictures and measuring streets and plots.

Out of these preliminary explorations, new ideas emerged about the potential and opportunities in kampong Mariënborg. The opportunities and qualities were obvious: tourism and agriculture could help tackle the growing social disintegration and unemployment in Mariënborg. Next to the material heritage of the old plantation (the buildings and plantation structure), the immaterial heritage (the mainly Javanese culture of its inhabitants) proved that the kampong had a lot to offer, both as a

neighborhood and as a community. Beside the great potential and opportunity, the challenges were clear, too: no drinking water, poor sewage and rainwater management, badly maintained road and building infrastructures, population growth, uncontrolled informal renovations, constructions that put pressure on rare open spaces that were important for residents, not only for cultural reasons but also for recreation, water buffering, and small-scale agriculture.

Explorational conversations with governmental organizations made it clear that solutions would not be found in big scale governmental projects. The lack of heavy equipment and funding directed our research towards small scale, home-based, bottom-up propositions. I chose an unused old plantation site to design a new typology for spatial development, that considered culture, production, and water management. The site's choice fitted seamlessly with the Plan4Cure idea: deploying heritage as a motor for sustainable development. The housing shortage implied the provision of new dwellings. The unemployment on the other hand, required the integration of productive landscapes, which were organized between the new dwellings. This intertwining was necessary: first because the residents needed the ability to keep an eye on the crops or animals to keep

them from being stolen, and second because Javanese people are used to doing small-scale agriculture on their own property in the so-called home garden or pekarangan.

The search for a suitable master plan was made during a co-evolution process, following the principles of the living lab strategy explained earlier. Simultaneously two repetitive actions supported each other, the first of which was research (by design). The second action consisted of activating and mobilizing decisive local and supra-local actors. The final master plan intertwined living and working in a small scale, provided retention basins for water collection, and left room for short-term processing and public space to relax.

The work I did in Suriname was very instructive and continues to influence me in my current practice as an architect. My Surinamese experience has taught me not to be afraid of the experiment. This actor-centered strategy proved to be very promising during our time in Suriname because it enabled us to elaborate on locally supported proposals in a relatively short time. Moreover, deploying people and communities to co-creation scenarios in a 'living lab' is most likely to result in smart solutions that you would never think of yourself.

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Cinematic spaces of the Horizontal Metropolis

ANNELIES STAESSEN

Perceptions of the horizontal metropolis

Cinema and urban landscapes are closely intertwined. Since the very beginning of cinema, cities and urban landscapes have been a subject of interest for amateur and professional cinematographers. Furthermore, different aspects of the relationship between cinema and urban space have been demonstrated by many authors (for example AlSayyad, 2006; Barber, 2002; Clarke & McArthur, 1997; Koeck & Roberts, 2010; Mennel, 2008; Penz & Lu, 2011; Pratt & San Juan, 2014; Shiel, 2001; Shiel & Fitzmaurice, 2003). These authors expose thematic as well as formal aspects related to social, cultural, economic, geographical, and political spatial reality and perception.

These insights show that our understanding of contemporary (urban) space cannot be viewed independently of cinematic experience. Consequently, this research assumes that cinematic perceptions, in particular the depiction of spatial environment in films, represent, reflect, and influence the evolution of spaces. These perceptions then determine not only ideas about space, but the way in which areas are depicted also affects those who live and work in it. In this case, regarding their influence on space, these perceptions should therefore be included as actors (ANT/ARA), or so-called *actants* incorporating non-human actors (Latour, see the introduction of this book).

This consideration is also the case for the *Flemish urban landscape* and how this urbanized condition is perceived. While urban planners as well as policy makers struggle to get a grip on this highly fragmented settlement structure, indicated as a horizontal metropolis, everyday life and practice unimpededly continue consuming space. In 2018, thus far six hectares of open space disappeared every day through further urbanization (Vlaams Team Vlaams Bouwmeester, 2018). Even current demographic, economic, and ecological problems such as structural traffic jams, noise nuisance, and chronic flooding seem to have little effect on the everyday concept of these spaces. Everyday expecta-

tions and behavior concerning space and urbanization seem to be shaped by rather individual desires and practices.

As a result of this development, the settlement structure covers almost the entire territory. Although Flanders is a densely populated region¹, with a settlement area of 33%, Flanders has one of the lowest densities in terms of settlement structure.² Urban professionals severely critique the current wasteful model, which, with a growing population, not only affects energy consumption and the environment but also the quality of life. Planners voice an urgent need for densification of the centers to safeguard the remaining open space from further land parceling.

Perceptions regarding the Flemish urban landscape are thus extremely diverging, with concepts and theories of the professional experts on one hand and everyday realities on the other. These diverging perceptions have, in fact, a substantial influence on the evolutions of space. They contribute to the social debate on how to deal with space and thus influence the way in which we understand what spaces and places mean. As spatial planners analyze, interpret, and design places, they formulate concepts of space in order to understand its meaning and how it is used. In Flanders, it appears to be especially difficult for planners to execute their visions and plans. The way citizens and developers deal with space often deviates from the proposed plan, or urban guidelines and planologic projects often get stranded as ideas on paper and are never executed on at all. To facilitate an understanding of the everyday as a basis for realizable planning decisions, it is important for urban planners to consider perceptions of space.

By applying film, as a unique representational medium, I assume a new approach on the horizontal metropolis, and its diverging perceptions can be generated. This article will explore how cinematic perceptions can operate as an actant for planning.

Cinematic perceptions & the horizontal metropolis

In 1981, Jürgen Habermas described in his ‘Theory of Communicative Action’ (translated in 1984) the opposition between system and lifeworld. On the one hand, the system comprises structures, like bureaucratic state and economy, based on purposive rationality. On the other hand, the lifeworld is composed of resources of culture, society, and personality and serves as a background to social action. Habermas claims that the interchange between system and

lifeworld – between material and symbolic reproduction – constitutes (real and meaningful) social action. In this theory Habermas describes how rationalization and modern science engendered a growing distance between what he defines as the system-world of experts and the social lifeworld of everyday. Specialist processing and reflections by the professional world do not automatically trickle down to everyday practices. In the same way, the reverse impediment happens when tendencies within society are considered exclusively goal-related by the procedural and content-related urbanists (Boelens, 1986, p. 41).

The capacity of film to mediate as an actant between the professional experts – or the system as defined by Habermas – and the everyday – the lifeworld (Habermas) or the users – originates in a threefold quality of the cinematic image. As mentioned above, the cinematic image is representational, reflective, and influential. I will further elaborate on these three filmic actions – representation, reflection and influence – and how these actions can restore the connection between realities (everyday) and theories (planning) on the contemporary perceptions of the urban landscape.

Representation: a reading device for the lifeworld

First, film distances itself as an adequate reading instrument. The moving image combines filmic characteristics (i.e. spatio-temporal, narrative, camera position, mise-en-scène, soundtrack) with the attention for the everyday. Film can function as a mirror to the world, appropriate to represent the lifeworld, the everyday. Film can thus serve as a (cultural) lens to gain insight into the everyday experience of the horizontal metropolis.

The film *Steve + Sky* (2004) directed by Felix Van Groeningen presents a Flemish illustration of film as a mirror to the world. The movie provides an insight into life along the typical so-called stone roads (*‘steenwegen’*, referring to the material). In this love-story (elaborated in more detail in the box) the road itself functions as a third protagonist, next to small criminal Steve and interim prostitute Sky. The cinematic representation mainly illustrates appreciation, especially through the poetic and surrealistic character, whereas planners designate the developments along these roads as the cause of traffic jams, pollution, dangerous traffic situations, and so on. The qualities and possibilities, while often overlooked by planners, surface in this film. The film provides a source of information on how the culture, the everyday lifeworld, and the relations with the spaces exist in this specific context.

- 1 The average population density in Flanders is 485 inhabitants/km² in 2018. (<https://www.statistiekvlaanderen.be/bevolking-omvang-en-groei>)
- 2 Ruimte Vlaanderen. (2016) *Witboek Beleidsplan Ruimte Vlaanderen*. Brussels, Belgium. [https://www.ruimtevlaanderen.be/Portals/108/WhitePaperSpatial-PolicyPlanFlanders_brochure2017_1.pdf] Available from (2017). Vlaamse Overheid. (2017a). *Vlaams Bouwmeester meejarenprogramma 2017-2020*. Brussels, Belgium. [<https://www.vlaamsbouwmeester.be/nl/meerjarenprogramma-2017-2020>.] Available from (2017).

Reflection: a social construct of (urban) imaginaries

Second, films are, just like plans, social constructs: they articulate a certain perspective on the “real” world. The way a filmmaker depicts certain areas reveals not only the characteristics of the area itself, but also unveils its significance for the characters of the narration. The place in which a particular scene takes place situates the story, gives us an indication of the personality and origin of the characters, and determines the general atmosphere of the film.

The depiction of suburbia is a reoccurring theme in feature films. American movies like *Edward Scissorhands* (Tim Burton, 1990), *The Truman Show* (Peter Weir, 1998) and *American Beauty* (Sam Mendes, 1999) give us a contemporary perspective on the director’s experience of the place. The narratives are located in clean, safe, and ordered allotments — the materialization of the American dream — but, reveal contrary feelings and tensions of imperfection and anxiety. Flemish films like *Violet* (Bas Devos, 2014), *Fucking Suburbia* (Jeff Otte, 2012) and *Nowhere man* (Patrice Toye, 2008), all deal with specific allotments, which constitute suburbia in Flanders. These movies depict a similar dichotomy between utopia and dystopia. On one hand, suburbia manifests itself in these movies as an idealized place. Children and undisturbed families are pictured as experiencing suburbia as a paradise-like dream location. On the other hand, however, alienation through individual isolation and imprisonment is the overshadowing ambiance in these suburban movies. These critiques correspond with the rather negative urban discourse of planners about suburbia. Planners recognize the alienation and emphasize isolation and imprisonment. They ignore the inclination to create a paradisiac settlement as a living place for families, which make suburbs a place that simulates the paradise imagined in childhood. By stressing the negative elements of suburbia — low densities, high energy consumption and car-dependency — planners portray suburbia as a dystopian place without providing an alternative that can resemble the childhood utopia.

Influence: an impact on public perceptions

Third, visualizations in films can also contribute to the social debate on how to deal with space. AlSayyad describes how ‘*movies influence the way we construct images of the world, and in many instances they influence how we operate within it*’ (AlSayyad, 2006, p.1). He argues that our understanding of the city cannot be viewed independently of cinematic experience. Moreover, since film is a very common and easily accessible medium, public opinion and behavior can also be influenced by film.³

³ Many authors from different disciplines have investigated the influence of movies on attitudes and behavior, (e.g. the ‘Payne Fund Studies’, a series of monographs published in 1933 by a number of sociologists and psychologists or, more recently, Michelle C. Pautz 2015).

There are many examples of how films and documentaries can contribute to shifting public perceptions. To start with, *Rosetta* (Dardenne brothers, 1999) 29 September 1999 (France which follows the life of a poor, young, Belgian teenager, induced Belgian policy-makers to vote through ‘Rosetta’s Law’ to protect the rights of teenage workers in the country. *An Inconvenient truth* (Guggenheim & Gore, 2006) or *The Beach* (Danny Boyle, 2000) are international examples of how cinema can initiate awareness and influence people’s behavior. According to various studies (Butts, 2007; Jacobsen, 2011), awareness of climate change translates into behavioral change and even in carbon offsets after watching the former film. For the latter, however, years of intensive tourism were an outgrowth, harming nature and especially the coral on Thailand’s Maya Bay beach to that extent that the local authorities decided to close the beach for tourists from 2017 until 2021.

Of course, the spatial impact of film is mostly far less explicit than the examples just mentioned. Cinema’s influence on how space is conceived, and how people see and imagine cities and urban space, will determine how they live their daily lives or how they appreciate certain spaces more than another. Romantic films with love scenes for example, will evoke affection for similar locations as those with similar shots. Conversely, if the crime scenes of films are repeatedly situated in certain areas, for instance in harbors, these environments will be perceived as dangerous and no-go zones.

Film as an actant for planning

This paper started from the observation that there is a discrepancy between the urban discourse concerning the Horizontal Metropolis and everyday life and practice. Since film is related to space in general and thus also to the Horizontal Metropolis, film has been put forward in this paper as an actant. This article discussed the ways in which film can act and relate to the urban landscape. By functioning as representation, reflection, and influence, film offers an opportunity to gain insight into the everyday, the lifeworld, and its intrinsic characteristics, the experience value and the typical dynamics. First, film can be a reading device by which information about the lifeworld surfaces. Second, as a social construct, the narratives and imaginaries made by filmmakers can be used to reveal prevalent concepts in the sphere of the everyday, the lifeworld. The third aspect deals with the influence of films on public opinion and everyday life. Formulating how film represents, reflects, and influences built and unbuilt spaces furthermore highlights the mutual interactions within this film-space

relationship. As much as film influences space, film itself is naturally shaped by space and cannot exist without space.

Since perceptions of culture, place, and lived space are caught in the narratives of film, film can provide a better perspective on the everyday, the lifeworld of the Flemish urban landscape and a more nuanced image of this peculiar urbanized context. As an alternative form of research, film is a medium capable of improving the link between urban planning and the Flemish urban landscape. Deploying film as a reading device will provide an alternative analysis, which in turn will contribute to plans that are aligned with the lived space.

Reading Steve + Sky (Felix Van Groeningen, 2004): the representation of the ‘steenweg’ (stone road)



Figure 35.1 Steve + Sky

Although *Steve + Sky* (2004) is the first feature film directed by Felix Van Groeningen (who afterwards directed *With Friends Like These* (2007), *The Misfortunates* (2009), *The Broken Circle Breakdown* (2012), *Belgica* (2016) and recently his English language debut *Beautiful Boy* (2018)), the motion picture exhibited a fresh eye on the urban setting. The film was rewarded in the same year as its release in 2004 with the

Plateau award for Best Belgian Film. The storyline of this motion picture revolves around the romance between small-time crook Steve and interim prostitute Sky, situated entirely along the so-called stone road *Kortrijksesteenweg* on the outskirts of Ghent.

In addition to the two protagonists, this motorway takes the third lead role in this film. Spectators are emerged in a distinct world where life unfolds other social practices. Sky is employed in successive interim jobs including factory work, as a prostitute in one of the many brothels, and later on as a dancer in a strip club on the motorway, while Steve steals and sells



Figure 35.2 still Steve + Sky, 1:20:11



Figure 35.3 still Steve + Sky, 1:03:50



Figure 35.4 still Steve + Sky, 25:50

motorcycles. Leisurely swimming in one of the store's model pools along the road or running in circles around the roundabout is how they creatively use the typical amenities of the 'steenweg' for recreation. Despite the rawness of the narrative and its portrayal, the film emanates an almost surreal poetry. On the one hand, the landscape characterized by its heavy traffic feels desolate. We experience the harsh reality of a world that is reversing from its origin. The facades at the street side are completely closed, while entrances, situated on the back side, are almost impossible to find, even indicated in one instance with a gigantic arrow. The grainy projection with saturated color scheme accentuates the ugliness of this everyday environment and reinforces the very realistic portrayal.

On the other hand, the tender love of these two colorful individuals emerging in an equally colorful neon lighted environment resembles a fairy-tale. The soundtrack by Soulwax not only supports the images but seems to propel the entire movie. The song *Beats of Love*, mentioned as the film's subtitle, summarizes the doubtful relationship of Steve and Sky. Throughout the



Figure 35.5 still Steve + Sky, 24:16

film Sky regularly sings along with the song while wearing her Walkman.

This constantly returning duality — raw realism versus surreal poetry — reaches an apotheosis in the final scene of the film. Supported by pumping beats, Steve skims on his motorbike along the endless succession of shops, brothels, houses, interior design shops, Chinese restaurants, petrol stations, and so on. These images are interspersed with Sky dancing on the crossing in total silence until the two intersect.

The cinematographic perception of this specific *stone road* and its environment differs fundamentally from the negative perception employed by spatial professionals. The messy composition, traffic problems, pollution, and so on do not seem to bother the director. On the contrary, the sociocultural appreciation of the film demonstrates how the world of the motorway is a place where individual desires and subcultures, often neglected by policy makers and planners, can thrive. This indicates a need for more nuanced and positive perceptions of these 'steenwegen' and, by extension, the horizontal metropolis.

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Opening up Heritage – Beyond a conceptualization as object or process

KARIM VAN KNIPPENBERG

Opening up heritage

The process of making sense of spaces and places is now characterized by the involvement of many actors who take part in an unforeseen and spontaneous way due to continuously changing circumstances. Hence, in a number of spatial domains there is an increased attention for the inclusion of various stakeholders and multiple perspectives on spatial matters. Also in spatial planning contexts involving heritage, a plurality of stakeholders shares their ideas about the value of heritage. Yet, even though the domain of heritage management is now undergoing a paradigm-shift towards more participatory discourses, it appears difficult to include communities' and individual's ideas of heritage in heritage management practices. An example of a case-study analysis on heritage re-use practices in the city of Beringen (Belgium) shows that the heritage management approaches that were applied leave only limited room to capture more personal, immaterial ideas of heritage that are identified by communities themselves. In this article we discuss different theoretical conceptualizations of heritage to offer insights in which conceptualization of heritage fosters community-heritage engagement so that a plurality of stakeholders, and their ideas of heritage, can be taken into account. We argue that going beyond a physical (heritage-as-thing-approach) or representational (heritage-as-representation) perspective will allow us to understand what heritage means to different people, at different times, and in different contexts.

The mining heritage of the city of Beringen

As a city, Beringen (Flanders, Belgium) is inextricably linked to its mining past. The city is characterized by many relicts of the mining past such as a mine shaft, a sewage treatment plant, as well as former employees' neighborhoods. There are differences in the way these relicts are treated, making Beringen an interesting case to analyze as to what extent heritage management approaches encompass a plurality of stakeholders and heritage values. The mining history lives on in the minds of the citizens of Beringen. Yet, at the same time, the applied heritage management approaches leave only limited room to capture these communities' ideas of heritage as they are foremost focused on protection and preservation of objects. A clear example of such an object-oriented approach to heritage is the management of the mining shaft—probably the most iconic object representing the town's mining history. It is listed as a monument and is currently being renovated, but the building is not in use and is closed to visitors. It is in a way isolated from the broader urban context and has almost no links to the local community since the building is not accessible. Other buildings have a more transformative history, as they are either re-used for a different function or because new functions are added to the building. The sewage treatment plant is for instance transformed into an aquarium with

diving activities taking place. Although this is an example of the use of heritage as a catalyst for development, these preservation or re-use projects are rather top-down, and fixed-solution oriented. Moreover, however this re-use project once more leaves only limited room for a plurality of stakeholders and their ideas of heritage, since only some stakeholders (such as an investment company) are involved in the heritage management process. In Beringen there are also other, more small-scale projects, often initiated by the local community itself. These projects are not necessarily linked to the preservation of an object, but are more about identity, practices, and immaterial aspects. In the former employees' neighborhoods for instance, citizens undertake all kind of social activities (e.g. planting trees and hedges) to emphasize the special character of the former Garden City-designed working class neighborhood. These practices, or this 'way of doing' is a rather informal way to deal with heritage, and even the citizens themselves would not regard this as heritage management practices. Yet these practices are an expression of how a community and individuals understand and value heritage. In this chapter we explore which conceptualizations of heritage allow us to take such expressions of community-heritage engagement into account.

Lost time

The heritage management approach applied to the former mining shaft in Beringen is an object-oriented one, focused on preserving the inherent value of the physical structures of the site – hence the object as such. This understanding of heritage strongly regards heritage as a property, site, object, or structure “with identifiable boundaries that can be mapped, surveyed, and recorded” (Smith, 2006, p. 31). Heritage is seen as valuable features of the environment that are worth preserving from decay or development (Davison, 2008; Harrison, 2010). In other words, heritage is seen as something that can be objectively observed, understood, recorded, and dealt with by a detached heritage expert either by means of classification, listing, maintaining, preserving, and promoting. Accordingly, heritage management practices based on this conceptualization have a more defensive attitude as they predominantly focus on protecting and preserving objects and buildings. Moreover, this object-oriented heritage approach makes heritage selective and exclusive as heritage is prefigured by some, pre-determined as ready-made objects, and then made selectively available (Crouch, 2010). Confronting this homogeneous perspective on heritage with a stubborn reality shows that this approach does not capture heritage adequately and comprehensively. This is first because the multiplicity of values and ideas, inherent to heritage, is not fully recognized. As such, this object-focused approach to heritage distracts people from the contemporary and creative aspects of culture that could transform it (Harrison, 2010). Second, because this more or less fixed innate idea of value poses challenges for the management of heritage objects, as this approach is difficult to read together with the more transitional character of heritage (Thorkildsen & Ekman, 2013). The re-use of heritage assets are therefore in many cases isolated or confined only to the realm of building or site protection, which may result in a lack of integration into the general urban planning framework and the broader societal context.

Linking past and present

Such an object-oriented approach, which protects but also isolates heritage from its societal context, might actually distract people from engaging with their present and future, instead of the intended opposite. Therefore heritage scholars (such as Hewison, 1987; Lowenthal, 1985, 1998) have shifted attention towards the social processes around heritage. They began to focus on the

everyday use of heritage in contemporary society. Following this perspective, various authors now describe heritage as a “cultural practice” or “social process” (Smith, 2006, p. 11) and focus more on the modern-day socio-political and cultural process that transforms elements of the past into heritage (Ashworth & Graham, 2005; Graham, Ashworth, & Tunbridge, 2000; Harvey, 2001; Waterton & Watson, 2013). Heritage is thus no longer conceptualized merely as a ‘thing’, ‘site’, building, or other material object. Rather heritage is “what goes on at these sites” (Smith, 2006, p. 44). What follows is a heritage management approach that focusses increasingly on how heritage can be used and exploited as a vital socio-economic resource and a catalyst for development (Thorkildsen & Ekman, 2013). Alongside this paradigm-shift towards a more integrated heritage management approach, there is also a tendency to widen the scope and ambition of heritage definition by seeking for a more holistic idea of heritage, which also depicts immaterial aspects, and by shifting from expert-led authoritarian procedures towards more inclusive and participative community-led practices (Vecco, 2010). As such this conceptualization of heritage puts more focus on contextual aspects and incorporates the multiplicity of actors and their ideas and values of heritage. However, although different representations of heritage are heard and taken into account, the outcome of heritage management processes actually adopting this representation-oriented conceptualization of heritage is still a single, agreed-upon idea of what heritage could or should represent, in which only some values are incorporated and fixed (see the example of the aquarium in the former sewage treatment plant). Such solutions are thus not flexible and adaptive, as they do not enhance a myriad of representations and continuously changing values.

Heritage in motion

As explained in the introduction of this book, spatial planning (including planning for and in heritage landscapes) now increasingly acknowledges the complexity, dynamics, uncertainty, and non-linearity of many contemporary socio-spatial challenges, turning planning into a highly situational, multi-faceted, open-ended and unpredictable activity. With regard to heritage management practices, this complexity emerges partly because not merely the heritage practitioner, but also communities and individuals are looking for ways to link heritage to socio-economic developments. Working with heritage thus implies ongoing engagement in a field of controversy, potentially conflicting values, and various beliefs and points of view (Thorkildsen & Ekman,

2013). The dynamic processes of creating connectedness, collaboration, and trust cannot be dealt with through a conventional object-oriented approach alone, nor with an approach solely focused on fixing representations in time (Parkinson, Scott, & Redmond, 2016; Thorkildsen & Ekman, 2013; Waterton & Watson, 2013). Instead, notions of adaptability and flexibility become even more important in heritage re-use projects given the long-term horizons and the many uncertainties they face. In sum, in order to meet the increased complexity in the field of heritage, there is now a quest for an inclusive and adaptive heritage management approach which empowers the community and which includes a coalition of stakeholders and their ideas of heritage. To achieve this community-heritage engagement we argue not just to see heritage as either an object or a cultural process, but also to focus on the more fluid and dynamic aspects of heritage.

One way to capture these fluid and dynamic aspects of heritage is by looking at the way heritage is produced, performed, and emerging in the embodied and creative uses of heritage generated by people (Haldrup & Bøerenholdt, 2015). In Beringen, we see that the mining heritage lives in the minds of the citizens. Accordingly, there are various small-scale initiatives initiated by the local community itself. These practices are an example of heritage generated by people. It is a manifestation: something that is in a process of making. Adopting this idea of heritage means that heritage is more and more framed as something performed rather than as a thing in itself (see for instance Crouch, 2010, 2012). It is important to note here that these performances are never fixed but depend on situational and relational circumstances. This means that the meaning of heritage depends on specific contexts, combinations, and connections, and heritage has to be regarded as being subjective and always in the process of making (Haldrup & Bøerenholdt, 2015). In other words, the meaning of heritage and heritage experiences can shift and modify through time and in relation to, for instance, other heritage objects or previous encounters with a particular object. Heritage is thus always performed in specific contexts, combinations, and connections (Haldrup & Bøerenholdt, 2015) and heritage might emerge much more informed and more complex (Crouch, 2010).

In line with more complexity-informed planning approaches, meaning thus depends on the context and is received from other subjects, and influences them in turn. Meaning would therefore not be intrinsic, but always relative to or, better still, relational while receiving meaning only from the context and from other subjects, and influencing them in turn (Boelens & de Roo, 2016).

Beyond a conceptualization as object or process

Especially spatial planning contexts involving heritage are surrounded by dynamism and uncertainty (Baarveld, Smit, & Dewulf, 2013). Hence, opening up heritage to ideas of heterogeneous processes of spatial becoming (Boelens, 2009; Hillier, 2007) hereby acknowledging that notions of co-evolution, self-organising realities, and adaptivity could also be suitable in the field of heritage to deal with changing circumstances. Therefore, we need a conceptualization of heritage that allows us to see that the value and meaning of heritage is continuously constructed and reconstructed in interaction with multiple actors. Going beyond a heritage-as-thing-approach or heritage-as-representation-approach, and seeing heritage as a more co-evolutionary process, opens heritage up to various interpretations and re-interpretations, reconceptualising it as something that is always in the process of making. A co-evolutionary heritage approach recognizes that the meaning of heritage depends on specific contexts, combinations, and connections and heritage has to be regarded as being subjective and made in unforeseen, non-linear, and spontaneous ways due to changing circumstances. Seeing heritage this way, however, means that heritage cannot be fully known as there is a much greater plurality of meanings, values, and ideas about heritage. In fact, heritage is always in construction, dynamic, and open. Crouch (2015) adds to this that there is, perhaps, no closure in heritage: no full script, no controlled tour. Heritage is complex, fractured, and variant; it is unpredictable and does not work according to a given script, in visual representation or otherwise (Crouch, 2010). Indeed, heritage is frequently much more physically and visually amorphous or nuanced and complex than just objects and/or representations, as we also saw in the case. In Beringen for example, citizens 'perform' heritage as they undertake all kinds of practices which are an example of heritage as a manifestation: as something that is always in the process of making. A co-evolutionary heritage approach focuses on understanding such expressions of heritage rather than defining heritage. Adopting a co-evolutionary heritage approach thus allows us to incorporate different expressions and ongoing meaning for processes of heritage. It is a way of opening up heritage so that a plurality of stakeholders and changing ideas and performances of heritage can be covered. As such, it would enable us to precisely discern communities' and individual's ideas and values of heritage.

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INTERMEZZO

Actor-relational planning education – Moving toward a flat educational program for horizontal metropolitan challenges

LUUK BOELENS, GEERT HAENTJENS & TARA OP DE BEECK

Introduction

As mentioned in the introduction of this book, the flat ontology of spatial planning has served the scholarly education program of the Centre of Mobility and Spatial Planning, especially with regard to the Studios and Advanced Topics of the Master of Science in Urbanism and Spatial Planning since 2013. These were organized either flatly or horizontally between practice, theory, and (lifetime) learning in a process of undefined, ongoing reciprocal becoming. Ontological perspectives and post-structural notions have been used to grasp specific practitioners' challenges within the horizontal metropolises. In return, student research by design has been used to fill in specific parts and blank spots of ongoing (academic and PhD) research and to come up with new windows of opportunity for additional policy making. Furthermore, the intention to gain new vigor and implementation routes in multi-actor business cases (with all the practical bottlenecks and issues at hand), has served both the educational intentions and the actor-relational research ambitions of the Centre. This has guaranteed that the ongoing progress of the actor-relational-approach remained not so much elusively highbrow but also evolved into practical and action-oriented services.

All the Advanced Topics have the intent to involve master students educationally in the alternating research focus of the key teachers in urbanism, spatial planning, and landscaping. They are connected to specific and concrete pilots of that research; e.g. with regard to Global Metropolitan Deltas, regional planning arenas, commons and business improvement districts, inclusive and lived heritage, etc. In this contribution, however, we will mainly focus on the Master Studios which are intended to apply practical skills in real life time settings. They are connected to specific practitioner assignments from the Centre, awarded by various clients from the local towards the European level. They are intended to focus on the process of network formation, where various actors and spatial elements are brought together in new and innovative business cases and spatial associations in order to enhance resiliency. At the start, the Studios were highly open; no one (neither the clients, teachers, nor the students) knew how they would end. It was in fact an academic experiment of a practical undefined spatial planning process: open enough to follow various (previously non-explored) strands, but constrained enough by their practical intent. As such, they all followed the seven-step scheme presented in the introduction of this book and were structured according to the four phases of 3-4 weeks according to this approach; e.g. *tracing* the potentials and setting the scene, *mapping* the (potential) actant networks and possible options for solutions, *diagramming* of enrolling new alliances and setting up new windows of opportunities, and *agencying* towards new opportunities and arrangements and closing the problem with new roadmaps and challenges. Often, this fourth phase wasn't completed within the compact setting of the Studios, but was filled in afterwards by the Centre's researchers themselves (partly with help of assigned working students) as part of a project report, roadmap, or handbook. Here we will present some examples of these highly intensive actor-relational Studios.¹

¹ Two of these (with regard to the N16-Corridor and Bellebeekbekken in the academic years 2013-2014 and 2014-2015, respectively) are already published in

- Boelens, Luuk et al. (2015) *The Living Labs; Co-evolutie planning met onderzoekers, overheden, burgers en ondernemers voor uitvoerbare ruimtelijke projecten*; Gent-Leuven, Steunpunt Ruimte 2015, and in
- Boelens, Luuk & Marleen Goethals (2015) Planning tactics of undefined becoming: Applications within Urban Living Labs of Flanders' N16 Corridor; in: Rydin, Yvonne & Laura Tate (eds.) (2015) *Materiality and Planning: exploring the influence of Actor-Network Theory*, Routledge p. 186-202.

We will focus here on the others.

Academic year 2015–2016; Studio De Kempen

Client:

Flemish Thinktank Climate Adaptation, 2015-2017.

Actors:

Involved farmers, water managers, drinking water companies, engaged inhabitants, major water consumption industries (like soft-drink, textile, and food processing industries), insurance sector, fisheries, recreation facilitators, province of Belgian Limburg, involved municipalities, and landscape trusts

Involved students:

Lars Acke, Fien Adriaen, Peter Bulcke, Andreas De Mesmaecker (water farm), Jonas Declodt, Hannelore Hernalsteen, Sieglinde Ruelens and Helen Sambaer (erosion common).

Involved teachers:

Luuk Boelens & Geert Haentjens of Ghent University, teachers of Hasselt University and associates of Aequator

On behalf of the Flemish Thinktank of Climate Adaptation, operational from 2015-2017 in a Triple Helix setting to advise the Flemish Minister of the Environment, Nature, and Agriculture (see elsewhere in this book), the Studio explored five actor-relational cases, with regard to (1) circular economy, (2) the energy exploitation of still mining water, (3) sustainable living in De Kempen, (4) the Water-farm and (5) the Erosion-common. With regard to restricted time and space we will only discuss the latter in more detail below. Reports of the other three cases you can find at <http://planning.ugent.be/en/> or elsewhere in this book.

The Erosion-common

Due to its specific hilly circumstances, De Kempen is specifically confronted with mudslides, as a result of recent modernization in fruit cultivation, deforestation, and floods. The mudslides are increasingly strengthened by climate change. These mudslides are even far worse to recover from than from floods. They have a major impact on the financial, social, and psychological wellbeing of the inhabitants themselves. Therefore, the province of Belgian Limburg installed pits to catch a mudslide in case of hazards. Nevertheless, these mud pits proved to be too small to protect the inhabitants in all events. Next to that, a proper maintenance became too costly for

the Limburg province, while the mudslides also were covered with other flora and things over time. Furthermore, mudslides were too unpredictable to be dealt with by structuralist measures. It became clear that more situational, flexible, and adaptive, but also more integral and inclusive approaches were needed to deal with these events. Through tracing historical documents and with help of the provincial experts and (older) natives, the involved students could map the areas with the highest probability of mudslides. Moreover, they discovered that through modernization and efficiency gains within the horticulture of fruit and wine uphill, the situation worsened. Therefore there was a need to develop a more integrated and sustainable adapted horticulture production uphill and additional store pits on strategic places along the way, to preserve the existing landscape with additional protective custodies for mudslides, paid by a communal trust of all involved parties (including the insurance sector) and maintained by the involved stakeholders themselves. For this reason, the students came up with a new kind of a situational common between fruit and wine producers uphill, and the inhabitants downhill, with additional (expertise and financial) backup by the involved nature trusts, local authorities, and provincial experts. Through actor-networking the students could even enhance new promising alliances on specific locations in the Haspengouw region. Nevertheless, the financial paragraph proves to be stubborn for the moment, due to path dependencies in the Belgian insurance sector. These institutional constraints have to be uplifted, before a further implementation can be discussed.

Academic year 2016–2017; Studio peripheral retail N70

Client:

Provinces of East-Flanders, Antwerp, and Flemish-Brabant.

Actors:

Involved retailers, project developers, social housing organizations, representatives of the chamber of commerce, experts of the Flemish department of Mobility and Public Works, public servants of the involved provinces and politicians of the involved communities...

Involved students:

Emelie De Smedt, Sébastien de Wilde, Gieles Kinget, Simon Lox and Dieter Van Hemelrijck.

Involved teachers:

Luuk Boelens and Geert Haentjens of Ghent University, Silke Lemant Province of East Flanders and Matthias De Beule of Retail Sonar.

As mentioned in the comparison of Dutch and Belgian planning (*‘Planning the Low Countries’*, elsewhere in this book), postwar Belgian politicians became very much car minded, inspired by the American dream of the liberators. Next to car subsidies, they developed a dense highway system in parallel to the age old provincial paved road system of Habsburg and Napoleonic times. Especially from the 1970s and 1980s onwards—when the highway system was more or less complete—these provincial roads became the backbones for ribbon-like peripheral retail, each with their own car access and parking lots. They served the convenience of the welfare society of the time. The downside was that due to the unstrained developments, over time these provincial roads became hotspots for traffic jams and (mortal) accidents, especially during the weekends. Furthermore, it had a major impact on the environment and landscaping. With the ongoing e-commerce from the 2010s onwards, it also resulted in many vacant retail buildings in the (smaller) urban centers of Flanders. Against this backdrop, the three Flemish provinces mentioned above decided to give an assignment to the Centre/Retail Sonar, to experiment with a more compact development around two cross-provincial roads between Antwerp and Aartselaar/Leuven (N10) and between Antwerp and Ghent (N70). The Studio focused on the latter.

Tracing the N70 from Antwerp to Ghent with regard to traffic, spatial and environmental impact, age and the return on investment strategies, economic

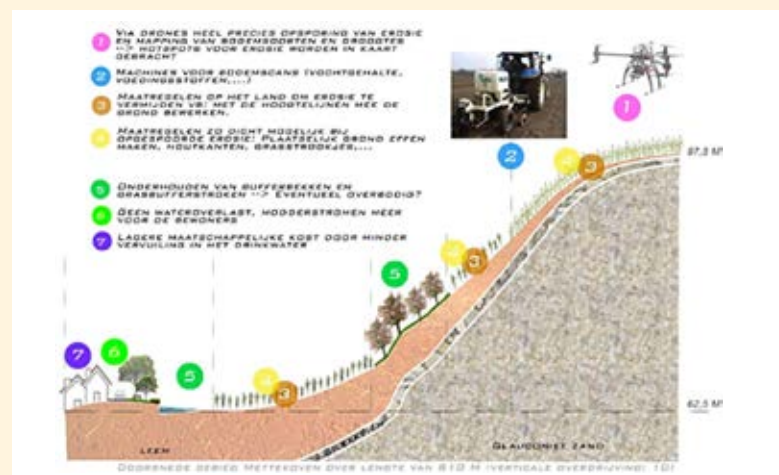


Figure 37.1: de Kanskaart of the Erosion common

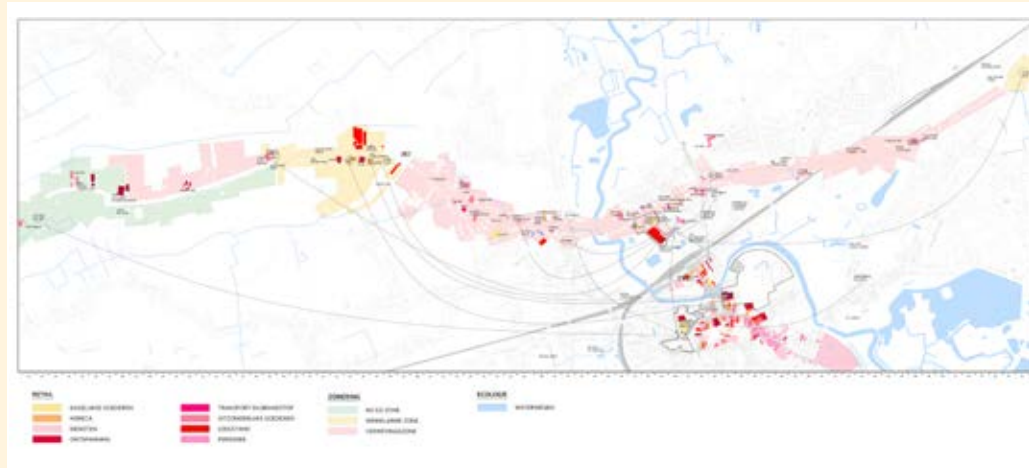


Figure 37.2: de Kansenskaart Retail Lokeren

turnover, and (financial and spatial) possibilities, the students came up with four selected pilots. One of these was Lokeren, a medium-sized city of 41.000 inhabitants. Due to the competition of peripheral retail, e-commerce, and the core-shopping areas of Ghent and Antwerp, this area suffered major restraints with regard to the exploitation of its own urban center. Nevertheless, Lokeren is still a frequent stop, but is an underdeveloped node in the Belgian railway system. Moreover, the students discovered that regrouping the scattered retail along the adjacent zones of the N70 in two vacant areas at close walking distance to the railway station, but also easy accessible by the two main local roads (N47 and N70) and the historic urban center, would not only avoid traffic jams, accidents, environment, etc. But this regrouping could also strengthen the respective retail (through accidental purchases) as well as the entire Lokeren core shopping area, including the catering industry, culture, and other social features. Furthermore, the students calculated that with compact multifunctional project development, the regrouping could be implemented budget neutral, including the redevelopment of the open retail places for agriculture, recreation, nature, or landscaping. Discussing these results in a roundtable with the involved retailers, (potential) project developers, politicians, and other involved experts, the students put up an adaptive roadmap for a twenty year step by step redevelopment progress. At present, the beginning of this roadmap still needs to be decided upon, due to political pathdependencies.

Academic year 2017–2018; Studio Denderpoort

Client:

The Environment, Nature, and Energy Department (LNE) of the Flemish Government

Actors:

Involved industrial park managers, some of the industries themselves, the Flemish Water management, Flemish Nature Trust (Natuurpunt), the Belgian Railways, the five involved municipalities, and the province of East Flanders

Involved students:

Ive De Kesel, Niels Gheyle, Tobias Hooftman and Leen Maes

Involved teachers:

Luuk Boelens and Geert Haentjens of Ghent University, Hannelore Mees and Wim L'Ecluse of the Province of East Flanders.

Within the context of the assignment to investigate opportunities for inter-municipal cooperation, the Studio was focused on industry parks. Due to Belgian and Flemish municipalities being relatively small (some 22.000 inhabitants on average; see also Claus/Boonstra elsewhere in this book), and due to Flemish economic-geographic policies focused on an exhaustive supply for light industries in order to enhance economic welfare (see also *Planning the Low countries*, elsewhere in this book), industry parks have been scattered over the Flemish countryside. This is especially the case for the fringe of Brussels, as a result of spill-overs from this dense metropolitan region. Based on a first exploration of possibilities, the students came up with a case in the west fringe of Brussels, covering five municipalities (Aalst, Affligem, Denderleeuw, Liedekerke and Haaltert) next to the E40 highway at the junction of the river the Dender. While four challenges were traced, there were also new opportunities for cross-overs:

- *Industrial*: due to internal competition, the area accommodates no less than six industry parks, each housing retail, offices, congress and other facilities who by planning and originally weren't meant to be there;
- *Accessibility*: due to the Brussels express light rail network, the most accessible nodes move southwards from the core city Aalst to the smaller villages Denderleeuw and Liedekerke;

- *Flooding:* due to climate change, the basin of the Dender is regularly flooded, especially in this area where side-streams come together, and the industries and infrastructure cause bottlenecks;
- *Energy transition:* the region of Aalst has been explored as a major opportunity for sustainable energy production (wind and solar), provided an energy hub will be put up in the area.

Tracing the actants behind each of these challenges, and mapping their needs and future options, the students came up with the proposal to organize six municipal industry parks, including the two new key nodes of the Brussels express light rail network (Denderleeuw and Liedekerke) under one cross-municipal managerial umbrella. This would allow relocation of offices, retail, and congress facilities to the key nodes of the express rail network to gain new room for industries and transport and distribution on the industry parks itself, and to reconfigure these parks for better flowing of the Dender as well. Pivotal to these proposals is relocating and enhancing nature reserves, and therefore restoring the original historic dimensions and environmental characteristics of the Dender by making room for the river. At the same time, these transitions would allow implementation of the necessary (ground) works for the energy hub, making the common business park the central focus point for the intended energy transition in East Flanders. Discussing

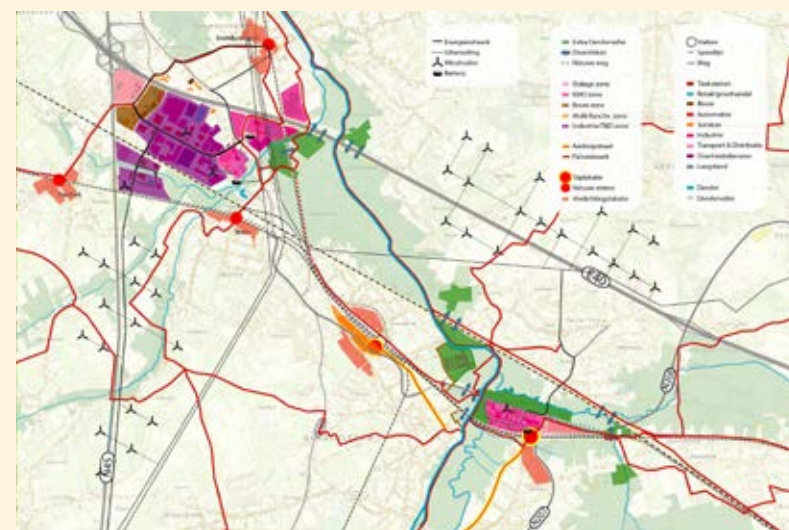


Figure 37.3: de Kansenskaart Denderpoort

these windows of opportunity with all involved stakeholders during several roundtables resulted in a proposal for an urban re-allotment model, where each of the stakeholders and municipalities would put in their shares upfront in an intercommunal project development agency, which would redistribute ownership and give dividends proportionally after reconstruction. At the moment of this writing the precise establishment of this intercommunal project development agency is being discussed among the involved stake- and shareholders.

Academic year 2018–2019; Studio Ghent University Campus

Client:

Ghent University

Actors:

Involved deans of the 11 departments of Ghent University, involved University administrators and students, politicians and public servants of the municipality of Ghent, representatives of the Flemish regional public transport company, social housing corporations, and inhabitants of the involved areas

Involved students:

Anthony Bouckaert, Nathalie Casteels, Jorik De Wilde, Eloise Dobbelaere, Lissa Van Doorselaere, Margot Duyver, Fien Pauwelyn, Charlotte Rottiers and Hans Schildermans.

Involved teachers:

Luuk Boelens and Tara Op de Beeck of Ghent University.

2 The Ghent University Association (including the University Colleges of Ghent and West Flanders and the Artevelde Hogeschool) numbers 67.500 students and 12.500 employees. Including the Academic Hospital of Ghent, the number of employees number up to 18.500. This makes Ghent University by far the biggest employer of Ghent and even West- and East Flanders.

Ghent University was founded some 200 years ago, during the interbellum by King William I of the United Low Countries. Over two centuries it has evolved into the second largest University of Belgium, after KU Leuven, with some 44.000 students and 9.000 employees². Over time, the physical fabric of Ghent University has also expanded immensely, towards some 20 campuses in the greater region of Ghent, and even 3 in Flanders (Kortrijk, Bruges, and Oostende), and 1 in South Korea. Furthermore, the University's management is more or less characterized by a highly decentralized decision structure. This means that each of the 11 departments more or less independently makes decisions about housing, in consultation with and backed up by the central administrations. However, this results in a highly opportunistic and

fragmented spatial layout. At the moment this feature is stretched to its limits in terms of efficiency; daily students and teachers have to travel between the various campuses for education and research. Although distances are relatively limited, more often this is also done by car since not all campuses are as easily accessible by public transport. In addition, the rate of spin-offs based on academic research projects is relatively low, since the possibilities for tacit exchange (of knowledge) are hardly present, especially in the peripheral campuses of the University. The relationship of the campuses with the city doesn't stimulate interaction either. The campuses often remain empty areas during the evenings, on weekends, and during summer holidays. To enhance related variety and to improve a sustainable development, with less (energy) waste and more multi-functional use 24/7, there is a need for a more compact and multifunctional setting.

Tracing the 80 bachelor- and 140 master programs, inquiring into their colleagues and interviewing the deans of the 11 departments of Ghent, the students came up with more integrated program requirements and an overall overview of the needs within the UGhent family. Moreover, they delved into the historical accounts of each of the campuses, and the environmental and mobility impact, including the future options for each of these sites. They put these up against the ideas, visions, and plans of the municipality itself, even though the University often remains implicit in these plans, possibly due to

the fact that the campuses are very much demarcated and often even fenced off from their adjacent surroundings for path-dependent safety and environmental reasons. From there the students mapped alternative solutions for the latter, and developed a progress roadmap toward better integration with the urban fabric of Ghent, as well as a step-by-step reconfiguration program toward multifunctional and related alpha, beta, and gamma University districts. These included facilitating as well as alpha/beta/gamma focused programs with regard to mobility, greeneries, (teachers, students, visitors, and neighbors) services, socio-cultural amenities, sport- and recreation facilities, housing, etc. toward more sustainable and lively 24/7 districts. Discussing these ideas within a roundtable of all the Ghent politicians, public servants, and University sections involved, resulted in business cases for quick wins in each of the aforementioned University districts. In addition, and after the proposals were published in the local newspapers, the students were invited by involved citizen and neighborhood movements to discuss possible programs with them. At the moment this has led to an overall assignment from the central UGhent administrations to a professional agency to come up with a future strategic vision for the University, along with several facilitating projects for additional densifications, environmental improvements, and public transport linkages.

Concluding remarks

Above we have presented some examples of actor-relational spatial planning education for the extensive challenges of the horizontal metropolis. What stands out is the exhaustive variety of these challenges. They deal with climate adaptation measures for the De Kempen, with fragmented University campuses, from ribbon-peripheral retail towards competitive industry parks housing more sustainable economic functions, including energy transition, environmental pollution, and restoring original landscapes. Looking back, the student proposals were often based on just common sense. However, they are apparently hard to implement in the horizontal metropolitan context. This failure to implement these 'plans' often lies in three things, which the students discovered over the course of the studio: the combination of (1) a historically evolved small municipal organization of Flanders with (2) a dispersed property system, and a (3) sectoral approach to spatial planning. For these reasons the Studios were initially focused beyond the traditional strategic planning approaches to develop proposals that



Figure 37.4: de Kansenskaart Alpha, Beta, Gamma Ghent University districts

could count on broad support from the involved stake- and shareholders, in order to confront the politicians and public planning servants with new, but feasible windows of opportunity. Thinking beyond the usual debate on government-driven planning and neo-liberalism, the Studios started off from the position that not only governments, but also (and sometimes especially) citizens, entrepreneurs, creatives, communities, and businesses play a more proactive role in spatial transformations, as it is often 'their property' that needs transforming. That is why the studios pivot around a roundtable that is organized just after halfway in the timing. This roundtable proved to be time and again the central organizing moment. A broad spectrum of actors became involved, promoting a so-called 'living planning laboratory', not limiting itself to purely 'spatial approaches'. Sometimes the students became highly successful in this respect and gained practical support even beyond traditional practitioners' work. In some cases, the studios have led to actual 'networking' between the stakeholders and proved to become agenda-setting. This actor-relational learning by doing, and vice versa the doing by learning prepared the students for the new planning challenges of (horizontal) complexity, proven by the regular feedback and professional careers of the alumni.

But what is more, given the enormous variation of these horizontal challenges, no overall spatial plan or vision can suffice. What stands out in the examples above is that they all went beyond the drawing of a 'plan'. Instead, the common interests, roadmap, and concrete business cases became the final results of each of these Studios. And these products are in each studio a one-to-one result of a process in dialogue with stakeholders. The introduction of monetizable value somehow 'weaponizes' the actor-relational approach, fires up the debate about measures to take, prioritizes actions within roadmaps, and also leads to a clearer understanding of the role and position of each of the stakeholders. As such, this actor-relational education prepares the students for a broad and lively practice for future complex situations: sharpness in what is needed, optional, or possible, with methods from a broad background, including economic and entrepreneurial competences. More than just educating designers, planners, or researchers, it stretches these competences to the outset in close integration by working together. Therefore, the program trains not so much planners per se, but mediators or intermediaries in the broad field of 'environmental actor-relational sciences'.

EPILOGUE

After ARA – Critical Reflections and a Reflexive Beyond

BEITSKE BOONSTRA, LUK BOELENS, ANNELIES STAESSEN
& PETER DAVIDS

ARA: A critical planning approach

From its very beginning, a key message of the actor-relational approach has been to act and think “beyond the plan” (Boelens, 2006). With this statement, the actor-relational approach encouraged planners – and especially planners who have, by default, followed government-led decision-making processes – to think beyond the usual (governmental) aspects of planning initiatives, to work towards innovative partnerships around spatial investments, and to creatively embed these partnerships in an ever-evolving institutional context. With its rich and hybrid theoretical background—including relational geography, post-structuralism, complexity theory, actor-network theory, and differential system theory—the actor-relational approach nevertheless provides a hands-on and practical planning approach. In the ongoing oscillation between theory and practice, the actor-relational approach developed itself into a research approach. This was not done in the form of a methodology, as the actor-relational approach is methodologically hybrid, but rather as a distinctive and critical *attitude* towards the conduct and issues of spatial planning research itself. With this attitude, ARA aims at opening the sometimes age-old path dependencies in both planning theory and practice. As already mentioned by Leonie Janssen-Jansen in her review of 2009, the actor relational approach has in this respect no beginning, nor end. It is full of possible overwhelming underlying principles, concepts, ideas, and opinions, which are sometimes – one might say even opportunistically – not stretched to their fullness according to some planning theorists (Webb 2010, Rydin 2010, Metzger 2011). The various theoretical and methodological backgrounds of the actor-relational approach, as well as experiences with planning practice are relationally put together

in such a way that they challenge the planner and other involved actors to determine their own position and motives with regard to planning the future as well as the future of planning itself (Janssen-Jansen 2009).

This attitude is apparent within the structure of this book. Part one (*actor*) addressed the entry, emergence, and changes of planning actors, stressing that the adaptation and creation of new agency within spatial transformation is always possible. Part two (*relational*) addressed new and evolving relations between various geographic or acting entities in planning, stressing mutual interdependencies and the benefits of shared value creation. Part three (*approach*) addressed tools, methods, and means for critical reflection and institutional embeddedness of those partnerships in an ongoing process of ‘undefined becoming’ (Boelens & De Roo, 2016). However, in some cases, the distinction between actor, relational, and approach has been somewhat artificial, as most contributions discuss various combined aspects of the actor-relational approach, revealing three operational perspectives that are imminent to the actor-relational approach.

What does ARA do?

Rendering actors visible

The first operational perspective is that of *rendering actors visible*, predominantly discussed in Part 1. This concerns the tracing and mapping of actors who are not yet involved in or engaged within spatial transformations yet, but have an interest or hold on a crucial resource to those transformations all the same. By making these actors and their interests visible, the planning landscape is widened and opened beyond the obvious traditional stakeholders and issues.

This type of operation is described in various ways. Tom Goosse argues that the visualization of flood injustice among inhabitants of flood prone areas in Flanders is a first step in activating citizens. Peter Davids explores the potential of a policy instrument to increase residents’ sense of responsibility in relation to floods. Hanne Glas and Greet Deruyter describe a method to involve citizens in geographical data collection, when formal institutions lack the capacity for this kind of research. Rob van der Bijl argues that the visualization of mobility poverty is a first step to mobilize policy makers to take the issue seriously. Thomas Verbeek argues that health professionals play a crucial role in bringing health issues and environmental pollution to the planning table.

But also in part 2 actors are rendered visible through their relations with the changing environments and with other actors. Rainer Johann, Bart de Jong, and Luuk Boelens each illustrate how the main stakeholders of both airports and seaports are heavily entangled within their environments; institutionally as well as geographically. These three authors present studies and methods on how to make mainport actors aware of this entanglement, beyond the mere and obvious focus on noise, traffic jams, and air quality in order to enhance a license to operate, with the indirect aim to turn them into leading actors on other issues as well. Such an attempt can be also found in the contribution by Aamir Basheer, who delves into the impact of public transport improvements for the ongoing land use developments in Lahore, Pakistan, in order to enhance a new policy, with new focus points and alliances for a more integrated and resilient land use transformation in the municipality and region itself. Following the symmetry between human and non-human agents, as advocated by actor-network theory, actors therefore get agency not only in communication with other interested parties, but also in their dissipative engagement with the changing conditions and developments in the surrounding itself.

Navigating relations

Thus, the second operational perspective of the actor-relational approach is the *navigation* in and towards new relationships. This navigation in some cases concerns interventions that stress the relations between several actors or stakeholders that were not yet aware of their mutual dependences. By revealing these interdependencies, and by giving and exploring new directions in which these interdependencies might and can evolve, new windows of opportunity might open. This has been the first and most traditional focus of ARA from the very beginning (see for instance Mommaas et al. 2005; Boelens & Coppens, 2015)

This type of operation is also discussed in various contributions of this book. The contribution of Goethals et al. and Van Knippenberg, for instance, discusses approaches based on co-evolution (with Goethals et al. more empirical and that of Van Knippenberg more theoretical). Both aim to activate and incorporate local communities; both are related to heritage redevelopment. Goethals et al. show that a joint exploration of improvements in the living environment not only raises awareness among local communities—in this case a Kampong community in Suriname—but also motivates communities to take actions themselves. The contribution of Karim van Knippenberg argues how traditional approaches to heritage management leave little room for community involve-

ment and thus he introduces a new heritage approach that incorporates the dynamics and multiplicity that come with community-engagement.

Several contributions shed light on the operational perspective of navigating relations, not so much emphasizing the benefits of a relational approach but emphasizing the how-to. Beitske Boonstra for instance reflects on what the emergence of community-led planning could imply for the relations between professional spatial planners and initiating residents and entrepreneurs. Kobe Boussauw and Dirk Lauwers subsequently reflect on what the role of the planner can be in such relational navigation. In addition, Suzanne Van Brussel argues for the importance of telling good stories in making people relate their own experiences to ongoing planning issues. Tempels et al. provide a method to navigate relations that connect the technical and the social side of dealing with flood risks. Tristan Claus and Beitske Boonstra discuss how the actor-relational approach in the Flemish context can assist politicians in assessing whether a certain civic request represents an individual or community interest.

Contextualizing planning issues

This brings us to the third operational perspective of the actor-relational approach; that of making planning issues *more contextualized*. Isabelle Loris shows that in order to really understand the issue of regional governance for housing, the housing market must be seen not as a market per se, but as an arena of actants, which is more complex and more dynamic. The same goes for Jiajia Gong's contribution. She shows that actors in different phases can and must take on different roles in relation to each other, in order to gain some meaning for a resilient urban economic transition. In reference to this, Boelaert shows that this dual operation in getting bigger and smaller at the same time could serve a better understanding of complex issues, which have lingered on for many years. Contextualization therefore is pivotal and in this contextualization the thickness and direction of relationships is more important than fixed geographical (snapshot) situations. This makes a more dynamic and flexible approach possible; it can tackle complex challenges. By zooming in on only a few relationships (without losing sight of complexity and plurality), the issue becomes smaller and therefore more soluble. Thinking from the relationship perspective makes it possible to view a problem in its entire context. However, thinking from the relationship perspective can also make things bigger and more difficult; it can paralyze action. Zooming in and out and determining to what extent and in what way the planner or researcher could and should act remains therefore a challenge.

This challenge becomes more apparent in the contribution of Ann Pisman, dealing with fourteen criteria for spatial quality, or in the account of Peter Davids, dealing with a floodlabel to improve citizens' actions regarding multi-level-water-safety. However, for the moment in both cases it still remains unclear how these institutional designs should be implemented, as the informal part of institutional design still remains somewhat underrepresented. Therefore, this part could still need additional attention for a new planning future in complex differential situations.

The latter is even more important, as it shows that ARA has been developed as a reaction to the overwhelming influence of governmental actors in Dutch planning. However, the contributions above show that it could also serve conditions where this is not the case. This becomes apparent in the contribution of Tristan Claus and Beitske Boonstra. Here ARA could serve to activate collectivity in preserving specific interests. The same goes for Annelies Staessen, who stresses that planners have lost their connection with the daily life in Flanders, and that perhaps a cinematic view would restore a more elaborate perspective on given and age-old planning problems in Flanders setting.

New roles for planning

Moreover, the contributions in this book show that the operational perspective of rendering actors visible, navigating relations, and contextualizing planning issues go hand in hand with both planning practice and planning scholarship. Neither planning practice nor planning scholarship can be separated, since the one feeds the other and vice versa. Therefore the contributions also give clearance on possible new roles for planning. Many contributions in this book address the more operational and/or instrumental side of planning. As such, the actor-relational approach proves to be highly instrumental in opening up the planning landscape: an opening towards unexpected themes, an opening towards new and unexpected actors, and an opening towards new and experimental planning approaches.

At first sight the actor-relational approach holds the potential danger of an ever expanding planning landscape, making it fuzzier, more dynamic, disruptive, and uncontrollable and making planning an obsolete practice. When the starting point of the actor-relational approach is that everyone can be a planner, the playing field of planners becomes at first glance un-endlessly dynamic, continuously expanding, and fuzzy. Therefore there is a question of

where the fine line is between opening the planning landscape up and breaking apart a long-standing practice. And if the actor-relational approach opens the planning landscape up to new actors, relations, and approaches, then what will be the new role of that kind of planner? Is there still room for a planner, e.g. someone who aims at envisioning an imaginable future in order to organize collective endeavors? Here at least five possible ‘transition keys’, and therefore possible roles of planners in a complex adaptive planning landscape emerge, which have in fact time and again have also been touched upon in the contributions above.

A first role, related to rendering actors visible, aims to understand the not-yet-involved or engaged actors, understand their real and possibly hidden or suppressed internal motives, and help them to succeed in an ever more complex field of planning law and property rights, such as equity planning (public; e.g. John Forrester, 1987 & 1989), regime planning (business; e.g. Clarence Stone, 1989), advocacy planning (civic; e.g. Paul Davidoff, 1965), and the uprising field of radical action planning. We can find these kind of references in the contributions above, such as in the political service approach for Flanders by Tristan Claus and Beitske Boonstra, the account of industrial actors in the transformation of Chinese cities by Jiajia Gong, and the spatial planning approach in an age of active citizenship by Beitske Boonstra. In addition, academia itself enters the field of societal transformation, according to the Quadruple Helix approach of Elias Carayannis and David Campbell (2009). Here the planner itself could become **an important actor**, like the phronetic planning researcher of Bent Flyvbjerg (2001), represented above by the account of Kobe Boussauw and Dirk Lauwers, regarding the planning experience of peripheral retail development in and around Brussels. This role becomes highly included in the actor-relational approach and still develops further.

Second, planners could take a role, or deal with the circumstances, of the so-called **factors of importance**, in order to generate or improve the conditions for urban adaptability or balancing purposeful interventions and spontaneous change; like the age-old condition planning (eg. Kleefmann, 1985; Rauws, De Roo & Zhang, 2016). Here planners do not so much interfere directly in human actions but try to adapt or enhance the (non-human) conditions for human actors to act in the desired directions, more or less spontaneously. Similar accounts can be found above for instance by Basheer to delve into the impact of public transport improvements for desired land use developments, or by Johann and De Jong by enhancing the urban centrality of airports,

tranquility in design, the transition from wastelands into more productive noise landscapes, and the opening up of a circular airport laboratory in order to improve airport-city connections. The backdrop of this approach is that you would never know if the desired action or development would really happen and you would never know, that if the planner could indeed oversee or prevent all the options, that the intended progress wouldn’t turn into its opposite. But then, wouldn’t this be the case for all planning actions of undefined becoming?

Third and more traditionally, planners could try to mold **the institutional design** in such a way that the intended planning transition could take place. This is the more regular way of the so-called ‘hard planning’ of planning law and property rights, next to the soft planning mentioned above (Allmendinger & Haughton 2009). Institutions, however, are the once agreed upon rules of the game; therefore, they can also change or innovate over time and place (e.g. Salet ed., 2018). Institutions are therefore regarded as the result of actant networking, which when institutionalized become a major conditional factor for (non)action itself. In other words, there is a reciprocal relationship between institutions, actors, and factors of importance (Boelens, 2018). Moreover, institutions can be formal – like laws, contracts, etc. – but also informal, like norms, values, or specific customs. Nevertheless, regular institutions are regarded or researched by planners in a formal way. As mentioned, this kind of role is alluded to in the contributions of Pisman and Davids, but also challenges the hard way of planning with new complexities of plural, changing, nonlinear, and volatile situations.

Therefore, related to navigating relationships, planners could also take up a role in between – i.e. the role of an **intermediary**. In Actor Network Theory, an intermediary is described as a black box, or an object that can be viewed in terms of input and output. For Latour (2005) an intermediary transports meaning or force without transformation. In the above we found accounts of that in the contribution of Hanne Glas and Greet Deruyter making inhabitants aware of the possible risks of flooding by just presenting given data in a new format or technique. Another account of this is the contribution of Tom Goosse by connecting open source data within the scope of environmental (in)justice. Although an intermediary accounts for somewhat predictable outcomes, they can nevertheless mold, transform, or change action. In planning, this intermediaries’ role could become very important, and is thus in need of further investigation.

Finally, related to navigating relationships, a possible role for spatial planners is that of a **mediator**. This role is already explained before, within the operational offer of actor relational planning with regard to navigating towards new and possibly more resilient relationships in an unpredictable world. As mentioned it is in fact the coevolutionary predominant intent of several of the contributions mentioned before, e.g. by Luuk Boelens with regard to port-city interactions and climate change, by Marleen Goethals with regard to new perspectives in Mariënborg Suriname, by Thomas Verbeek with regard to environmental issues, by Barbara Tempels et al. with regard to integrative water management, and even in accounting for actor relational education. These authors all have the intent to translate given interactions between institutions, actors, and/or factors of importance towards new relationships and therefore new opportunities for action. This mediating role has the intention to ‘transform, translate, distort, and modify the meaning of the elements they are supposed to serve’ (Latour, 2005 p. 39) by interconnection. This role is therefore highly situational and unpredictable; it can’t be done in repetition, unlike the seven-step-scheme the actor-relational-approach might suggest. Instead, and similar to Deleuze’s rhizomatic concept, mediators point to the proliferation of objects and locate where these objects might connect to and expand toward. Mediators challenge us to follow flows, rather than define new concepts or plans.

Some critical reflections

Together with these new roles for planning, the operational perspectives revealed in this book have demonstrated how the actor relational approach is able to open the planning landscape up and create breakthroughs in dead-locked processes. Such openings or breakthroughs imply the start of a new actor relational planning process in which, throughout the course of the process, the complexity seems to increase. In fact, this increased complexity seems to slow down and even restrain the execution of final phases of the process.

Based on the reflections in this concluding chapter, these processes start more theoretically and analytically based by employing the operational perspective of *rendering the actors visible* with methods of tracing and mapping. The actor relational approach offers the ability to be aware of the diversity of all the actors at stake. Moreover, it has been proven throughout the different chapters to be highly effective in exposing the factors of importance. The pitfalls in this stage of the process are, as noted before, overlooking the less represented, overlooking the non-active, the inability to understand the other’s percep-

tion, and the lack of a diversity of conceptualizations. What should follow is the more active part of the process in which the operational perspective of *navigating relations* enables the planner to choose the role of an intermediator or mediator and execute diagramming-methods. The focus is mainly on the relations itself, in which the central position of the planner as a mediator or intermediator can make the planning problem or challenge more concrete and achievable. However, this implies new (additional or alternative) skills and planning styles, and explicit role-awareness of the planner. The finalization of the process through agency with the focus on the institutions is largely missing in this overview. This might indicate the limits of the actor relational approach, which after effectively opening the planning process, remains rather theoretical and analytical instead of operational.

What we see from the contributions in this book is that the actor-relational approach has proven particularly strong and powerful in revealing and criticizing existing path-dependencies in planning practices. Nevertheless, the planning process apparently stagnates with the transition to more active and executive orientation towards the planning problem. This stagnation may lie paradoxically in its actual and initial strength, namely, to enable planners to look beyond defaults of their practices and re-question them. Beyond all this opening up, the planning roles discussed in this concluding chapter illustrate that, beyond the deconstructive opening up that ARA promotes, a more constructive alternative lies ahead. However, each role can possibly extend in various directions and therefore give rise to further differentiation of the planners’ subsystem into five or even more subsystems, which would subsequently irritate or interpenetrate each other. This proliferation of subsystems could potentially lead to an even more complex, sticky process, therefore making the sustainability of the process uncertain in the long run (Valentinov, 2014). To prevent complexity from overburdening an individual mind or a planning process as a whole, and to deal with this complexity/sustainability trade-off, once more, we should emphasize the importance of zooming in and out between the planning process itself and its environment when an actor-relational planning process takes place.

The operational perspective of *contextualizing planning issues* is what complicates the process. Since every planning process is co-evolutionary, there is no clear indication of when the deconstruction of the problem should end. It is the planner who has to decide when he stops involving new actors, zooming out on relations. The internal freedom of a planner during the data collection process

of tracing and mapping could result in a certain tunnel vision, and in the long run, make the process less adapted to the environment on which it critically depends. Within these evolutions of the planning process, the planner has to take a dual role.

Actor-relational planners stand both within and outside the planning process and might thus have a dual performing-observing role within the process. While they are serving the leading clients involved, they also need to think beyond the actual planning assignment and process and try to link the outside inwards. Due to the freedom within this duality, in some cases, an actor-relation process could develop an insensitivity for one of these perspectives. For the latter, it is important to not only reflect on the deconstruction of actors, relations, and approaches through tracing and mapping, but also through a deconstruction of styles, effects, and performances of the involved (human and non-human) actors. Planners may use these insights to make actors sensitive to and self-conscious of potential openings and closures in the processes of which they are part (Hasanov & Beaumont, 2016; Loepfe 2014), thus increasing the awareness of the importance of individual intentionality, emerging collective intentionality, and their socio-psychological traits (Hasanov & Beaumont, 2016; Atkinson et al., 2017). Following the post-structuralist perspective as advocated by the actor-relational approach, an awareness of the impact of style and effect may assist planners in reflecting upon their own style, actions, and frames through which they observe their world (Loepfe, 2014). Such an understanding can increase actors' efficacy to align more closely with other engaged actors and to become more effective in building new relationships. As such, becoming aware means deployment: consciously and actively using certain behaviors while staying close to one's own preferences and self-driven spontaneity.

Next is, through this increased self-awareness, to step over one's own preferences and actively seek differentiation. This can be done by involving actors that are able to diversify and differentiate in their own tendencies or by connecting to actors with different preferential tendencies. This differentiation will allow planning actors to build upon each other's movement to prolong, continue, and progress the movement (cf. Deleuze, 1993). As such, actors who are able to differentiate can both contribute to the progress of an initiative as well as enable other planning actors to benefit from the added value of the initiatives. Voss and Kemp (2006) distinguish two levels of reflexivity. First order reflexivity relates to the cycle of problem producing – problem solving, after which new problems emerge, which then are to be “solved” again. Second-

order reflexivity occurs at an even more reflective level and rethinks the routines and execution of the problem producing: problem solving cycle. The orientation then is less towards solving problems, but towards creating and maintaining spaces for working towards solutions. This is where the actor-relational approach could prove its value once again.

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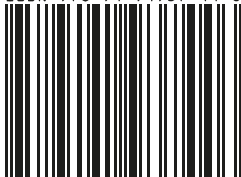
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Over the past 15 years, the actor-relational approach of planning grew and evolved from an interactive system between leading actors, factors of importance within evolving institutional settings to a co-evolutionary perspective on spatial planning. The various actor-relational and complexity-sensitive research and applications in the Flemish and Dutch landscape and beyond collected in this book demonstrate how this actor-relational approach of planning is not a fixed methodology but rather an attitude which (co-)evolves depending on specific themes, insights and surroundings. Therewith, the book forms a showcase of the wide applicability of the actor-relational approach in enduring or deadlocked planning processes. The combination of scientific exposés, column-like retrospective intermezzos and concise boxes is structured according to the main ingredients of the approach: actors, relations and approaches. The book offers an exploration of the consistencies in its (theoretical) insights, addresses future challenges in actor-relational and complexity-sensitive planning research and discusses its potential for future planning in the Eurodelta region and beyond.

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