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# Planning of undefined becoming: First encounters of planners beyond the plan

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## Abstract

Since the 1980s and due to the ongoing complexity and diffuseness of global networked societies, planners have tried to move beyond classic technocratic and/or sociocratic ideas of planning towards new approaches, which address the multiplicity and fuzziness of our perceptions and actions in time and space. Innovative ideas have been developed concerning discursive, collaborative, informal and post-policy planning, as well as relational geography, multi-planar, non-linear and actor-relational approaches. Nonetheless, techno- and sociocratic approaches remain dominant conceptions for much teaching and practice in Europe and elsewhere. This is partly because these innovative contributions of the past 20 or 30 years have been fragmented and isolated. However, they can also be regarded as the beginning of a bigger transition towards what we call a movement of 'planning of undefined becoming'. In this article, we will sketch a framework in which these innovative ideas about the planner's perceptions of fuzzy, complex and co-evolving space and time will in some way be interrelated. From this background, we will also critically reflect on some planning experiments in practice inspired reciprocally and incrementally by these ideas, developing applications for practitioners along the way.

## Keywords

co-evolutionary planning, planning of undefined becoming, post-structuralism, theory of complexity

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## Introduction

Since the 1980s, sociologists, political theorists, planners and the like have begun to acknowledge that they operate in fuzzy but connected multiple realities (Dupuy, 1991), in multiple space–time dimensions (Castells, 1996, 1997, 1998), simultaneously networked and splintered (Graham and Marvin, 1996), and in multi-scalar, global–local contexts (Duffield, 2001). Ever since, planning literature has moved from techno- or sociocratic ideas towards approaches that engage with the increasing complexities of sociospatial systems. Fresh and novel ideas of planning have emerged from theories about urban and regional regimes (Hamilton, 2004; Mossberger and Stoker, 2001; Stone, 1989), discursive and collaborative governance (Forester, 1993; Healey, 1997; Innes, 1995), relational geographies (Amin and Thrift, 2002; Massey, 2005), arrangements and situatedness (Hillier, 2007; Van Wezemael, 2010) and theories of spatial complexity (Batty, 2005; De Roo & Silva, 2010, 2012; Portugali, 2000; Teisman, 2009). Along with these debates, numerous questions have been asked about the competence and expertise of planners (Forester, 1989; Lovering, 2009), and the kinds of planning that can mediate between the state, the market and civil society (Boelens, 2009), as well as their democratic accountability (Purcell, 2008; Sager, 2009). The consequence of these new perspectives is that much of the academic discourse is experiencing the reorientation and repositioning of planning practice away from being an applied technical science concerned with fixed planning and decision-making within an exclusive government domain, advancing towards a communicative ideal where planning actions enhance the achievement of consensus on perceived situations. In this new era, planning is exploring potential new routes beyond explicit goals (command-and-control governance) or processes towards consensus (shared governance). Instead, innovative planning ideas now consider and extend themselves to address fuzzy and situationally perceived manifestations acknowledged as a communal burden or opportunity. Subsequently, there is a growing awareness that planning needs a wider portfolio of tools beyond ‘the plan’ towards an agreed future or ideal – a course towards a planning of ‘undefined becoming’.

This evolution in planning thought has by no means been universal. The sociocratic and technocratic views of planning remain dominant conceptions in much of teaching and practice in Europe and elsewhere. In some respects, this is not surprising because issues of non-linearity, volatility, fragmentation, and so on cannot easily be connected to issues of justice, equity and democratic accountability, which are commonly associated with planning. This article will therefore make a serious attempt to connect several emerging views, theories and ideas of ‘undefined becoming’ with the field of planning, ranging from abstract to concrete notions of space and relational action. By the expression ‘planning of undefined becoming’, we mean that planning is understood to be not so much the pursuit of an end-state plan – be that technocratic, process-oriented or procedural – but a situational planning of undefined becoming which is focussed essentially on communal and co-operative valorisations of dynamic intentions and needs, without necessarily knowing the ultimate goal beforehand. This also is a response to and an acknowledgement that real situations are variegated and therefore fundamentally impossible to understand fully (Rittel, 1972). In other words, uncertainty prevails. Consequently,

the process of actor networking and its ability to adapt to and co-evolve with changing contexts towards more sustainable and resilient solutions become the main driving force for planning. Planners would stop being reduced to mere facilitators and would become respectful participants in the sense of sharing meanings in these intentional actor networks. As such, and in the last 10 years or so, there have been several academic reflections on parts of these notions of complexity, adaptability, co-evolution, and so on, though they are usually discussed separately and without reference to each other. Therefore, the aim of this article is to start discussing these evolving ontologies on ‘undefined becoming’, moving on through epistemologies and theories of evolutionary governance, towards concrete strategies and techniques of actor-relational planning. Although purist could contest these latter strategies and techniques for not being consistent with the ontologies and epistemologies from which they originate, we will take a post-structural stance and add an associative creativity mode to current planning issues in practice. How can we move towards a more post-structural planning in theory *and* practice?

## **Mind-frames on undefined becoming**

### *A spatial ontology of becoming – post-structuralism*

Although notions of post-structuralism have already been discussed extensively elsewhere (Amin and Thrift, 2002; Hillier, 2007; Massey, 2005; Murdoch, 2006; Thrift, 1981), we need to start with these notions in order to explain sufficiently some interconnected mind-frames of ‘undefined becoming’. After all, post-structuralists mainly criticise structuralists for focussing too much on the truths underlying apparent features, trying to give a specific and structured meaning to those core features and to the seemingly chaotic and unpredictable character of social life (Smith, 2001). In the same way, planners have been accustomed to start from notions such as the good or just society, or a strategic or even instrumental perspective of space and time. Post-structuralists, on the other hand, are convinced that each of these features has multiple meanings and modes of identification, depending on the various relationships with other features and meanings, and depending on their specific contexts (Belsey, 2002). Meaning would therefore not be intrinsic to the subject or space itself, but always relative or, better still, relational, while receiving meaning only from the context and from other subjects, and influencing them in turn. Therefore, according to post-structuralists, social systems such as families, neighbourhoods, cities and nations, or even notions of a good, just or sustainable society, are never closed but always open. These systems, social ties, political and geographical ideas, etc., proliferate in complex and unexpected ways. They are open, dynamic and constantly in a process of unpredictable becoming. These unpredictable, complex, non-linear features have become particularly apparent in global, intensely networked societies and could even be said to have become the rule rather than the exception (Albrechts and Mandelbaum, 2005; Boelens, 2000). Consequently, they affect planning at its very core and in several ways, as the core aim of spatial planning is and always has been to propose the best interaction between space and society based on a long vision of time (Van Veen Commissie, 1973). Post-structuralists would challenge precisely that idea of

planning because time is volatile and open to multiple interpretations, and a networked society is splintered into various spatio-temporal assemblages (Hillier, 2007).

### *A spatial epistemology of becoming – complexity theory*

Partly autonomously, but also partly with reference to and in reciprocal interaction with these post-structural ideas of becoming, theories of complexity have likewise evolved according to a similar pattern. Like post-modernist and post-structural ontologies, these theories of complexity could also be said to be a form of critique of the Enlightenment or more specifically of the Newtonian or linear paradigm of science. To simplify this drastically, that kind of science was, according to Robert Geyer (2004), founded on four positivist/modernist golden rules:

- *Order.* Specific causes lead to known effects at all times and places;
- *Reductionism.* The behaviour of a system can be understood by observing its parts;
- *Predictability.* Once that behaviour is defined, the future course can be predicted;
- *Determinism.* Processes flow along orderly paths with a clear beginning and rational end.

Although several scientific experiments had already contested these golden rules in Newton's time, these findings were regularly regarded as exceptional or latent to be resolved in subsequent waves of new science. Since the early 20th century, however, new insights regarding uncertainty, non-linearity, disorder and unpredictability also came to be recognised as fundamental: for instance, Henri Poincaré's three-body problem (1902–1908), Albert Einstein's theories of relativity (1905–1922), Neils Bohr's (1913) contribution to quantum mechanics, Werner Heisenberg's (1927) uncertainty principle, Paul Dirac's (1933) work on quantum field theory and Edward Lorenz's (1963) identification of non-linearity in our daily weather forecast. Lorenz showed how minor differences in initial conditions lead to outcomes that are radically divergent as well as chaotic and unpredictable. Cause would not lead to rationally expected effects, and orderly progress would become impossible due to self-referential mechanisms and an unstable and interfering context, thereby significantly challenging the idea of certainty. These findings force us to consider chaos and complexity as integral parts of life (Gleick, 1987; Holland, 1998; Kauffman, 1993; Waldrop, 1992).

However, it is important to distinguish between complicated and complex systems. A complicated system, such as a clock or a turbocharger, is indeed sophisticated, consisting of several parts all working together as a single unit. However, when broken, it is possible for specialists to disassemble these systems into their various components, study them separately, repair them where necessary and put the systems back together again into working wholes. This would not be possible in a complex system, as each of its parts influences the others reciprocally, exchanging (dissipating) information mutually and in accordance with the specific circumstances or contexts. Disassembled and reassembled – even if this were a realistic option for complex systems and their fluid behaviour – the

system would not be the same, as the circumstances which sustained it would have changed meanwhile, and the system's parts and context are subject to discontinuous, interactive change not allowing a return to the system's initial settings. Subsequently, complex systems are difficult to predict, in disequilibrium and probably fundamentally different at various moments (Bovaird, 2008). It is therefore awkward that some academics persist in focusing on taming or solving complexity (Heurkens, 2012; Kiel, 1994; Teisman, 2009), just as though the weather can be 'tamed' or managed too.

That said, both systems – complicated and complex – coexist within our society. However, within the ever more globalised and highly interconnected network society, ideas of complexity are becoming increasingly prevalent not only within physics (Prigogine and Stengers, 1984) or biological science (Kauffman, 1993), but also in economics (Beinhocker, 2006), social sciences (Urry, 2003; Waldrop, 1992), political science (Kiel, 1994), transition management (Kickert et al., 1997) and the like. Subsequently, in the past decade, these complexity theories have also gained ground within planning theory. Although still not yet part of mainstream reasoning, they emerge alongside classic goal-oriented planning and collaborative practices intended to tame complicated situations by means of prescribed procedures, zoning plans, mitigation proposals for impact assessments and consensus-based agreements. There is growing interest among planners to address complexity and its ongoing fluid, open, non-linear and unpredictable development, considering this to be more in line with reality. The theoretical focus is thus shifting to new features to be engaged with, such as *self-organisation*, defined as a process in which the components of a system in effect spontaneously communicate with each other and abruptly co-operate in co-ordinated and concerted common behaviour (Stacey, 1993). Here, planners seek new insights into how to become genuinely involved in those processes of self-esteem and how a 'fitness landscape' could be co-created in which those kinds of self-organisation could flourish (Boonstra and Boelens, 2011). This concept of 'self organisation within fitness landscapes' refers, in other words, to *complex social adaptive systems*, defined as open and responsive systems in which many actors – as subsystems – act in parallel, where control is highly dispersed, where coherent behaviour arises from competition and co-operation among the actors themselves, although the latter are quite capable of adapting themselves to changing circumstances (Byrne, 1998; Urry, 2003). These socially adaptive systems are responsive to external signals from neighbouring macrosystems, resulting in adaptive behaviour, while internally these systems manage to reorganise themselves through processes of self-organisation which also contribute to a better fit with their environment (De Roo et al., 2012). Accordingly, the theory of social complexity is focussed on multiplicity, immanence and emergence, folding and ultimately reaching what some would call *assemblages both robust and dynamic*, which are perceived as open compositions constructed from heterogeneous<sup>1</sup> parts (Hillier, 2011).

In these shifts from taming to engaging with complexity, a whole new range of planning notions surface, including self-esteem, emergence, situatedness and the like. These have to be taken seriously if planners sincerely wish to study the importance of conditional space-time to undefined processes, and as a consequence of open, flowing, non-linear and unpredictable processes (De Roo et al., 2012). Therefore, these first encounters

with complexity can be regarded as an epistemology of a planning of becoming, since it shifts the focus to new and open items, 'what needs to be, but cannot be known', and away from 'knowing the *better* future already'. Practically speaking, this epistemology implies a shift from planning *content and process* to planning *conditions*, in which the intended developments might or might not occur, or could take a different course.

### *Spatial theories of becoming – co-evolutionary notions of planning*

Ideas of dynamic becoming through co-evolution are more concrete and elaborated perspectives on 'how to deal with these complex situations'. Complexity theories address the issue of co-evolution, which is also rooted in the biotic sciences and has links with notions derived from 'generalized Darwinism' (Campbell, 1960, and others). Ehrlich and Raven (1964) first discovered that groups of organisms not only evolve in specific biotic circumstances but also in explicit circumstances through reciprocal selective interaction with other related organisms. Since then, their theory has also found application in the social and behavioural sciences, such as the political sciences, law and even economic geography (Barkow, 2006). Like co-evolutionary biologists, co-evolutionary sociologists, for instance, stress that the human capacity to co-operate is not only dependent on specific individual, genetic or psychological abilities, but also rests on humans' ability to acquire beliefs, values, ideas and practices from others; for example, the capacity for interactive cultural learning results in sociocultural co-evolution (Durrant and Ward, 2011). Through time and space, subjects and objects influence each other continuously: indeed, genes and culture co-evolve through time and space.<sup>2</sup> Similarly, evolutionary economic geography tries to understand economic innovation through the changing spatial distribution of firm routines across space and time (Boschma and Martin, 2010). Regional economic prosperity would thus be determined not so much by specific spatial improvements (such as a new highway), shifts in competitive global power blocks or Kondratieff's rhythms of growth and decline, but would primarily be an outcome of innovation in the interactive behaviour of firms, in co-evolution with related sectors, technologies and territorial institutions and their convergence/divergence in spatial systems (Boschma and Frenken, 2011). In this sense, the focus of co-evolutionary economists shifts from structural measures towards influencing post-structural phenomena such as the rise, interaction and fitness of economic clusters in specific institutional and spatial conditions. These conditions give rise to economic clusters and networks, and vice versa, thereby contributing to economic innovation or a better economic fit and vice versa. Therefore, co-evolutionary economists refocus on how firms and sectors grow in close co-operation with other firms and how innovation is not only dependent on specific economic, technological and/or R&D features, but also on simultaneous transformations in institutional arrangements. Subsequently, evolutionary economists have refocused on specific geographical circumstances, while economic innovations are often tied in to specific locational characteristics, such as co-location, the presence of social capital and cognitive, organisational, social or cultural 'proximity' (Boschma and Frenken, 2011; Schamp, 2010). These notions of 'local buzz in global pipelines' become operational by careful selection (while not everything is co-evolving with everything else), a precise analysis of the conditions under which co-location occurs, an understanding of with



whom and what co-evolution occurs and how business clusters translate into innovative business networks (Visser and Atzema, 2008).

Ideas of co-evolution have therefore also been receiving growing attention from planners. First, there have been efforts to theorise urban transport planning in a co-evolutionary fashion (Bertolini, 2007, 2010). Co-evolutionary theories of economics have been used to come up with new planning and governance proposals for major harbour and airport areas (Atzema et al., 2009, 2011; Urban Unlimited, 2007). A co-evolutionary perspective has been applied to understand the planning process and its failures, for instance, in the sustainable development of the Elbe estuaries (Gerrits and Teisman, 2012) and those in the Scheldt and along the North Sea (Allaert et al., 2012). Accordingly, following the lead of co-evolutionary biologists, sociologists and economists, planners and planning historians too are increasingly viewing neighbourhoods, cities and other spatial structures as the embodiments of the complex, historical co-evolution of the desires, ambitions, sociocultural frames, technology and other cultural attributes of their builders and occupiers (Boelens and Taverne, 2012).

Since the 1990s, based on these insights, complex and dynamic urban and regional models have been built to reveal how the dialogue between individual and collective levels generates successive spatial structures with characteristic patterns and flows. 'These would represent co-evolutionary behaviour and organization beyond "the mechanical" where the locations and behaviour of the actors are mutually interdependent' (Allen, 2012). Since the 2000s, more proactively, several experiments have been conducted in planning practice that take this kind of co-evolutionary approach seriously (see also the experiments described below). These experiments took the micro-scale of the actor in its location (and its unique reciprocal historical routines, needs and challenges) as their point of departure, highlighted how formal and informal institutions condition rather than determine behaviour and shed light on how actors individually or collectively could be coaxed into co-evolution with each other and with technologies, changing social structures and institutions to produce innovative co-operative cross-overs. The main idea here was to regard changes in the planning objective, planning contexts and planning itself in multiple, reciprocal and fundamentally open ways. Planning itself was thus considered only one of many forces (albeit the most prominent, directing or steering one) operating interactively in an ocean of agents and agency within continuously changing settings. Planners need to become an integrated part of these specific, ongoing actor networks, and co-evolve with them in order to bend them to more sustainable futures. This approach accepts that planning processes unfold in time, without a clear beginning or at least without a clear and definite end. It takes each step for itself in the process of interaction with what is decided and by whom, thus adapting planning to what emerges, and vice versa, to either facilitate common futures or minimise unwelcomed effects.

### *Spatial strategies of becoming – adaptive planning*

The twin sister of co-evolutionary planning is adaptive planning because contextual fit implies co-evolution with a context undergoing change. Like co-evolution, it is rooted in Darwin's (1859) *Origin of Species*, since he reasoned that adaptation to changing

circumstances causes species to diverge in various forms of dynamic fitness and ecologically relevant traits in order to survive (Schemske, 2010). However, the term also has its own meaning in physics, psychology and psychiatry (Garnezy, 1973; Werner and Smith, 1982), and within socioecological system theories (Bronfenbrenner, 1979; Holling, 1973; Masten, 2001; Rutter, 2012). Moreover, after the World Conference on Disaster Reduction in 2005, adaptive planning was given a prominent place in risk management strategies and climate change strategies. Especially in these latter two domains, adaptation is usually a responsive strategy dealing with the increasing impacts of natural hazards, to reduce the vulnerability and enhance the resilience of a system in the event of change due to unexpected circumstances. Here, adaptability is often used alongside mitigation strategies. Mitigation is then often reserved for actions taken to reduce the negative effect of these changes (for instance, to reduce greenhouse gas emissions or to enhance the removal of these gases from the atmosphere) or to compensate for their impact by, for instance, planting trees to mitigate the effects of CO<sub>2</sub> emission. Adaptability, by contrast, tries to attune itself to changing circumstances and, if possible, to bend these circumstances to its own advantage, like a judoka. Therefore, instead of being a responsive strategy, adaptability can evolve into a proactive strategy of undefined becoming. Furthermore, in planning, adaptability is especially concerned with the circumstances or the conditions with which the object of planning might co-evolve. It is defined as a strategy that starts explicitly from contexts (the specifics of the location, its latent co-actors and institutional settings) and tries to develop the capacity of these contexts to respond to changes and exploit circumstances (Hartman et al., 2012). It tries to disclose the opportunities of specific planning questions or more specifically the unique selling points of those challenges, developing a 'regional narrative' with, by and through its human and non-human actors, to open up new and even unforeseen options (Hajer and Wagenaar, 2003; Mommaas, Jansen and Boelens, 2006). As such, it would operate between the technical (means-end strategies) and communicative rationales of planning (consensus through interaction), leading to the differential fitness of spatio-temporal planning solutions in specific situations (De Roo et al., 2012).

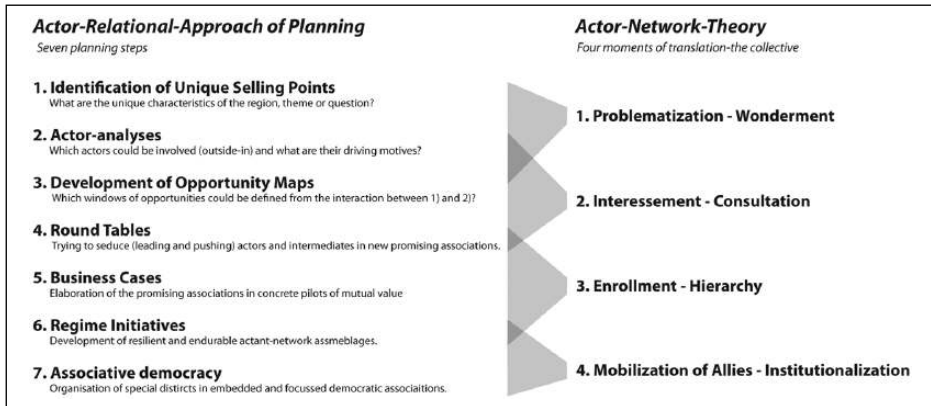
Open as they might be, the main goal of adaptive strategies is to strive for an improved balance between robustness and dynamics, or better yet, more resilient situations in changing contexts and unpredictable circumstances (Holling, 1987). However, in the course of time and due to new insights into emerging complex situations, the concept of resilience has also undergone a number of substantive conceptual reorientations from engineering to ecological and even socioecological resilience (Folke, 2006). While the emphasis in engineering design focuses on a return 'as quickly as possible' to the pre-existing state after a disturbance, the ecological interpretation acknowledges the inherent dynamism of systems and the existence of multiple states of equilibrium, and therefore the possibility that a system could flip into alternative stability domains after disturbance (Tempels, 2013). Consequently, ecological systems could evolve in multiple ways towards veritable differential fitnesses in several and ever-changing contexts. Moreover, the capacity for resilience could also be conceived of as more active and open, and rather than being a tendency to return to some kind of normality or other it can be the ability to change, adapt and transform in response to the stresses and strains of society itself (Davoudi, 2012). As such, the inherently resilient dynamism of one system could move

to a disturbed dynamism in another, which would in turn influence or disturb the original system. The term 'socioecological resilience' is thus used to describe this process, even though all social and natural systems evolve and in some sense co-evolve with each other over time (Tompkins and Adger, 2004). Co-evolution and adaptive planning can thus be regarded as an inherent strategy of 'undefined becoming' developing towards resilient futures (Wardekker et al., 2009).

### *A spatial technique of becoming – actant<sup>3</sup>-relational approaches*

Nevertheless, these strategies are not easy to implement in planning practice. Davoudi (2012) therefore worries that if these questions of an active resilient strategy are not sufficiently addressed, planning practice will revert to more conservative engineering and/or ecological resilience systems. Consequently, along with – rather than instead of – the planning approaches of stability and control (realism) and consensus seeking (relativism), approaches, which build on relationalist (in kind and in degree) and idealist (ranging from utopias to essential becomings) perspectives, also support a comprehensive understanding of reality. One tool for arriving at such a comprehensive understanding is 'story-telling', a means of bridging factual, agreed and imagined understandings within a wider collective of what are known as 'actants'. These 'actants' represent structural roles performed within the planning arena, contributing to a comprehensive story of actions, moves and behaviour from which the contribution of each actant cannot be excluded. The story functions as the cohesive whole, which is essential to execute planning techniques of undefined becoming. Several of those techniques have already been incrementally developed over the last 10 years of planning practice, in reciprocal reference to the evolving ontologies, epistemologies, theories and strategies mentioned above. The aim of these kinds of approaches is to bridge the growing gap between the post-structural and relational theoretical perspectives on planning on the one hand, and the diehard 'structuralist', Cartesian and geographically restricted path dependencies of planning practice on the other. It is not so much the various discursive collaborative experiments (Healey, 2007), the participatory or co-productive approaches for the 'inclusive' reasons mentioned above (Nyseth, 2011; Pløger, 2001; Van den Broeck, 2011), or the ideas of the spontaneous city or self-organising citizenship (Boonstra and Specht, in press; Holemans, 2012; Portugali, 2000; Urhahn, 2010) that are worth mentioning here. More relevant are the more or less 'open and undefined developments of becoming', with the help of planning techniques, which are very much inspired by co-evolutionary innovation management, rooted in the post-structuralist frameworks of Michel Foucault, Gilles Deleuze, Félix Guattari, Bruno Latour and so on (see, for instance, Farias and Bender, 2010; Oosterling, 2009). In each of these proposals, the planners' interest and techniques are not so much regarded as orchestrating or facilitating objects, let alone directing them, but as an integral part of the possible co-evolutionary assemblages of becoming shared with other major stake and shareholders in other parts of society.

Most of these techniques are focussed on developing a practical alternative which goes beyond 'the plan' and the agreed upon future-to-be, and beyond 'the restrictive confines of government', in intensive co-operation with leading actors in business, the public sector and civic society, without knowing beforehand where the plan will end and



**Figure 1.** The seven steps in the actor-relational approach and their relationships with the decisive planning action moments.

how it will develop. Incrementally, and partly with reference to the classic translation phases of actor–network theory as identified by Callon (1986), ‘problematization – interessement – enrolment – mobilization of allies’, or more clearly by Latour (2005), ‘wonderment – consultation – hierarchy – institutionalization’, each of these actant-relational approaches identifies various techniques and/or steps to mediate actant networks into human or non-human communal matters of interest, however long it takes. For instance, the actor-relational approach distinguishes seven such steps (see Figure 1). However, following Deleuze and Guattari (1980) and Jean Hillier’s (2007) ‘strategic navigation towards a speculative future’, this approach also contracts those steps into four kinds of decisive planning action moments, intended to bring about and clear tipping points:

- tracing actions, exploring the potential of a site or planning challenge
- mapping actions, an educated matching exercise to map the potentials traced to possible actor networks
- diagram actions, following the transformations of actor networks and their fields of influence during the proceedings
- agency actions, the potentially more binding and passive elements for actor networks, such as laws, regulations, contracts, arrangements, etc. (Sanders, 2009: 166–179)

The first three ‘planning actions’ (or ‘strategic navigation routes’) are means to activate, influence and/or attract other leading (human or intermediated) actants into evolving actant networks. Agency documents, however, are the ‘formal or informal institutionalization’ where actant networks finally become public, the last of Callon’s (1986) and Latour’s (2005) aforementioned phases. In response to critics who claim that these practices do not do justice to actor–network theory by focussing too much on human actors alone (Rydin, 2010) and other critics who argue that these approaches fail to do justice to the real power struggles in life (Moulaert et al., 2012; Swyngedouw and Cook, 2012; Webb, 2011, etc.), we adopt a more creative, proactive rather than purist, retrospective

analytical mode for planning. On the one hand, it is important to stress that in proactive planning practice, non-human factors need human mediators to become ‘activated’. If they are not discussed, taken for granted or even defended by one of the significant human actors or mediators – be they the planners themselves or other stakeholders – this would render these important factors mute and inactive. On the other hand, actor-relational planning shows that any human or mediated actant can hold the key to a common solution, that there can even be multiple non-level playing fields and that it could subsequently be wiser or more efficient to set aside the self-esteem of the ‘leading’ human or mediated actants.<sup>4</sup> To address the increased fragmentation, interpretative multiplicity and volatilities of present-day society, engaged practitioners would be wise to move beyond structuralist ideas of pre-defined notions of the just or sustainable society, or, in other words, to move beyond ‘the overall and big plan’, to navigate through complexity and endow evolving and co-evolving actant networks with more resilient dynamics.

### Cases of undefined becoming

Bearing in mind what was discussed above, theoretically inspired practitioners or practical theorists have over the past 10 to 15 years experimented with these planning notions of ‘undefined becoming’. These practices explored ways to circumvent the idea of both ‘the grand narrative’ and of ‘the small story lines’, trying to mediate between existing and possible discourses of engaged planning, redirecting them towards optional but *real communal matters of concern*. They did not intend to oppose, overcome, manage or reduce complexity, but on the contrary, *embraced it* as an ordinary and insurmountable state of affairs and even as an attractive force for planners’ creativity, opening up new ways of co-evolutionary becoming. They adapted themselves to specific and changing situations, trying to establish new grounds for promising *co-evolutions between subjects, inter-subject reasoning and objects* for the dynamic transformation of space and place relationships within society. Finally, these experiments tried to mediate between various actant networks, *horizontally* and *in-between* as integral parts of mediation, rather than taking neutral or expert positions, whether in a hierarchical top–down, conditional sense or a facilitating, bottom–up, participatory one (both being vertical). Of course, these ideas did not appear overnight. Like the experiments themselves, the practitioners/theorists co-evolved with academic and practical progress through associative reasoning, counterargument, exploring the alternative, challenging the frontrunners’ mindsets, testing and piloting, additional theorising and so on. The result is very different, however, from the still dominant structuralist approach to planning, with its focus on pre-defined, well-argued, representational public goals, for the sake of a better or just society, regardless of how engaged, flexible, discursive, participative, collaborative or co-productive they might be. Instead, a post-structuralist planning approach of undefined becoming

1. goes beyond the restrictive confines of governments and planning;
2. takes the living micro-scale (the historical and present actants) of the region, planning question or challenge as its point of departure, while remaining open to contextual or macro-influences which trigger transitions, co-evolution and structure-functional change;

3. points out the variety of options and possible opportunities of new assemblages of objects and subjects within these specific institutional settings;
4. sheds light on how leading actors in civic, public and business society could co-evolve within these settings more horizontally and resiliently;
5. analyses how these actants individually or collectively could adjust these settings and their path dependencies accordingly.

Subsequently, these kinds of post-structural planning become fundamentally open and undefined: where they will end up and how they will evolve in time and space is unknowable in advance. Perhaps they will even turn out to be ‘never-ending’ and ‘unlimited stories’, sometimes at rest and at other times highly dynamic, but in essence trans-communal, unfinished and unconfined, existing in a non-linear reality in which no conscious control mechanism can be applied, and within which processes evolve more or less autonomously. Conditions in support of communality and resilient assemblages of heterogeneous co-evolving actor networks (at rest or in a rush) are viewed as more relevant than content and process.

Over the last 10 years, several such projects have been developed in the Netherlands, Belgium and parts of Germany, and possibly also elsewhere. We have been involved in some of them as initiating actors, sometimes as mediators (multiplying or minimising controversies) or just ethnographic spectators (without transferring meaning). We have thus followed them closely over the years, occasionally intervening with advice, or sometimes even trying to bend them towards greater resilience. Each of these cases has been executed at various levels of scale, ranging from the local to the transnational, some commissioned by governments (local, regional, national and supra-national), but mostly through the co-operation of private, semi-private or semi-public organisations. Therefore, the experiments almost naturally and immediately extended beyond the often closed and object-oriented planning path dependencies of public administration. Furthermore, and although the projects were usually initiated to solve a specific pre-defined problem and/or planning goal, we discovered that in the more actor-relational, post-structural projects, it usually took several weeks or even months to orient, re-orient, discuss and reformulate these questions or challenges with greater precision. Often, this resulted in a mutual reformulation of the points of departure, subsequently identifying additional stake and shareholders, and new spatial or thematic foci. They were usually executed by a team of practitioners and academics, in close co-operation with universities, consultancy firms and sometimes even semi-public or semi-private services. An overview of some of these experimental cases, commissioners, executors, results and side-effects is listed in Table 1.<sup>5</sup> The table presents cases ranging from the Hillside Delight project in Dutch Limburg, which eventually turned into a mutual investment project, to the Brabant Water case, which dealt with value creation for sustainable water management. They include the Urban Airfield experiment – an improved mutual license-to-operate initiative in the Schiphol Amsterdam Airport area – a public transport case in South Holland dealing with sustainable programmes for various mobility styles, a community pride project in a deprived neighbourhood in Antwerp and territorial, functional and thematic cross-border programmes for socioeconomic innovation in Flanders and the Netherlands. Despite

Table 1. Overview of some co-evolving practices.

Name	Location	Period	Commissioners	Results	Side-effect
Regional Vision KAN	Gelderland, NL	2001–2002	City Region Arnhem-Nijmegen	–	Second Price, EO Wijers Competition Atlas City Region Park Overbetuwe
Hillside Delights	Limburg, NL	2003–2004, 2005, 2007–2008, 2010–ongoing	Limburg Development and Investment Company, province Limburg	Healing Hills Preuve Limburg Wellness in Wealth Precluding Sport Courses	Co-operative Marketing Programme www.zuidlimburg.nl
Urban Airfield Schiphol	North Holland, NL	2004, 2006, 2007–2008	Schiphol Group, Municipality of Haarlemmermeer	Airport University Airport Museum Schiphol Leisure-Business Park	Airport Carbon Accreditation Microsoft Schiphol
Connected Cities	South Holland, NL	2010–ongoing 2006–2007, 2009–ongoing	EU-Interreg IIC, Province Limburg, Municipality Rotterdam	TOD Almanak Co-operative Investment Programme PALIJS	Inter-public Projectbureau Stedenbaanplus www.stedenbaanplus.nl
Beyond the Lock-in	Eurodelta	2006–2008	Port Authority Rotterdam	–	Urban Farming Rotterdam City-Harbours Rotterdam Floriade 2012
North and Central Limburg	Limburg, NL	2006–ongoing	Limburg Development and Investment Company, province Limburg	Luxurious Landscape Living Slow River Programme Adventure Zones	–
New Leisure Amsterdam	North Holland, NL	2006–2007	Municipality Amsterdam	–	Masterclass Actor-Relational Approach
Leiden Housing Travelguide	South Holland, NL	2003, 2006, 2012	Housing corporations Leiden	–	Travelguide Several projects
Hotel Waarderpolder	North Holland, NL	2007–2008	Art-group Haarlem	Proposal Culture Hotel by and for Businesses Waarderpolder	Art Exhibition

(Continued)

Table 2. (Continued)

Name	Location	Period	Commissioners	Results	Side-effect
New Markets for Brabant	North Brabant, NL	2007–2008, ongoing	ZKA Brabant	Innovation Yards Eindhoven Playful Network Brabant Forests of Reflection	Leisure Academy Brabant Metal Valley Brabant Supervillage Program Trudo
Creating Values with/for Water	North Brabant, NL	2009–2010, ongoing	Waterboards, Brabant Water, Province North Brabant	Water Road Brabant Water Farming Water Products Zilty Crops Water BusinessParcs	Water Sensibility Program Water Competition Programme
Opportunities beyond Borders	North Brabant, NL Limburg/Antwerp, BE	2011–2012, ongoing	BOM, SRE, Municipality Cranendonck, Hoge Dunk, Nyrstar	Heritage Program Dorplein Ecological-Water Projects Canal-du-Nord Cross-border Business Network	BusinessParc Nyrstar Cross-Border CEO Congress
Luchtbal Revisited	Antwerp, BE	2011–2012, ongoing	Municipality Antwerp, Flemish Region	Urban Farming Gardens BBQ-Leisure Park Neighbourhood Market Urban Sport Courses	New Neighbourhood Interest Groups
Innovations for Flanders	Flanders	2012–2013, ongoing	Flemish Region	Glocal Energy Program Synchrono-modality Healthcare Transition Program	IWT Sprawl Impact Energy Landscapes Caspar 2.0

NL: The Netherlands; BE: Belgium; EU: European Union; CEO: chief executive officer.



their obvious diversity, they all largely followed the 7-step actor-relational scheme set out in Table 1.

As previously mentioned, we have been following each of these cases closely, from their inception to the present, and we have interviewed their leading stake and shareholders to learn their ideas about the progress of these experiments, their pros and cons, opportunities or threats. In this way, we were able to examine whether these ideas matched ours and how the projects have been evolving and co-evolving over the years towards more resilient or non-resilient realms (from the broad socioecological perspective as described above). Subsequently, and in congruence with the planning theme of 'undefined becoming', it must be stressed in advance that this analysis should not be assessed according to a conventional instrumental or strategic SWOT (strengths, weaknesses, opportunities and threats) analysis, whereby 'success' is measured as 'a degree of implementation' or 'cost-benefit balance'. Instead, the criteria for describing whether something is a strength, a weakness, an opportunity or a threat reflect the focus on co-evolving self-organised processes and on stimulating more resilient and common or actant-balanced spatial assemblages. This concurs with the main feedback received from the relevant stake and shareholders, namely, that they were aware that these intended planning transitions could not be implemented within the timeframe of our 4- or 5-year election cycle, for instance, but would probably require a longer timeframe of mutual associative involvement. We have therefore looked specifically into the past and current progress of each case. Does disagreement remain among the stake and shareholders, and would the experiments have resulted in adjoining planning reorientations towards greater actor-relational resilience? Our analyses were tested in interviews with the commissioners and stake and shareholders.

### *Strengths*

From these preliminary interviews and our own analyses, we can conclude that, although most of the cases started with the commissioners' specific problem definitions or expectations, each of these 'practices of becoming' eventually opened up into new views, ideas and identifications with the problem and planning issues at hand. For instance, the Twin City Region Arnhem-Nijmegen initially opted for an up-to-date but conventional Structure Plan for the Twin City Area to replace its existing one, but the main outcome was an Atlas of the Twin City Region (Boelens and Sanders, 2003), with more than 100 mental maps identifying various possible associations and/or new spatial assemblages against hidden sociocultural frictions in the area. Similarly, the Province of South Holland initially preferred simply to implement a new light-rail infrastructure network jointly with the municipalities and service providers involved, but the project ultimately resulted in a preliminary network Almanac, identifying several mobility styles and the need for designated and dynamic programmed nodes. Moreover, during these projects' development, new, unexpected actors often became involved, especially those with an overriding interest in the adapted problem or issue identifications. At the same time, others left the arena for the same reason. Nonetheless, overall, the stake and shareholders appreciated the openness and prime-actor orientation offered. They appreciated the expressive and thus associative power of the experiments and their ability to open up

hidden social, cultural and economic capital. Moreover, the stake and shareholders welcomed the surprising ‘becoming character’ of the projects, with their capacity to adapt to changing circumstances. At least seven of the listed projects remain in progress and have proven to be resilient in a post-structural sense, especially those that also involved leading or meditated actors from business, civic and public society. Sometimes they achieved unintended results – as in the case of several initiatives in the ‘New Markets for Brabant’ project, for instance – sometimes they continued to develop towards their intended directions, but with new actors and in surprising ways – as in the case of Luchtbal.

### *Weaknesses*

According to the stake and shareholders, the main weakness of these actor-relational experiments was that they provided an impetus, especially at the beginning of the process, but that in the long run, additional inputs were required for resilient urban assemblages. There was and remains a need to maintain a continuously open focus, balancing support from the civic (mostly long-term), public (medium-term) and business society (short-term) groups. Moreover, some experiments showed that to prolong the initial results, specific additional actors are required, especially those who are not only able to organise some kind of ‘validating or co-operation power’, but who can also simultaneously switch from a management paradigm to a development paradigm, constantly remaining open to and dealing with new and enriching ideas. Sequencing the experimental projects, we became aware that they needed to secure an open-process approach, in a context where many leading actors still think in terms of the conventional paradigm of decision–plan–do–check. As a result, several of the projects listed appeared not to have any direct result at all. Moreover, in some cases, several proposals (for instance, the Private Alliance Lombardijen IJsselmonde (PALIJS) Corporate Investment Programme in ‘Connected Cities’ or the Adventure Zones in ‘North and Central Limburg’) started but did not prove resilient. Others (for instance, Water farming in ‘Creating Water Value’) are still awaiting full implementation. That said, it must be recognised that these new planning approaches of ‘undefined becoming’ have not yet been applied to planning decisions capable of having major impacts on broader society. As a preliminary conclusion, we can say that these planning practices of undefined becoming are for the moment mainly applied in small or niche planning situations or at least in projects with manageable goals or common interests, and a manageable number of actors.

### *Opportunities*

Times are changing, however. The current housing, financial, euro, governance and ideological crises and the ongoing *glocalisation* processes appear to be driving planning into more open, engaged and self-organised practices of becoming, at least in Western Europe. Although the focus on ‘the Big Society’ in the United Kingdom, on ‘Planning decentralization and deregulation’ in the Netherlands, ‘Co-production’ in Flanders, Belgium, and ‘Crowd and neighbourhood funding’ in Germany all feed the suspicion that these operations are merely motivated by neo-liberal public budget-cutting policies (Waterhout

et al., 2013), behind the scenes and in light of the growing number of publications and relational practices (Hajer, 2011; Holemans, 2012; Oosterling, 2009; Urhahn, 2010), a real and profound shift in planning focus seems to be in the making, both theoretically and practically. The retreating governments leave room for experiments with new approaches to planning. Stake and shareholders recognise that the real-estate crises and the limited growth expectations in Europe (demographically and economically) are making room for a shift away from conventional land-use and hardware planning towards a more sophisticated software and orgware planning. Moreover, numerous Information technology (IT) innovations facilitate an open and associative approach. Therefore, even within the formal domains of major infrastructure and land-use planning, officials increasingly refer to the apparent post-structuralist promises of complexity theories, self-organisation, co-evolution and adaptive planning (see for instance the programme of the Forum of European National Highway Research Laboratory (FEHRL) and that of the Joint Programming Initiative of (JPI) the European Commission in 2013). These planning practices of undefined becoming seem to deal more adequately with the geographic and thematic cross-border and unpredictable flows of the network society. They seem to offer new prospects for engaged and embedded planning in differential, volatile and fragmented contexts.

### *Threats*

Nevertheless, there remain real threats to these promising futures. According to the stake and shareholders and according to our own analyses, the most important threat is that the existing and traditional formal institutional planning settings are not evolving in the same direction, let alone at the same pace (see also Innes and Booher, 2010). As regards each of the planning practices of becoming listed in Figure 1, at any rate, we have not observed any form of co-evolution between the enrolment of the project itself and its formal institutional contexts (e.g. the respective and so-called law and rights), although the question of necessary adaptive settings was raised, in some cases several times. On the contrary, and especially with regard to those cases which did not receive any follow-up, the existing institutional and organisational settings proved to be counterproductive. For instance, the tenacious Landlord Port management paradigm of the Port Authority of Rotterdam, which is focussed solely on the highest number of port calls and land rents and not on the added value of Advanced Maritime Producer Services (Jacobs et al., 2011), proved to be pivotal for the decision not to go 'beyond the lock-in' towards new deals with innovative urban businesses, citizens and local and regional authorities (see Atzema et al., 2009). Likewise, the search for strategic co-productive planning, powered by public servants in Antwerp, proved to obstruct the co-evolutionary challenges in the Luchtbal case (Boelens and Coppens, submitted). Strategic planning, with clear visions and goals, proved weakly complementary for adaptive, co-evolutionary planning. This situation is prominent and in fact quite alarming. When the ability of complex socioecological systems to change, adapt and co-evolutionarily transform themselves is not explicitly and fully addressed, we end up again at the conservative view of engineering and planning. In fact, we would regress further than we are now, moving towards a merely cumulatively vague complexity.

## Discussion and recommendations for further research

In conclusion, innovative ‘planning practices of undefined becoming’ remain thin on the ground. The above experiments are but a few, and do not yet constitute a post-structural summer. Moreover, after more than two decades of post-structural theories and practical experiments, mainstream planning is still structuralist. This is partly because the vast majority of planning practitioners still work within their comfort zone or on assignment for governmental and semi-governmental agencies (Albrechts, 2012). Consequently, the pre-defined ambitions of these agencies to establish specific goals within restricted time periods, for the sake of some kind of ideal society, urban form or sustainable future, are implicit in those planning strategies. As such, they are usually focussed on strategies for managing complexity, tackling non-linearities and reducing the impact of multiplicities and uncertainties, whether or not in procedural or cybernetic regimes. However, planning theorists also seem to be getting cold feet about submitting themselves entirely to the ideas of ‘undefined becoming’. Innovative ideas of discursive, collaborative or co-productive planning, or even planning for an energetic society (Hajer, 2011; Healey, 2007), however sincere and engaged they might be, are basically still a modification of traditional structuralist planning paradigms, rather than being radically co-evolutionary. Furthermore, some are explicitly reluctant to embrace fully a co-evolutionary planning of becoming as long as they remain convinced that there continue to be pre-defined structuralist challenges in urbanisation, mobility, sustainability, deontology and ethics, which need intensive governmental involvement and therefore guidance (Coppens, 2013; Oosterlynck et al., 2010; Zonneveld, 2013).

That said, we acknowledge that co-evolutionary planning is not applicable everywhere, at all times and for all the planning challenges of today. As a result of its profound ‘horizontal character’ – not literal or geographical, but through its focus on mutual assemblages of heterogeneous actants – it does not address conventional, pre-determined vertical power relationships or may be somewhat naive when free-riders take advantage of co-evolutionary processes for their own benefit. Although it is often not so clear-cut, projects with obvious harmful impacts for other interests have to be counterbalanced with the same vertical, bottom-up power as was used when they were initiated from the top down. Moreover, and referring to the experiences discussed previously, actor-relational planning of undefined becoming seems to be particularly useful when applied to specific situations rather than the broad, generic challenges for society as a whole. If broad spatial outlines for the nation, county or town as a whole are required, actor-relational planning would take too much time (Weinrich, 1987), or be restricted to the inner-circle of spatial planning (Boussauw and Boelens, 2014), to deliver any major impact. That said, we must stipulate that co-evolutionary planning of undefined becoming is not a new, ideal, all-encompassing solution for all current expected and unexpected developments. There are no longer any either/or solutions, only both/and ones. Just as complicated challenges still exist alongside complex ones (Prigogine and Stengers, 1984) and just as associative democracy can exist in addition to representative forms (Cohen and Rogers, 1992), planning approaches of undefined becoming can or even should exist alongside co-productive, collaborative or even conventional strategic and technical ones. They are two sides of the

same coin, and planning has thus indeed become ‘multi-focused’ and ‘multi-planar’. Here, co-evolutionary planning could serve as a respected and inherent deal between specific multi-level qualities of complexity, while co-evolving the specific with the generic towards a ‘net quality’ that is beneficial for all actants (Verbeek and Boelens, 2013).

However, to make that happen, planning of undefined becoming still requires special attention. The preliminary planning experiments referred to above show just how fragile and vulnerable they still are. Mainstream planning, existing institutional settings (both formal and informal) and the way planners continue to prefer to operate from their ‘comfort zones’ as objective analysts, editors or at best facilitators without involving themselves fully and radically in self-organising complex systems of undefined becoming are counterproductive for ongoing and expanding realms of adaptivity and resilience. Therefore, further elaboration is needed of adaptive and co-evolutionary *institutional* arrangements of becoming, precisely because they enhance restrictive ‘lock-ins’ for continued innovation. Further research is required into decisive implementation of becoming, beyond simply ‘fixing’ these implementations for all time and in every circumstance. Finally, further expansion of planning is required beyond the exclusive realm of public services into the domains of business and all kinds of civic actants. Instead of focussing on the content and process of planning, we need to turn decisively towards the *conditions* for possible developments: the drivers, markers or connectors (De Roo et al., 2012) of complex adaptive systems and what they represent in the empirical world. Furthermore, we have to highlight the institutional arrangements, the planning contexts and the embeddedness of attractive perspectives and the role of planners. Sticking to the comfort zone of governmental planning would mean that planning remains limited to pinpointing the conditions that must be met in view of the public interest. However, the role of the co-evolutionary planner could become one of a ‘social entrepreneur’, who makes the stake and shareholders aware of the added value of possible creative combinations of actions and/or of the existing limitations in capabilities. That kind of planner of undefined becoming could open up proposals for resolving those limitations and adjusting the institutional environment accordingly. It would need further experimentation in real-life situations or ‘Planning Living Labs’ on the specific items and spatial challenges of today. In doing so, it could further enhance the possibilities of co-evolutionary planning of undefined becoming.

## Notes

1. Heterogeneous refers here to both human and non-human particles. We will return to this idea later.
2. For example, Durrant and Ward (2011) refer to the evolution of the widespread cultural practice of cooking, which in turn had a major effect on anatomical changes in humans and on their social behaviour.
3. The word ‘actant’ is used as it is used in actor–network theory to denote human and non-human actors.
4. ‘Leading’ is defined here as those human or mediated actants who are able or willing to invest in their surroundings with money, time, expertise, adaptation, co-evolution and so on out of pure self-interest.
5. More information on most of these cases can be found on the website of Urban Unlimited ([www.urbanunlimited.nl](http://www.urbanunlimited.nl)).

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