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Ordering Principles in a Dynamic World of Change – On social complexity, transformation and the conditions for balancing purposeful interventions and spontaneous change☆

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ABSTRACT

Consider autonomous, discontinuous and non-linear change a constant factor in the transformative world we humans are part of: Heraclitus revisited. What seems to be stable is nothing more than a temporary period of persistence, a frozen moment within a dynamic world, the lee-side of a world in flow. As there is no permanent stability, tensions, frictions, mismatches and breaks occur more or less constantly. Such a situation is not necessarily undesirable. On the contrary, these tensions, frictions and mismatches prove to be essential for development and progress. This contribution will construct a frame of reference for such a world of discontinuous change, proposing ordering principles that can guide planners and decision-makers in a world of non-linear change.

The ordering principles that meet this task are conditions and are an intrinsic part of a transformative environment to which a situation or system responds. Here, these are referred to as *contingent and adaptive transformative conditions*. Two interrelated models will be introduced to elucidate these conditions and their relevance to framing change, development and transformation. The models will reveal the conditions with which a situation or system has to comply to be able to respond, coevolve and adapt within a dynamic environment.

Both models have their own history and are fed by various theoretical debates. Moreover, they not only combine the technical and the communicative sides of planning. They also bridge the 'static' world of planning with the non-linear, dynamic and transformative world on which the Complexity Sciences focus. The combination of the two models, in conjunction with the transformative conditions these models produce, will work as a frame of reference for planners and decision-makers who must cope with non-linear, transformative change.

This frame of reference is strongly related to, resonates with and nicely defines 'social complexity' – a field within the Complexity Sciences that is still an underdeveloped area of research. While both planning and social complexity address the material and immaterial, social complexity incorporates concepts of non-linear change relevant to transformative environments. Human settlements such as cities are examples of these transformative environments.

Cities are human achievements that are in a continuous process of construction, redevelopment and transformation, ensuring liveability for people, supporting societal development and allowing people to socialize. The Complexity Sciences consider cities as complex adaptive systems which are open to change and therefore transformative in character. Considering cities as non-linear, dynamic and unstable is probably more realistic than seeing them as nothing but stable, linear and certain.

In unstable, non-linear and transformative environments, transformative conditions become relevant. These conditions are points of reference in a continuous process of cities seeking but never reaching for long, if at all, a balanced, healthy state. This results in a trajectory that cities and every other complex adaptive system may follow in seeking new paths, progressing and consequently transforming. This also means that transformative conditions generate a new kind of knowledge, and can be seen as ordering principles in a dynamic world of change. The question is how to identify these transformative conditions as parameters of non-linear change.

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1. The reality of evolution and revolution

Revolution and evolution are expressions of change which occurs without thoughtful planning, ranging from abrupt transformations to almost invisible adjustments. This strongly contrasts with the planner's usual perspective of intentional intervention, which focuses on space and places as they 'are' and on how they should be, based on an expert's opinion or on agreement or consensus. Traditionally, a planner is concerned about effectively intervening in space and place, hence the desire for controlled environments. Contemporary planners also prefer to act on the basis of consensus among the various parties involved, to create a world which is agreed upon. The message here is not that these approaches are bad, wrong or outdated; on the contrary, it is just that there is more involved. Revolution, evolution, or whatever kind of contextual, spontaneous and unintended change, is also in the air, and usually not part of most planners' ideas about how the world should look.

Therefore, here the traditional and contemporary view of planning will be challenged. This traditional view ranges from a controlled world and a *factual reality* to an environment which gains meaning through consensus about an *agreed reality*. The message of this contribution is that in addition to controlled environments and agreed realities, it is reasonable to accept that our daily environment may be full of unintended, autonomous and surprising change. We had better learn to live with this, whether we like it or not.

Autonomous, unintended and spontaneous change implicitly affirms the relevance of time. Looking back in time brings to light the non-linear course of many developments, both socially and spatially. With respect to revolutions and evolutions, let us step back in time a little and take a moment to consider, for example, the impact of the French Revolution, which elevated the mob to the level of civil society, and therefore fundamentally changed the world of choice, decision-making and planning. The French Revolution began in 1789 and led to voting rights for all men in the second half of the nineteenth century, followed by women in the early twentieth century. Another social project, which at that time resonated through various societal developments, including spatial planning, was Ebenezer Howard's Garden City. This was more than a spatial proposal, as it also ardently addressed a social agenda. This social project continued in the twentieth century.

Despite revolutions and evolutions elevating people as citizens, it is only since the 1960s that planners have turned their attention to the voice of society, with Davidoff's advocacy planning (1965), Friedmann's transactive planning (1973) and Forester's ideas for a critical theory of planning (1977) all representing a change in attitude towards a notion of a responsible society capable of becoming more involved in spatial transformations (Fischer & Forester, 1993; Friedmann, 1987). Eventually, this change in planners' attitudes resulted in a true paradigm shift – a scientific revolution – around 1990. This shift is also known as the 'communicative turn in planning', and a distancing from a technical attitude to planning. Consequently, shared governance approaches were embraced, albeit half-heartedly, as the involvement of society was not entirely the result of a voluntarily gesture made by planners and decision-makers. The communicative turn was also due to a lack of funding, a decline in authority, the rise of opposing stakeholders and a growing awareness of the powers of stakeholders (Forester, 1989). The legacy of the French Revolution was turning into an evolutionary trajectory, full of sudden, surprising and transformative developments, which at some point in time forced the planning profession to adapt to the circumstances. In other words, the communicative turn in the discipline of planning was a product of a long-term, non-linear kind of development.

The days of planners being the sole experts on how the daily environment is shaped are behind us. Their ability to produce straightforward and definitive answers to spatial problems is now labelled as 'primitive optimism' (Voogd, 2004, 15) and 'functional determinism' (Alexander, 1986). Consequently, in the early 1990s, the theoretical debate shifted focus away from linear reasoning and controlled outcomes. Shifts in everyday planning practice were less clear, but were unavoidable due to examples of failure in policies aiming to exert control.

At various moments, planning practice had to endure surprising, if not revolutionary, developments. Most notable were the 2008 housing, mortgage and financial crises, which came as a complete surprise to most experts. It had a devastating effect on citizens, cities and urban development across the globe. Planners stood aghast and watched it all happen, powerless to stop the destructive avalanche of financial and urban misery.

Beyond the control of planners, economists and governments, paths of an entirely different nature can be observed running in parallel to the crises, seemingly unaffected by it. Although having had its own bubbles in the past, the information society continued evolving spontaneously, effectively and rapidly, with the digital environment being transformed in an unprecedented way: a development not constrained by the global instability of financial markets. Moreover, the way digital innovation has invaded physical space and the rapid rise of virtual realities have also had an unprecedented effect on society. This digital revolution and its impact on space and society is seemingly unstoppable.

There is more to observe with regard to change. Society today is highly educated and, thanks to the digital era, also well informed. Consequently, civil society is becoming a critical and capable society, ready to step into what some call the post-policy era (Swyngedouw, 2010) to take responsibility and the lead in processes of spatial transformation. Consequently society's attitudes are changing. A critical society wants to be involved in and, indeed, responsible for decisions about the kind of spatial interventions that are necessary (De Jong, 2016; Warren, 2009). This critical society also wants a say in determining the contributions these interventions should make regarding the quality of life and the environment. This societal transformation influences the role of planners, as well as the position that planning takes in relation to the urban and to society.

Such non-linear developments are very much real, they do matter and do have an impact. There is no other way than to conclude that change is not only intentionally created by experts. In fact, it is all around us, it is interrelated, it is present in many and plural ways, impacting on space and society. The question then is: Could and should this unintended, spontaneous and uncontrollable change become an intrinsic part of spatial planning, reflected in its language, attitude, models and debate?

2. The storyline

Below, the word 'systems' will be used to designate situations, cases and issues.

This introduction to a world that is open to autonomous and discontinuous change will now continue by connecting it with the Complexity Sciences. This aim is to inform planners and decision-makers about how transformative worlds relate to the idea of non-linear development. Non-linear development can be seen in the very systems representing a dynamic world in change, affected as these are by flows of energy, matter and information, which come from the system's environment, transit through it, and is partially absorbed by it. Within the Complexity Sciences, these systems susceptible to change are considered to be 'out-of-equilibrium'. These systems will thus continuously seek a good fit and a balance, internally and with the contextual environment, and as such follow

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