Planning in the Limelight of an Unpredictable Future

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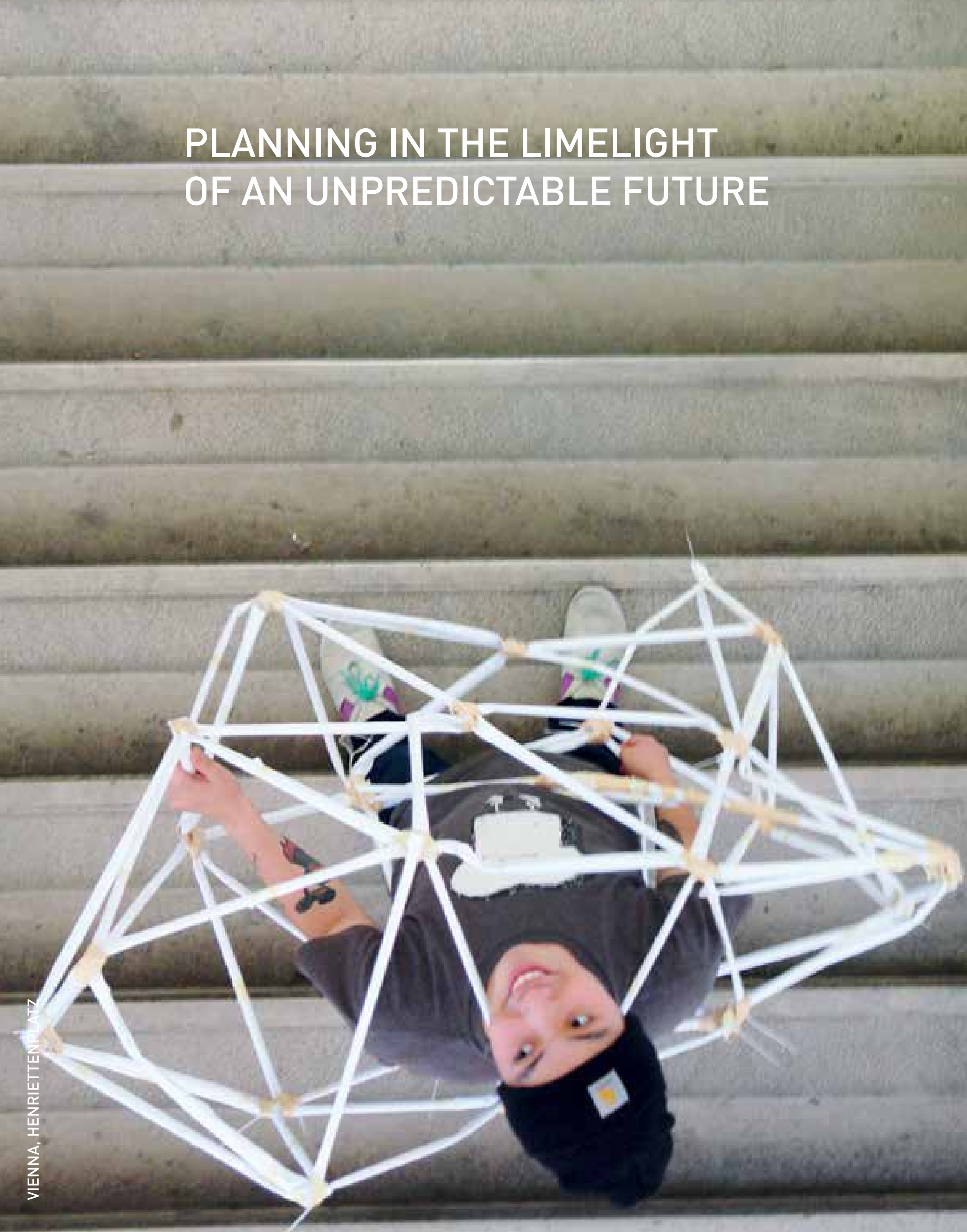

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In accordance with the line of thought of Scholl (2005), we create planning strategies which act as guidelines into the future. Obviously, imagined futures are helpful in debating the decisions and choices to be made. However, imagining futures by extrapolating facts from the past and the here and now does have is limited. Thinking along linear Newtonian cause-effect lines seems dubious from the perspective of a world considered to be in continuous change.

The Newtonian worldview has been favoured in spatial planning for a long time. This technical paradigm addresses the idea of a factual reality, a certainty within the reach and a linear route into the future. Apart from a factual reality, an agreed reality is also considered to respond to the built environment. However, we have to be aware that the only constant factor is probably discontinuous change. Kropf (2001) notes that urban form and the social and economic life of cities are best apprehended by descriptions of inter-alia transformation, cycles, growth and decay, catastrophes, shifting centres of activity, dynamics and influence.

This is reminiscent of an evolutionary perspective. It relates to complex adaptive systems (CAS) (Gell-Mann, 1994; Holland, 1992; Solvit, 2012), which define spatial systems on the basis of internal interactions between dynamics and robustness while interacting and floating in an external environment between order (uniformity) and chaos (diversity). This idea of CAS introduces notions such as dynamics, self-organisation, emergence and adaptivity, which are all relevant with regard to evolving space, complexity and planning. The notions are somewhat counter-intuitive to traditional planners, since they are accustomed to the dominance of linearity and functionality.

Cities are a good example of CASs changing over time in structural and functional senses. CASs have the potential to co-evolve during a transition process. With co-evolution, the system undergoing a transition could fundamentally undergo a transformation in terms of its structure (in the case of Bènard conventions cells or lasers). This co-evolution is the result of the system adapting to a new context, with a better fit between the system and its environment. During the process of co-evolution, stability decreases while the system's dynamics increases again.

In evolutionary systems we find both a slow deformation and a sudden metamorphosis changing the underlying structure and pattern of a system. For example, many changes in urban evolution have been conditioned by technical innovation and fundamental societal changes. The agricultural and industrial revolution profoundly altered how society and the economy work changing urban systems fundamentally within a few decades.

In this line of thought planning has to be responsive to a world being adaptive, as proposed by complexity studies. Non-linearity tackles urban situations as something stable at a particular moment while they can become unstable at the very next moment, and vice versa This occurs because, for example, contextual driving forces (in society these could be riots or an economic crash) emerge suddenly and the existing system is no longer properly connected (a good fit) to its changing context. In general, system changes refer to instabilities of a system triggered. Batty (2005) rightly points out that cities respond flexibly to external pressuring forces such as new technologies, economic change, changes in transport modes, and so on while responding to these changes from bottom up or from the 'inside out'. Moreover, each city contains several subsystems which we consider 'urban', too, influencing each other while coping with changes and undergoing transformation as a response to changes. What we observe are dynamic interactions within the urban and the rural at various levels of scale and differently sized systems interacting with each other (city, town, village, hamlet). Our cities are becoming more and more complex (Batty, 2013).

What does this all mean for spatial planning? From the knowledge gained over the last decades and with the rise of computer technology we are enabled to incorporate complexity science into spatial planning. This will support to create meaningful guiding principles leading us into the future. We have to consider planning in the limelight of an unpredictable future (Popper, 1957).

References:
Batty M (2005) *Cities and Complexity: Understanding Cities with Cellular Automata, Agent-Based Models and Fractals.* Cambridge, MA: The MIT Press.
Batty M, (2013) *The New Science of Cities* (MIT Press, Cambridge, MA)
Gell-Mann M (1994) *The Quark and the Jaguar: Adventures in the Simple and the Complex.* San Francisco, CA: WH Freeman.
Holland J (1992) *Adaptation in Natural and Artificial Systems: An Introductory Analysis with Applications to Biology, Control, and Artificial Intelligence.* Cambridge, MA: MIT Press.
Kropf KS (2001) *Conceptions of change in the built environment.* Urban Morphology 5(1): 29–42.
Popper K (1957) *Wissenschaft: Vermutungen und Widerlegungen [Suppositions and Refutations].* In: Popper K (ed.) *Vermutungen und Widerlegungen. Das Wachstum der wissenschaftlichen Erkenntnis. [Suppositions and refutations: growth in scientific knowledge].* Tübingen: Teilband 1, pp.46–95.
Scholl B (2005) in: *Handwörterbuch der Raumordnung.* Hannover: Akademie für Raumforschung und Landesplanung (ARL)
Solvit S (2012) *Dimensions of War: Understanding War as a Complex Adaptive System.* Paris: L'Harmattan.

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