

Systems thinking and scenarios for sustainable urban futures

It is sometimes said that cities provide more efficient ways of organising society and everyday life, implying that urbanisation per se might be beneficial for sustainability. Such statements are typically based on a territorial understanding of impact assessment according to which a city's impact is only that which takes place within the city, essentially disregarding most of the resource flows (and related pollution) that keep the city running. For most Swedish cities (and for Sweden as a whole) such a territorial allocation model is beneficial as it shows a rather small footprint, at least if compared to a consumption based allocation model. In a consumption based impact assessment, a city's footprint is established through calculating the impact of all consumption taking place in the city, no matter where the resources, goods or services are produced. Such a model builds on a relational understanding of space, taking into consideration impacts across the globally fragmented hinterland. Not only do these allocation models provide ecological footprints that are different in both size and composition, they also come with very different consequences for urban governance, planning, design and architecture, particularly regarding the extent to which consumption is addressed and a life-cycle perspective is used. It also challenges the idea of Sweden and Swedish cities as role-models for sustainability. The territorial-based carbon footprint of an average Swede is about 6 tons per person and year, while the consumption-based footprint is close to 11 tons per person and year. And for Stockholm the difference is a factor 4. The Paris agreement on keeping global warming below 1.5 degrees Celsius implies that a sustainable and globally just carbon footprint is about 1 ton per person and year. Until 2050, just one generation away, we thus need to get rid of 91 % of our GHG emissions. This is a formidable challenge, not least because fossil fuels have provided a (too) cheap source of energy, literally fuelling economic growth for 150 years. Paraphrasing Frederic Jameson, it is easier to imagine the end of the world than an alternative to fossil-fuel driven capitalism. Fossil fuels are in everything. This is where future studies and scenarios come into the picture. In order to manage such a rapid transition we need to overcome a socio-material entanglement of path-dependency and related inertia. The usefulness of scenarios in relation to transitions rests on the understanding of the future as open and on the appreciation of a critical social-constructivist perspective on what futures are seen as probable, possible and preferable. Scenarios work as 'learning machines' through which that which was previously taken for granted and normalised can be de-familiarised and re-politicised, i.e. they support a process of un-learning and re-learning. This is particularly the case for the field of visionary, or utopian, futures studies through which scenarios of sustainable or in other terms desirable futures are developed, examined, evaluated, and proposed. Such scenarios can be developed and represented in numerous ways. Traditionally, scenarios have tended to focus on systems analyses of macro-scaled structures (e.g. national energy provision) which have been communicated either through numbers only, or complemented with qualitative analyses and text-based descriptions. While these kinds of scenarios have provided important insights regarding such macro-structures, they have not been that useful for exploring urban futures (apart from as boundary condition), especially not from the perspective of everyday life. Lately there has however been somewhat of a critical and creative turn in futures studies, resulting in an increasing number of scenarios being developed and represented through design, arts and crafts, and for which critical theory often (but not always) provide point of departure. These scenarios often play out at smaller scales, and are represented in ways (prototypes, sketches, films, poetry...) that both are more accessible for a lay audience and that engages us not only analytically but also emotionally and bodily. There is however a lack of studies evaluating the effect of scenarios on professional or household practices. There is also a lack of scenario projects working with diverse groups of people. To avoid a continued 'speculation from spaces of privilege' also marginalised groups need to be actively invited and involved in scenario processes from start.