Editorial: Interrogating the design of smart, sustainable, and socially just urban spaces: A look at institutions, places, and values

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Editorial on the Research Topic
Interrogating the design of smart, sustainable, and socially just urban spaces: A look at institutions, places, and values

For the future of our cities, "smart" urban development appears inevitable, but the so many meanings the concept of "smartness" can have in planning and design is witnessed by the frequency of reviews in literature (Albino et al., 2015; Meijer and Bolívar, 2016; Kummitha and Crutzen, 2017; Trencher, 2019; Zhao et al., 2021). In other words, who should decide what a smartness future for cities should look like and whose interests smart urbanism should serve is a question still to be answered after decades of debate and applications.

Urban growth is inherently political, and there is mounting evidence that political conflict lies at the heart of urban transformation (Gualini, 2015). In this view, political struggle is a call to action, from youth climate protests to LGBTQ+ activism, that asserts a right to public space.

These movements are the flints that spark urban experiments, and can be transformative. However, we know very little about how these experiments are run, how the institutions that manage them have developed, and how they are intended to add value (Evans et al., 2016; Caprotti and Cowley, 2017). When spatial, institutional, and value-based design principles are weak or missing, urban experiments may fail. Moreover, research has shown that it can be difficult to interpret and apply public ideals and values to smart city technologies. This is precisely why this Research Topic has focused on spatial, institutional, and value-based design in urban experiments. The articles included in this Research Topic explore the dynamics between the socio-technological processes – value-based design being foremost among them – through which urban space emerges and takes on meaning. Furthermore, they engage with the question of how institutional design principles shape citizen participation in these processes.

A number of articles examine how citizens can be brought into the fold of urban experimentation, emphasizing how the datafication of urban space may affect target populations. One study, by Breuer et al., set out to investigate what enables people – specifically, vulnerable populations - to understand and exercise their right to data protection in datafied societies, with the aim of boosting involvement in socio-technical systems. The authors criticize the GDPR for treating data literacy as a fundamental life goal rather than as a tool. Based on a dynamic concept of layered vulnerabilities, they extend the notion of vulnerability to capacity deprivation. This dispels the misconception that vulnerability only carries negative connotations and offers a more positive framework in support of everyone's literacy, even those who are less literate or more vulnerable. As a scheme for achieving GDRP literacy, they offer a dynamic approach involving layered vulnerabilities and capabilities. In their study, Van Leeuwen et al. consider ways to remedy the difficulties that arise for civil servants and policymakers as a result of a lack of knowledge about, data on, and tools for older adults in the promotion of age-friendly initiatives in cities. A methodology, in the form of a design tool, is developed to ensure that data and information on older adults are collected and used to inform automatic policymaking, so that their needs and preferences are also represented in urban governance. The authors further highlight how their tool accounts for older adults' perspectives at each project's inception and throughout its life cycle.

Other studies interrogate the possible tensions between smartness and sustainability, and reflect on how these tensions can be mitigated. Sengupta et al. put forward a piece of critical social justice discourse on smart cities, explaining the continued resistance of equity-seeking groups to smart city initiatives. In their view, institutional failures arise in the absence of formal accountability mechanisms in situations where values such as equity, particularly the equitable distribution of risks, are neglected. Finally, they examine the integration of "risk" as an adaptation to the existing practical mechanism of Community Benefit Agreements, enabling the use of this framework to support value-sensitive design approaches in future smart city initiatives. Zooming in on solutions, Van den Eijnden et al. put forward a creative and participatory approach that draws on a range of values and perspectives shared by citizens who together envision a more sustainable future centered around "zero" waste; in doing so, this approach offers an alternative to the predominant technology-centered policy visions of waste, which are at best myopic and limit people's perceptions of what is possible and desirable. Through citizen-science-inspired and speculative design methods, future imaginaries are created through a lens of "translation", yielding insights into the roles of various forms of engagement in shaping inclusive urban futures.

Similarly, Schröder reviews discourses on "sustainability" and "smartness" in the context of urban mobility. They have

in common a shared understanding that governance is central to any comprehensive transformation of long-term, complex processes such as becoming "smart". Although these processes are non-linear and diverse, the author identifies multiple directions of development that may or may not align. The extant literature, she reports, indicates that technical challenges may be a barrier to smart and sustainable urban transportation. Finally, these efforts can only be realized through intense integration and coordination.

Experimentation does not necessarily lead to transformation, which means that insight is required into when transformation can and will happen. In identifying the main barriers to urban transformation, Servou et al. examine an automated driving experiment that employed the concept of storylines, focusing on how this experiment was co-created along with broader governance cultures at multiple levels of governance, and on identifying the implications of this co-creation for urban transformation. They determine that transformation is rendered more likely when government is involved and supportive and when diverse experiments – e.g., those emphasizing innovation and those emphasizing public value – are conducted, many of which are the result of open deliberation and collaboration. Calzati et al. place their focus on *who* engages in experimentation. They develop a non-institutional perspective on citymaking as a composite practice in which both institutional and non-institutional actors not only coexist but also presuppose one another. They zoom in on two non-profit organizations working in the housing market and how they operate as intermediaries, filling the gaps left by the market and public actors. In doing so, the authors interrogate how city making can be upheld through practices of commoning between and among diverse actors whose experimentation with social cooperative ownership can revive and redefine urban space.

Taken together, these articles emphasize how citizen involvement can ensure the consideration of values such as equity and fairness, and how this can, in turn, help cities to achieve and maintain the tenuous balance between smartness and sustainability.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

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