Federico Cugurullo
Frankenstein Urbanism. Eco, Smart, and Autonomous Cities. Artificial Intelligence and the End of the City, London and New York, Routledge, 2021, pp. 228

Claudio Coletta *University of Bologna*

It is a fascinating journey the one that Federico Cugurullo invites us to take on the trails of an urbanized Dr. Frankenstein and his awkward creatures. The book adopts Mary Shelley's notorious character as a guiding metaphor to observe the contemporary urban experimentations across the development of contemporary eco-cities, smart cities and autonomous cities in seek of the perfect urban equation. As pointed out by the author, Dr. Frankenstein has at least one good point: cities are unjust, unequal, unsustainable. They overconsume resources and represent one of the major sources of global carbon emissions. They must be changed for better and that requires experimentation. The how, where, to which ends, by and for whom of these experimentations are precisely the matter of the book.

The quest for building the ideal city has ancient roots, and, in the first section of the book, the author proposes a genealogy of ideas underpinning the notions of "ecological" and "smart city". The common starting point is the Aristotle's concept of eudaimonia and the idea of the city as a place built by humans to realize human potential in harmony and happiness. The book then describes how the "eudaimonic city" has been reinterpreted by thinkers, urbanists, and activists across centuries (including Bacon, Spinoza, Geddes, Le Corbusier, Wright, Register), connecting the tradition of environmental philosophy, planning theory, urban design, and geography with the current debate on smart, sustainable, and experimental urbanism. In this sense, the eco, smart, autonomous city labels become the latest expressions of an endless attempt to transform a fragile ecosystem made by complex social, political, economic, and cultural processes.

The empirical focus offers a documented and critical analysis of two case studies: Masdar, a city built from scratch in the Abu-Dhabi metropolitan area, and the portions of the Special Administrative Region (SAR), where the Hong Kong smart city vision is implemented. In so doing, the book contributes to move the attention from a literature mainly centered on European and North American cases towards some of the world largest urban projects taking place in the Middle and Far East, where the levels of investment and political-economic integration have impressively upscaled in the last decades.

Given the title, it will not be a spoiler to say that the book tells a story of failures, whose hubris consists in pursuing grandiose projects that are prematurely abandoned to their destiny and turned into monsters, as they do not fit with the expectations. The "Frankenstein urbanism" introduced

by the author features a radical incompleteness and fragmentation, where projects are more instrumental to exploitation and profitability than to improvement and sustainability, and where technocratic solutionism produces a chaotic and patchy urban landscape which lacks a regulating vision.

While it does not directly engage with STS, the core of the book accounts for a very well-documented political, technological, and financial entanglement that will be appreciated by the STS readership. An exercise of translation could thus suggest a possible STS version of the cases explored. Networks of human and non-human actors including ICT corporations, policy-makers, global engineering and design studios, energetic resources and their carbon emissions are shaped by conflicting and converging agendas. Urban design and planning are adapted to the research and development strategies of specific actor alliances, producing uneven social conditions that recalls the debate on artefacts and their politics. Living labs and test-bedding sites are used to produce, showcase, and exploit technological solutions to be sold to other cities, similarly to the dynamics described by laboratory and innovation studies (with the laboratory being the world). City master plans emerge as an uncertain and provisional result of different programs of action. For example, the development of the Hong Kong Science and Technology Park area (HKSTP) turns into a way to boost specific economic sectors such as ICT, artificial intelligence, and biotechnology instead of offering a smart environment for the potential inhabitants. Likewise, in Masdar the mobility project based on Personal Rapid Transit (PRT) is interrupted to accommodate the development of self-driving vehicles by one of the corporate partners. Within this context, the narratives set by the Hong Kong Smart City Blueprint and the Abu Dhabi Vision 2030 reveal insufficient to steer the eco and smart development in a coherent way. To the STS audience, the Masdar case will certainly evoke Bruno Latour's Aramis (1996), the cold case investigation on the automated train system developed in Paris. The ghost of Victor Frankenstein appears several times when Latour accounts for the mysterious killing of such a technologically advanced and long-lasting project. As happening in the Masdar PRT case, we assist to a collective assassination, as the technological endeavor is distributed across crowds of actors able to sew the stitches of the creature as much as to kill it.

The final part of the book introduces the concept of transurbanism, which indicates a shift from the urban management supported by ITC automation to an autonomous control by Artificial Intelligence (AI) without human oversight. The focus is on Alibaba's "City Brain" tested in the HKSTP area, a ubiquitous artificial intelligence able to monitor the environment and make decisions across multiple domains in an unsupervised manner. As remarked by the author, here the Dr. Frankenstein metaphor starts to teeter, since the creature overtakes in power its creator, and the city "as we know it" moves into another mode of existence. For this reason,

in this part of the book, the new urban condition challenges the limits of the critical and philosophical analysis and seems to require new tools for interpretation.

The author reflects on the ethical concerns arising from the increasing deployment of AI in cities, both in terms of environmental and social sustainability: a world performed by machine could likely diverge from the human common good; plus, the AI development depends in the extraction of rare-Earth elements, and this is already producing planetary exploitation and inequalities. To understand the implications of transurbanism, the author proposes a further theoretical step where Horkheimer's "Eclipse of Reason" takes over Aristotle's eudaimonia as the guiding concept. Following the Frankfurt School thinker, the author describes how the subjective reason and the individual fulfillment through technological empowerment is increasingly dominant over the objective reason and the pursuing of higher values such as justice, democracy, and sustainability. However, the author does not endorse an apocalyptic vision and refers to apocalypse in its original meaning, as a "revelation" of a new phenomenon that we are just beginning to understand. An eclipse of reason by technology could have started but is hardly complete, the author argues, as AI should be situated in different geographical contexts, mediated by multiple and heterogeneous social and urban processes, with diverse and unpredictable outcomes.

To conclude, "Frankenstein Urbanism" digs critically into the shiny surface of eco, smart, and autonomous cities. It offers an original and clearly written contribution to understand the digital and ecological transformations of the urban environment and the possible urban futures. Plus, the concept of transurbanism and its philosophical roots offer an innovative lens for scholars interested in the current debate on platform urbanism. Finally, the rich empirical ground and the analytical toolkit open up an interzone of dialogue for STS, with more to investigate into the material and infrastructural dimension of ecologic and digital urban transitions, and their glitchy and fragile existences.

References

Latour, B. (1996) *Aramis, or the Love of Technology*, Cambridge, MA, Harvard University Press.

* * *