Does Infrastructure Reflect the Polity?

A Overview of Smart Cities Development in China

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Abstract

We have witnessed a rapid growth of "smart cities" worldwide in the last decade. The introduction of technologies like IoT and cloud computing quickly places smart cities at the crux of the infrastructure of public data collection. Advocates of smart cities argue that smart city programs are crucial components of the Fourth Industrial Revolution. Smart cities, they continue, will also improve the productivity of government operations and encourage public participation through technology. Whereas, while critics pointed out that it is only a continuation of the previous urban entrepreneurialism and became the principal tool of massive surveillance. In short, the former believes that the smart city belongs to a progression of technology, and the latter sees it as an instance of the Deleuzian control society .

We argue that this debate is largely hindered by a problematic ontological premise shared by both sides. They all assume that the technical artifact, data infrastructure in this case, is external to city politics. To understand "actually existing smart cities" and their social consequences needs us to intervene in this debate both theoretically and empirically, which this paper is devoted to.

Theoretically, following many STS research, we argue that the city should not be seen as merely an object of technological transformation, nor as a wielder of technological tools related to smart cities. It is rather a socio-technical apparatus by itself actively transforming through social relations of multiple scales. Empirically, we support our theoretical reasoning via a detailed study of smart city practices in China. Drawing on multiple sources from government policy documents to data of all government procurement of smart city infrastructure in China since 2013, we delineate how smart cities developed in China, and provide a case study of "city brain." To be specific, we depart from previous monolithic accounts that consider smart cities in China as a coherent project, no matter if they come from policy makers' and corporations' claims or critical accountings from academics or public media. We show that smart cities in China are products of multiple forces: central government, local government, and business actors. As a result, smart cities in China resulted in a heterogeneous infrastructure of data collections. In this sense, it is a relevant case of what Donald Mackenize called Material Political Economy, in which artifacts are also imprinted with previous social political relations.

Lastly, based on our theoretical discussion and empirical research, we also offer some suggestions about the future of research about smart cities. Methodological speaking, we advocate for more comparative studies of smart cities that goes beyond the framework of the nation states. Specific to research topics, we call attention to the question of how ordinary city-dwellers are practically adjusting to the new urban environment brought by smart cities.

Keywords: Smart City, Central-local government relations, Material Political Economy, Infrastructure

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