Part IV

Data Shaping Cities
Approximately 58,000 college students are homeless; ALEXIS BENVENISTE, AOL.COM, Jul 24, 2015 12:00 p.m. https://www.aol.com/article/2015/07/24/approximately-58-000-college-students-are-homeless/21213755/
The NSA and Alphabet having given us reason to fear the facelessness of data gathering and its application. Their whistle-blowers have shown us that we do not always have real access to our own data or agency in its use. But in trade, there is almost no category in cities that remains completely untouched by access and digital interaction with “big data.” Supermarkets track the behavior of customers hawkishly to relate sales data to product placement and visual merchandizing. For these organizations, shelf location has long been a commodity to trade alongside the groceries. Which of us would now travel in a car without reference not only to GPS routing but to real-time feedback on the traffic conditions on alternative routes and expected travel times? Most evidence points to a correlation between data openness and prosperity. But are the design of the public fabric and infrastructure, and are the social and environmental imperatives in cities as well served by the abundance and availability of data as commerce? What does the data fail to tell and which, and whose, data is not flowing into the system? Homelessness is a condition often cited as invisible. While there is some understanding of the numbers of people living on the streets or seeking shelter in the temporary refuges of NGOs, the couch surfers and young families surviving in temporary or cramped, and unsuitable conditions are estimated to be a much larger number but unseen. Who else remains unrepresented? Is there equity of access to representation and benefit from data?

Another question is whether in design and design modeling for cities, our legacy systems are yet making use of newly abundant open data or the opportunities to share data between stakeholders in meaningful ways. In 2015, a joint report by the RIBA and Arup “Designing with Data: Shaping Our Future Cities” made three recommendations: improve coordination between government departments; digitize the planning process; and get governments and urban planning experts to work together. To flow, data needs the human and digital system conduits to interconnect. It seems that at least as recently as two years ago in the UK the digital pipelines still did not connect government departments or the human capital contributing to the shaping of city fabric. The uptake of information modeling in building has been slow and riven with technical and organizational challenges, how much more complex is shared information and data modeling across stakeholder interests at the scale of the city? Where are the Precinct information models that combine infrastructure, services, landscape, transport design, feedback on microclimate, lighting, drainage?

How is data shaping our cities, and how should or could it be contributing to more environmentally sensitive, human-centric urban spaces? With the automation promised by the combination of big data and machine learning, what are the humanizing trends in virtual reality modeling of cities?

This section opens with Antoine Picon’s beautiful exposition of the shift from the cleansing influence of modernism to a celebration of sensory richness and diversity in the contemporary sentient city. Fábio Duarte and Carlo Ratti explore applications for the exponentially expanding photographic data in Google Street View when machines analyze the qualities of different precincts from the photos.
The research papers cover topics that range from the integration of microclimatic data into urban design, to stimulating pedestrian behavior and gaming to increase public participation in design; from models for social integration, to using machine learning in the design of workspaces. Data and model relations shared between collaborating consultants in the design process for a ramp and a facade contrast with new work to simulate pedestrian movement and the use of twitter data to follow the movement of individuals in the city. Design modeling researchers are taking on the significant challenge of data shaping cities.

Jane Burry