Tech Otherwise • PDC '20

Data Publics, IoT, and the Valuation of Participatory Design

beth coleman

Published on: Jun 07, 2020

DOI: 10.21428/93b2c832.77f82f18

License: [Creative Commons Attribution 4.0 International License \(CC-BY 4.0\)](https://creativecommons.org/licenses/by/4.0/)

Data Publics, IoT, and the Valuation of Participatory Design

By Dr. Beth Coleman, graduate researchers Dawn Walker & Curtis McCord

ICCIT/Faculty of Information, University of Toronto

Contact: beth.coleman@utoronto.ca

This paper looks at the complicated intersection of historical frameworks of urban public space and the more recent instantiation of automated computational sensors as represented by the internet of things (IoT) installed throughout cities globally. As a Western ontology, the bourgeois public sphere (Habermas) describes a freedom of discourse and movement as a demonstrated ethos of “the city,” even as such agency has never been evenly distributed across race, class, and gender lines. IoT technology, with its accelerated automation of machine-to-machine functions, effectively changes any critical or experiential sense of “free” movement in a city, as such technology effectively captures, tracks, and archives the actions of urban residents without permission. In other words, as we move about the emerging “smart” city we are taken up as data points in an information architecture that appropriates movement through the city as a tacit form of consent.

We look at two case studies, the King Street transportation pilot in Toronto and the LinkNYC free-wifi kiosk in New York City, that speak to municipal responsibilities and values in information systems design (DoITT 2017, Open Toronto, Toronto City Council). Procedurally, the IoT technology performs exactly as it has been programmed to behave: it extracts information (e.g., Mac addresses of people passing by) [Coleman forthcoming]. The issues of ethics, codified primarily as policy measures around privacy, have been demonstrated to be weak protections at best and simply obfuscation of the technology design at worst (NYCLU, CCLA). The issues we address are twofold: a critique of current IoT practices in urban centers and the modeling of participatory design of IoT in public space that incorporates in its architecture values of privacy, transparency, and availability. The ethical and equitable management of urban data is a thorny issue that we tie directly to the activist call for a right to the smart city (Coleman 2019, Harvey).

Through the two case studies, we address intersectional issues at hand that involve technology/data design as well as societal norms and local governance. Precedents such as civic open data (supported by municipalities) do not offer a perfect platform for the preliminary list of qualities we note (privacy, transparency, and availability), even as solving for one value, such as “privacy” may preclude frameworks that allow for greater transparency (e.g., “open”). Interestingly, some of the emerging

models of municipal and civic tracking of COVID19 infection provide valuable insights on preserving privacy while supporting the timely sharing of critical information (Kottke, Wetsman). As the infrastructure for “smart” cities is already underway globally, our analysis addresses the potential of participatory design as an intervention and adjustment of the current technological status quo.

References

1. Coleman, B. *Internet of Things: IoT, AI, and Ethics*. White paper published with Data & Society and Berkman Klein Center for Internet & Society, MIT Press, 2020
2. -----“Right to the Smart City: How to Represent, Resist, or Disappear.” *Ways of Knowing Cities*. Columbia Books on Architecture and the City, 2019.
3. Habermas, J. *The Structural Transformation of the Public Sphere* (1962)
4. Harvey, D., “The Right to the City,” *New Left Review* 53 (September–October 2008): 23–40.
5. Kottke, J. “How Privacy-Friendly Contact Tracing Can Help Stop the Spread of Covid-19” Kottke.org Apr 10, 2020 <https://kottke.org/20/04/how-privacy-friendly-contact-tracing-can-help-stop-the-spread-of-covid-19>
6. Open Toronto. King Street Pilot Open Data <https://open.toronto.ca/catalogue/?search=King%20Street&sort=score%20desc>
7. Toronto City Council. The Future of King Street - Results of the Transit Pilot City Council Decision. April 16 and 17, 2019
8. Wetsman, N. “What is contact tracing? Google and Apple announced today that they’ll use Bluetooth to track COVID-19 cases” Apr 10, 2020, 1:52pm EDT <https://www.theverge.com/2020/4/10/21216550/contact-tracing-coronavirus-what-is-tracking-spread-how-it-works>