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Platform methods: Studying platform urbanism outside the black box

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Abstract
This intervention seeks to expand our methodological repertoire for studying the geographies of digital platforms. One of the most fundamental challenges to understanding the politics of digital platforms is that many of the sites where politics is happening are concealed from view. Algorithms, corporate ownership structures, and venture capital funding sources are each sites where the politics of enablement and constraint is taking place, shaping the emergence of the platform. These sites are hugely challenging to access and this can lead to an impression that digital platforms are a methodologically impenetrable black box. However, rather than privileging these black-boxed sites as if they are where the real politics of platforms is decided, we suggest researchers must develop an expanded sense of the multiplicity of sites where the politics of platform urbanism takes place. Rather than getting 'behind' the screen, or being granted privileged access to the data platforms collect, or apprehending the logics of their algorithms, we suggest researchers might instead think outside the black box. Our intervention proposes a series of methodological techniques including narrative approaches, counter-mapping, and tracing data-flows, that do not require privileged access to a platform, but are nonetheless capable of yielding insights about platform urbanism.

In this intervention we engage accounts of digital platforms as black-boxed systems and geographical work on research methods to reimagine the possibilities for understanding the politics of platform urbanism. As other contributors to this themed intervention have observed, the relationship between digital platforms and urban space and society is impossible to ignore (Leszczynski; Sadowski; this issue). An array of core activities of daily life and city governance are now mediated by profit-driven platform operators, who are even taking on major urban development projects themselves, e.g. Google's Sidewalk Labs in Toronto (van Dijck et al., 2018). Yet worryingly, the power dynamics driving platform urbanism are characterized by opacity. Though dependent on user-generated data (Pasquale, 2015; Noble, 2018), the algorithms that automate classification and decision-making by platforms are largely proprietary. The corporate ownership structures that define for-profit platforms often demand secrecy to build and maintain market advantage and protect from legal and public controversy (notoriously Google and Apple, two of the 'big five' platforms). The venture capital industry, the primary backer of platform startups (Langley and Leyshon, 2017), operates on the basis of confidentiality and privacy so as to protect intellectual assets and valuation formulas, despite often investing funds from public bodies such as universities (Axelrad, 2014). Such opacity poses a direct challenge to our collective capacity to comprehend how platforms are transforming urban life.

Given the “persistent insinuation of platforms” into urban life (Lesczcynski, this issue), it might be tempting to assume that the real politics of platform urbanism can only be grasped by unveiling what happens in privileged ‘black boxed’ sites such as the algorithm, the corporation, and the venture capital office. However, we argue that such an approach problematically reifies a discrete set of sites associated with the development of platforms as *the* locus of political action. Instead, recognizing how digital platforms are a form of mediation inseparable from everyday urban life and the power relations therein (Rose, 2016; Graham et al., 2013), we suggest that geographers can look to a more expansive range of sites to more comprehensively explore the politics of platform urbanism. Our approach locates the politics of platforms in their material, social, and embodied relationships within cities. Rather than imagining digital platforms as discrete entities that impinge *on* the urban, thinking ‘outside the black box’ understands platforms as architectures[1] that are thoroughly part *of* the urban.

Investigating platform urbanism therefore demands attention to matters of spatiality. Multiple possibilities are available for thinking about the spatiality of platforms as they manifest in the city through combinations of online and offline practices (Kanngieser et al., 2014). A political economy approach attuned to the relations of the urban and the global might examine platforms in terms of the conflict-ridden dependencies between accumulation strategies that exploit the social and built environment of cities (see Sadowski, this issue), resource extraction and dispossession, and the labor of assembly (Crawford and Joler, 2018; Mezzadra and Neilson, 2017; Casilli, 2017). A practice theory approach (Shove et al., 2012) might consider the local manifestations of specific practices associated with platforms, such as buying, organising, or transporting, with an attention to where and how these take place in the city. An approach inspired by Science and Technology Studies (STS) might look at the topological forms platforms enact in the city, and how they might be understood in terms of networks, more fluid spatialities, or ‘distanciated ties and real-time relationships’ that ‘cut across proximity and distance’ (Law and Mol, 2001; Allen, 2011, 284). A process-ontology approach would examine the spatiality of platforms not in terms of general transcendental organising principles, but rather in terms of site-specific material articulations where unpredictable variations unfold (Woodward et al., 2010, 271).

Any understanding of the politics of platform urbanism is therefore necessarily produced by the approach employed to analyse it. Such diversity of approaches also points to the wide-

[1] Sometimes taking on the qualities of infrastructures, see Plantin et al., 2018

ranging ways platform urbanism might differentially constitute, enrol, and impact urban collectivities, directing our attention to the operation of power at multiple scales and across different sites. In the remainder of our paper, we offer three research methods—narrative, counter-mapping, and tracing data flows—that expand the sites where the politics of platform urbanism take place beyond black-boxed spaces and processes.

Storying platform urbanism

First, we suggest narrative methods based on stories of lived experience can be developed to probe specific dimensions of platform urbanism. Such approaches can necessarily take different forms, depending on the research objective and the epistemological stance. Narrative approaches are particularly well suited to understanding the embodied dimensions of urban platforms and how they come to be registered in diverse ways by the sensing and feeling bodies that platforms enrol. Semi-structured interviews can be used in this regard to solicit reflection on both the in-situ bodily engagement with the digital interfaces of platforms, as well as examining how the nature of this engagement impacts on how people inhabit the city. For instance, Malin and Chandler (2017) undertook interviews with workers of rideshare platforms in Pittsburgh to explore how workers used the platform itself, as well as drawing out how this work affected their broader timespace routines in the city. In this regard, a narrative approach can draw attention to the intricate and nuanced ways that platform work impacts on everyday life in the city and mediates interpersonal relations. As such, by attuning to the way that workers enrolled by platforms make sense of the bodily impacts of their labour, the role of narrative here is to amplify voices in order to expose the otherwise-overlooked forms of enablement and constraint that are experienced by workers.

Narrative approaches can also be developed in a more speculative way to enhance our understanding of the material politics of platform urbanism. Bissell's (2018) account of an accident involving an automated Uber vehicle being tested in Tempe, Arizona considers how this single accident came to be narrated by different people in different places. His multi-sited approach explores how accounts of the accident given by bystanders, newscasters, government officials, and an Uber driver permits us to sense how the force of the accident rippled out to differently affect multiple domains of urban life, even across different cities. Encountering narrative here provides Bissell with a way of sensing the multiple sites of transformation that the accident catalysed, indicating how the operation of this particular platform interfaces with the material contingencies of a much more complex urban ecology. So rather than being used to amplify voice, multiple narratives here are being brought together to encounter this platform differently. We therefore suggest that engaging with and

assembling narratives can create new ways of differently attuning to our objects of analysis (Brigstocke and Noorani, 2016).

Counter-mapping platform urbanism

Second, we suggest that mapping techniques can be developed to actively change the course of platform urbanism. The relationship between cartography and power has long been subject to critical geographic analysis (see Thatcher, 2018), through a questioning of what maps include and keep out and how this shapes spatial knowledge, maps as tools of imperialism and dispossession, cartography as the top-down exercise of control and dissemination of official discourses. The interface of platforms and the city in and through maps and spatial data underlines the ongoing importance of being attuned to cartography's power relations. Consider how "not all places are seen the same, and not all people see the same place" in Google Maps (Shaw and Graham, 2017, 4), the way location-based services like Yelp and Foursquare feed the machinery of gentrification (Payne, 2018), and 'safety apps' with implicitly racist and classist branding such as 'SketchFactor' and 'GhettoTracker' (Leszczysnki, 2016). We therefore argue that bottom-up, counter mapping approaches[2] using "(geographical) data to unite critical ideas and radical practice to explore and realize more equitable alternative possibilities" (Dalton and Stallman, 2018, 94) constitute a core method for studying platform urbanism.

Counter-mapping works in confrontational and creative, generative ways by opening up cartographic practice to community members and laypeople with the aim of destabilizing dominant power relations (Dalton and Stallman, 2018). For example, the Anti-Eviction Mapping Project (AEMP) draws together counter mapping and narrative methods to document eviction and dispossession associated with the Bay Area's 'tech boom 2.0' (Maharawal and McElroy, 2018). By working with directly affected communities, AEMP produces non-reductive representations that aim to "feed political imaginations" and collective resistance (Maharawal and McElory, 2018, 387). Such efforts may be contrasted with projects that seek to use data science for social good without also transforming the structures, processes, and outcomes of geographical knowledge production (Dalton and Stallman, 2018), or corporate-led participatory mapping projects that promise digital inclusion while helping to open new markets for platform operators (Luque Ayala and Neves Maia, 2018). We propose that the method of counter-mapping offers a way of situating digital platforms in the experiences of the urban communities who at once help comprise platform

[2] Such as counter-mapping, and geographical expeditions, see Thatcher, 2018; Peluso; 1995; Counter Cartographies Collective, 2012.

urbanism and are its potentially unwilling subjects (see Fields, 2017). With its explicit emphasis on changing the world through changing the practice of cartography, this method can contribute to the work of making claims on platform urbanism 'from below'.

Tracing platform urbanism

Finally, we propose 'tracing data flows' as an approach for analyzing platform urbanism. Informed by STS, this method involves examining data as it moves between social actors, institutions and sites. It provides a useful means of analysing the urban socio-materialities and politics that interact with, and are generated through, data managed by digital platforms. For far from data being inert, neutral and objective (*cf.* Bowker and Star, 2000), we must question the "root assumptions" beneath data (Gitelman and Jackson, 2013, p.4) and examine the material conditions, and implications, of their production through contingent and contested social practices (Bates *et al.,* 2016; Dalton and Thatcher, 2014). We suggest that the following techniques (used collectively or singularly) can yield valuable insights on the workings of the platform: semi-structured interviews or focus groups with different actors to understand how digital data are determined, generated or aggregated by the platform; mapping/diagraming the route(s) through which these data become agreed and utilised (or modified or disregarded); observations of bodily and material interactions prescribed by data derived from the platform interface; and examining obstacles, or blockages, to intended data flows.

Considering the production and use of digital data through a platform for sustainable urban development, Macrorie (forthcoming) traced how numeric parameters are standardised, verified and adjusted in real-time online, and across a variety of practice sites (architectural studios, developers' offices, the factory, the construction site). This work highlights the politics inherent to the integration of different forms of professional knowledge and expertise and the 'hidden' human factors integral to platform-managed prefabricated housing production. Relating to data mobilities, Bates et al. (2016) used the low-tech method of sticky notes on flipchart paper to map the movement of meteorological data between relevant organisations, projects, datasets and individuals. Attending to the socio-material constitution of data objects and flows also entails a focus on ''data friction' and restrictions to potential data movements (Edwards, 2010; Bates, 2017). Recognizing data mobilities as socio-materially constituted means such "breaks, stoppages and dis-junctures" are almost inevitable (White, 2017, p.93; Lupton, 2014). For example, Leonelli's (2013) work shows the fragmentation of online biological and biomedical databases into a wide variety of specialised disciplines and projects limits their application to science. Rather than reifying

platforms as impermeable black boxes then, tracing data flows demonstrates their embeddedness in social and material worlds, and in so doing points to the open-endedness of platform urbanism.

Conclusion

As digital platforms are woven into urban life, produce urban space, and participate in urban governance, it is vital that geographers develop methods that help to unpack the politics of these socio-technical systems. Yet sites crucial to the development of platform urbanism—such as algorithms, corporate boardrooms, and venture capital offices—are challenging for critical researchers to access. In this intervention, we have followed Amoore's (2019) inclination to work *with* opacity by proposing methodological approaches that do not seek transparency so much as the potentiality, slipperiness, and movement that can point us toward uncharted futures of platform urbanism. Storying offers potentials for evaluating the multiplicity of political sites that platform urbanism takes place through. Counter-mapping offers potentials for subversion and transgression of the workings of platform urbanism. Tracing data flows offers potentials for considering how the work of platforms is negotiated and mediated by different urban constituencies.

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