The Politics of Geodata in Urban Platform Capitalism

Boris Michel & Susanne Schröder-Bergen

Introduction

Much of the critical research on urban platform capitalism focuses on how digital platforms transform labor, subjectivities, and social practices in cities.[1] Be it by changing urban retail, mobility, self-care, or social interactions, platforms have been central actors in the latest round of accelerating socio-technological transformations of urban space and urban life. This paper contributes to those current debates through a close look at something that is not much discussed and that, at first glance, might seem rather technical and non-political, while it, in fact, represents a key infrastructural precondition for much of those urban platforms: the politics and the social construction of geodata and cartographic knowledge underlying these services. Furthermore, by looking at the role of geodata in general and OpenStreetMap in particular, the paper investigates the hidden inscriptions and labor that make socio-technological objects such as the apps of urban platform capitalism's apps.

This essay presents the following argument: most of those platforms critical research in urban studies focus on and that are seen as central actors in a new urban techno-capitalism are inherently spatial. That means that geodata and spatial knowledge are central to their functioning and power. Like all data, geodata is not a neutral thing that is out there only to be extracted, used, or exploited and thereby turned into useful information or knowledge. Instead, it is a social relation assembled and objectified through a myriad of interrelated political, economic, social, and technological actors (Kitchin 2014). While commercial providers of geodata are still dominant and services

1 We would like to thank Finn Dammann, Yannick Ecker, Georg Glasze, and Anke Strüver for their valuable comments on an earlier version of this chapter.

such as Google Maps are paramount to many of these platforms, this paper investigates how a growing number of actors of urban platform capitalism both extract and contribute data from and to OpenStreetMap (OSM), the largest free and open geodatabase.

This example of the role of geodata for urban platform capitalism in general and that of OSM in particular is illustrative because it highlights the social production and political nature of data. Furthermore, it is an example of the complex relations and assemblages that form platforms and that go well beyond the notion of a platform as a clearly bounded entity, such as a cooperation, a business, a service, or a technological infrastructure. As such, it illustrates how platforms connect to and rely on many other platforms to act within and on the world. The example of OSM highlights the role of embedding unpaid and hidden labor and non-commodified knowledge and data into platforms and indicates the strategy of urban mobility platforms to reduce dependency on other proprietary platforms, which often exercise decisive control and power.

A word on platforms

Over the last couple of years, the term *platform* gained traction in discussions around the digital transformation of society, especially around the geographies of digital and so-called *smart urbanism*. Platforms, it is frequently argued, symbolize and represent the present state of the political and social condition. Thus, terms such as *platform society*, *platform capitalism*, or *platform power* are mobilized to describe this social mode of governing (van Dijck/Poell/de Waal 2018; Srnicek 2017; Seemann 2021). In view of this boom and the breadth of the use of the term platform, it is not surprising that the term is in danger of becoming an empty signifier and phrase, lumping together different understandings of the nature of platforms but also referring to a broad and somewhat heterogeneous set of technological, economic, and socio-technological entities and relations. As such, it might be helpful to say a few words about platforms and why a broad understanding of them is helpful within this paper. Based on a review of recent research, one might distinguish between three different conceptions of platforms and a wider variety of types of platforms.

First, there is a technical understanding: a platform is something that brings human and non-human actors together. Seemann systematizes three

types of platforms. Protocol platforms, interface platforms, and service platforms refer to three types of platforms with inherently different arrangements and regimes of control and power (Seemann 2021: 33). Van Dijck et al. understand digital platforms as "a programmable digital architecture designed to organize interactions between users" (van Dijck/Poell/de Waal 2018: 4). Importantly, this bringing together of different elements and actors is not one of equals. Dunn underlines that there are "two inherent and seemingly contradictory qualities of the platform – the centralized control exerted by its core structure and its openness to modification by its participants" (Dunn 2020: 335). As Seemann argues in his work on platform power, platforms, in a very abstract and general way, are arrangements that pre-structure who interacts with whom and in what way through standardization and algorithmization (Seemann 2021).

Second, from an economic understanding, platforms are a specific business model often driven by large amounts of venture capital and a particular mode and ideology of growth and disruption. As Srnicek posits in his book *Platform Capitalism*, platforms are the logical next step in capital's drive to reduce risk and cost and are a reaction of capital to the tendency of the rate of profit to fall (Srnicek 2017). Many platforms are privatized markets or labor markets for the gig economy (Altenried/Animento/Bojadžijev 2021), and, following Staab and his portrayal of digital capitalism, one can understand platforms as strategies to establish and secure proprietary markets. Lean service platforms such as Uber, Airbnb, and Deliveroo do not sell anything but build and govern a market that they control and tax (Staab 2019). This economic mode has far-reaching consequences for the relation between labor and capital.

A third understanding regards platform as a socio-technological mode of governing – an understanding that goes "beyond the company" (Richardson 2020: 459). It is a mode of "controlling interactions between users, workers, capital, and information" (Graham 2020: 453), where platforms enter the scene as a new mode of data-driven capitalism (Beer 2018) and its uneven geographies. This socio-technological understanding is also reflexive of the ideological components of these modes of governing. While a platform such as OSM, which relies on an enthusiastic community of mapping activists, might seem antithetical to a platform such as Uber or Airbnb, there are some similarities in both the technology and the ideology, especially in its anti-statist libertarianism and its techno-fix solutionism (Turner 2006; Morozov 2014).

This paper is primarily interested in the praxis of service platforms and the way they use geodata. Examples come primarily from lean mobility platforms such as Uber, Lyft, or Grab. Although this means that this paper only addresses a limited set of platforms, those platforms are the most specific for a decidedly urban mode of platform capitalism.

At the same time, this paper finds a broader and more abstract understanding of platforms helpful – one that understands platforms not only in terms of platform capitalism and a capitalist business model. Such an understanding includes all sorts of interface, protocol, and service platforms and would also include non-digital and even non-material modes of regulating connections and networks (Seemann 2021). While this runs the risk of turning everything into a platform, it helps to focus on the understanding of platforms in terms of a small number of common denominators instead of practices and processes that can be described in more traditional terms, such as precarization and flexibilization, or in terms of more general trends, such as digitalization and datafication. This rather abstract definition of platforms as socio-technological modes of regulating connections makes it essential to pay close attention to the different methods of regulation, governance, power, and control of different types of platforms. While platforms that organize and control interactions on privatized markets or that regulate communications between machines have a high degree of control over user interaction, in an open and community-based platform such as OSM, the concrete modes of interaction, the back end, the infrastructures, and the ontologies would be open for debate and negotiation, which makes a project such as OSM all the more interesting when looking at the politics and construction of platforms.

Spaces of urban platform capitalism

Most platforms associated with platform capitalism are inherently spatial. They mediate spatial interactions and help build spatial connections. While those platforms are inherently spatial, they most often are also highly urban. As Shaw puts it with regard to the platformization of real estate markets, most platforms are "prototyped *in* the city and *for* the city as a primary site of experimentation" (Shaw 2020: 1056), and they organize their services primarily in urban space, thus changing the way cities function, look like, and are experienced. By articulating a diverse set of urban and spatialized elements, they can be understood as "flexible spatial arrangements" (Richardson 2020)

that express their power by both connecting (e.g., customers and companies) and disconnecting (e.g., the individualized platform workers). Furthermore, they rely on spatial knowledge and data to render the urban space a legible territory and turn cities into sites for their respective actions. While the role of connections is central to much of the critical research on urban platforms, the role of spatial knowledge and data is much less scrutinized.

In order for urban platforms to scale their businesses, their geospatial knowledge has to be simultaneously global, abstract and universal, as well as hyperlocal, real-time, and user-centric. Thus, they depend on qualities and quantities of geodata that only became available and conceivable with the rise of the very technologies these services rely upon. As Leszczynski (2019) indicates in her work on platform affects, platforms' spatiality is about abstract space and abstract geodata as cartographic data. Furthermore, platforms are closely linked to affective notions of place and the local. An example is when a global platform such as Airbnb sells a commodity marketed as the authentic experience of being and living like a local anywhere in the world. Thus, space plays a complex and multidimensional role in platforms and urban platform capitalism.

On the one hand, those platforms use existing geodata to have their services delivered. While this sounds like simply using a map to get from point A to point B, cartographic knowledge became much more complex with the rise of ubiquitous computing and new geospatial media (Crampton 2009). Routing in complex and dynamic contexts requires mobilizing a wide range of actors, such as GPS technology, geodata standards, algorithms that predict mobility patterns, local road traffic regulations, and data protection laws. Many of these actors can be understood as platforms that allow, organize, and regulate connections, exercising power over other parts of these nested networks of platforms. This growing complexity suggests varying demands and arrangements for different platforms. For example, the geodata needed by mobility platforms will differ somewhat from that needed by platforms for rating restaurants. One part of this use of existing geodata and geospatial technologies is the ongoing interest of platforms in acquiring map companies and geodata start-ups, be it Uber buying parts of Microsoft Bing in 2015, Facebook taking over Mapillary (a service that builds an alternative to Google Street View through crowdsourcing) in 2020 or WeWork acquiring a start-up that maps and surveys the spaces of in-office mobility. Geospatial technologies and technologies that extract surplus from geodata are a key commodity for those services. On the other hand, these platforms generate large amounts

of dense geodata as part of their services and business. It is frequently pointed out – often somewhat hyperbolically – that the riches and real value of platforms come from the data they generate and possess. In particular, Zuboff (2019) considers behavioral surplus in user data as the foundation of future profits. Examples are the fine-grained spatial and temporal mobility patterns that can be extracted to mobilize future extractions of value. Hence, locational data becomes a commodity (Thatcher 2017).

OpenStreetMap

Despite it not being profit-oriented and even being set against state-owned and profit-oriented modes of geodata and cartography, OSM can also be seen as a platform. It is an infrastructure that allows a large number of actors to contribute geodata to one global database collectively. This database can then be turned into a map. OSM is made by a vast and diverse community of mappers with an increasingly global reach and coverage. Often seen as the most successful example of volunteered geographic information (Goodchild 2007), OSM relies on its contributors' work, labor, and care. The project is community-driven in its data and much of its basic infrastructure, it is supported by a non-profit foundation, and it is free/libre open-source software (FLOSS). Notably, the data contributed to OSM is licensed under the Open Data Commons Open Database License (ODbL)[2], allowing the free use, sharing, and adaptation of the data and database.

While these kinds of platforms are celebrated for opening and democratizing the production of geographic data and for challenging the cartographic monopolies of states and large corporations (Gartner 2009; Dodge/Perkins 2008), research has highlighted how even platforms of volunteered geographic information reproduce the digital divide and uneven geography of geographical knowledge. In all its different forms and modes, participation is highly influenced by gender, class, formal education, and access to broadband connections (Dittus/Garcia 2019; Gardner et al. 2019; Bittner/Michel/Turk 2016; Ballatore/de Sabbata 2020; Stephens 2013). Moreover, over the last couple of years, critical research and OSM activists have highlighted and problematized the increasing role of corporations, institutional actors, and organized editing in OSM (Dickinson 2021; OpenStreetMap Foundation 2018).

2 See https://opendatacommons.org/licenses/odbl/.

While dominated by an ethos of local attachment and ground truth and the idea of the engaged craft mapper, OSM's success made the platform attractive to institutional actors. At least three different types of institutional actors can be identified: those from the field of humanitarianism, pointing to the role of mapping and geodata for digital humanitarianism and cases of emergency (Burns 2018); the use of machine learning and artificial intelligence (AI) to produce and optimize OSM's geodata, for example through Meta's/Facebook's Map with AI project (Vargas Muñoz/Tuia/Falcão 2020; Coldewey 2019); and corporate mappers, especially lean service platforms in the field of urban mobility that use OSM as a free and open alternative or addition to services such as Google Maps (Anderson/Sarkar/Palen 2019). Although the involvement of institutional and corporate mappers in projects such as OSM is neither new nor significantly controversial, it poses challenges and questions for a project that is frequently seen as being part of non-commodified digital commons.

If one looks at the data, one can see platforms active in OSM in at least three ways, two of which are relevant to this paper's argument: the first and most obvious way is the use of existing OSM data for their services, be it by using the OSM map as a base map for apps and interfaces or by using the data for its services, for example in the form of routing or locating. The latter is much less visible to the user, and sometimes intermediate companies facilitate this interaction through tailored services.

A second way such platforms interact with OSM is by adding and maintaining data. A growing number of platforms pay employees to engage with OSM to both add and update data, as well as engage with local mapping communities and their activities. One example is Grab, a mobility platform from Singapore and Southeast Asia's start-up with the highest valuation in 2020. In South and Southeast Asia, Grab lists several hundred people in its GRABOSM data team (with different modes of employment as well as both remote and on-the-ground mapping). By adding large amounts of specialized geodata, such as addresses, building footprints, and turn restrictions, the company is responsible for a large chunk of new data in the areas it is active in. In 2018, conflicts over modes and the ethos of mapping led to a considerable upset within the Thai mapping community (Russell 2018).

Attempts to use AI and machine learning algorithms to optimize maps and extract data are, even if sometimes less focused on urban spaces, important too. In the case of Meta's/Facebook's Map with AI project, this takes place primarily through pattern recognition in satellite images but also through mobility data – for example, in a project by Lyft that uses the company's

mobility and geodata, namely the routes their drivers actually took. Hence, the spatial and platial knowledge of the workers are used as feedback to optimize the company's algorithms and OSM data (Huberty/Corthell 2021; Kißling 2019). Since "AI is neither artificial nor intelligent" (Crawford 2021: 69), this often requires much manual labor and raises questions about the role of mappers as click workers for training algorithms.

A third way in which these platforms are active in OSM is their impact on the configuration of the software stack and infrastructure of OSM. One example is the editing software users use to contribute to OSM and the suggestive power of default settings and suggestions. While the default, and currently most popular, editor was introduced by Mapbox – an early institutional actor in OSM – some time ago Meta/Facebook developed the AI-supported RapiD editor, which focuses on predicting roads and buildings.

The growing role of institutional – especially corporate – mapping in OSM reflects an increasing demand for free-to-use and easy-to-modify geodata. However, while one could argue that little harm is caused by more data and that those companies contribute to an open and free digital common, there are conflicts and challenges. Those conflicts range from questions around the politics of representation to conflicts around a disregard for community standards and neglect of the ethos of OSM, which highlights attachment to places, the local and ground truth.

Discussion

Geodata is deeply embedded as an infrastructure in urban platform capitalism. As frequently pointed out in the geographies of infrastructure and the infrastructural turn, infrastructures are hardly visible and noticeable in the everyday. This is also true for the infrastructures that facilitate the "technological everyday" (Amin 2007: 109) of the digital present. As Graham forcefully highlights, urban infrastructures become visible and a matter of concern primarily in moments of glitches, disruption, failure, and collapse (Graham 2010). Thus, there is good reason for paying closer attention to the working of infrastructures and how they shape the technological everyday of the platformized city.

All infrastructure and all geodata are social and political. The same applies to geodata as cartographic data and as maps. While much of the literature on critical cartography and geodata highlights the politics of the data, its era-

sures and its silences, the politics of geodata in OSM are more far-reaching. Hence, they are an excellent example of negotiations and conflicts that otherwise often remain hidden within institutions. Beyond the general fear of data extractivism and the appropriation of a crowd-based data project by private operations, there are also conflicts around ethics and commitments.

This paper calls for looking at the back end and the underbelly of urban platforms. By looking at work that is often hidden or not seen as work at all – such as reviewing other mappers' edits in a neighborhood one cares about in one's free time – this paper followed the call for placing labor more centrally in the discussions about platform urbanism. Furthermore, it wanted to add a focus on the labor that takes place behind or under the platform. In addition to looking at the working conditions and labor in the gig economy of food delivery, transportation, and holiday flats, there are work and politics of the socio-technological arrangements that underly this gig economy.

It is nothing new that tech companies use open and free data and software to make a profit. The integration of open source and open data has been a vital part of the internet since its very beginning both ideologically and technically. Hence, a clear distinction between platform capitalism and a world of collaborative and free platforms and software is often hard to make. The rise of corporate engagement with OSM "is not simply a case of capitalist appropriation of an open data project, but rather the latest stage in an evolving project comprised of a wide array of stakeholders, each coming from a different value system" (Anderson/Sarkar/Palen 2019: 4). Nonetheless, data extractivism, the externalization of costs and risks to projects such as OSM, outsourcing to crowdsourcing (Ettlinger 2016) and an "open-source washing" as a strategy (Daum 2020: 59), all highlight the politics of geodata and of all the stuff that, in most apps, appears as nothing more than a map.

References

Altenried, Moritz/Animento, Stefania/Bojadžijev, Manuela (2021): Plattform-Urbanismus. Arbeit, Migration und die Transformation des urbanen Raums, in: *sub\urban. zeitschrift für kritische stadtforschung* 9(1/2): 73-92.

Amin, Ash (2007): Re-thinking the urban social, in: *City* 11(1): 100-14.

Anderson, Jennings/Sarkar, Dipto/Palen, Leysia (2019): Corporate Editors in the Evolving Landscape of OpenStreetMap, in: *ISPRS International Journal of Geo-Information* 8(5): 232.

Ballatore, Andrea/de Sabbata, Stefano (2020): Los Angeles as a digital place: The geographies of user-generated content, in: *Transactions in GIS* 24(4): 880-902.

Beer, David (2018): *The data gaze. Capitalism, power and perception*, Los Angeles/London/New Delhi/Singapore/Washington DC/Melbourne: SAGE.

Bittner, Christian/Michel, Boris/Turk, Cate (2016): Turning the spotlight on the crowd: examining participatory ethics and practices of crisis mapping, in: *ACME: An International E-Journal for Critical Geographies* 15(1): 207-29.

Burns, Ryan (2018): Synergizing Geoweb and Digital Humanitarianism Research, in: Thatcher, Jim/Eckert, Josef/Shears, Andy (eds.): *Thinking big data in geography. New regimes, new research*, Lincoln, NE: University of Nebraska Press: 214-28.

Coldewey, Devin (2019): *Facebook empowers OpenStreetMap community with AI-enhanced tools*, in: TechCrunch, 24.07.2019. https://techcrunch.com/2019/07/23/facebook-and-openstreetmaps-empower-the-mapping-community-with-ai-enhanced-tools/ [14.08.2021].

Crampton, Jeremy W. (2009): Cartography: maps 2.0, in: *Progress in Human Geography* 33(1): 91-100.

Crawford, Kate (2021): *Atlas of AI. Power, politics, and the planetary costs of artificial intelligence*, New Haven: Yale University Press.

Daum, Timo (2020): *Agiler Kapitalismus. Das Leben als Projekt. Nautilus Flugschrift*, Hamburg: Edition Nautilus.

Dickinson, Cory (2021): *Inside the 'Wikipedia of Maps', Tensions Grow over Corporate Influence*, in: Bloomberg City Lab, 19.02.2021. https://www.bloomberg.com/news/articles/2021-02-19/openstreetmap-charts-a-controversial-new-direction [15.02.2022].

Dittus, Martin/Garcia, David (2019): Caretography – Mapping Difficult Issues with OpenStreetMap during Difficult Times. https://2019.stateofthemap.org/sessions/F9D8QG/ [28.11.2020].

Dodge, Martin/Perkins, Chris (2008): Reclaiming the Map, in: *Environment and Planning A* 40(6): 1271-76.

Dunn, Peter T. (2020): Participatory Infrastructures: The Politics of Mobility Platforms, in: *Urban Planning* 5(4): 335-46.

Ettlinger, Nancy (2016): The governance of crowdsourcing: Rationalities of the new exploitation, in: *Environment and Planning A: Economy and Space* 48(11): 2162-80.

Gardner, Z./Mooney, P./de Sabbata, S./Dowthwaite, L. (2019): Quantifying gendered participation in OpenStreetMap: responding to theories of fe-

male (under) representation in crowdsourced mapping, in: *Geojournal* 85(6): 1603-20.

Gartner, Georg (2009): Web mapping 2.0, in: Dodge, Martin/Kitchin, Rob/Perkins, Chris (eds.): *Rethinking Maps. New Frontiers in Cartographic Theory*, London: Routledge: 68-82.

Goodchild, Michael F. (2007): Citizens as sensors: the world of volunteered geography, in: *Geojournal* 69(4): 211-21.

Graham, Mark (2020): Regulate, replicate, and resist – the conjunctural geographies of platform urbanism, in: *Urban Geography* 41(6): 453-57.

Graham, Stephen (ed.) (2010): *Disrupted cities. When infrastructure fails*, New York, NY: Routledge.

Huberty, Mark/Corthell, Clara (2021): How Lyft discovered OpenStreetMap is the Freshest Map for Rideshare. https://eng.lyft.com/how-lyft-discovered-openstreetmap-is-the-freshest-map-for-rideshare-a7a41bf92ec [18.04.2021].

Kißling, Kristian (2019): *Kartendaten: Lyft verbessert Openstreetmap im Vorbeifahren – Golem.de*, in: Golem.de, 10.09.2019. https://www.golem.de/news/kartendaten-lyft-verbessert-openstreetmap-im-vorbeifahren-1909-143759.html [18.04.2021].

Kitchin, Rob (2014): *The data revolution. Big data, open data, data infrastructures & their consequences*, Los Angeles/London/New Delhi: SAGE.

Leszczynski, Agnieszka (2019): Platform affects of geolocation, in: *Geoforum* 107: 207-15.

Morozov, Evgeny (2014): *To save everything, click here. The folly of technological solutionism*, London: PublicAffairs.

OpenStreetMap Foundation (2018): Organised Editing Guidelines. https://wiki.osmfoundation.org/w/images/6/62/Organised_Editing_Guidelines.pdf [10.06.2020].

Richardson, Lizzie (2020): Coordinating the city: platforms as flexible spatial arrangements, in: *Urban Geography* 41(3): 458-61.

Russell, Jon (2018): *Grab is messing up the world's largest mapping community's data in Southeast Asia*, in: Techcrunch, 20.12.2018. https://techcrunch.com/2018/12/19/grab-maps-osm-thailand-southeast-asia [15.02.2022].

Seemann, Michael (2021): *Die Macht der Plattformen. Politik in Zeiten der Internetgiganten*, Berlin: Ch. Links.

Shaw, Joe (2020): Platform real estate: Theory and practice of new urban real estate markets, in: *Urban Geography* 41(8): 1037-64.

Srnicek, Nick (2017): *Platform capitalism*, Cambridge: polity.

Staab, Philipp (2019): *Digitaler Kapitalismus – Markt und Herrschaft in der Ökonomie der Unknappheit*, Berlin: Suhrkamp.

Stephens, Monica (2013): Gender and the GeoWeb: Division in the production of user-generated cartographic information, in: *Geojournal* 78(6): 981-96.

Thatcher, Jim (2017): You are where you go, the commodification of daily life through 'location', in: *Environment and Planning A: Economy and Space* 49(12): 2702-17.

Turner, Fred (2006): *From Counterculture to Cyberculture*, Chicago/London: University of Chicago Press.

van Dijck, José/Poell, Thomas/de Waal, Martijn (2018): *The platform society. Public values in a connective world*, New York: Oxford University Press.

Vargas Muñoz, John E./Tuia, Devis/Falcão, Alexandre X. (2020): Deploying machine learning to assist digital humanitarians: making image annotation in OpenStreetMap more efficient, in: *International journal of geographical information science IJGIS* 35(9): 1725-45.

Zuboff, Shoshana (2019): *The age of surveillance capitalism. The fight for a human future at the new frontier of power*, New York: PublicAffairs.