Glitchy vignettes of platform urbanism

Agnieszka Leszczynski (iD)
Western University, Canada

Abstract

'Platform urbanism' has recently gained traction as a designator for emergent dynamics and material configurations associated with the increasing presence of digital platform enterprises in cities. Initial scholarly engagements with platform urbanism have tended to coalesce around critiques of digital platforms as progenitors of inevitably dystopian urban futures. In this paper, I advance a counter-topographical minor theory of platform urbanism. I do so by drawing on Legacy Russell's notion of the glitch as a tendency toward both error and erratum (correction) in digital systems, mobilizing space/times where platforms appear 'glitchy'—unexpectedly, otherwise than anticipated, or not at all—as the margins of platform urbanism. Through the narration of three specific platform/city interfaces from the minors of their glitchy margins, I capture the ways in which platform–urban configurations are demonstrably open to negotiations, reconfigurations, and diffractions through tactical maneuvers rooted in everyday digital practices of urban denizens. Theorized from the minor, platform urbanism is a phenomenon that may beget an array of possible outcomes that remain shapeable by mundane tactical interventions in the platform-mediated present. This ultimately underwrites possibilities for more hopeful digital urban politics, theory, and futures.

Keywords

Digital platforms, glitch, minor theory, platform urbanism

Introduction

It is really no longer enough – and never really was – to analyze the production and expropriation of value, the dialectic of accumulation by dispossession, or the flows of capital and labour. Though such analyses are crucial at every turn

Corresponding author:
Agnieszka Leszczynski, Department of Geography, Western University, Social Science Centre 2322, 1151 Richmond Street, London, ON, N6A 5C2, Canada.
Email: aleszczy@uwo.ca

of capitalism's screw, it is also necessary to understand the concrete nature of these abstract social relations

(Katz, 2017: 599).

[T]he implementation of smart and intelligent city projects faces resistance but also socio-technical outcomes tend to exceed the plans of corporate and political interests

(Bunnell, 2015: 45).

Over the last decade, there has been a burgeoning of scholarship attending to the pervasiveness of digital networks, data, and connected technologies in cities, with a particular emphasis given to the ways in which these assemblages are (re)shaping urban environments and everyday lives. To date, this "digital turn" in urban scholarship (Datta, 2018) has largely coalesced around critiques of the techno-solutionism of smart cities developments and attendant discourses of smart urbanism that underwrite and sustain the enmeshing of connected objects, data, and urban environments (e.g. see Datta, 2019; Greenfield, 2013; Kitchin, 2014; Leszczynski, 2016; Marvin et al., 2016). More recently, digital platform enterprises such as Uber,[1] Airbnb,[2] Deliveroo,[3] Mobike,[4] and Bird[5] have succeeded in establishing themselves as fixtures of urban landscapes in cities around the world. Although most platform enterprises have been operating in cities for less than a decade, there is a growing recognition that digital platforms are "rapidly chang[ing] how people experience cities, and even how cities *work*" (Rosenblat 2018b: 38; emphasis original), and that they are doing so in ways that diverge from the material assemblages and discursive frameworks of the "smart city" that have to date emphasized data-driven forms of urban governance (e.g. Barns, 2018b; Kitchin, 2014; Leszczynski, 2016; Shelton et al., 2015). This emerging consensus has catalyzed efforts within urban studies and corollary fields to designate an emergent condition of "platform urbanism" that more immediately captures the specificities of platform materialities beyond smart city formations and which directly contends with the implications of attendant reconfigurations of labor, mobilities, consumption, governance, civic citizenship, infrastructures, and a broad range of city services.

Efforts to articulate what is meant by a platform-mediated urban condition, how we know it to be something that is actually materializing and simultaneously distinctive vis-à-vis other configurations, and how and for whom these pronounced shifts are most consequential have only recently begun to take shape. Yet already, a significant corpus of initial academic forays in platform urbanism is, like much smart cities scholarship before it, quickly becoming dominated by dystopian critiques of the universal capitalist and/or neoliberal essence of platforms and the platform-mediated city. Certainly, the potent influence exerted by platform enterprises and platform technology capital in cities is undeniable and warrants sustained public and scholarly attention, analysis, critique, and response. But as Sarah Barns (2018a) has recently reminded urbanists concerned with the digital, platforms are not first and foremost ecosystems of value extraction and capital accumulation, but rather of mundane connectivity and interaction (see also Van Dijck et al., 2018). Understanding platforms' generative capacities to shape and be shaped by cities requires a theorization of platform urbanism as a phenomenon of the urban everyday outside the hegemony of political economic approaches that "risk reducing how we 'think the urban' to its transactional logics" (Barns, 2018a: n.p.).

In this paper, I advance a feminist theorization of platform urbanism which responds to echoes of techno-hysteria within contemporary debates that exclusively equate digital platforms with neoliberal corporatization and capitalist usurpation of the city, and which

subsequently mobilize these assertions as the tenets of a universal theory of "the" platform-mediated city. Rather than commencing from urban patterns of platform-induced alienation, isolation, and dispossession overdetermined within these engagements, I begin instead with the "everyday interactions of smartphone-equipped urban subjects" in which Barns (2018c: n.p.) argues that platform urbanism has its genesis. I do so by prefiguring the 'glitchiness' of encounters at platform/city interfaces, drawing on Legacy Russell's (2012, 2013) notion of the glitch as an inherent characteristic of digital formations that expresses simultaneous potential for both *error* (malfunction, failure) and *erratum* (correction to a system). In privileging the generative potential of erratic/erroneous platform–city dynamics over and above their teleological reduction to "logic[s] of capital extraction [and] infrastructuralization" (Barns, 2018a: n.p.), the glitch serves as an entry point for theorizing platform urbanism from what Katz (1996) has famously termed "the minor." Theorizing platform urbanism from the minor empirically and theoretically situates dynamics between cities and platforms in the feminist politics of the urban everyday; represents a locus from which to intervene in crystallizing techno-masculinist tendencies to advance universalizing apocalyptic critiques expressed through demonstrated mastery of 'major' strands of political economy and its "totalizing analytics" (Derickson, 2018); and furthermore constitutes a point of departure from which to envision more open—and as such more hopeful—platform urban futures.

I flesh out the dual dynamics of error and erratum as they play out across three separate vignettes of glitchy platform–urban configurations. These vignettes include Canadian urban data territoriality, rhizomatic platform–urban interactions, and the ridehail-less city—instances where the glitch appears respectively as surprise, casualty, and absence. In narrating each vignette, I emphasize glitchiness at each platform/city interface—or the emergent spatio-temporalities of where digital platforms, urban denizens, and cities meet—as the minor register of platform–urban configurations. I unpack how an attunement to the minor in each vignette recasts a "major" narrative of platform urbanism in each scenario, and conclude the paper by identifying the significance of a glitchy engagement with digital platforms for the possibility of more hopeful platform urban politics, theory, and futures.

Platforms and cities

Platforms

The term "platform" is a broad designator for a number of nascent and developing socio-technical formations that coincide with sweeping shifts being wrought across spheres of economic, political, and social life as a result of pervasive digitization, the personalization of technology (e.g. smartphones), changing modes of governance, and the rise of "disruption" as a desirable business model and practice. In its most instrumentalist sense, "platform" is a "highly technical framework that can support many specific applications" (Guyer, 2016: 4). It constitutes, in other words, both a (digital) architecture and an infrastructure. For Barns (2019), the uniqueness of platform architectures is latent in their recombinant architectures. This designates an inherent capacity for cross-platform interoperability characterized by one platform underwriting a critical infrastructural function of another, in the way that Google Maps' digital map platform for instance serves to "infrastructure" the visual interface experience for Uber riders, whose interaction with the Uber ridehailing app is organized around information (available rides, suggested pick-up location, etc.) presented as spatial content over top of a Google Maps base map centered on their real-time location.

This emphasis on the infrastructural natures and capacities of platforms is reflected in a key strand of emerging scholarship on platforms. Helmond (2015), for instance, has

theorized social media platforms as a dominant infrastructural model for organizing how (and where) online activity takes place, as well as a form of 'platformizatiton' by which platforms prime and rework digital content to render it compatible with dominant digital infrastructures. Plantin et al. (2018) characterize this relationship between platforms and infrastructures in terms of a dual process of the often-times simultaneous "infrastructuralization of platforms" by which platforms come to function in infrastructural capacities, becoming indispensable to systems and/or practices, as well as the "platformization of infrastructures," whereby platforms come to colonize and/or transform extant infrastructures. For Bratton (2016), while platforms may be equated with a new modality of physical infrastructure, their infrastructural characteristics or materialities matter less than their infrastructural capacities. "Platforms are," asserts Bratton (2016: 41), "what platforms do": they are techno-organizational formations that "pull things together into temporary higher-order aggregations [that] in principle add value to both what is brought into the platform and to the platform itself."

By contrast, for Gillespie (2010, 2015, 2018), 'platform' is first and foremost a discursive construct by which information technology companies position themselves as neutral facilitators of social interaction, digital commerce, political debate, and scientific innovation in ways that veil their socio-political ambitions, agency, and power, and structural capacities. As Andersson Schwarz (2017: 374) argues, these discourses are underwritten by a cohesive logic of "control, interact, and accumulate" that allows digital platforms to effectively function as utilities which at once both fulfill societal functions and create opportunities for economic exchange, often by subsuming the former into the latter. Indeed, it is the accumulative logics of many of these commercial digital platform entities and their economic effects that have received perhaps the most scholarly attention. This is perhaps nowhere more apparent than in the designation of 'platform capitalism' as a new mode of accumulation wherein the platform functions as both an intermediary that brokers two-sided market exchanges and as a new business model "whose core product is the foundation for an ecosystem of other products and services" (Langley and Leyshon, 2017; Srnicek, 2017; Yu, 2018: n.p.). This business model is one which is variously characterized by a platform-dependent interplay of speculative capitalization, a monopolistic telos, (at times) a divestiture from the ownership of tangible assets, the commodification of personal data trails, the flexibilization of labor, and the provision of a digital service that brokers access to other services and/or assets as a basis for monetization.

Yet, as Van Dijck et al. (2018) persuasively assert, while platforms may rightly be considered as each of these things—as architectures/infrastructures, a discursive logical, or an economic phenomenon—they should not be considered as registering solely in any one of these registers where social considerations emerge solely as corollary effects. Rather, Van Dijck et al. (2018: 2) uniquely advance an account of platforms that "emphasizes the inextricable relation[s] between online platforms and social structures" that they term the "platform society." This paper espouses this nuanced definition of platforms, one which offers a

> comprehensive view of a connective world where platforms have penetrated
> the heart of societies – affecting institutions, economic transactions, and
> social and cultural practices – . . . forcing governments and states to adjust
> their legal and democratic structures
>
>   (Van Dijck et al., 2018: 2).

Platform urbanism

As theorists of society and space, we know that these profound socio-technical, -institutional, -economic, and -cultural transformations are always-already spatialized. One of the key sites in which these transformations are being evidenced as particularly acute is in cities. Cities comprise existing, mature markets for a wide array of goods and services (Artioli, 2018). As such, they are spaces where platform *enterprises*—digital platform market actors and commercial entities—can exploit the density of potential consumers, producers, workers, and connected devices (Artioli, 2018). As platform enterprises look to cities as sites in which to secure and expand market share, and cities worldwide are simultaneously opening themselves up as spaces for new forms of experimentation with digital platforms and technology capital, there is a growing recognition on the part of scholars, policy makers, and urbanites alike that platform society developments are driving a pronounced reconfiguration of what it means to be—and to live in—a city.

These "co-generative dynamics of platforms and cities" (Rodgers and Moore, 2018: n.p.) have recently been framed as constituting an emergent condition of 'platform urbanism,' a term originally coined by Sarah Barns (2014). Platform urbanism discursively signals and provides a theoretical framework for researching the unprecedented scale, scope, agency, and urban ambitions of platform economy actors and their effects, which are held to be unique to platform entities and distinct from antecedent digital-urban configurations, namely those of the smart city and its corollary smart urbanism in several key ways. In geography, urban studies, and media literatures, the smart city has been engaged as primarily constituted by networked material infrastructures—such as urban dashboards, interfaces, and sensor grids (Barns, 2018b; Greenfield, 2013; Kitchin et al., 2015; Klauser and Albrechtslund, 2014; Mattern, 2015)—and as techno-utopian discourses that underwrite new modes of data-driven urban governance and "smart" urban planning and development regimes (Gibbs et al., 2013; Greenfield, 2013; Kitchin, 2014; Luque-Ayala and Marvin, 2015; Marvin et al., 2016; Shelton et al., 2015; Söderström et al., 2014; Valdez et al., 2018; Vanolo, 2013; Wiig, 2015; Zook, 2017).

The platform-mediated city does not so much constitute a radical disjunction with the smart city, but rather a reconfiguration, diversification, and intensification of its constituent practices, processes, and technologies. For instance, compared to smart cities hardware/software systems which developers have looked to sell to city administrations, digital platforms in the form of ridehailing, food delivery, venue review, and microtasking apps scale beyond the chambers of city halls and onto the personal networked devices of (nearly) every urban denizen (see also Barns, 2018c). In addition to these end users representing a very different customer and market, by reaching into the pockets of urbanites, platforms express a potential for individualized influence unprecedented by 'smart' infrastructure-urban configurations.

While they may not necessarily be looking to sell the infrastructures of digital governance *to* city halls, digital platform enterprises are very much interested in nevertheless having a presence *in* city halls, where they are reappearing as legitimate policy actors with a seat at the policy-making table (van Doorn, 2018). In this capacity as "policy entrepreneurs" (van Doorn, 2018), platform enterprises are not only effectively regulating-in urban policies that codify their ability to operate but are also regulating-out obstacles to their unencumbered market expansion (see Ferreri and Sanyal, 2018, on Airbnb as an urban policy actor in London). They are furthermore effectively innovating how urban governance functions and is enacted by actively curating relationships between market, civil society, and government stakeholders in which they position themselves as the indispensable brokers of state–society

interactions that make urban governance "happen" in ways that benefit the platform (van Doorn, 2018). And at the same time that they exert increasing influence in shaping policy and changing the very nature of urban governance, platform enterprises operate in extra-regulatory spaces of their own making, situating themselves beyond the bounds of governance by claiming distinctiveness from legacy operators in key sectors such as transport (e.g. ridehailing companies are not taxis) and accommodation (e.g. short-term rental platforms are neither hotels nor landlords) that are otherwise heavily regulated.

From smart to platform urban dystopias

Urban materialities, imaginaries, ambitions, politics, and markets of digital platform enterprises are accordingly considered substantively distinct from those engaged under the rubric of the smart city. The heralding of a specifically *platform* urbanism thus serves as both a placeholder and an analytic framework that simultaneously names and provides an entry point for empirically and theoretically grappling with the shifts, crystallizing formations, praxes, and consequences of the intensifying and accelerating convergence of cities and platforms unprecedented by smart city configurations and their scholarly engagements. Yet, a significant strand of platform urbanism interventions are rehearsing the syntax of antecedent smart city critiques by similarly mobilizing metanarratives of capitalism and neoliberalism, leveraging these "broader theoretical arguments" as proxies for "actually-existing" configurations of platforms and cities on the ground (Datta, 2018: 406; Kitchin, 2015: 134). In so doing, they reify masculinist overdeterminations of the smart city as at best merely "empty rhetoric" (Wiig, 2016) or a "false dawn" (Marvin et al., 2016), and at worst a cataclysmic neoliberal urban political economy (Greenfield, 2013) that cannot beget anything other than a new "spectrum of control" (Sadowski and Pasquale, 2015) and "disciplinary strategy" (Vanolo, 2013) in service of a capitalist "modality of entrepreneurial urban governance" (Krivý, 2018b: 8) that intensifies privatization, dispossession, oppression, and inequality (e.g. Masucci et al., 2020; Scott, 2016; Thatcher, 2013; Wilson, 2015).

These more recent platform urbanism interventions are rooted in an equivocation—or perhaps more precisely, *conflation*—of platform urbanism with precursor theses of platform capitalism, which have likewise recently proliferated to designate new modes of accumulation and market-making associated with digital platforms and platform–ecosystem business models. In one of the first efforts to formalize a definition, Rodgers and Moore (2018: n.p.) have recently advanced "platform urbanism" as offering a "twist on the notion of 'platform capitalism,'" which they realize by simply "speculatively substituting 'urbanism' for capitalism" in the formulation. Scholars Sadowski and Gregory (2017), writing for a popular audience in *The Guardian*, similarly engage the relationship between platforms and the urban as one marked by an unfettered capitalism that finds its spatial expression in cities. For them, the urban incursion of platforms is tantamount to a sweeping, inescapable "techno-capitalist takeover of cities" in which anything and everything—all aspects of urban life and urban environments—is subsumed or potentially subsumable by the platform: mobility, housing, consumption, desire, governance, and citizenship (Sadowski and Gregory, 2017: n.p.).

Certainly, political economic critiques in this vein are not only warranted but urgently necessary. At issue are not engagements with platform urbanism as an urban political economy, but rather the "speculative substitution" of "urbanism" for "capitalism" (Rodgers and Moore, 2018: n.p.). Be this substitution explicit or implied, it has three immediately polemical implications. First, it reduces the city to being little more than a spatial container for the extractive–accumulative practices of digital platform enterprises. This

harkens back to conceptualizations of space as an isotropic plane tendered by spatial scientists at the height of the quantitative revolution, proclamations that were vociferously condemned by human geographers who effectively demonstrated the ways in which spaces, including those of cities, are socially produced. These debates are well known and as such do not need to be recited further here, but they remind us that urban environments are not a priori vacant *tabulae rasae* into which platforms and their capitalist machinations descend from a disembodied ether.

Second, advancing platform urbanism as the spatialization of platform capitalism in this way anchors the categories offered by political economic orthodoxy for making sense of *capitalism* as default epistemological entry points for empirically engaging with and theorizing platform *urbanism*. Krivý (2018a: n.p.), for instance, explains platform urbanism as the "late neoliberal epitome" of an extractive "environment of capture" by the platform, which itself represents an unprecedented "consolidation of . . . capital's power." Elsewhere, Stehlin (2018b) identifies parallelism between urban platforms and capitalism in their mutual predication on the extraction of rents, with platforms introducing the innovative extraction of rents from *mobile* assets in addition to fixed assets such as land. Stehlin (2018a) sees platform urbanism as the ultimate expression of capitalist urban planning logics *par excellence* in that they have successfully enrolled tranches of previously economically idle urban space—such as the space of the sidewalk curb ('curbspace')—in service of capitalist accumulation by mobility platforms like bikeshare and e-scooter operators. These mobile assets themselves also further serve the dual capitalist imperatives of extraction and accumulation by simultaneously enrolling urbanites as both renters (accumulation) and as free laborers producing monetizable data for the platform (extraction; Stehlin, 2018b). For Attoh et al. (2019), it is not only end users who labor under these conditions of informational asymmetry, but also urban gig economy workers such as Uber drivers from whom the central commodity of platform capitalism—data—is likewise being forcibly extracted under conditions of alienation and isolation imposed and digitally enforced by the platform entity.

An epistemology that renders platform urbanism knowable as a spatialized form of platform capitalism is one capable of offering little more than what Derickson (2018: 577) has referred to as a "totalizing analytic" that "contain[s] and metabolize[s] the social totality," confirming and strengthening "capitalism's explanatory power." Platform urbanism interventions which narrowly leverage analytics of labor, class, capital, dispossession, accumulation, and extraction arrive at a dystopian singularity, one in which platforms will have remade cities in their own image on a planetary scale. This signals a third problem, which is that this techno-alarmist convergence around inevitably dystopian urban futures is inherently defeatist. It limits scholarly engagements to endlessly castigating platform–urban configurations as capable only of begetting an 'idiotic' city (Attoh et al., 2019) that functions solely as the spatial "theatre [for] platform capitalism" (Stehlin, 2018b: n.p.), circumscribing opportunities for critical engagements that meaningfully intervene in platform urban formations, practices, and politics by negotiating, diverting, or remaking them. Rather than cracking open the horizon of possibilities for reconfiguration, the only alternative presented to a defeatist resignation to the imminence of a platform-induced urban apocalypse is anarchy via "euthanasia of the platform" (Sadowski, 2018). Such prescriptions for euthanizing platform urbanism are not only impractical, but they also falsely suggest that we can return to some kind of romanticized pre-technological urban —a form of magical thinking that Stiegler (1998) has termed *aporia of origin*.

This fetishization of the capitalist platform entity in nascent platform urbanism engagements is generative of a kind of myopia which desensitizes us to the everyday instances where platform urbanism is neither frictionless nor inevitably successful, and where the

particularities of encounters at platform/city interfaces are irreducible to dynamics of labor, class, appropriation, and/or dispossession. Such desensitization blinds us to the highly mundane possibilities for "counter-topographies" (Katz, 2001) where platform/city interfaces are actively negotiated, contested, diffracted, or remade through everyday digital interactions that "do not deny the power of capitalist social relations [–] or the theories that explain them – but which reveal their limits in ways that suggest new means to undo them" (Katz, 2017: 599). Accepting as a point of departure Barns' (2018c) assertion that platform urbanism begins with the situated quotidian digital interactions of city dwellers rather than with the extractive–accumulative propensities of neoliberal capitalism demonstrates platform urbanism to be urgently in need of a theoretical framework that situates platform–urban configurations in the everyday, that acknowledges the political potential of mundane encounters at platform/city interfaces, and that is open to an indeterminate array of possible urban futures. What platform urbanism needs, then, is minor theory.

Minor theory and the glitch

Cindi Katz's (1996, 2017: 569) 'minor theory' is simultaneously a critique, politics, and praxis of knowledge production. It repudiates the masculinist essentialism of "big [boy]" political economic orthodoxy and the ways in which it rewards mastery of a universalizing theoretical apparatus that explains lived socio-spatial relations in terms of abstract dialectics (production/reproduction; accumulation/dispossession) over and above how these dynamics actually play out in the lives of everyday people, particularly those whose subjectivities—as women, racialized majorities, LGBTQA+, residents of Majority Worlds—are deemed marginal or secondary to positionalities in labor and class hierarchies. Minor theory instead proceeds precisely from the margins, working the universalizing axioms of political economic orthodoxy through the subjective particularities and site-specificities of marginality in ways that simultaneously acknowledge the influence of capitalism's broader structural forces and expose the inherent limitations of universalizing explanations tendered solely in terms of capitalist social relations. In eschewing totalizing analytics in favor of the relationalities and intersectionalities of marginality, minor theory remains open to alternative "terrains of possible practice" and to the political potentials of the everyday (Katz, 2017: 598).

I move to theorize platform urbanism from the minor in an effort to work through and against engagements with platform urbanism as a teleologically techno-apocalyptic phenomenon while moving toward more open—and ultimately more hopeful—potentials for platform–urban futures and the possibilities for platform–urban politics. I do so by prefiguring the marginality of platform urbanism, which I locate in the 'glitchiness' of digital platform–urban configurations. 'Glitch' is a term often used as synonymous with accidental, highly obvious "dysfunctional event[s]" in digital systems where something is discernibly wrong, having failed to execute as anticipated or completely failed altogether (Goriunova and Shulgin, 2008; Nunes, 2011: 114; Sundén, 2015). Glitches may arise where there is an error in code, a "mistranslation in the transmission of data between different domains" (Bucher, 2010: n.p.), or where critical information has been incorrectly classified as erroneous or erratic content in a data signal—what Nunes (2011) refers to as "noise." As developed by Legacy Russell (2012) in a feminist manifesto for a queer politics of digital embodiment, the glitch has an additional register beyond the immediacy of failure or malfunction—one where "the pixilated hiccup, the frozen screen, or the buffering signal ... acts as a fissure ... that jars us into recognition" about momentary opportunities opened up by errors for "slipping across, beyond and through" hegemonic configurations to realize "new transfigurations" (Russell, 2012: n.p., 2013: n.p.). Glitches, then, express a dual capacity for

both *error* and *erratum*, or a much needed "correction to the 'machine'" of digital and social systems alike (Russell, 2012: n.p.). The critical potential of the glitch as erratum is latent not so much in opportunities for intentional disruption *à la* Sundén (2015) but rather in the ways in which glitches constitute "creative openings ... that allow for a reconceptualization of what can (or cannot) be realized within existing [socio-digital] practices" (Nunes, 2011: 4).

In the empirical sections that follow, I mobilize Russell's conceptualization of the glitch in three specific ways to theorize platform urbanism from the minor. First, Russell's error/erratum dualism serves as a heuristic that captures both the empirical propensity of platform–urban configurations toward erraticness *and* the radical potential of the indeterminacy of this tendency toward error to underwrite an indeterminate, ontogenetic, and ultimately more hopeful platform urban politics (erratum). Second, this 'glitchiness' of platform–urban configurations constitutes the marginality of platform urbanism where actually existing platform/city interfaces belie hegemonic overdeterminations of the total and complete capitalist takeover of cities being ushered in on the coattails of digital platforms. And third, the glitch serves to name a technopolitical epistemology of attunement to precisely this glitchy marginality—moments and sites where platforms materialize otherwise or differently than expected, where platform–urban configurations fall short of their ambitions for capitalist frictionlessness, where platforms cannot effectively smooth out or 'fix' city spaces in ways necessary for their unencumbered operation, or where the platforms are unexpectedly absent. This attunement to the glitch is not so much a search for abject failure in the system, but should rather be thought of as an epistemological ethos of being attentive to platform–urban marginalities that open up opportunities for mundane tactical maneuver within and through "configurations between ... people, networks[,] and urban infrastructures" (Barns, 2015: n. p.) where these may be modulated, diffracted, or (re)made along counter-topographical lines.

Below, I present a selective sample of three vignettes of glitchy platform/city interfaces narrated from the margins of these configurations, fleshing out what this (re)narration from the minor illuminates about platform urbanism in each instance. Drawn from an ongoing archive of technology industry and press media coverage of technologies and cities since 2008 as well as an autoethnographic account, these vignettes are not intended to represent methodological or empirical cohesion—which is precisely why I term these vignettes rather than case studies. I enroll these vignettes instrumentally as illustrative devices to identify unique spatio-temporalities where the comings-together of cities and platforms are observably glitchy, evading distillation to pattern, process, or expected outcome. In each vignette, the glitch materializes and (re)makes platform urbanism in different ways, coming in the form of surprise, casualty, and absence.

Glitchy vignettes of platform urbanism

Glitch as surprise: Sidewalk Toronto

In 2017, it was announced that Sidewalk Labs, an arm of Google parent company Alphabet, had chosen Toronto as the site to develop a prototype platform-mediated city at a neighborhood scale on a site along Toronto's Lake Ontario waterfront known as Quayside (Bozikovic, 2017; Rider, 2017). As per the vision statement for this proposed development, named Sidewalk Toronto, Sidewalk Labs (2018: n.p.) promises a utopian urban future that will "[combine] people-centered urban design with cutting-edge technology [to] achieve new standards of sustainability, [housing] affordability, mobility, and economic opportunity." This envisioning has been supported by visualizations of these futures depicting variations on a theme of vibrant multicultural denizens inhabiting modern multi-story residential units

overlooking likewise multicultural families making use of perfectly manicured urban green spaces that afford immediate access to water-based outdoor recreation activities such as paddling and from which, importantly, all visible traces of embedded technology are absent (Sidewalk Toronto, n.d.).

In the midst of a protracted public consultation and planning process leading up to the release of Sidewalk Labs' Master Innovation and Development Plan to the public on June 17, 2019, the following headline appeared in the Canadian news media in the Spring of 2018: "Sidewalk Labs 'hadn't foreseen' data concerns by Canadians in designing Toronto neighbourhood" (The Canadian Press, 2018a: n.p.). At issue were not only the ways in which the sensor-laden and app-accessible spaces and services of Sidewalk Toronto will comprise a data-driven ecosystem sustained by the continuous capture of the digital traces of its denizens, workers, and passersby. Sidewalk Labs undoubtedly anticipated that there would be questions raised about the privacy implications of the project, and indeed the privacy implications of a city-within-a-city "operat[ing] on a data platform" have been a bone of contention and vociferous opposition in the spirited public debate about the proposed development and its future data handling practices (see e.g., CBC News, 2018; Cecco, 2019; Coletta, 2019; The Canadian Press, 2018b; Wylie, 2018: n.p.). Rather, what was "not foreseen" was the "passion Canadians [have] for . . . data residency" (Kristina Verner, Vice President, Waterfront Toronto, quoted in Rider, 2018: n.p.), and "how fiercely Canadians would demand that their data be retained within the country" (The Canadian Press, 2018a: n.p.). The issue emerged when, when, as reported, a legal representative for Sidewalk Labs did not provide a direct answer to questions about where the data were going to be stored, or how data residency would be technically engineered (The Canadian Press, 2018a).

What is glitchy about this encounter is not Torontonians' intransigence regarding data territoriality, but rather that concerns over data jurisdiction were unanticipated. The glitch here comes in the form of a surprise that appears as a momentary wrinkle in the veneer of streamlined projections of utopian urban futures in which the spaces and practices of city life appear as always-already smoothed out for the unrestricted operation of technology platforms and platform-technology capital. Certainly, data jurisdiction is only one of the many things that are at stake in the proposed Quayside development along Toronto's lake shore. Yet, reading the Sidewalk Toronto project through the lens of the margins of this surprise—of something that, unlike the much-covered concerns over data privacy protections and custodianship (not just where the data would reside, but who would control it), received only fleeting media attention—underwrites an engagement with platform urbanism that belies 'major' narratives of an inevitable and inevitably successful platform–capitalist monolith of rent, value, data, and labor extraction.

It does so by illuminating the fragility of platform urbanist ambition, an ambition that is perhaps most negotiable and/or contestable along axes for which contingencies have not been devised in advance simply because they could not be. Unpacking platform urbanist ambition from the minor of the glitch-as-surprise furthermore suggests that urban platform interventions should perhaps be understood as at their core a "gamble" on the part of platform enterprises and cities alike (Carr, 2018: n.p.)—or radical urban-technological experimentation with an as-yet indeterminate outcome—rather than as the telos of the runaway freight train of an urban techno-colonialist platform capitalism that sees the city merely as a platform for dialectical extraction/accumulation. As Nunes (2011: 3) writes, while unanticipated outliers are often disregarded as noise that is merely incidental to dominant processes, it is precisely in this divergence from pattern, hegemony, and trend that noise constitutes information in its own right, signaling "an opening for variance, play, and

unintended outcomes." At the time of writing of writing, Sidewalk Toronto is by no means a 'done deal'. The current agreement between Sidewalk Labs and Waterfront Toronto includes provisions for the development to be canceled in the event that enduring concerns are not resolved by October 2019 (Deschamps, 2019).

Glitch as casualty: #deleteUber

Likewise in 2017, a social media campaign coalesced around the hashtag #deleteUber in response to Uber's lifting of surge pricing for rides originating at the John F. Kennedy (JFK) airport during a public demonstration protesting U.S. President Trump's executive order restricting persons from seven named countries from travelling to the United States. Uber's decision to lift surge pricing (which charges multiples of standard fares when demand for rides is high) was perceived as an act of profit-mongering that capitalized on an hour-long embargo on JFK pick-ups by New York taxi drivers organized by the New York Taxi Workers Alliance as an expression of solidarity with the protests (Cresci, 2017). Even though Uber had advertised its lifting of surge pricing in the vicinity of JFK after the end of the hour-long taxi union action (Isaac, 2017), the ridehailing service provider's actions were nevertheless perceived by some as politically objectionable capitalist opportunism that both undermined a labor action and exploited the plight of residents of the countries named in the executive order. This perception gained momentum as it spread through the social network Twitter, where, stripped of the context of the timing of Uber's lifting of surge pricing *after* the end of the strike action, users encouraged others in their social graph to #deleteUber by removing the app from their devices and deactivating their accounts. In total, some 400,000 Uber users deleted their accounts in response to the social media campaign, leading to a significant though only temporary drop in its business and in its user acquisition (growth) rate (Bhuiyan, 2017).

The glitch here is not found in the deletion of the app as an act of political resistance to the technocapitalist platform that upset a platform enterprise's ability to extract value or accumulate capital, for indeed Uber's business quickly recovered, actually growing by 15% in the United States in the six months from March to September following the campaign (Bhuiyan, 2017). Rather, glitchiness in this instance is an inherent structural characteristic of digital platforms themselves, whereby one digital platform enterprise (Uber) becomes a casualty of another platform's (Twitter's) rhizomatic topology, which underwrote an unprecedented momentum of the spread of (mis)information through the social network (Twitter). Reading this scenario from the margins of the glitch-as-casualty rather than via dominant framings of #deleteUber as a form of organized resistance against the technocapitalist platform monolith importantly shifts the focus instead to the "concrete nature" of specific platform/city interfaces (Katz, 2017: 599). It highlights that platform/city interfaces are more the result of diffractive encounters of urban denizens, platforms, and spaces than of being prefigured or fixed in advance by the machinations of an abstract platform capitalism and/or resistance to its logics of exploitation, the profit motive, or oppression.

Glitch as absence: Vancouver, the ridehail-less city

I am a native Vancouverite, a city where ridesharing platforms do not have the permission to legally operate. Vancouver is the last remaining major North American metro holdout in the ridesharing space, with ridehails set to take to the streets only in late 2019 (Lindsay, 2018). Not having lived there for well over a decade but regularly travelling to and through the city a few times a year, I would, until quite recently, forget this fact. I would casually open up my Uber

app, only to see no available car icons appear on screen within proximity of my real-time location. Licensed taxi services do operate in the city, and have been requestable through competing apps that similarly allow users to order and pay for licensed taxi rides via their mobile device. However, my momentary disappointment at not being able to hail an Uber did not compel me to install a competing taxi hailing app in the moment. Instead, it would propel me to utilize Vancouver's public transit services. This was motivated not by any opposition to the traditional taxi industry, but rather by self-admitted laziness associated with not wanting to have to go through the process of finding, downloading, and setting up my payment information in a taxi hailing app in situ, and also by my intimate familiarity with Vancouver's public transit network, which I know how to easily navigate.

The glitch here appears as absence, where the actual non-appearance of the platform speaks to the ways in which platform urbanism has not (yet) fully subsumed urban mobility to the extent that traversing the city continues to be possible *sans* platform-brokered ride/ bike/scooter sharing. I experience this glitchy absence as both a material non-appearance (Uber is not available) and as an affect, the latter signaling my acute awareness of the non-fulfillment of my desire for the platform to digitally render smooth my urban travels on-demand. While drawn from autoethnographic experience, this temporary inconvenience represented by the absence of the platform begins to get at not only how the dynamics of platform urbanism "*work*," but also how they "feel" (Katz, 2017: 596), capturing the ways in which platform urbanism itself is an affective phenomenon (Leszczynski, 2019) in which we become invested, actively assembling the platform/city interface every time we open an app, request a ride, rely on the accuracy of our mobile GPS to pinpoint our real-time location, and fulfill payment through our mobile device.

The absence of the platform—where contra expectation it fails to appear at all—comprises a fissure *à la* Russell (2012), cracking open the "[terrain] of possible praxis" to opportunities for mundane, minor tactical maneuver (Katz, 2017: 598). In this case, it comes in the form of a tactical rerouting of my urban mobilities from the platform enterprise onto the public transit network of a city, a rerouting that remains digitally mediated as I continued to rely on my smartphone to determine the departure times of late night trains out of the city center. This could be interpreted in terms of a major regulatory success on the part of British Columbia in keeping ridehail operators at bay to date. Yet, in the minor register, the rerouting necessitated by the absence of the platform importantly works "in, through and against ... universalizing theoretical" proclamations of scenarios in which platforms have effectively subsumed all of aspects of the urban everyday—including mobility—to their totality (Katz, 2017: 598), begetting a universal kind of doomsday scenario predicted on the crystallization of urban platform/ spaces[6] in which the absence of the digital platform renders mobility impossible. In other words, this encounter at a platform/city interface from which the platform itself is unexpectedly absent importantly captures the ways in which platform urbanism is not only a project of imperfect ambition (*glitch-as-surprise*), but one which is also incomplete. This incompleteness signals less the inability of platform enterprises to realize a vision of global urban market expansion due to regulatory obstacles than it does the ways in which platform logics of universal subsumption have not yet overcoded the spaces and practices of everyday life in their totality, belying warnings of the immanence of the outright "techno-capitalist takeover of cities" (Sadowski and Gregory, 2017: n.p.).

Toward a more hopeful platform urbanism

In this paper, I have drawn on Legacy Russell's (2012, 2013) notion of the glitch as a dual tendency toward malfunction and correction in digital systems as an entry point for

theorizing platform urbanism from the minor, mobilizing the glitchiness of platform–urban configurations to constitute the marginal registers of this emergent phenomenon. Narrating specific instances of co-generative dynamics between platforms, cities, and urban denizens from their glitchy margins—as I have done via three vignettes of platform/city interfaces that are assembled otherwise than expected or not at all—underwrites a conceptualization of platform urbanism that is counter-topographical (Katz, 2001) to theorizations of platform urbanism as the telos of a neoliberal platform capitalism capable only of producing dystopian, ever more unequal, idiotic cities that are a predetermined inevitability against which there is no meaningful recourse. Rather than a universally totalizing urban condition rendered legible only via totalizing analytics of rents, value extraction, class difference, and labor exploitation, platform urbanism as theorized from the minor via the glitch reveals it to be a highly contingent, indeterminate, and necessarily incomplete phenomenon where erratic/erroneous configurations of platforms and cities are both the result of, and open to opportunities for, tactical maneuvers rooted in everyday digital praxes that remake, unmake, and make differently platform/city interfaces.

Minor platform urbanism's attunement and openness to reconfiguration and contingency underwrites more hopeful digital urban theory, politics, and futures going forward. As a technopolitical epistemology, the glitch trains the eye precisely on those space-times where platforms appear in ways that, on the surface, seem not quite right: unexpectedly, otherwise than anticipated, or failing to appear at all. It furthermore engages these glitches as fissures that create opportunities for mundane digital tactics to negotiate, divert, diffract, or differently assemble the platform/urban interface in ways that are counter-hegemonic and as such inherently and immediately political. This prefiguring of a tactical platform urban politics is significant in that it remonstrates with the reductionism of digital urban politics to stark dialectics of cooptation/resistance or acquiescence/anarchy. Given that full-scale anarchy through calls for, for instance, euthanasia of the platform (Sadowski, 2018) are unlikely to manifest as populist action, such dialectical thinking effectively presents organized collective resistance against the platform as the only viable means of being political in the platform-mediated city (see also Rose, 2017).

Organized resistance however signals a *strategic* version of platform urban politics, one that implies and necessitates forms of social, economic, and political capital which may be leveraged to affect institutional and infrastructural processes so as to define the parameters of regulation, operation, and the possible array of responses to changes in platform urban environments. A glitchy theory of platform urbanism ultimately underwrites a more hopeful platform urban politics by extending and recognizing ordinary urban denizens' abilities to express political capacity through everyday digital interactions and practices *outside* the bounds of acts of collective resistance which presuppose and necessitate forms of social, political, and often economic capital to which many do not have access. Dialectical thinking which suggests that resistance and anarchy are the only alternatives to acquiescence to and cooptation by urbanized forms of platform capitalism may furthermore pre-emptively exclude subjects who may themselves feel disenfranchised from organized social actions that work to advocate for the needs and interests of members of comparatively more powerful social groups, such as those of predominantly male gig workers who drive for ridehail platforms (see Rosenblat, 2018a, 2018b), even where these individuals may belong to the economic precariat.

While the glitch situates platform urban politics in everyday digital practices, it is not a prescription for *doing* platform urban politics. It is *not* a directive to search for the "exploit" (Galloway and Thacker, 2007) in platform–urban configurations or to engage in practices of "selective hackability" (Zook and Graham, 2018: 390). Indeed, such practices of

strategically coding or propagating error through the system similarly necessitate certain kinds of capital and power (digital literacy, privileged subject positionality, access to technological resources, and having access to viable non-platform alternatives/alternative platforms). As a technopolitical epistemology rather than a political praxis, the glitch does not disavow nor oppose the critical importance of vital social organizing work—such as that of the Fairwork Foundation[7]—that directly confronts the urban social inequalities known to be arising as a result of platform enterprise actors' extraregulatory operations, informational asymmetries, wage deflationary and biased algorithmic practices, endeavoring to create fairer platform–urban cities for all. A minor theory of platform urbanism acknowledges the significance of such strategic platform urban politics while simultaneously attuning us to what Bunnell (2015: 45), quoted above in the Introduction to this paper, refers to as the "but also" of the political potentials of mundane digital practices that have the capacity to make, remake, and unmake platform/urban interfaces in ways that evade distillation to organized resistance *and* "corporate and political interests" (emphasis added).

Similarly, theoretically, the glitch is not a naïve counterpoint to political economic analyses which illuminate the ways in which platform technology capital is most certainly working to 'flatten' cities by rendering them frictionless for the operation of, and accumulation of capital by, the platform (Ferreri and Sanyal, 2018). Focusing on the glitch does not deny the influence exerted by platform enterprises and technology capital in cities. Rather, a theorization of platform urbanism from the minor of its glitchy margins equally considers and gives empirical weight to the ways in which urban denizens are "respond[ing] to the new configurations between people, networks[,] and urban infrastructures resulting from [the effects of] real-time, ubiquitous technologies and platforms in cities" (Barns, 2015: n.p.). In so doing, a glitchy, minor theory of platform urbanism offers a necessary corollary— indeed, an erratum—to the totalizing analytics of masculinist critiques which overdetermine the expanding presence of platform enterprises to be the catalyst of an imminent urban technopocalypse, the scale and inevitability of which may only be truly appreciated once apprehended in terms of logics of dialectics, late capitalism, and neoliberalism by those who demonstrate mastery of their maxims. By engaging platform–urban configurations from an epistemological orientation of openness to the potential indeterminacy of platform/urban configurations and to the political potentials of everyday digital practices—an openness to both "actually-existing" platform urbanism[8] of the present and to platform–urban cities to come—the minor approach to theorizing platform urbanism from its glitchy margins developed in this paper undermines reward structures which applaud rehearsal and repetition of the grammars and syntaxes of major theory. It does so by rendering readily apparent the delusions and futility of clinging to the idea that there are privileged ideological and theoretical positions which provide unique access to universal truths about platform-mediated urban presents and which can predict with certainty the trajectories of platform urban futures.

Working from the empirical, glitchy specificities of actually-existing platform/city interfaces *up* rather than from dialectics of production/reproduction and accumulation/dispossession *down* engenders a more hopeful theorization of platform urbanism by divesting us as scholars from ideological resignations to platform urban dystopia as sole possible outcome of intensifying integrations of platforms and cities. Rather than relegating scholars to assuming the positions of eternal critics who voice condemnations of platform urbanism in a tautological syntax that begins and ends with the logics of capitalism and neoliberalism in an abstract terrain of the universal platform city, a glitchy minor theory illuminates the everyday contingencies of the comings-together of platforms, cities, and urban residents. In so doing, it renders them legible such that we may meaningfully intervene in these

intensifying configurations, which, as per Ahmed (2017), is the primary role and responsibility of theory (see also Elwood and Leszczynski, 2018).

By privileging the empirical specificities of platform urbanism as a complex of platform–city–urban denizen dynamics that may manifest in unpredictable and generative ways, a minor, glitchy theory of platform cracks open the horizon of possibility to an as yet indeterminate and therefore more hopeful array of possible urban futures which remain open to being formed in more equitable ways via tactical maneuverings through strategically organized platform urban environments enacted in the form of everyday digital praxes at platform/city interfaces. Returning to Russell (2012: n.p.), these opportunities for tactical maneuver are moments where errors act as fissures that allow for "new transfigurations" that negotiate, subvert, deflect, or assemble differently the platform/city interface. As a corrective to normative and hegemonic configurations, the glitch is, as per Russell (2012: n.p.), a point of "positive departure" for platform urban politics, theory, and futures—and ultimately, for more hopeful digital urban scholarship.

ORCID iD

Agnieszka Leszczynski https://orcid.org/0000-0002-5167-0499

Notes

1. https://www.uber.com/.
2. https://www.airbnb.com/.
3. https://deliveroo.co.uk/.
4. https://mobike.com/global/.
5. https://www.bird.co/.
6. A play on Kitchin and Dodge's (2011) concept of code/space as a space to which the functioning of code is essential, and where in the absence of code, the space would fail.
7. See https://www.oii.ox.ac.uk/research/projects/a-fairwork-foundation-towards-fair-work-in-the-platform-economy/
8. Building from Shelton et al.'s (2015) notion of the "actually-existing smart city."

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Agnieszka Leszczynski is an Assistant Professor in the Department of Geography at
Western University. Her work examines geolocation, digital platforms, and cities.