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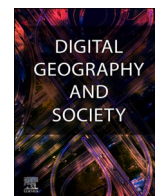
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Of fixes and glitches: Mixing metaphors for platform urbanism

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ABSTRACT

The growing influence of digital platforms on cities has captured the attention of urban scholars, marking a 'platform pivot' in digital geography and urban research. This article reviews emerging literature on platform urbanism, using the metaphors of the fix and the glitch as starting points from which to discuss two contrasting perspectives on the phenomenon. Rooted in Marxist political economy, fix-thinking highlights how platforms generate new opportunities for value-extraction through processes of disembedding, datafication and deregulation. Influenced by feminist, queer and Black media studies, glitch-thinking performatively underscores the breakdowns and openings in the working of platforms. Where fix-thinking highlights the role of platforms in furthering urban capitalism, glitch-thinking encourages us to envision how things could be otherwise. The review leads to two original insights that may further knowledge on this phenomenon. First, it points to a gap in research investigating instances when breakdown and disruptions turn into organised action and sustained social change. Second, it underscores the citational politics that limit engagements between the two strands, and the potential usefulness of drawing on earlier scholarship that softens or challenge the 'fix-glitch divide'.

1. Platform urbanism and its theory-cultures

Since the launch of Facebook in 2004, the influence of platforms (i.e. online services that mediate social interactions and market transactions) has vastly expanded; once concerned with media production and circulation, platforms now intervene on many more realms of social life, including housing, mobility, work, education and health. They have also become part of novel sociotechnical imaginaries (Jasanoff & Kim, 2015) with an explicit, if nebulous, geographical dimension, demonstrated by buzz words such as 'the city as platform' or the 'sharing city'. These transformations have captured the attention of geographers and urban researchers, marking a 'platform pivot' (Barns, 2019) in the literature. Scholars have built on critiques of the smart city (Datta & Odendaal, 2019; Luque-Ayala & Marvin, 2015) to question platform companies that present themselves as neutral intermediaries dedicated to making online and offline spaces more accessible and inclusive. Against this narrative, they have demonstrated that platforms intervene on cities, productive relations and social arrangements in ways that are profoundly political (Graham, 2020; Langley & Leyshon, 2017; Sadowski, 2021; Zukin, 2021).

This article reviews the critical¹ geographic scholarship on platform urbanism and examines its theory cultures. Following Aamir Mufti (2005), I understand theory culture as 'the habitus that regulates theory', a concept that foregrounds how group identity and personal history shape scholarly practices. In platform urbanism scholarship (and in geography at large), the predominant theory culture is that of political economy, by which I mean an admittedly heterogenous set of approaches that shares a Marxist understanding of capitalism, and thus an interpretation of power relations primarily in terms of class struggle (see Gregory, Johnston, Pratt, et al., 2009 for a more extensive discussion of how geographers have approached political economy). Researchers working from within this tradition use the phrase 'platform urbanism' to evoke Srnicek and De Sutter's work on platform capitalism (Srnicek & De Sutter, 2016) and connect it to the urban studies literature on planetary urbanisation (Brenner & Schmid, 2014; Merrifield, 2014). These accounts characterise platform urbanism as a worldwide condition, an uneven fabric of sociocultural and politico-economic relations centered upon the extraction and use of data. In this reading, platforms facilitate capital accumulation through fixes, i.e. processes of (spatial) expansion and restructuring, and thereby extend the smart city's technocratic,

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¹ While I share a certain suspicion for the (often self-appointed) 'critical' label (Blomley, 2006), I use it here as shorthand for scholars who, regardless of their theoretical stripes, share an understanding of technologies as historically and socially shaped, an interest in the structures of ownership and control that underpin them, and a normative commitment to probing their ethical and political implications (see also Wyatt, 2021: 407).

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profit-oriented mode of urban governance. Resistance is arduous, and necessarily relies on organised mobilisation (particularly, protest and unionisation) against platform-driven dispossession.

This framework is extremely useful. Analytically, it eschews technodeterminism, placing platform technologies in historical context and putting their relative novelty into perspective. It also underscores the importance of studying not only the effects of platforms on cities but, more broadly, how platforms operate at various scales in profoundly uneven ways. Politically, it foregrounds the importance of collective action and structural change. Such emphasis on structural forces and macro-processes, however, leaves little room for exploring those aspects of platform urbanism that fall beyond, or at the margin of, platform capitalism. Not all platforms abide by the same, singular logic: some are more exploitative than others, some have been developed with some collective good in mind, others as a hobby or learning exercise. Some platforms fail, others thrive. Nor do the terms of exploitation and resistance exhaust the possibilities of user engagement with platforms: people's experiences with platforms are not fully determined by their class position and include moments of playfulness, intimacy, escapism, etc. Political economy analyses tend to disregard this richness.

Noting these limitations, several recent contributions (Elwood, 2020; Leszczynski, 2020; Leszczynski & Elwood, 2022; Rose, Raghuram, Watson, et al., 2021) accuse the platform urbanism scholarship of being overly reductive, dystopic and totalizing. Influenced by Feminist STS, Black and Queer Studies, these authors intentionally focus on *glitches*, i. e. the errors and openings in the working of platforms, to underscore that platforms mediate urban space in unpredictable ways. These contributions helpfully multiply scholarly perspectives on platform urbanism, thanks not only to their original conceptual repertoire, but also because this theory culture is not as male-dominated as political economy (although similarly white and anglophone). Overall, they regard platforms with cautious optimism, or, at least, with a sense of possibility: as technologies that can be shaped through 'tactical maneuvers rooted in everyday digital praxes' (Leszczynski, 2020: 13).

This article takes the two recurrent metaphors of *the fix* and *the glitch* as entry points from which to examine each perspective and, hopefully, facilitate a dialogue between them. I hasten to add that conceptualisations of platforms and their effects are not as homogenous as this binary implies, and that scholars can move back and forth between these two positions. A split, however, does exist and occasionally turns into an outright clash. A focus on metaphors furthers these conversations on two accounts. On the one hand, metaphors work as 'structuring concepts' (Lakoff & Johnson, 2008) that inform how their adopters think and act, in ways that they themselves are not fully aware of. Thus, paying closer attention to our choice of words, and 'trying out/on' metaphors we do not normally use, is a way to push our thinking, seeing a phenomenon through a new lens. On the other hand, in academic writing, researchers use metaphors in similar ways to citations: to anchor their work within particular traditions and fashion their scholarly personas; in so doing, they reproduce the authority of those who wrote before them. An explicit discussion of metaphors is, therefore, a way to interrogate theoretical-political alliances, and consider how we choose to reproduce urban studies as a discipline.

Reviewing the platform urbanism scholarship through this lens leads to two original insights. First, it highlights the need for investigating how breakdowns and disruptions turn into sustained action and alternative social arrangements; these instances, in fact, tend to fall in a blindspot, between fix-thinking's focus on structural oppression and resistance, and glitch-thinking's celebration of idiosyncrasy and subversiveness. Second, and relatedly, it highlights the importance of continued engagement between *fix-thinking* and *glitch-thinking*, with an emphasis on earlier scholarship that bridges and challenges this divide, such as Black and feminist political economy, or Marxist queer theory.

In the following section, I clarify my understanding of metaphors, and their dual role as structuring devices and citational technologies. Building on these ideas, sections three and four consider platform

urbanism through the fix and the glitch metaphor, respectively. Here, I briefly trace a 'genealogy' of these tropes, before discussing their use in the geographic literature on platforms. I underscore the ideas about space, technology and politics that underpin each metaphor, while also considering how scholars use the fix and the glitch to position themselves in relation to particular theory cultures. In the conclusion, I draw out the implications of my argument for future research.

2. Metaphors we identify by

Critical geographers and urban studies scholars know well that "pieces of the world (...) do not come with their own labels, and thus representing 'out there' to an audience must involve more than just lining up pieces of language in the right order", as Barnes and Duncan (2011: 2) put it twenty years ago. With different degrees of self-awareness, researchers decide how to represent things, in ways that are shaped by their lived experiences and social positions (Haraway, 1988; Harding, 1992). Metaphors are, of course, an example of such decisions. By representing the world in certain terms and not in others, researchers intervene on the phenomena they are describing. And while this is true of any form of representation, academic texts can be especially influential: they transform how people interpret the world around them, point at problems to be tackled and possible solutions and inform law, policy and technological development. But it is one thing for critical scholars to know these things and another, much more difficult thing for them to mobilise this knowledge in their research and writing practices. I suggest that examining their, that is, *our*, choices of metaphors is one way to do that, and thereby produce accounts that embrace reflexivity without falling into solipsism.

Simply put, metaphors describe one thing (called *target* in cognitive linguistics) in terms of another (called *source*). An original, well-chosen metaphor can clarify meaning, cast its target in new light, and inject a text with humour, gravitas or poetry. When a metaphor is used over and over again, the association between target and source becomes fixed and tends to lose its metaphorical qualities, as has happened to phrases such as 'heart of gold' or 'sharp mind'. Such well-established metaphors have been traditionally written off as 'dead' or 'dying' (e.g. Barnes & Duncan, 2011; Ricoeur, 2013): at best, useless; at worst, a tell-tale sign of 'bad' language and of the writer's regrettable laziness (Orwell, 1946). This characterization, however implies that conventional metaphors are inert, essentially inconsequential. On the contrary, cognitive linguists have demonstrated that it is precisely those metaphors that we use without noticing, often implicitly, that have the greater influence on our thoughts and actions (Lakoff & Johnson, 2008). In discussions of digital technologies, 'platform' provides an example of one such dormant metaphor. By explaining one thing (online intermediary services) in terms of another (in this case, at least two: a physical stage and a political programme), the metaphor foregrounds the similarities between them. In some respects, digital platforms are truly 'like a stage', in that they allow users to view and select service providers. In countless respects, however, they are different: *digital* platforms collect fees, use algorithms to sort and filter who is visible, undercut local service providers, and dodge taxes and labour regulations. The platform metaphor highlights the similarities and hides the differences. As Gillespie (2010: 13) observes, it shapes how we think of and relate to digital platforms, evoking 'a comforting sense of technical neutrality and progressive openness' that is clearly misplaced.

Another feature of well-established metaphors is especially relevant in the context of academic writing, namely, their intertextual character. Scholarly texts build on, and derive their meaning from, earlier work, and that includes from metaphors. Some metaphors become so successful that they are taken up as signifiers of entire fields or intellectual traditions. The fix is one of these metaphors, as Rachel Bok (2019) has argued in a contribution that partially inspired this article. It is invoked not so much to refer to a specific theory, but rather to evoke a sort of shared critical common sense that arguably characterises geographical

political economy. As Bok contends, writers use the fix metaphor not just to explain a given phenomenon, but also to signal that they belong to this particular theory-culture. In doing so, they refer to previous work using the same metaphor, and thus reproduce and reify the canon of this discipline – the works and authors that *must* be cited. While not associated with a comparably well-defined disciplinary community, the glitch metaphor also allows scholars to situate themselves within a particular theory culture. As I will show in section four, this latter theory culture defines itself, among other things, through its marginality within critical geography. An analysis of scholarly metaphors *must* engage with the ongoing debate on the politics of citation (Mott & Cockayne, 2017) and the ‘screening out’ (Ahmed, 2013) of particular bodies from academic practice. It is tempting to blame the use of metaphors as markers of (scholarly) identity for their dulling and, ultimately, their death. Yet, it would be naïve to assume that it is possible to separate the meaning of metaphors from the history of their usage.

In the following section, I draw on these ideas to examine the fix and the glitch as metaphors for platform urbanism and to discuss how, by choosing one or the other, scholars position themselves in different ‘camps’. I come to this discussion as someone who is sympathetic to both positions, and has in fact used both tropes in her research, at different times (reference removed for peer-review). I believe that each has something to contribute to platform urbanism research, and regard the tension between them as especially productive.

3. The fix: The political economy of platform urbanism

The notion of the spatial fix describes capitalism's drive to solve its inner crisis tendencies through geographical expansion and restructuring. David Harvey (1981, 2001, 2002) first proposed this metaphor, using it to discuss the production of space under capitalism. The fix here refers to two interrelated spatial dynamics: the perpetual attempt of capital to expand (for example, through colonialism, imperialism and urbanisation), and the ‘fixing’ of capital in place through the production of the built environment (most notably through infrastructural development). The effectiveness of the metaphor can easily go unnoticed not only because of its familiarity, but also because the word ‘fix’ has multiple meanings. As a verb, it can mean to fasten something in position (I fixed the lights to the bike), or to repair something that is broken, either literally (I fixed the bike), or figuratively (I fixed the problem). Harvey, however, has also a fourth meaning in mind: the (already metaphorical) notion of the ‘drug fix’, i.e. ‘the burning desire to relieve a chronic or pervasive problem’. The fix resolves the problem and dissolves the desire but, the metaphor implies, ‘the resolution is temporary rather than permanent, since the craving soon returns’ (Harvey, 2001: 24). Addicted to capital accumulation, cities experience a ‘burning desire’ for productive space/time/things. Their attempts to relieve themselves from the problems of overaccumulation, however, are bound to fail.

Bok rightly notices that, over the past forty years, geographers have used the fix metaphor, ‘creatively yet in many respects fairly consistently’ (Bok, 2019: 2), to indicate ‘a precarious, temporary solution mobilized in response to crises of capitalist reproduction that only exacerbates fundamental, underlying contradictions’ (Bok, 2019: 14). This understanding connects Harvey (1975), Harvey, 1981) to recent political ecology discussions of ‘socioecological fixes’ (Ekers & Prudham, 2015), passing through Smith's theory of uneven development (Smith, 2010), Peck and Tickell's analysis of post-Fordism and neoliberalism (Peck & Tickell, 1994), Jessop's work on institutional and spatio-temporal fixes (Jessop, 2000; Jessop, 2013) and Brenner's rescaling theory (Brenner, 1998; Brenner, 2001). Bok discusses the differences between these various phases and currents of fix-thinking in ways that are well beyond my scope here, but her key contention is that the shared metaphor of the fix works as ‘a signifier of disciplinary histories and theorycultures’ (Bok, 2019: 18): a point of ideational convergence that supports community-building within the field.

Platform urbanism scholars who adopt the fix metaphor, either by

implication (e.g. Sadowski, 2020) or explicitly (e.g. Greene & Joseph, 2015), position themselves within this tradition. For the purpose of this discussion, I group fix analyses of platform urbanism into three overlapping categories: material, informational and governmental. In the first place, scholars talk of ‘fixes’ with respect to the material (albeit often inconspicuous) urban transformations driven by digital platforms. A clear, well-studied example is ‘gentrification by Airbnb’ (Ardura Urquiaga, Lorente-Riverola, & Ruiz Sanchez, 2020; Wachsmuth & Weisler, 2018). For political economy geographers, gentrification is a form of spatial fix: urban redevelopment happens in areas where current earnings from rentals are lower than potential earnings; this gap attracts investments in building renewals and infrastructures, increasing rental revenues as well as property values (Smith, 1987). With Airbnb, property-owners can grow their income with minimal investment by converting their properties into short-term rentals (Wachsmuth & Weisler, 2018). This results in rent surges in the broader housing market, and in the displacement of the original lower-income population (often, though not exclusively, from racialised minorities), replaced by higher-income, temporary residents (Cocola-Gant & Gago, 2021). Since Airbnb fares especially well in gentrifying or already gentrified areas, the platform drives a form of ‘super-gentrification’ (Lees, 2003), furthering capital accumulation in already saturated housing markets.

Second, the fix metaphor is used to describe strategies of capital accumulation related to platforms' capacity to produce, accumulate and extract data. Srnicek and De Sutter (2016) famously speak of a new phase of capitalism, *platform capitalism*, where data extraction has supplanted manufacturing as the key site of capital expansion. Data accumulation has thus become an end in itself, ‘driv[ing] capital to construct and rely upon a world in which everything is made of data’ (Sadowski, 2019: 8). Platforms are key to this process, enabling the datafication (and thus marketisation) of previously relatively uncommodified activities and spheres of life, from religion (Poon, Huang, & Cheong, 2012) to menstruation (Gilman, 2021). In this case, the platform fix remedies to capitalist crisis not through geographic expansion, but, more figuratively, by ‘colonising’ (Thatcher, O'Sullivan, & Mahmoudi, 2016) new realms of social and urban life.

Thirdly, the fix metaphor is mobilised to describe the institutional and governmental arrangements that permit platform capitalism to thrive. For example, Ugo Rossi (2021) speaks of a ‘post-2008 urban-technological fix’ to describe the convergence of ‘the urban’ and ‘the technological’ in the ‘platform metropolis’. For Rossi, the platform metropolis is the spatial manifestation of a new phase of global urbanised capitalism, characterised by the deterritorialization of economic value extraction and by the transformation of cities into ‘money-making machines’. Where earlier phases of urban capitalism had been supported by state policies of economic development, the platform metropolis is quintessentially neoliberal (Rossi & Di Bella, 2017). The discourses that legitimise these transformations deploy the platform as a trope (see for example Bollier, 2016), to signify forward-thinking, horizontal models of urban governance. Platform companies explicitly draw on this rhetoric to present themselves as vectors of economic empowerment and democratisation, delegitimising criticism and regulation as reactionary (van Doorn, 2020). In this formulation, platform urbanism is itself a form of spatio-institutional fix, not entirely dissimilar to the ‘sustainability fix’ theorised by political ecologists (While, Jonas, & Gibbs, 2004), and part of a broader neoliberal trend towards post-politicisation (Swyngedouw, 2011).

My overview is not a comprehensive catalogue of platform fixes, which would also include, at a minimum, the platformisation of infrastructure (Stehlin, Hodson, & McMeekin, 2020) and the reconfiguration of labour markets through platforms (Gregory & Maldonado, 2020). Taken as a whole, however, the examples point to an overarching narrative running through this scholarship, poignantly summed up by Sadowski in these terms: platforms are ‘concerned with producing *productive* space/time/things so that value can be extracted from previously unproductive space/time/things’ (Sadowski, 2020: 3, emphasis in the

original).

By highlighting these processes, the fix metaphor shapes analyses of platform urbanism, in ways that are both enabling and limiting. A first issue with the fix metaphor is that it embeds into the analysis a sense of inescapability: Harvey's hypothetical drug addict does not stand a chance of being rehabilitated. As even sympathetic critics like Bok observe, fix analyses are explanations for a foregone conclusion, since we already know that capital continues to reproduce itself: 'the certainty of escalating breakdown-response-breakdown is built into the internal logic of the metaphor itself' (Bok, 2019: 16). Such certainty is particularly troublesome when dealing with novel and scarcely understood phenomena, such as platform urbanism. This work, then, suffers from what C.P. Pow (2015) has termed 'a form of theoretical determinism' that sees cities as helpless pawns manoeuvred by the forces of globalised capitalism. Furthermore, drawing on the first meaning of 'fix' (to fasten), fix analyses present cities as sites where 'capital is locked up and committed to a particular physical form for a certain time-period' (Harvey, 2001: 27). This implies a relatively static conception of place, as if change happened only in bursts, in rhythm with the cycles of capital accumulation. As Doreen Massey (1991: 275) put it,

The problem with the idea of spatial fix is that it really is about fixity, about immobility. (...) But localities, as I see them, are not just about physical buildings, nor even about capital momentarily imprisoned; they are about the intersection of social activities and social relations and, crucially, activities and relations which are necessarily, by definition, dynamic, changing. There is no stable moment, in the sense of stasis, if we define our world, or our localities, ab initio in terms of change.

Combined, this sense of inescapability and static understanding of place play into the dystopic tendencies of the digital geography literature: as study after study explains how capitalism survives crises, it becomes harder and harder to imagine more equitable and just futures.

In sum, the fix metaphor helps to make sense of the logics that drive platformisation, but tends to obscure the heterogeneity of platform-related practices that do not necessarily abide by those logics. To be clear, this point is not new: similar arguments run through the glitch scholarship, as I will discuss at length in the following section. It is, however, worth repeating, not least because political economy geographers have been remarkably resistant to engage with these critiques. Such resistance is made possible by their relatively hegemonic position within human geography. Simply put, they can (and often do) choose to mostly ignore contributions from other traditions and scholarly communities that are not as firmly established as part of the disciplinary canon (see Roberts, 2015). These omissions, in turn, reproduce the gendered, racialised and geographically-informed hierarchies that inform academic knowledge-production.

4. The glitch: platform urbanism from the margins?

In media theory, a glitch is 'a break from (one of) the protocolized data flows within a technological system' (Menkman, 2011: 26), i.e. an interruption in the transmission of information. Audiovisual artists have used glitches in their practice since the early twentieth century, intentionally producing digital or analogue 'errors' for aesthetic or expressive purposes. In the platform urbanism scholarship, the glitch has become shorthand to broadly describe anomalies or disruptions in the working of sociotechnical systems that reveal or defy the logics of platform capitalism. Again, a closer examination of this metaphor and its scholarly trajectory provides a good starting point to consider its strengths and limitations.

Media and communication studies scholars have long been interested in glitches (Krapp, 2011; Nunes, 2011), but the glitch has acquired its current popularity and figurative force in recent years, partially thanks to Legacy Russel's *Glitch Feminism Manifesto*. Russel (2012: 8) conceptualises the glitch as a mistake in *and* a correction to the faulty system in which we all exist:

(...) an error in a social system that has already been disturbed by economic, racial, social, sexual, and cultural stratification and the imperialist wrecking-ball of globalization—processes that continue to enact violence on all bodies—may not, in fact, be an error at all, but rather a much-needed erratum.

Russel's glitch (plausibly from the Yiddish 'glitch', meaning slippery area) articulates a posthumanistic rejection of the division between inside and outside, between digital and 'real' world. 'The first step to subverting a system', elaborates Russel (2012: 11), 'is accepting that that system will remain in place; that said, the glitch says fuck your systems! Your delineations!'. The glitch thus represents 'a positive departure' from the machine, even if it originates within the machine itself, and is thus marked by liminality rather than subalternity. In their recent discussion of the glitch as an epistemological point of departure, Leszczynski and Elwood (2022) point to a second source of inspiration, namely Ruha Benjamin's *Race after Technology* (Benjamin, 2019), which explores how White supremacy is hard-coded into software. In Benjamin's work, glitches are trivial anomalies, not bugs but features produced by structural inequalities within the tech industry and 'signals of discriminatory orderings' (Leszczynski & Elwood, 2022: 364). So, for example, the fact that Google Maps cannot parse Malcom X's name correctly illustrates how software 'reflect and reproduce racialized commands that instruct people where they belong in the larger social order' (Benjamin, 2019: 90). The glitch has thus come to refer to both systematic design features that reveal the logics of racialised platform capitalism, and errata that disrupt those same logics, an ambiguity that Leszczynski and Elwood seek to capture through the concept of *glitch/glitch*.

These ideas have clearly captured the imagination of urban and platform researchers giving shape to a sub-genre in platform urbanism research. As a whole, these contributions correspond to an alternative set of theory-cultures: looser, more recent and more marginal compared to the fix scholarship, but remarkably influential. Glitch scholars reject the spatial imaginary of political economy, with its emphasis on cyclical compressions and expansions, embedding and disembedding (in particular, see Rose et al., 2021: 2). Instead, drawing on the work of digital geographers such as Kitchin and Dodge (2011), they envision space as being in a state of constant flux, continuously remade through practice in ways that are increasingly mediated by technology. Since this process does not necessarily follow any given logic (say, the drive towards capital accumulation), its spatial forms are multiple and contingent, depending on the specific interactions between snippets of code, places and people. Methodologically, glitch scholars often rely on vignettes (e.g. Elwood, 2020; Leszczynski, 2020; Leszczynski & Elwood, 2022; Odendaal, 2020), eschewing macro-theory and generalisation in favour of modes of 'modest theorizing' (Elwood, 2020) from partial, embodied perspectives. Put differently, as Leszczynski does, focusing on glitches, however small and extemporary, 'trains the eye' on moments and spaces where platforms work in unexpected ways; by noticing and valuing these marginal realities, scholars hope to contribute to 'negotiate, divert, diffract, or differently assemble the platform/urban interface in ways that are counter-hegemonic and as such inherently and immediately political' (Leszczynski, 2020: 13).

What are some instances of such 'glitchy' moments and places? Dattani draws on Russel (2012) and Leszczynski (2020) in her analysis of Delhi's on-demand domestic work sector. The study explores and critiques the notion of 'Uber-isation', a term used in similar ways, albeit with opposite connotations, by tech companies and fix scholars. For Dattani (2021: 383), this notion implies 'that on-demand platforms can universally expropriate the labour of varying populations regardless of local socio-spatial relations'. This logic presumes workers with independent access to digital technologies, a basic level of digital literacy and the ability to move around the city with relative freedom. Since these conditions are not realised in the case of Delhi's domestic work sector, Uber-isation fails to materialise: an empirical case of glitch.

Leszczynski (2020) and Carraro (2021) focus on people's varied interactions with platforms, which are not fully captured by terms such as 'exploitation' or 'resistance'. They both explore episodes where one platform (Twitter) is used to coordinate and promote the boycott of another platform (Uber and Google Maps, respectively). As both authors readily acknowledge, interpreting these campaigns as forms of organised resistance seems an overstatement, given their ephemeral and opportunistic character. But they are not inconsequential: they disrupt the normal operations of platforms, however temporarily, and they offer an effective way to broadcast a political message and to mobilise a collective around a shared concern. Here, the figure of the glitch foregrounds the 'minimal politics' (Marchart, 2011) of these practices, underscoring that people have some degree of agency in their dealings with platforms.

Reacting to what Dattani identifies as an 'Uber-bias' in the literature, glitch scholars also emphasize that platforms are highly heterogeneous, a fact that tends to be overlooked by the political economy scholarship, which is indeed dominated by studies on large, successful, for-profit platforms. So, for example, Rose et al. (2021) examine eight apps developed in Milton Keynes, a 1960s new town in the UK with a strong international profile as a smart city. On this basis, they argue that the circulation of data through apps produces a variety of values: data-as-commodity, but also a sense of place identity, and normative values related to how people should navigate and experience the city and interact with other residents. Platform-generated values, then, take various forms: commodities, or norms, or interactions (Rose et al., 2021: 10). These forms can align, but also clash, rendering the working of platforms unpredictable. Authors such as Elwood (2020), Odendaal (2020) and Letizia Chiappini (2020) take this line of thinking a step further by considering non-profit, socially-minded platforms such as the Real Change app, Map Kibeira, and Commonfare.² What these platforms have in common is that they work as tools for social and activist organisations, helping people to connect, share information and make their voices heard. Taken together, these examples demonstrate that platform urbanism is not synonymous with platform capitalism, and that anti-hegemonic digital politics "are already alive and well, producing and creatively occupying cracks in the 'smart' city" (Elwood, 2020: 14).

In all these cases, the glitch metaphor performatively highlights the extemporaneous, small-scale disruptions to platform systems that are typically overlooked in critiques of platform urbanism. The juxtaposition between glitch-thinking and political economy is explicit, and at times polemical. For example, Leszczynski (2020: 3) views the glitch as the basis for a minor theory of platform urbanism, and a way to intervene on "crystallizing techno-masculinist tendencies to advance universalizing apocalyptic critiques expressed through demonstrated mastery of 'major' strands of political economy and its 'totalizing analytics'". This sensibility also leads Leszczynski and Elwood (2022: 372) to question whether the political tactics developed through Marxist frameworks — such as strikes, organised protests and collective bargaining — may not be pre-emptively exclusionary of women and other disenfranchised social groups:

These framings centre already-privileged subjects as political by virtue of, for instance, their ability to take time to organize and participate in formal acts of resistance against technocapital, or to be selective about when to disengage and re-engage with ridehailing, bikesharing, Instagram, or on-demand meal delivery and other technocapitalist conveniences and entertainments.

² *Real Change* is a Seattle-based weekly paper sold by street vendors suffering from poverty and, often, homelessness. The app discussed in Elwood's paper connects vendors with potential buyers. *Map Kibeira* is community digital mapping project documenting issues that affect Nairobi's slums. *Commonfare* is a grassroots welfare platform developed in Croatia, Italy and the Netherlands; it supports the sharing of information and skills among its members.

Their concern is echoed by Fields et al. (2020: 3), who lament the 'strong strand of dystopian thought [that] runs throughout narratives of the digital urban, with the resultant tendency to reduce politics to organized resistance'. The implication that organised resistance to platforms is only or even primarily possible from a position of privilege is, however, unconvincing. The biases of mainstream political economy have contributed to prevalent imaginaries of striking workers and protesters as white and male. Yet, women, migrants, racialised and sexual minorities have often been at the forefront of protests, unions and social movements. The same groups also hold a significant share of low-paid platform jobs: in the Amazon warehouses, in Facebook's moderation centres, in the subcontracted cleaning firms of the Silicon Valley. These workers regularly engage in collective action (e.g. Gomez, 2008; Gurley, 2021). Turning to 'micro-politics' and online activism can replicate, rather than counter, their erasure. Glitch politics and political organising need not be pitched against one another.

Moved by a justified desire to highlight and strengthen the political potential of platform glitches, these readings can exaggerate the importance of individual acts of defiance, glossing over an important aspect of the original metaphor: namely, that glitches do not necessarily challenge the systems in which they occur, and can indeed even be built-in features of those systems. To refer back to the examples above, social media campaigns drive users to platforms, increase user engagement and generate data that can be used for advertising and/or surveillance. The platform-supported solidarity initiatives and social entrepreneurship mentioned above draw on unpaid labour and practices of care to compensate for a hollowed-out welfare state and a precarious, underpaying labour market. Marginality may offer an epistemological entry point, but is not in and of itself a political position.

5. Conclusion

In the past two decades, platforms have altered, and often exacerbated, urban dynamics of exploitation, commodification and dispossession. Some scholars, however, warn against the risk of excessive pessimism, suggesting that platforms also hold some potential for creative practices, solidarity and political action. This article has intervened on these debates through a discussion of the fix and the glitch, which I take as signifiers of different theory cultures. While other authors have recently reviewed and discussed this emerging literature (Artioli, 2018; Lee, Mackenzie, Smith, et al., 2020), the article makes a distinct contribution by explicitly addressing the rift between Marxist political economy and poststructuralist approaches, and using metaphors to frame the discussion. This frame helps to underscore the strengths and limitations of each approach, and to reflect on the relative power of these traditions within academia. I have suggested that the fix scholarship aptly illuminates the material, informational and governmental role of platforms in the production of space under capitalism. These compelling accounts, however, tend to overlook the processes, practices and outcomes that do not fit the logic of platform capitalism. As a result, they risk portraying platform capitalism as an all-pervasive and, for the time being, unavoidable condition. Glitch scholars consciously position their work against these tendencies. Through the glitch metaphor, they underscore, and thereby hope to sustain, those instances when the logics of platform capitalism falter. Yet, in doing so, they tend to risk conflating marginality with anti-hegemony, glossing over the fact that glitches are also implicated in the reproduction of platform capitalism.

From this review, I draw two insights with implications for further research. First, there seems to exist a blindspot between fix-thinking's focus on structural oppression and resistance, and glitch-thinking's celebration of idiosyncrasy and subversiveness. In this blindspot lie those instances where glitches are leveraged to galvanise organised social action and bring about social change. The pessimistic tones of political economy can lead to discouragement and to a 'politics of preparation or postponement' (Collard & Dempsey, 2020: 241), whereby all we can do

is to wait for the revolution or, at the very least, the next conjunctural crisis. The glitch invites us to not give in into resignation, and instead to say ‘fuck your systems!’ (Russel, 2012). Here, I take the verb ‘to fuck’ to go beyond an expression of rage, or a refusal to talk and think about it; instead, it can stand for a ‘prefigurative politics of creation’ (Springer, 2016), a commitment to find ways to live, here and now, as if platform capitalism was not inevitable. This entails building alternative spaces, economies and communities that abide by logics other than that of platform capitalism. Such a project can benefit from subversiveness and extemporaneity, but ultimately requires patience and hard work, direct action and collective organising. The question, then, is under which conditions and through which strategies can glitches be mobilised to this end?

Second, the review has highlighted how dialogue and cross-fertilisation between these two perspectives, albeit crucial, are made difficult by the citational politics of metaphors, which turn fix and glitch scholars into reluctant allies, or even antagonists. There is, however, a risk of overstating the fix/glitch divide, overlooking earlier scholarship that engaged with political economy from a position of marginality, including Black marxism, feminist political economy and Marxist queer theory. Here, my suggestion aligns with Mahmoudi and Sabatino's argument (Mahmoudi & Sabatino, 2022) that glitch scholars can productively historicise the glitch by relating it to analogue forms of failures and disruptions. As an example, they cite the ‘glitches’ in the adoption and use of home appliances in the early 20th centuries examined by feminist political economists. Paradoxically, these technological developments intensified women's domestic exploitation, thus bringing to light patriarchal and capitalist power structures, and also generating the impetus for new forms of feminist organising. Another example would be cultural analysis of sex work by Marxist queer theorists like Yin-Bin Ning. Ning (1998) compares unpaid sexual labour in heterosexual marriages to surplus labour, and conceptualises sex work as an anomaly that reveals the inherent contradictions of the modern family institutions (Liu, 2015).³ On the whole, these examples suggest that engagement with these works could soften the juxtaposition between fixes and glitches, whilst capitalising on the productive tensions between Marxist and poststructuralist perspectives. Granted, the extent to which these past disruptions (and the concepts used to analyse them) resemble the glitch is open to discussion and investigation. The broader point here is that, rather than proceeding on parallel tracks, the two strands of scholarship can build on each other, mix metaphors and thus attend to the relation between fixes and glitches.

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³ While, unfortunately, only a limited selection of Ning's writings is available in English, I draw here on Liu's extensive review of Marxist queer theory in Mainland China and Taiwan.

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