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Governing infectious disease in the urban periphery: marginality, informality and vulnerability

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This paper works toward building a theoretical framework to understand the role that extended urbanisation and peripherality played in the COVID-19 pandemic, with a specific focus on conceptualising and analyzing the nature of the social impacts and outbreak responses that unfolded in urban peripheries. In particular, we emphasise how scholarship on socio-spatial peripheralisation—as part of broader approaches devoted to analyzing the nature of extended urbanisation more generally—may vitally inform current discussions about the ways the urban periphery continues to be defined and debated in the wake of the pandemic. We make the case that governance of urban society must accept and respond to the territorial and scalar perforations, multiple diversities and deepening inequities that were highlighted in the pandemic. The chief contribution of this article is that the ways the urban periphery has been defined and debated has been associated with the changing political ecologies of urbanisation.

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To analytically explore this relationship we deploy and extend relevant concepts like extended urbanisation and suburbanisation, peripherality, marginality, and informality. Our intervention in the distinct but related debates on extended urbanisation and peripheralization adds a further dimension to consider in the governance of disease and cities.

Introduction

Five years after the beginning of the COVID-19 pandemic and ten years after the Ebola epidemic in West Africa, this paper revisits the relationships of infectious disease and extended urbanisation. When Ebola became, for this first time in the disease's history, an urban disease, ravaging the informal settlements of cities in Guinea, Liberia and Sierra Leone, it was noted that 'perhaps the most dynamic social process in Africa is its rapid urbanization (including peri—and suburbanization). The ravaging of the countryside by resource companies and the expansion of the urban fabric into regional hinterlands demonstrate the interface between humans and infectious disease' (Ali et al. 2016, 5). This formulation touched on two aspects of extended urbanisation that also came into play in the COVID-19 pandemic just a few years later: on one hand, the expansion of cities into their regional peripheries, and on the other hand the capture of urbanisation as a process extending beyond cities and their regions generally. The second phenomenon has been captured succinctly by Brenner and Ghosh: 'Planetary urbanization involves not only an intensification of city-building processes, but the remaking of territories and political ecologies beyond metropolitan centers, whether in zones of high-intensity agro-industrial and extractive capitalism, or in more remote hinterlands, forests, and oceans that are being more directly subsumed into global circuits of capital' (2022, 868).

These two related and overlapping aspects of extended urbanisation are part of a larger and expanding lexicon of how 'the peripheral' can be captured on an urbanised planet. This is a point highlighted by research on peripheralisation, which suggests that the unplanned nature of peripheral developments means that areas in the periphery may be especially prone to a number of social and environmental problems (Sawyer 2014). There has been significant debate about the peripheral—social, spatial, institutional—in the emergence and spread of pandemics as well as emerging consensus about the importance and challenges of urban governance in combatting pandemics (Biglieri et al. 2021; Connolly, Keil, and Ali 2021; Sharifi and Khavarian-Garmsir 2020).

The paper will return to these discussions focusing on the emergence and spread of COVID-19 in the extended urban periphery based on a series of case studies—or 'excursions' as we refer to them. We include three types of peripheral communities—migrant and Indigenous communities in societies of the global North (specifically in Canada), and informal settlements in parts of the global South (specifically West Africa). These excursions were selected based on two of the authors' long-term investigations (and residence) in the countries covered, particularly during the respective disease outbreaks. We then

compare and contrast these cases to others written about by scholars based in other countries to generate some comparative insights. We ultimately make the case that governance of urban society must accept and respond to the territorial and scalar perforations, multiple diversities and deepening inequities that were highlighted in the pandemic with new modalities of governance that deal with 'a more pluriversal territorialization of urban space' (Simone 2022, 9).

The chief contribution of this article is the argument that the ways the urban periphery has been defined and debated has been immediately associated with the changing political ecologies of urbanisation. In constructing our argument, in extension of concepts like extended urbanisation and suburbanisation, peripherality, marginality, and informality are critical aspects that we will focus on. In doing so, we offer an intervention in the distinct but related debates on extended urbanisation and diverse dimensions of social, spatial and institutional peripheralization. While the paper makes mostly a conceptual intervention at a certain remove from both the Ebola and COVID-19 events it evokes, it is also based on ongoing research by the authors in affected urban environments. Methodologically, the paper is based on a close reading of the changing literatures on the relationships of extended urbanisation and infectious disease since the Ebola and COVID-19 outbreaks over the past 10 years and our own long term field work in Africa and Canada, especially on research interviews and focus groups in (peripheral) communities affected by the outbreaks. The paper concludes by highlighting urban peripherality—in both its social and spatial dimensions—as a key focus in preparing for and managing future pandemics.

Extended urbanizations

For most scholars of extended urbanisation during the recent period of 'planetary urbanization', the most important influence has been the work of the French urban thinker Lefebvre (2003) who observed how our ever-expanding 'urban society', driven by the unrelenting imperative for capitalist growth, extends far beyond a city's immediate physical borders. Lefebvre's work has been made particularly popular in the context of scholarship on planetary urbanisation (Brenner and Schmid 2015; Schmid 2022). On the concept of the 'periphery', Howe (2022, 1803–4) proposed that it is 'a space that results from processes of peripheralisation: the specific ways in which urbanisation perpetuates or exacerbates structural spatial inequality'. Following the Lefebvrian tradition of seeing urbanisation as polymorphous and characterised simultaneously by processes of concentration and deconcentration and centres and peripheries, Howe (2022, 1804) locates the 'periphery' in the 'urban fabric' where it 'can indeed occur anywhere'.

In recent years, and in partial overlap with the work done by Brenner, Schmid and others, scholars who identify with the emerging school of 'southern urbanism' have taken a slightly different approach, less anchored in the dialectics of Lefebvre's implosion\explosion dynamic. These scholars have proposed to look at the urban periphery and extended urbanisation as a more organic phenomenon that combines precolonial, colonial and postcolonial aspects of urbanisation and urbanism. There is, in this view, a multiplication

of peripheries, hinterlands and surrounds that defy any linear relationalities of intensive and extensive urbanisation. For Abidin Kusno, this is the hallmark of a 'middling urbanism' defined 'as an urban condition characterised by the existence of the kampung in formation of the urban centre of peri-urban areas'; an 'intermediate' and 'heterogenous' space (Kusno 2023, 24). Central and yet peripheral at the same time, the kampung is simultaneously in and out of place (Kusno 2023, 31).

This 'southern urbanist' perspective has been particularly catalyzed as the majority urban world came into full visibility in the context of the recent polycrises that have characterised urban life (Sawyer et al. 2021). Accordingly, Bhan and co-authors (2020) at the start of the pandemic urged for: 'a focus on quotidian formations of collective life, a way of understanding the pandemic and the world that is attuned to southern urban processes and experiences.' Such collective life has also been discussed in the context of the 'massive extent' of urban regions, their 'heterogeneity of developments at all scales' where 'nothing is settled for sure' (Simone 2020). In a fascinating study of the impact of the COVID-19 pandemic on the remote Amazonian city of Iquitos in Peru, Japhy Wilson titles one of his sections: 'The pandemic on the peripheries of the cannibal metropolis' (2025, 9). Wilson seems to capture both senses of periphery in the article overall and in this section in particular. Iquitos appears to be at the end of the world and, yet, in the centre of a number of urban relationalities. While the city centre fell silent under the pandemic lockdown regime, 'in the informal settlements that surround the city ... life seemingly continued more or less as usual. An inhabitant of a settlement on the southern outskirts of Iquitos reported that in his barrio 'people just got on with their lives' (Wilson 2025, 9). Amongst the inhabitants of Iquitos' peripheries, the mass disposal of the bodies ('like animals') confirmed the assumption that the margins and the disease had long been linked through intricate processes of 'pandemic urbanization' (Finn and Cobbinah 2024).

Another view that borrows from both traditions is represented by work that explicitly speaks of 'peripheral centralities,' an oxymoronic term that aims to define emerging centralities of spatial peripheries in cities around the world. This includes planning phenomena such as 'activity centres,' and 'massive' new developments at the outskirts of cities. Yet the term also prompts new theorisation of the urban from the outside in and forces us to think more explicitly about the 'the relationships of those new peripheral centralities to the metabolisms, assemblages, and urban political ecologies beyond the built and imagined 'stones' of their immediate presence' (Phelps, Keil, and Maginn 2025, 12–13). In the next section, we will examine how the trajectories of recent infectious disease outbreaks relate to and influence the formation of the urban periphery and its governance arrangements.

One well-known dimension of widespread extended urbanisation involves the development of suburban sprawl predicated on: low-density residential housing, single-use zoning and an increased reliance on automobiles for transportation (Keil 2018a; Rafferty 2022). Ruszczuk, Broto, and McFarlane (2022) note that today, sprawl is outpacing densification across the world and contributes to the formation of new and qualitatively different peripheral areas dependent on the mix of land use at a particular peripheral site. Not only does

sprawl in its classical form—where low density land use outpaces the actual growth of population—produce unsustainable landscapes in urban regions around the world, it is also often accompanied by vertical sprawl that plugs islands of density into suburban districts. Moreover, in some areas, like Ontario, Canada for example, (sub)urban development is now the biggest economic sector. Scholars have consequently spoken of the ‘suburban financial nexus’ to express the significance of this phenomenon (Keil and Üçoğlu 2021; Sawyer et al. 2021). This process creates new environmental conditions and social vulnerabilities in oscillating and perforated territories that pose challenges to policy and planning strategies which still tend to focus on territorially distinct and bounded cities and regions.

Urban peripheries, new centralities

As some urban scholars have argued, extended and peripheral urbanisation does not simply entail the growth of cities beyond their hinterlands, but is also a form of production of space that can take place almost anywhere (Caldeira 2017; Brenner and Ghosh 2022; Howe 2022). Sites and infrastructures of extended urbanisation are located and spread throughout the world, including residential suburbs as well as peripheral spaces adopted for a wide variety of other usages: agriculture, factories, warehouses, meatpacking facilities, landfills, quarries, airports, water treatment facilities, oil fields, recreational cottage areas, First Nation reserves and informal settlements (see Brenner and Ghosh 2022; Enns and Bersaglio 2024). The spread of urbanisation to such peripheral urban areas is today a global phenomenon, leading some to describe this type of development process as ‘planetary urbanization’ (Brenner and Schmid 2015).

This paper takes a two-fold understanding of the urban periphery in relation to pandemic governance. First, peripherality captures both the social and spatial dimensions of extended urbanisation that have been less emphasised in dominant approaches to planetary urbanisation. These are, what Keil (2018a) and McFarlane (2021) have called, ‘fragments’ of the urban explosion, which contain lived spaces of particularity, differentiation and multiple centralities from which the urban fabric has to be understood. This aspect includes infrastructural peripherality, which Gulbrandsen (2022) describes as the scarcity of health infrastructure in peripheral regions, combined with longer distances to hospitals and clinics. Many residing in such regions often do not have access to government healthcare and social protection programmes which would afford them some protection from disease. For example, Biglieri and Keil (2024) have argued that marginalised communities in Toronto’s urban periphery have suffered from structural disadvantages as the hard and soft infrastructures in their neighbourhoods continuously fail them. As they observed, ‘the infrastructures they have had at their disposal were not constructed and maintained to assist communities under the duress of a pandemic disease’ (Biglieri and Keil 2024, 228). Such analyses of infrastructural peripheries are often established from the perspectives and experiences of residents regarding the absence of infrastructure and its significance on their everyday lives (Meth, Charlton, and Todes 2024).

Second, spatial peripherality is simultaneously a moment of subalternity, yet also leads to new forms of centrality. For Wilson (2025), topographic, sectoral, functional, geopolitical and geoeconomic meanings of periphery intersect. Economic precarity and corporeal vulnerability seem to be functions of the same dynamics of peripheralization in the planetary urban.¹ We cannot review here the vast literature that has recently emerged on the question of how extended urbanisation and the urban periphery have been theorised but we will navigate the most important developments here briefly with an eye towards our own chief argument: that the notion of the urban periphery was reshaped in and through recent pandemic experiences and that modalities of governance (pandemic and otherwise) will in future have to be reflective of these new developments.

Sick suburbs—pandemic extensions

Of special significance for this paper is how the global pervasiveness of urbanisation and especially its extended nature, influenced the origin, trajectory and afterlife of the COVID-19 pandemic across the urban periphery. As key nodes in our complex and highly connected urban society, cities facilitate the rapid flow of people, goods, money and services which in the same way, increases the vulnerability of cities as sites of infectious risk transmission (Connolly, Keil, and Ali 2021; Ali and Keil 2006). Zoonosis (the jump of viral disease from one to another species) and anti-microbial resistance (AMR) have recently been associated with the urban political ecologies of extended urbanisation (Aguiar, Keil, and Wiktorowicz 2024; Enns and Bersaglio 2024). At the same time, the critical role of the urban-rural interface and urban-rural linkages along the urban periphery must be acknowledged in considering the genesis and perpetuation of these risks (Teller 2021). Schmid and Streule (2023, 21) for instance, explain how forms of urbanisation and agglomeration ‘inevitably and simultaneously [cause] a proliferation and expansion of the urban fabric, thus resulting in various forms of extended urbanisation, stretching out beyond dense settlement spaces into agricultural and sparsely populated areas’. They note that areas dominated by extended urbanisation might also evolve into new centralities and urban concentrations, which is of significant concern for the spread of infectious disease throughout society.

The peripheral status of the poor and the disadvantaged is not accidentally linked to how they fare in a pandemic crisis. In fact, ‘pandemic urbanization’ is the process through which racial capitalism and colonialism have been ordering urban space in such a manner historically that disease and the diseased have been systematically sequestered from health and the healthy (Finn 2023; Finn and Cobbinah 2024). The wealth and well-being of urban communities rely systematically and structurally on the exploitation of labour in what is normally considered ‘the city’ but perhaps even more so on the human and environmental resources of distant peripheries (Tzaninis et al. 2020). For example, Gonsalves and Sosin (2024) also point to the fact that in the shadow of increasing urbanisation, a crisis of the rural periphery looms that is threatening the health of all. Their intervention came at the outset of yet another H5N1 (avian flu)

pandemic in early 2024 in the USA—this time affecting animals in dairy farms and their associated rural human communities. These communities combine the presence of some of the most vulnerable populations (racialized populations, new immigrants and precariously employed workers) with structurally underfunded health systems. This socio-spatial dimension of peripherality also includes processes of urbanisation ‘from below’ (see Derickson 2015; Simone 2022), which highlights the changing patterns of marginalisation resulting in a high concentration of COVID-19 in low-wage zones at the edge of metropolitan regions (Biglieri et al. 2022).

Those most identified with these distant resources and peripheries are marginalised workers, often migrants, who lack legal status and citizenship at places where they work, are from racialized groups and suffer from gender inequalities at work and in the community. As Gulbrandsen (2022) notes, such forms of social, economic or political marginalisation result in an ongoing process of peripheralisation which constantly (re)produces the risks and burdens for those individuals. There has been much scholarship during and since the pandemic that has deepened our understanding of how this dimension of peripheralisation has been evident in specific marginalised communities that inhabit, work in and/or pass through the urban periphery (Biglieri et al. 2022; Gulbrandsen 2022; Phelps, Maginn, and Keil 2023). As Black (2022, 130) has noted, ‘gendered and racialized inequalities in waged and unwaged work’ structured the ways in which working class communities were affected and state responses were designed. This refers to the notion of political peripherality that Gulbrandsen (2022) highlighted, which relates to the socio-spatial aspect discussed above, but further emphasises ‘whose experience and knowledge is valued in the context of the pandemic’ and related policy making. As such, peripherality can refer to both marginalised communities in any spatial location and peripheral regions or urban spaces.

Second, awareness has been growing in recent scholarship that notions of peripheralization in the urban context are built on the intricate dialectics of mobility and immobility (Cairns and Clemente 2023; Cresswell 2021; Keil 2014). For instance, migrant workers are even further susceptible to higher levels of infectious disease risk because of overcrowded housing, the need to travel in crowded buses or cars, and challenges in accessing public health information. Patterns of (im)mobility (restricted physical and social mobilities) such as unequal access to essential social resources and infrastructures, particularly pertaining to residential communities is also an issue. For instance, Matt Hern details the ways in which lives on the urban periphery are constructed through complex mobilities and socio-spatial interdependencies that defy the common notion of stasis associated with suburbanism. He argues that movement itself is an important part of the experience of peripherality and at the core of a new sub-urbanity from which new politics and social life emerges (Hern 2024).

Urban and regional actors are now held to understand that a localist approach to public health in general and pandemic protection specifically will not be enough. Instead, municipal and regional sites must be understood as nodes ‘of activity between sub-local communities, urban regions and other scales of providing protection from pandemic threats in the future’ (Keil 2024, 533). As such, this paper aims to review and conceptualise the role of extended

urbanisation and peripherality in fuelling the pandemic and its social impacts and outline an agenda for future research on (post)pandemic urbanism that includes these considerations. As Marvin et al. (2023) have noted, now is an important time to do so, when we have the opportunity to prepare for the next inevitable disease outbreak or pandemic. We also need to shift the dominant discourses about how infectious diseases emerge and spread before they become more permanently embedded in society and urban discourse more broadly. In the next section, we will explore in a more detailed manner the nature of COVID-19 spread and response within peripheral urban areas through a series of ‘excursions’, including First Nations and immigrant communities in Canada and informal settlements in West Africa and India.

In the peripheries of the urban world—excursions through the extended urban fabric

Excursion 1: Migrant workers, marginalisation and vulnerability

‘Essential but not empowered’ (Black 2022, 131) and often employed in construction, agriculture or domestic home sites, migrant workers are frequently hired through informal or casual arrangements. Gandy (2021, 210) highlighted how the COVID-19 virus thrived in such ‘exposed and insecure work environments’ which compounded the vulnerability of the workers to different forms of pre-existing exploitation, from the withholding of funds owed to them, to a lack of access to adequate hygiene, sanitation and protective equipment (FAO 2020). The vulnerability to infection reflects the precarious employment status of migrant workers. This happens in several ways. For instance, sometimes workers were fearful of disclosing their symptoms because they were not compensated by their employers if they were to stay home while at the same time facing the pressure of sending money home to their dependent families (Beaumont 2021). Second, although migrant farmworkers lived in cramped and impersonal conditions long before the pandemic, the situation worsened with the pandemic. This is because the working procedures in many ‘exposed’ working environments often emphasise productivity over health concerns such as physical distancing measures.

Our past work has illustrated how such workers faced additional health burdens not only at their workplace, but also in their living quarters, which are often interrelated. This includes those working in the warehouses, food processing centres and logistics businesses in the Peel region west of Toronto, which had the highest rate of COVID-19 infections in the province of Ontario (Ali et al. 2022). The vulnerability of these communities was highlighted repeatedly when we spoke to community representatives in related interviews (see Birch et al. forthcoming). Singapore’s migrant workers are another example of a community who had their personal mobilities extremely curtailed during the pandemic, as nine dormitories housing more than 50,000 men, mostly from Bangladesh, India, and China, were declared ‘isolation areas’ and locked down after initial cases among the community. Consequently, this meant workers’ movements were restricted within their complexes (Han 2020). Most of these worker dormitories were deliberately situated on the peripheries of

Singapore where 12–20 workers were sometimes found to share one room (Koh 2020). Because of this type of wilful segregation, these workers were essentially 'out of sight' (both literally and metaphorically) as a potential source of vulnerability until the issue exploded (Luger 2020). As such, around 90% of recorded COVID-19 infections in Singapore occurred among migrant workers who were effectively locked down within their dormitory complexes. This highlights the increased risk to which migrant workers were exposed as well as illustrating the spatial dimension of urban infectious disease outbreaks, as both the edges of the city and those who are most marginalised in society tend to be the most vulnerable (see Connolly, Keil, and Ali 2021; Ali, Connolly, and Keil 2023).

Yet, such vulnerability not only pertains to industrial sites within suburban areas, but also the global agricultural landscapes of farms, orchards and other food-production facilities that are equally part of the extended urban fabric. For instance, migrants working and residing in agricultural areas situated in the periphery of cities in other parts of the global North were also subject to increased risk of COVID-19 infection. In the year prior to the pandemic, 56,710 workers were granted temporary work visas under Canada's Seasonal Agricultural Workers Programme (Vosko and Spring 2022). Interestingly, a comparable number of 52,040 were actually issued during the 2020 pandemic year itself. This was an exceptional development because, while Canada closed its borders to non-essential travel in March 2020, exemptions were made for migrant farmworkers. Notably, these peripheral sites became pandemic hotspots. As the pandemic started to unfold, Canadian law required anyone entering the country to isolate for 14 days. However, as hundreds of migrant workers arrived, agricultural employers struggled to find the space where the isolation could be pursued. In some cases, this led to rather dubious ethical and public health practices such as converting warehouses into quarantine accommodations where workers slept on thin mattresses placed on top of wooden pallets with no barriers between them (Beaumont 2021).

Such violations of pandemic public health protocols related to housing and quarantine were supposed to be identified through federal in-person inspections, but in spring 2020 inspections were halted and employers were asked to send photographs to prove that they were abiding by the regulations—a practice that the Auditor General's office later specifically criticised as being wholly inadequate to the task (Beaumont 2021). While workplaces in Canada were frequently sites of infection in all sectors of manufacturing, agriculture and essential services, media reports and political decision makers often overlooked these cases and added to the marginalisation of essential workers (Loreto 2022). Responses by the organised labour movement to the pandemic in Canada were insufficient in this situation, as there were 2,089 COVID infections among migrant farmworkers in Ontario with three deaths in 2020, and an additional 1,102 cases with five deaths in 2021 (Beaumont 2021).

Excursion 2: First Nations reserves

In settler-colonial societies, Indigeneity is a prime marker of peripherality in spatial and social terms. While urbanisation and Indigeneity are linked in multiple ways (Dorries 2022; Hugill 2017), sub—and ex-urbanisation in

particular are forms of articulation between settler and Indigenous territories and relations (Keil 2018b) and have led to calls for a critical turn in suburban research related to those spaces (Shields, Keil, and Wu 2022). Beyond settlement in the form of physical encroachment of urban society on native land through the building of residential or industrial communities, the building of infrastructure such as pipelines and the expansion of mining and oil production has connected Indigenous life to the city (Kipfer 2018).

Besides the backdrop of a long history of a catastrophic relationship of disease and colonialism in Canada, the pandemic also severely affected the wellbeing, autonomy and decision making capacity of First Nations people living on reserves, both in exurban space and geographically locations farther away from cities (Flynn and Shanks 2021). By statute in Canada, reserves refer to land set aside for the exclusive use and occupancy of a First Nation group (Government of Canada 2017). The situatedness of reserves, often in geographically remote rural and exurban areas, has been recognised for some time as resulting in challenges as First Nations people try to increase their economic self-sufficiency and self-governance (ibid). As a legacy of settler colonialism, the land in which reserves are located involve those areas that are historically considered as undesirable by the colonising group and today may include those areas in which there is extensive chemical contamination from local industries, leading to problems with non-drinkable water and non-edible produce and game (Cecco 2021; Chong and Basu 2022; Tarbell and Arquette 2000). Positioned within the context of the settler colonial history of reserves, the pandemic resulted in unique challenges and disproportionate impacts with which the First Nations people residing in such locations had to contend. As Leonard (2020), citing Boyette (2020) notes, many First Nations people lack the medical resources and capacity to respond to a disease outbreak, often not even having a hospital, and if they did, such hospitals would rarely house Intensive Care Units.

The flight of urban elites to cottages and second homes that took them through First Nations areas during the pandemic therefore represented a real public health threat for community members, especially the elders. To protect against such risks, as an enactment of self-governance, First Nation groups developed and implemented their own emergency response operations, such as the setting up of checkpoints to screen people before entering Indigenous territories to prevent, reduce, and track the spread of COVID-19. These checkpoints were staffed 24/7 by authorised community members or local reserve police or security forces, who questioned travellers as to nature of their business on the territory, thereby gauging the risk of COVID exposure for their community. With the exception of essential deliveries and service workers, individuals without valid reasons for entry into the reserve were denied entry. Leonard notes that the dominant settler colonial state views indigenous checkpoints as blockades and as such defines such sites as threats to settler sovereignty and jurisdictional totality. However, as Leonard points out:

Checkpoints are a line of defence against COVID-19 for many Indigenous nations who lack the resources and medical capacity to respond to an outbreak—a vestige of colonialism and failed government promises.... Indigenous checkpoints are not

intended as a violent challenge to non-indigenous travelers but are a compassionate stand to protect the heart of our nations—our elders—from a deadly pandemic (Leonard 2020, 165).

Checkpoints established during the pandemic were therefore not a form of political resistance against state violence, but rather, they served to protect Indigenous Peoples' health and safety—a rationale that stands in opposition to the dominant settler logic that defines travel to second-homes and places of leisure as entitlements for escape protected by individual mobility rights (Grimwood, Muldoon, and Stevens 2019). Flynn and Shanks (2021, 258) conclude therefore that:

Going forward, troubling fault lines remain in the exercise of First Nations jurisdiction in respect of reserve lands, including difficulties in enforcing bylaws, administrative roadblocks in access to federal funding, lack of closures in neighbouring municipalities, and the economic hardship experienced by on-reserve Indigenous Peoples, all of which have urgent repercussions for First Nations working to quell COVID-19 rates.

In light of these developments, Phelps et al. (2023) suggest that the general analytic tendency to view urban peripheries as being always and inevitably secondary to established urban cores or city centres should be revised. Similarly, to better understand the dynamics of extended urbanisation, relinquishing conventional approaches based on an exclusive focus on centre/metropole regions and consciously redirecting attention towards what is happening at regional sites situated at the peripheries of urban society and explicitly focusing on the relationships of these sites with urban centres is an urgent and necessary strategy in grasping urban processes unfolding today (Keil 2018a). In our third and final excursion, we examine how these insights apply to informal settlements in the urban periphery.

Excursion 3: Informal settlements

The Global South is the most rapidly urbanising region in the world and accounts for 94% of the increase in the world's population between 2010 and 2015 (Smit 2021). Increasing at an unprecedented scale, much of this rapid growth is unplanned in the sense that it gives rise to informal settlements situated in under-serviced areas of the urban periphery that are often viewed as undesirable and risk prone (Bloch, Mabin, and Todes 2022; Ezeh, Mberu, and Haregu 2016). Referred to in different ways as slums, shanty towns or favelas, informal settlement areas lack basic infrastructure and essential healthcare services; experience high levels of poverty; insecure housing tenure with the constant threat of eviction; and/or overcrowded living conditions and substandard dwellings (Teller 2021). Adding to their burdens, such communities are also vulnerable to environmental risks such as land erosion, flooding, mudslides, air pollution and so on. Yet, it is estimated that today, well over one billion people live in these types of settlements around the world it is estimated that globally this will increase by 10 per cent each year (Agyabeng et al. 2022).

Informal settlements came into view early during the COVID-19 pandemic as scholars and practitioners attempted to assess the ability of those in these often overcrowded and under-resourced places to defend themselves against the coming challenges associated with the disease (Wilkinson 2020). Experiences from the Ebola outbreak in West Africa between 2014 and 2016, which was the first such outbreak in an urban setting and concentrated in some of the poorest and largest informal settlements in cities such as Monrovia and Freetown, served as an important backdrop to these early publications (Fallah et al. 2022). To some extent, diseases such as tuberculosis and malaria have been linked to the poor environmental conditions in informal settlements (Bhide 2021) but it this is not the full story.

Consider the contrast in transmission dynamics of Ebola and COVID in West Africa. In this region, Ebola spread along the social gradient spreading from more rural areas to informal settlements in the urban periphery then into wealthier neighbourhoods in the urban centres (Fallah et al. 2022). This transmission dynamic could be traced to the particular movement of specific groups of people, such as poorer residents living in informal settlements in the urban periphery who were employed as gardeners, housekeepers, care workers, security personnel, drivers, cooks in the wealthier urban areas. It was this grouping of people that were the first to become infected as Ebola spread from rural areas to the informal settlements in the urban periphery (Fallah et al. 2022). Subsequently, the virus was passed on from these employees to their wealthier employers. In contrast, COVID-19 spread from the more affluent who likely contracted the disease through international travel for business, political, or educational purposes then passed it on those who were employed in their homes, who then carried the virus back to the informal settlements.

As we have found from interviews and focus groups held in informal settlements in Monrovia and Sierra Leone (see for example, Ali et al. 2022; Keil, Harris Ali, and Treffers 2023), those in high density, informal settlements may not only experience an unconscionable lack of services and attention during 'normal' periods, but during 'crisis' periods they may receive an inordinate amount of (negative) attention, particularly from authorities. During the early stages of the unfolding pandemic, public and government attention increasingly focused in on particular sites, that is, those that were characterised as particularly busy and overcrowded. The stimulus for this attention was the adoption of an imaginary based on viewing 'density-as-pathology' (McFarlane 2023, 1553). With this perspective, high-density areas were seen as particularly threatening because they were popularly associated with much higher risks of infection. Yet, as various scholars have pointed out, the question of density is not a simple matter of topography or urban form but a more complex set of interactions between urban space, household structure, and corporeal vulnerabilities (Connolly 2024; Gandy 2022; McFarlane 2021). Nonetheless, the adoption of a pathological view of density had particular consequences for residents in informal settlements. For instance, those in dense informal neighbourhoods in Mumbai, were subject to intensified police violence, intimidation, forced quarantine, containment zones and stigmatisation (Indorewala and Wagh 2020).

In some ways, the situation in informal settlements in the Global South is similar to that of First Nations or Indigenous reserves within the Global

North, with the former situation resulting from external colonisation by foreign rulers rather than through internal settler colonisation. Although there are important differences, substantial commonalities ultimately result from having to face similar structural issues due to the exploitive relationship between the coloniser and colonised. Thus, issues of a lack of public trust in government and their officials, a lack of resources provided by the state, and the significance of informal economic activities and social networks in lieu of formal social service provision that were faced in reserves are similar in kind to those faced in informal settlements in the Global South (Ali et al. 2022). They also engendered similar responses to the pandemic. For instance, just as First Nations groups in Canada established checkpoints as a way for the community to regulate themselves in the absence of government assistance, Bhide (2021) describes how local residents in certain neighbourhoods in India enclosed their own lanes to restrict entry and exit.

In circumstances in which the state is suspect, which may be the popular view held in some informal settlements, top-down control measures during a pandemic may be perceived as a government strategy to oppress and further marginalise residents or to curtail possible political opposition (Wilkinson 2020; Ali and Rose 2022). The consequences of such an atmosphere of distrust and political tension during a disease outbreak situation is well-illustrated by the standoff that arose between government officials and members of the informal settlement community of West Point in Monrovia, Liberia when an unannounced lock-down of the whole community was imposed and maintained by armed government security forces, ultimately resulting in the tragic loss of life of one small child (for a full discussion based on field on our fieldwork, see Rose et al. 2024).

Although the lack of social service provision, public services and formal governance do render informal settlement residents more vulnerable to many environmental and other threats; at the same time, such inadequate social, economic and political conditions have served as the impetus for the evolution of long-standing informal arrangements of networked social capital relations to address the deficiencies that arose in everyday life. These range from needs related to child—and eldercare, obtaining food through credit for a street vendor, or identifying day labour opportunities through a friend, or a faith-based or community organisation. It was exactly this sort of informally networked social infrastructure that was activated and mobilised in a more formalised manner in the form of an organised community-based response during the 2014/16 Ebola outbreaks in West Africa (Ali et al. 2022; Richards 2016). With the community-based response, members of informal communities were involved in such outbreak response activities as: active and suspected case identification, contact tracing, monitoring and surveillance as well as providing food, water and support to those quarantined. This community-based response then served as the foundation for the subsequent COVID pandemic response in Africa and other parts of the Global South (Bhide 2021; Samaddar 2021; WHO 2020).

Unlike the situation in the Global North where ‘essential workers’ were still able to earn a wage during the pandemic (despite facing the risk of infection), this was not possible for many of those residing in informal settlements. Many activities associated with the informal economy were particularly hard hit.

Street lockdowns meant that vendors, auto-rickshaw drivers, construction workers and informal factories could not operate; service sector workers such as domestics were not permitted to enter their places of work and waste recyclers were denied access to waste collection points (Bhide 2021). With lockdowns, as Bhide (2021, 280–289) recounts in reference to India, moving about on the street was considered a ‘crime’ during the pandemic. While state containment measures were vigorous, they were not accompanied by equally robust actions on the ‘caring’ front: ‘The ‘care’ of the state often appeared as a rhetoric while its disciplinary face was the most visible and experienced reality in informal settlements’ (Bhide 2021). During the pandemic, the public that benefited from public health and social welfare rights once again was restricted to the ‘enumerated, identified, settled population of urban residents’ while populations in informal settlements were left without services or even became subject to active oppression (Samaddar 2021). Yet, as Samaddar has noted, ‘slum-dwellers showed the country the strength of self-organisation in the lower depths of society, and what they could do with some help from a responsive municipal government’ (see Samaddar 2021, 130). In this way, Caldeira (2017, 9) argues that peripheral urbanisation ‘generates new modes of politics through practices’ that evolve in response to the constantly shifting socio-political conditions in the urban peripheries, such as social movements and grassroots organisations.

(Post-)Pandemic planning and governance in the Urban Periphery

Our argument here is that pandemic urban governance must today be understood in the context of, and in response to, development and processes pertaining to extended and peripheral urbanisation. It should by now be obvious that we are not talking merely about changes in and to the built environment—e.g. suburbanisation in the most conventional form—or to changes in densities, infrastructures, etc. Instead, we have in mind the comprehensive rejigging of urban process, function and form that involves multiple forms of marginality, peripherality and Otherness at the core of today’s urban world.

Returning to Simone’s notion of pluriversal territorialisation, we see parallels to work on territorialisation that has emerged out of the neo-Lefebvrian literature we briefly reviewed above. For instance, Schwarz and Streule (2016) argue that ‘contestation and negotiation form an integral part of processes of territorialization’ and insist that territories are continually produced and altered ‘when subjects struggle over the practices, meanings, and tenures of urban space’ (Schwarz and Streule 2016, 277). This pluriversal, relational character of territory can be found in the peripheries we have discussed in this paper. The territory of extended urbanisation during infectious disease outbreaks is not just target of external policy intervention but itself an active arena of action and decision-making that involves residents, workers and communities in a bottom-up fashion.

There are again parallels here with newer forms of democratic theory that emphasise living technologies of care at the core of urban democracy (Boudreau 2024). As we unearth and celebrate emerging forms of governance in our

own and related research in affected communities (Ali et al. 2022), we must also remember, as Hillary Birch (2025, 8) has reminded us, that ‘endurance of structural drivers of urban inequalities that leave communities to buttress the failures of others must be at the forefront of any analysis so legacies of exclusion can be directly addressed in responses to future urban emergencies’. While the urban middle classes were often able to isolate at home, or even seek out new homes in peripheral or rural retreats, there was at times a lack of attention to those most vulnerable to infection, especially poorer and other marginalised groups.

The above case studies have highlighted the findings of Biglieri et al. (2021), noting that health issues in the urban periphery have become exacerbated by COVID-19, often in the ‘forgotten densities’ (Pitter 2020). Such densities are found not only in the urban core, but also in reference to those marginalised groups existing in peripheral sites—such as those hosting migrant worker communities, First Nation reserves and informal settlements. While the COVID-19 pandemic brought about a vast process involving the temporary de-densification of urban space through lockdowns—especially in city centres; in some more peripheral urban areas, physical isolation at home or in the workplace was next to impossible (Durizzo et al. 2021; Sengupta and Jha 2020). These forgotten densities, for a time, led to intensified public and political debate around the links between density and inequalities in housing and labour, a debate that has unfolded across the urban world (Hamidi, Sabouri, and Ewing 2020; Pitter 2020). Following an era of pro-density planning, policy and thinking (Pérez 2020), there was for a while a renewed focus on the debate about the merits of dense urban living.

Marvin et al. (2023) note that during the pandemic, spatio-temporal forms of improvisation in urban governance and service provision often came to constitute the norm for many urban residents, especially those in peripheral urban contexts characterised by institutionalised socio-spatial inequalities of urban residents. These include bottom-up technologies for social distancing and pandemic tracking, enabling access to real-time information; micro-economies to provide food, inexpensive supplies and personal protective equipment and necessities at a time when there was little to no access to such essentials during lockdown (see Ali et al. 2022; Connolly 2022; Chatinakrob 2022). Such improvisation became necessary because of factors including gaps in service provision from the authorities, breakdown of infrastructural networks and services, which were made more severe in such ways, existing formal governance failures in supporting urban communities and localities were thrown into relief through COVID, as was the importance of universal urban public services and infrastructures. This includes urban green space (Gandy 2023) and public amenities (Apostolopoulou and Liodaki 2021) to transit systems (Lockhart et al. 2021) and health infrastructure (Ruszczuk, Broto, and McFarlane 2022).

As the understanding of the failures and successes of pandemic governance became more obvious, post-pandemic politics began to move towards an urgent overall appeal to care (Biglieri and Keil 2024) and ‘integrative resilience’ (Camponeschi 2022). Marvin et al. (2023, 16) further explain: ‘While improvisation may speak to the consequences of inadequate or absent urban infrastructure and planning, it also speaks to the local processes of creativity, robustness

and resilience of the pandemic city within societies that seek to counter or complement universal processes'. Temporarily as least, these developments have mobilised demand and shaped a resurgence in public capacities to provide and maintain critical public, collective infrastructures and for the prioritisation of public interests in city governments' interventions and accountabilities. For instance, Connolly (2022) has discussed how Hong Kong repurposed its extensive civic infrastructure for the purpose of containing the virus' spread by digitally tracking cases of COVID-19 through hotspot monitoring, and providing other critical public health information. Similarly, we have discussed in our own research on Ebola how community-based initiatives were also mobilised in a similar manner in the informal settlements in West Africa (Ali et al. 2022). These cases show how collective action and organisation can help make up for the governance failures of urban and regional governments in real time (Connolly 2022).

As previous work has shown, complex connections between public health and pandemics emphasise the need for multidisciplinary knowledge generation and policy responses (Connolly, Keil, and Ali 2021; Gandy 2023). Furthermore, such knowledge in the service of planning and policy should not be limited to that emanating from different disciplines, but should also include knowledge which comes from the embedded diversity of the sites that public health planning encompasses in its remit. In this connection, McFarlane (2023) reminds us that the question of whose knowledge counts in the shaping of urban governance should not be ignored, especially when it pertains to sites across the urban periphery. For this reason, if truly effective pandemic response policies that address the needs of all members of a community is the desired objective, then knowledge about the structures that underly the various aspects of peripherality that we have emphasised in this paper and the lived experiences of those groups needs to be incorporated in the planning processes. Inclusion of such considerations will also be essential for the development of innovative solutions based on improvisation (in the sense that Marvin et al. (2023) refer to above). At a broader analytical level, this means that proper attention must be given to conceptualising the relationship between urban planning, governance and pandemics as an essential starting point to guide planning endeavours in general (Harris et al. 2022) especially in the context of the urban periphery.

Conclusion

This paper has analysed how COVID-19 has impacted different and specific sites of the urban periphery, including the plight of First Nations and immigrant communities in societies of the global North, and informal settlements in parts of the global South. These cases, fragments of an extended urban world, are utilised to highlight the issues arising from the prevailing social inequality, marginalisation, and (inadequate) governance structures that emerged across the urban periphery during the COVID-19 pandemic (see McFarlane 2021). Taking insights from the vast literature on the socio-spatial impacts of the pandemic, we noted how the particular lived experiences of those residing within peripheral urban spaces resulted in greater health burdens during the

pandemic, and how these were amplified by the lack of adequate policies and services. For instance, decades of ‘pandemic urbanisation’ has resulted in the sequestering of disease (and diseased individuals) from the social and (healthy) urban core (see Finn 2023; Finn and Cobbinah 2024). This highlights the socio-spatial dimension of urban infectious disease outbreaks like COVID-19 and Ebola which emphasises how the wealth and well-being of urban communities relies systematically and structurally on the exploitation of the human labour and environmental resources of their socio-spatial peripheries.

In this way, we adopt a two-fold understanding of the urban periphery: first, as a site and outcome of extended urbanisation; and second as a process of social and spatial marginalisation. We have highlighted how the urban periphery has been (re)shaped in and through pandemic experiences, as both the edges of cities and their most vulnerable inhabitants were marginalised through public health policies. As we noted, such vulnerability not only pertains to industrial sites within suburban areas, but also the global agricultural landscapes of farms, orchards and other food-production facilities that are equally part of the extended urban fabric. This includes various aspects of peripheralisation previously highlighted by Gulbrandsen (2022) such as infrastructural and political peripherality, which have been entrenched by the COVID-19 pandemic and the official responses to it. We also highlight how the intricate dialectics of mobility and immobility, referring to both physical and social mobilities such as unequal access to essential social resources and infrastructures and movement related to livelihoods, combine to generate unequal health outcomes. Relatedly, the paper discusses the issue of ‘forgotten densities’ in the urban periphery, referring to the lack of attention given to those most vulnerable to infection, especially poorer and other marginalised groups living or working in dense or crowded conditions during the COVID-19 pandemic (Pitter 2020).

In light of the further analysis presented here considering COVID-19’s disproportionate effects and impacts on peripheral urban communities, we argue that urban planning and governance in the future must take the socio-spatial periphery more seriously as a site and condition of vulnerability in order to create fairer and more sustainable urban communities in the post-pandemic era. How might policies regarding the treatment of migrant workers, for example, be adjusted to avoid any undue burdens, not only in future outbreak scenarios (such as prolonged confinement or isolation in overcrowded conditions), but also to create more socio-ecologically just urban communities (Anguelovski et al. 2019). In terms of urban governance, we have argued that there is a need for planners and governments to recognise and leverage the potential social infrastructure and self-governance mechanisms of various urban communities that might be mobilised during a disease epidemic (Ali et al. 2022). This finding builds on previous research has found that centralised governance structures were highly ineffective in terms of responses to the pandemic, as they often stifled local autonomy in decision making (Sharma, Bikash Borah, and Moses 2021). Instead, it echoes calls for new forms of bottom-up governance and collective action initiatives that take into account the knowledge and well-being of all members of the community in question.

We might think that rather than being an opening, a threshold or portal (Roy 2020) as many had speculated at the beginning of COVID-19, the pandemic

turned out to be more like an oval racetrack that led us back to where things began. In many ways we are even caught in a downward spin that sees the re-establishment of the status quo as the chief outcome. One way to remedy such an undesired outcome is to better account for the changing character of the periphery by pre-emptively incorporating such considerations more prominently not only in outbreak response strategies that take greater account of the periphery, but in planning policies and programmes that enables a restructuring of the relationship of the urban to the periphery in a more equitable direction. Future research should therefore include such considerations in reviewing and conceptualising the role of extended urbanisation and peripherality in fuelling the socio-spatial impacts of pandemics.

Note

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