Special issue introduction: New urban frontiers

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Abstract

The frontier is undergoing a resurgence as a productive spatial trope in urban geographical research. This article provides a critical overview of this "frontier moment" and contextualises it within the history of geography and allied disciplines. Building on this tradition, and drawing on the studies collected together in this special issue, we argue that the frontier is a powerful conceptual lens that can generate new insights into the 21st century urban. The paper develops a new typology of urban frontier thought: urbanizing frontiers; peripheral frontiers; violent frontiers; and capitalist frontiers. In light of the troubled history of frontier thought, it proposes two principles for critical and reflexive scholarship on urban frontiers. First, this scholarship should challenge the colonial myth of empty land, or *terra nullius*, by making visible the agency of those social actors situated "beyond" the frontier. Second, it should problematise assumptions that frontier spaces signify an inevitable and all-encompassing logic of expansion by recognising the continual reproduction of "outsides" that exceed capitalist urbanization.

Keywords

Urban frontiers, urbanization, peripheries, violence, commodification

Introduction

The frontier is undergoing a resurgence as a productive spatial trope in urban geographical research. This special issue re-examines the concept of the frontier in urban geography to reflect on its relevance for understanding 21st century urbanization and the urban. It brings together with this introduction four empirical papers, some of which were originally presented at the 2021 annual conference of the Royal Geographical Society with the Institute of British Geographers (RGS-IBG). Drawing on original case studies from Chennai, Gurgaon, Singapore and the Ecuadorian Amazon, the four papers represent the cutting edge

of research on new urban frontiers. Taken together, they extend the urban frontier concept into new geographical domains (private new cities, coastlines, sand mines and tropical forests) and through new theoretical lenses (the agrarian, the coastal, the granular and the indigenous).

In this introduction we provide a critical overview of the current resurgence of the frontier as a key urban geographical concept and contextualise this moment within the history of geography and allied disciplines. We argue that the frontier concept can inform understandings of the 21st century urban by training our attention on new urbanisation dynamics, peripheral urban spaces, the violence of urban inequality and the contested politics of capitalist expansion. As such, the discussion is structured around developing a new typology of urban frontier thought: urbanizing frontiers; peripheral frontiers; violent frontiers; and capitalist frontiers. In addition, and in light of the historical entanglement of this concept with violent processes of capitalist-colonial expansion, the paper proposes two principles for critical and reflexive scholarship on urban frontiers. These principles are illustrated by the papers collected together in this special issue, which together challenge the invisibilization of people and places "beyond" the frontier, and problematize assumptions that frontier spaces signify an inevitable and all-encompassing logic of capitalist urbanization.

Frontier thought

The frontier is a troubled concept with a violent history. Frontier discourse has played an important historical role in legitimizing colonisation, enclosure and dispossession. Frederick Jackson Turner's (1893) essay on *the significance of the frontier in American history* characterised the development of the United States in terms of European "civilization" encountering, and being reshaped by, the American "wilderness". This process of development took the geographical form of a frontier as European traders, ranchers, miners and farmers expanded westwards in search of "free land": "The frontier is the outer edge of the wave – the meeting point between savagery and civilization." Within Turner's essay, the urbanization process is central to the expansion of the frontier: he described how the civilisation of the wilderness took the form of pioneers' log cabins developing into villages, towns and cities, and indigenous trading routes being transformed into modern roads and railways. As such, Turner's essay is perhaps the earliest account of what Lund (2020, p.1) terms "urbanisation as a frontier process". Turner acknowledged that this frontier had advanced unevenly due to resistance by native Americans. However, his framing of the

American West as “free land” and “wilderness” ultimately served to legitimize settler colonial genocide by invisibilizing the long history of indigenous inhabitation.

Turner’s essay is perhaps the most famous example of how violent processes of capitalist-colonial expansion have historically been accompanied and justified by a frontier discourse that constructs an imagined binary between “civilization”, “modernity” and “development” on the one hand, and “wilderness”, “savagery” and “empty land” (or *terra nullius*) on the other. Reflecting on the early modern history of the English enclosures and the colonization of Ireland and North America, Blomley (2003) observes that the violence of the Western property regime finds its spatial expression in the frontier. In particular, the emergence of surveying practices during this period enabled the mapping and settlement of indigenous space as “empty” land beyond the frontier of property relations. This violent dispossession was legitimised in Western liberal thought through a geographical frontier imaginary that framed savagery and disorder as the constitutive outside to property and law. For example, John Locke’s argument that mixing labour with soil established private property rights was premised on the assumption that uncommodified land constituted *terra nullius*, depoliticizing and naturalizing primitive accumulation in the process (Haila 2016).

Despite this historical association with the colonial project, the spatial trope of the frontier has also been employed by critical social scientists to illuminate the inherently expansionary, violent and contested character of capitalist development. One example can be found in “world-ecology” scholarship on the emergence of the capitalist world-system as a frontier process. Drawing on world-systems analysis and political ecology, Moore (2015) and Patel (2022) argue that capitalism has expanded geographically throughout history via the violent appropriation of “cheap” (i.e. uncommodified) nature. They spatialise this process of expansion through the concept of the “commodity frontier”: “a *zone beyond which further expansion is possible*…so long as there remains uncommodified land, and to a lesser extent labour, “beyond” the frontier” (Moore 2000, p.412). For example, the Portuguese colonization of Madeira in the late 15th century led to the production of a commodity frontier in which the island’s great forests were appropriated as cheap energy for sugar production. The exhaustion of this sugar frontier through deforestation by the 1530s motivated further capitalist expansion into the Americas in search of new frontiers of cheap nature (Moore 2000; Patel 2022). As such, the concept of the commodity frontier illustrates the fact that “the

capitalist world-economy is inherently expansionary. Ceaseless spatial expansion is the product of a system based on ceaseless capital accumulation" (Moore 2000, p.428).

There is now widespread recognition that violent processes of appropriation and dispossession were not limited to a "primitive" stage of capital accumulation in the early modern period, but are in fact a central feature of contemporary capitalist development (Harvey 2003). Under globalized conditions of privatization, austerity and financialization, there has been a proliferation of scholarship on "new enclosures" as the *modus operandi* of neoliberal capitalism (Christophers 2018; Hodkinson 2012; Midnight Notes 1990; Vasudevan et al. 2008; White et al. 2012). Within this body of work, the concept of the frontier has retained its significance for understanding the spatiality of capitalist expansion. Agrarian and development studies scholarship has identified new frontiers of land and resource control characterized by novel agents, mechanisms and justifications of enclosure. Under the banner of green capitalism, for example, multinational corporations and state-capital hybrids have acquired vast swathes of land across the global South for biofuel production, carbon forestry and conservation projects (Peluso and Lund 2011; Rasmussen and Lund 2018). These new enclosures have provoked resistance from an array of novel social movement actors, such as Brazil's Landless Workers Movement and the transnational peasant's network *La Via Campesina*. The emergence of these land rights movements demonstrates how frontier spaces are shaped by contestation and struggle (Peluso and Lund 2011).

Peulso and Lund (2011) and Rasmussen and Lund (2018) argue that contemporary frontier spaces are characterised by the violent destruction of established orders of resource control and the subsequent territorialisation of new property regimes through state-led processes of mapping and enforcement. As in the early modern period, this frontier process is typically accompanied by a *terra nullius* discourse that delegitimizes and invisibilizes existing, non-capitalist resource users and tenures. As such, new frontiers of land and resource control are spaces of violent struggle in which "authorities, sovereignties, and hegemonies of the recent past [are] challenged by new enclosures, territorializations, and property regimes" (Peluso and Lund 2011, p.668). These spaces of struggle between old and new orders of resource control have also been conceptualised as spaces of deregulation. Tsing's (2005, p.27) ethnographic account of rainforest privatization and exploitation in Indonesia argues that frontiers "arise in the interstitial spaces made by collaborations among legitimate and illegitimate partners: armies and bandits; gangsters and corporations; builders and despoilers.

They confuse the boundaries of law and theft, governance and violence, use and destruction." Tsing recounts how legal and illegal logging operations occur side-by-side in the scramble to appropriate Indonesia's natural resources. It is this blurring of distinctions between legitimate and illegitimate activities and public and private interests that enables extraordinary profits to be reaped by those operating within capitalism's frontier spaces.

Given this historical entanglement with violent and racialised processes of colonization and dispossession, it would be natural for contemporary geographers to recoil from the frontier as a spatial trope altogether. As Wyly (2020, p.29) suggests, "the word and the concept reflect an imperial mode of thought so deeply implicated in the genocidal dispossessions of indigenous societies that helped build urban-industrial colonial modernity." Despite this troubled history, however, the frontier is currently undergoing a resurgence as a productive spatial trope in urban geographical research, with literature proliferating on "real estate frontiers" (Gillespie and Mwau 2024), "resource frontiers" (Sarma and Sidaway 2020) "subaltern frontiers" (Cowan 2022) and "suburban frontiers" (Mercer 2024), to name but a few examples. This special issue introduction recognises that the frontier is a problematic concept that must be mobilised with care and in cognizance of its oppressive history. However, and as the papers collected here demonstrate, we also argue that this concept nonetheless has enduring power as a heuristic for critically analysing global urbanization and urban development. To this end, we identify four ways in which the frontier is being employed to understand contemporary urban geography: conceptualizing novel urbanization dynamics; examining the social, political, economic and cultural geographies of urban peripheries; drawing attention to the violence of urban inequality; and analysing capitalist expansion at the urban scale. This leads us to advance a new typology of urban frontier thought: urbanizing frontiers; peripheral frontiers; violent frontiers; and capitalist frontiers.

In order to harness the analytical power of the frontier concept while also addressing its troubled history, this proposes two principles for critical and reflexive scholarship on new urban frontiers. First, scholarship on urban frontiers should actively challenge the colonial myth of *terra nullius* that invisibilizes those social actors that constitute the "outside" of frontier processes. In doing so, it should amplify the presence, claims and agency of these subjects and document their role in producing, disrupting and reshaping frontier spaces. One way that urban scholars have done this is to emphasise that frontiers are necessarily spaces of contestation (Gillespie 2020; Schindler and Kanai 2018; Smith 1996). As Smith (1996,

p.231) states in his classic text on gentrification struggles in New York City, “there are two sides to every frontier, otherwise it would not be a frontier.” Second, scholarship on urban frontiers should avoid reproducing representations of urbanization as an all-encompassing, inevitable and irresistible process that subsumes all that is non-urban within its logic. Postcolonial and feminist scholars have emphasised the need for an urban ontology that acknowledges the many “outsides” that exceed capitalist urbanization, including informal livelihoods, struggles over social reproduction and the persistence of agrarian social forms (Ruddick et al. 2018; Reddy 2018; Roy 2016; Peake 2016). As the final section of this introductory paper explains, the contributions collected in the special issue demonstrate how these two principles are being operationalized in the study of new urban frontiers.

Urbanizing frontiers

The concept of the frontier has been employed to understand 21st century urbanization dynamics at multiple scales. This literature has largely focused on the rapid urban revolutions currently underway in the global South, and the implications of these transformations for understandings of the urban. The world regions of Africa and Asia have been conceptualised as new frontiers both in terms of urbanization dynamics and the geography of urban knowledge production. Over a decade ago, Bunnell et al. (2012) observed a disjuncture between the fact that Asia was home to half of the world’s urban population and the peripheral position occupied by the region within the field of urban studies. This led the authors to argue that the entire region of Asia constitutes a “global urban frontier” and that Asian cities had the potential to emerge as new centres for urban theories, policies and imaginations. This was a prescient observation: concepts that originated in Asia, such as “speculative urbanism” (Goldman 2011), “worlding cities” (Roy and Ong 2011), “occupancy urbanism” (Benjamin 2008) and “agrarian urbanism” (Gururani 2020) have subsequently achieved widespread purchase amongst urban scholars. .

While (some) Asian cities have now assumed a more central position within global urban studies, most of Africa remains relatively marginal to the geography of academic urban research (Robinson 2006). As Goodfellow (2022, p.8) argues, “there are cores and peripheries within ‘the South’, both economically and in terms of knowledge production.” We see this in research on Asian as well as on African cities, in which concepts for urban theory are often generated from a handful of large cities (e.g. Cairo, Delhi, Johannesburg, Mumbai). Despite our discussion of research on urban frontiers in Africa in this introduction,

none of the papers in this Special Issue take Africa as their primary empirical focus.[1] Goodfellow identifies the East African region as situated on the global periphery of both urbanization dynamics and urban studies. As the least urbanized but fastest urbanizing region in the world, he argues that East Africa constitutes "the world's urban frontier" (2022, p.11). It is this frontier status, characterized by peripherality combined with rapid incorporation, that makes cities such as Addis Ababa, Kampala and Kigali deserving of greater attention from urban scholars. He finds that urbanization on this frontier is characterized by challenges not experienced during previous waves of urban transition, including urbanization without industrialization, weak local government and climate breakdown. However, being situated on the urban frontier also presents opportunities to innovate and avoid repeating the same mistakes, such as carbon-intensive development, made in already-urban regions (Fox and Goodfellow 2022).

While the urbanization of the global South is often associated with the growth of cities, Brenner and Schmid (2015) and Brenner (2019) have argued for an expanded conceptualization of the urban that shifts the analytical focus away from spatially bounded agglomerations defined in opposition to the constitutive outside of the rural. Rather, this Lefebvrian epistemological approach seeks to prioritize "the core *processes* through which urban(izing) geographies are produced, tendentially stabilized, and recurrently transformed" (Brenner 2019, p.349). This reaction against city-centrism has provoked a proliferation of research on extended urbanization processes characterized by the relational co-production of metropolitan regions and urbanizing hinterlands. In particular, researchers have examined how the expansion of logistical infrastructure across the global South in the 21st century has catalysed the emergence of extended urban geographies within which spaces of resource extraction are increasingly imbricated with urbanization processes. Within this literature, the deepening logistical intermeshing of global capitalism's industrial centralities and extractive frontiers is recognized as a defining characteristic of the emerging planetary urban fabric.

Scholarship on extended urbanization has emphasized the centrality of transport infrastructure corridors to the production of new urban frontiers. Schindler and Kanai (2021) document the emergence of an "infrastructure-led development" approach since the 2008

[1] There were two papers on Africa in the RGS-IBG conference session that have been published elsewhere (Dawson 2023, Goodfellow 2020).

financial crisis in which international institutions, national governments and private sector actors have all embraced large-scale infrastructure projects as means to integrate territories within global value chains and achieve export-led industrialization. Ambitious spatial planning programmes such as China's Belt and Road Initiative (BRI) and the Initiative for the Integration of the Regional Infrastructure of South America (IIRSA) have sought to enhance logistical connectivity between industrial hubs and resource frontiers through the construction of geographically extensive corridors incorporating roads, railways and ports. Studying the relationship between such initiatives and new urbanization dynamics has generated new insights into the relational co-production of frontiers of resource extraction and urban frontiers.

Sarma and Sidaway (2020) demonstrate how the frontier of redevelopment and gentrification in central Yangon, Myanmar is connected to peripheral frontiers of resource extraction as profits from gems, minerals, narcotics, timber and teak are recycled by elites and foreign investors through the transformation of the built environment. The investment of resource profits in urban redevelopment has been accompanied by the proliferation of private security guards in the city centre. This has led Myanmar to be promoted as a "frontier market" for private security services. Similarly, Arboleda (2020, p.111) describes the transpacific resource extraction corridor that links copper mines in Chile with manufacturing cities in China as an instance of "logistical urbanization". This intercontinental connectivity has shaped northern Chile's splintered urban geography due to the polarization of the resource extraction economy between salaried technical workers such as engineers on the one hand, and informal workers who gravitate to mining centres due to the destruction of peasant livelihoods on the other. Under conditions of extended urbanization, therefore, the growing imbrication of cities with spaces of resource extraction indicates the importance of theorizing resource frontiers and urban frontiers in relation to one another.

Infrastructural corridors are intended to anchor a standardized form of urbanization that enhances the competitiveness of urban regions within the global economy (Wiig and Silver 2019). However, corridor urbanization is often an uncertain process that exceeds the designs of planners and policymakers (Bathla 2024). For example, Kenya's Vision 2030 national development strategy seeks to achieve industrialization and middle-income status through investment in large-scale infrastructure projects such as the Lamu Port–South Sudan–Ethiopia–Transport Corridor (LAPSSET). LAPSSET is an initiative to enhance transnational

connectivity and address regional disparities through the construction of railways, highways and pipelines connecting the port of Lamu with South Sudan and Ethiopia (Enns and Bersaglio 2020; Gillespie and Schindler 2022). Infrastructure-led development has thus far failed to deliver economic transformation and national prosperity for Kenya. Rather, government borrowing for large-scale infrastructure projects has contributed to a national fiscal and political crisis, provoking anti-government protests in June 2024 (Opalo 2024). While infrastructure megaprojects may fail to catalyse structural transformation, however, they have certainly played a critical role in shaping the emergence of new urban frontiers in Kenya. Vision 2030 projects such as LAPSSET have catalysed uncontrolled processes of extended urbanization by opening up new frontiers of land commodification and speculation (Elliott 2016; Gillespie and Schindler 2022; Maina and Cirolia 2023).

Peripheral frontiers

Research on extended urbanization processes has broadened the focus of urban scholarship beyond established agglomerations. The rapid growth of cities in the global South has generated interest in the dynamics of urban edges characterized as suburbs, the peri-urban, the periphery or the frontier (Caldeira 2017, Meth et al 2024, Ortega 2016, Keil 2018, Mercer 2024a). As Keil (2017) has noted, we live on a "suburban planet" in which the nature of today's urban peripheries is more heterogeneous than is conveyed by the US-centric notion of "suburb" that dominated urban geography until recently (Keil and Wu 2022). Wyly (2020, p.27) describes the present "planetary suburban frontier" as a "diverse, transnational process reshaping the settlement fabric of every part of the globe, especially in the Global South and East."

In the rapidly urbanizing context of Africa, researchers have identified urban peripheries as dynamic frontier spaces. In the Tanzanian city of Dar es Salaam, Mercer characterizes contemporary urban growth on the city's former peri-urban edge as a "suburban frontier" driven by small-scale land acquisition and house-building, and new modes of consumption. This suburban frontier can be understood as "a zone of commodification, dispossession, accumulation, risk, aspiration and experimentation that is especially productive for middle-class formation" (Mercer 2024a, p.11). The frontier is a space that is colonized as much by new lifestyle and consumption habits as by land acquisition. New residential neighbourhoods are dotted with private day care and English medium schools, shops selling imported

groceries, hair and nail salons, and bars with matching furniture and landscaped gardens, all of which have been invested in, and are patronized by, the emerging middle classes.

Mercer's description of the dynamics of the "suburban frontier" in Dar es Salaam pushes back against a dominant reading of the frontier in which an as-yet uncommodified "outside" gets incorporated "in" to the city, propelling the frontier forward. Dar es Salaam's peripheries are instead characterized by the "coloniality of space" where the widespread opportunity to access land on which to build a house has been made possible, but has also been made insecure, by the indeterminate nature of land rights in the city's former rural hinterland (Mercer 2024b). That insecurity of tenure stems from the German, and then British colonial periods during which a bifurcated land tenure regime distinguished statutory urban land rights from customary rural land rights (Mamdani 1996). Over the last four decades, as mass autoconstruction has extended the city into the formerly "rural" space where customary land tenure prevailed, the work required by residents to secure their property has become increasingly labour intensive, ranging from constant negotiation with neighbours or representatives of lower local government, contesting land parcels and land boundaries in the local or professional court system, and pursuing the long, expensive and arbitrary formal process of obtaining a title from the central government. Frontier space in Dar es Salaam is not simply opened up by the dynamics of capitalist accumulation, then closed and abandoned for new opportunities: it also lingers as some people and places become trapped in a frontier state. The frontier is not always the first step on a road to privatization and commodification; spaces can remain not fully privatized nor commodified. The suburban frontier, then, is not a simple case of the teleological unfolding of capitalist urban space.

Frontier thought has generated useful resources for understanding urban spaces from beyond established urban theory (Cons and Eilenberg 2019, Jazeel 2018, Zeiderman 2018). Some of the most productive areas of recent work have approached the urban through its complex relations with agrarian livelihoods, property regimes and social forms. Saguin's (2022) analysis of contemporary Manila draws on theories of urban metabolism and political ecology to argue that the trajectory of the city should be understood as interconnected with its urban resource frontier, Laguna Lake. Paprocki's (2019, 2021) work on the frontier of climate adaptation in Khulna, Bangladesh argues that the future of Dhaka cannot be grasped without an understanding of the social and political dynamics of agrarian livelihoods in

places like Khulna, where residents continue to organize through peasant movements to protect and invest in agrarian futures.

The interweaving of the urban with the agrarian is a theme that has been taken up more widely in writing on urban peripheries in Africa and South Asia (Chari 2004), and particularly for those writing about the contemporary dynamics of urban land transformations. Urban peripheries have been sites of land grabbing, enclosure and dispossession (Gururani and Dasgupta 2018, Balakrishnan 2019, Mercer 2024a). In India, research on "agrarian urbanism" (Gururani 2020) has fleshed out productive ways that urban scholarship can draw on insights from agrarian studies. The frontier has been used as a way of capturing the contingent and unstable processes and practices through which land on urban peripheries has been commodified and enrolled into capitalist projects of urban expansion through state-led FDI (Gidwani and Upadhya 2023, Levien 2018). An important aspect of this work is the exploration of the agrarian spaces and relations that necessarily shape the frontier. The city of Gurugram (formerly Gurgaon) has attracted attention because of the "Gurgaon model" of urban development initiated by the state in the 1970s, in which planning and development controls were liberalised in order to make agrarian land available for private sector real estate and industrial investment. Situating this transformation in relation to longer histories of colonial land policy and postcolonial agricultural modernization, Gururani (2020) shows how the dynamics of Gurgaon's peri-urban property boom have been shaped by the persistence of agrarian social relations and property regimes. .

Also in Gurgaon, Cowan's (2022, p.14) ethnography of "agrarian city-making on the urban frontier" questions the assumption that capitalist urbanization always entails the dispossession of existing land users. Cowan poses agrarian city-making as a way of understanding the process of urban change ushered in by the Gurgaon model not as a linear trajectory of transition but as the outcome of stitched together class alliances that bind agrarian communities and migrant working classes into bargains and compromises with private investors and state institutions. Cowan demonstrates that agrarian landowning communities and property regimes are not swept away by Gurgaon's urban development, but are in fact central to its making: "dominant" agrarian caste communities become brokers, speculators and landlords who make agrarian land legible to real estate capital. The agrarian world both enables and disrupts urban capitalist development, and commodification in this context is characterised by uncertainty and compromise. Cowan understands the frontier as a

"subaltern" space of unstable alliances in which the agendas of the state and investors, or of aspiring agrarian landowners are frequently frustrated, blocked or unsuccessful. As in Dar es Salaam, capitalist urban expansion in Gurgaon's periphery is not guaranteed.

Violent frontiers

Urban geographers have mobilized the concept of the frontier to emphasize the centrality of violence to the reproduction of contemporary urban inequalities. Foundational in this respect is the work of Smith (1996), who drew heavily on Turner to theorize the violent and contested gentrification of downtown New York in the 1980s-1990s as the creation of a "new urban frontier". Employing Marxist theories of uneven development, Smith argued the gentrification frontier took the form of the shifting geographical boundary between areas of disinvestment and reinvestment within inner city neighbourhoods. The advance of this urban frontier could be mapped on a "block by block" basis through identifying indicators of the reinvestment of capital in disinvested buildings (Smith 1996, p.207). This process of reinvestment reproduced urban inequalities through the violent displacement of low-income groups such as homeless park dwellers, provoking fierce contestation in the process.

While the gentrification frontier advances primarily through "the movement of capital in search of profit", Smith (1996, p.57) also identified the emergence of a popular frontier discourse that justified gentrification by constructing working class neighbourhoods as a dangerous wilderness that required taming by middle class pioneers. This discourse combined a sense of hope and opportunity with the supposed danger faced by those brave gentrifiers who were willing to venture into the "wild west" of Manhattan's lower East Side. Citing Turner's definition of the frontier as the "meeting point between savagery and civilization", Smith (1996, p.xiv) argued that the celebration of gentrification in New York also portrayed the city's working class and poor inhabitants as part of nature rather than society: "Just as Turner recognized the existence of Native Americans but included them as part of his savage wilderness, contemporary urban frontier imagery treats the present inner-city population as a natural element of their physical surroundings." As such, the frontier discourse justifies violent processes of class-based displacement through mobilizing Turner's civilization/wilderness binary in order to dehumanise and invisibilize marginalized communities.

Following Smith's engagement with Turner, recent scholarship has drawn on interdisciplinary insights from across the social sciences to examine the violent nature of settler colonial urbanism. Work on US cities has argued that the racial violence at the heart of frontier dynamics in settler colonial contexts is confined neither to the past nor to myth, but acts in the present as "a structuring logic of racial capitalism" (Launius and Boyce 2021, p157) that devalues and dispossesses the ownership and use of land by communities of colour. Safransky (2023, p.101) interrogates how the framing of post-industrial Detroit as an urban wilderness paved the way for the "racial-spatial violence of capitalism" in the form of foreclosures, corporate land grabs and green redevelopment initiatives that erased Black communities' claims to urban space. Similarly in Tucson, Launius and Boyce (2021) argue that a frontier logic structures the racist devaluation of indigenous, Mexican American and other nonwhite residents' use of urban space, leading to the violence of displacement and dispossession. In their analysis, the frontier demarcates the boundary between productive and unproductive use of space, where the link between personhood, property and productivity is made through a racial "ideology of improvement" (Bhandar 2018) that surfaces in contemporary real estate markets under the guise of the "highest and best use" of land.

The concept of the frontier has also been employed to understand settler colonial urbanism in Israel/Palestine as an 'ongoing process' (Milner 2020, p.273). In his study of Israel's "frontier architecture" in the Occupied Palestinian Territories, Weizman (2024, p.4) argues that frontiers in this context are constituted by "shifting, fragmented and elastic territories" rather than linear, fixed and rigid borders. For example, the locations of military checkpoints designed to control Palestinian movement constantly change in response to political and military struggle. The elasticity of frontier architecture is therefore shaped by the agency of both colonizer and colonized. In documenting the history of Israeli settlement construction in the West Bank, Weizman also demonstrates how frontier architecture enacts policy and legal discourses that blur civilian and military functions and construct Palestinian land as *terra nullius*. Following the occupation of the West Bank in 1967, the supposedly "temporary" requisition of land for settlements was legitimated in the Israeli courts with reference to the security value of these outposts for monitoring and pacifying the Palestinian population. From the early 1980s, the scaling up of settlement activity was justified on the grounds that land not under active cultivation, such as rocky mountain ridges, was without ownership and could therefore be expropriated by the state and leased to settlers. The convergence of these military and legal dimensions of occupation explains the tendency for Israeli settlements to

be located on high ground overlooking Palestinian towns and villages, creating "a vertical separation between two parallel, over-lapping and self-referential ethno-national geographies, held together in startling and horrifying proximity" (Weizman 2024, p.117).

In the context of Tel Aviv, Milner (2020) describes neoliberal urban restructuring and displacement as a settler colonial frontier process in which legal or discursive strategies simultaneously delegitimize the claims of indigenous Arabs to remain in place while legitimizing the violence of their erasure. In the contested case of private urban redevelopment that she describes in the settlement of Jamassin/Giv'at-Amal, the concept of the "open urban frontier" allows Milner (2021, p.269) to unpick how settler colonialism intersects with urban neoliberal restructuring in order to deny certain groups rights to urban space, in this case by refusing to formally recognise residents' claims to land. In Jerusalem, Pullan identifies a type of "frontier urbanism" in which settlers' occupation of urban space at the heart of the historic city precipitates spatial violence enacted by and for "frontier populations" (2011, p.31). This "frontier at the centre" (*ibid*, p.20) includes urban planning and architectural methods of claiming space for settlers, as well as the everyday "micro-frontiers" that develop in and around settlers' homes in the historic centre.

Another strand of scholarship addresses questions of violence through examining the (re)production of state authority and power on the frontier (Rasmussen and Lund 2018, Watts 2018). This work highlights the nature of the frontier as a zone in which the right to exercise legitimate authority is contested, often violently, in relation to the control of new resources or property forms. In urban geography this work has been taken forward mostly in Global South contexts where there is particular interest in understanding postcolonial state formation. In Zimbabwe, McGregor and Chatiza (2019) draw out the politics of "clientelist statecraft" that have shaped an "urban frontier" on the peri-urban edges of Harare. They argue that a frontier discourse that frames peri-urban informal settlements as lawless spaces in need of regulation was employed in order to justify intervention by planning officials. However, they also find that the violence of land repossession in these informal settlement by local actors connected to the ruling party is part of a wider political struggle between different factions of the state.

In Indonesia, Lund (2020) argues that the creep of the city of Medan into the surrounding former oil palm plantations has precipitated the violent removal of smallholders and other residents by developers aided by youth gangs. Here the frontier is a "crucible of property

rights" (2020, p. 104) in which existing rights and claims are dismantled in order for new configurations of authority, property and rights to be re-constructed in and through the state. Commenting on the dynamics of urban redevelopment in postcolonial and post-socialist Asian cities, Lund (2019) notes that urbanization has become a frontier process in which the dissolution and reconfiguration of claims to urban land often lead to multiple appeals for legal recognition. Regardless of whether actions and claims are legal or not, state authority is strengthened by the act of bestowing legal rights to property. Marginalized urban residents' rights, however, are rarely recognized in re-territorializing urban frontiers, as Rhoads (2020) shows in Yangon and Lund (2020) demonstrates for Medan. As Lund (2019, p.1) comments, "this is no picnic."

Both of the concerns discussed above - the violence of settler colonial urbanism and urban statecraft - come together in Tomás' work on the history of Luanda. His analysis of the socio-spatial development of the city focuses on the *fronteira do asfalto* (the asphalt frontier). This was a road that, from the 1920s, marked the boundary between the Portuguese-built concrete city and the African-built *musseques*. For Tomás, the asphalt frontier is akin to "the skin of the city", a "separation that [does] not effectively separate" (2022, p.213). This asphalt frontier was originally intended to separate the colonial city centre from the *musseques*, but it was a malleable boundary - people could physically cross it during the day, and the frontier itself moved outwards as the city expanded, encompassing many *musseques* as it did so. Tomás argues that with independence, civil war, and then oil money, the frontier between the city and its periphery, or between "the haves and the have-nots," was shattered by practices of squatting, informal trading, and the state's attempt at "decentralizing" the city by constructing gated communities and laying out new neighbourhoods beyond the city centre. The fragmentation of Luanda's geography beyond the original asphalt frontier exceeds common binaries of urban studies (formal/informal, centre/periphery), and is produced instead at multiple scales by urban squatters, tenants' associations, and an increasingly centralized and authoritarian state.

Capitalist frontiers

The frontier has been employed as a heuristic to understand the geography of capitalist expansion by diverse multidisciplinary perspectives. In theorising the significance of frontier spaces to global capitalism, this scholarship builds on Marxist insights about the centrality of violence to the creation of private property through processes of primitive accumulation

(Marx 1976), enclosure (Midnight Notes 1990) and dispossession (Harvey 2003). Moore (2015) argues that capitalism must constantly identify new frontiers of uncommodified nature in order to sustain its drive for endless accumulation and expansion. As such frontiers become more scarce in the 21st century, the rate of profit falls and capital becomes more crisis-prone. The era of the "end of Cheap Nature" is upon us (Moore 2015, p.108). As Loftus (2018, p.92) observes, Moore's "world-ecological" account of the exhaustion of capitalist frontiers takes a planetary level of abstraction as "the starting point of his analysis rather than as the arrival point derived through a historically and geographically situated analysis". Such an approach risks overlooking the indeterminate and contingent character of capitalist frontiers as they are continually produced, contested and exhausted at different scales. In the absence of a single "great frontier" to sustain world accumulation, Schindler and Kanai (2018) argue that localized commodity frontiers continue to be created at the city-regional scale. They demonstrate how such frontiers are produced through the expansion of markets for carbon credits in Southern cities. In Delhi, for example, the introduction of a Clean Development Mechanism-funded waste-to-energy programme has dispossessed the city's informal waste workers by transforming their livelihood resource into a new frontier of "cheap energy".

State-led land commodification plays a key role in the production of capitalist frontiers at the urban scale (Lund 2019). For example, Gillespie (2020) conceptualizes urban redevelopment in Accra as the production of a "real estate frontier" characterized by the encounter between real estate capital and uncommodified urban land. Widespread customary land tenure in Ghana has historically acted as a deterrent to private real estate investment as disputes over ownership are commonplace. In response, state actors have sought to encourage real estate investment by making litigation-free "underutilized" state land available to developers. The result has been the commodification of urban land, resulting in the proliferation of luxury housing developments and the densification of central urban areas. This privatization of state-owned land has resulted in the dispossession of current land users and has attracted allegations of "land grabbing" due to interference with the allocation of plots by ruling party officials. Gillespie argues that Accra's real estate frontier is distinct from Smith's (1996) gentrification frontier as it advances through the commodification of land in prime neighbourhoods rather than the reinvestment of capital in disinvested areas. As Ghertner (2014) argues, therefore, it is important to distinguish between frontiers that emerge through

the uneven development of already-commodified spaces and frontiers that exist between capitalist space and its uncommodified "outsides".

Tsing's conceptualization of natural resource frontiers as highly profitable spaces of deregulation is also productive for understanding capitalist frontiers at the urban scale. Reflecting on urban frontiers in four Asian cities, Lund (2019) argues that the exercise of the law enables creation of new property regimes through the legalization of land rights within frontier spaces. However, illegality is often the precursor of legalization, with state actors granting formal tenure for urban land appropriated through illegitimate evictions. Gillespie and Mwau's (2024) study of rentier capitalist expansion in Nairobi found that the government of Kenya's infrastructure-led development approach has catalysed the expansion of real estate frontiers along the route of peri-urban road corridors. These frontier spaces are characterized by what Smith (2020) terms a "gray" mode of development that defies conventional formal-informal distinctions. For example, state actors have colluded with land speculators to capitalize on new road-building projects and turned a blind eye to the bypassing of planning and building regulations by high-rise housing developers. It is this "grayness" that enables these powerful actors to capture large rentier profits from publicly-funded infrastructure projects, motivating the further expansion of urban frontiers into Nairobi's agrarian hinterlands.

Just as the Lockean frontier myth of *terra nullius* was instrumental to property-making in the early modern period, so frontierist policy discourses play an important role in contemporary processes of capitalist expansion. The framing of Africa as a "final frontier" for global capitalism has been employed by multilateral institutions and consultancy firms in an attempt to encourage international investment in large-scale infrastructure and real estate projects on the continent (Kimari and Ernstson 2020; Watson 2014). Kimari and Ernstson (2020, p.831) argue that such a framing reproduces racist colonial tropes that justify external intervention by constructing the continent in terms of both deficiencies and untapped opportunities:

> "In this and similar discourses, a 1884–85 Berlin-conference era problematique is reified: Africa is at once a place of deficit, of "not capable", lagging behind, the "least" developed continent. It is also the site of unexploited capitalistic potential, an emerging "destination" offered to further fulfil more Cecil Rhodes or Indiana Jones

> like plunder, while simultaneously othered for, ostensibly, benevolent "trusteeship" purposes and its "freedom"."

In order to avoid reproducing such tropes, it is important to question Western-centric diffusionist perspectives that frame capitalist modernity as radiating outwards from global core to periphery, with the latter assuming a largely passive role (Cirolia et al. 2024). Rather, conjunctural accounts of capitalist expansion at the urban scale should recognise how frontier spaces are produced through the multiscalar interplay of local, national and transnational actors (Gillespie and Mwau 2024; Leitner and Sheppard 2020).

Scholarship on real estate frontiers has largely focused on urban Africa to date (Gillespie 2020; Gillespie and Mwau 2024; Scheba 2023). However, Goulding et al. (2023, p.832) demonstrate that such frontier spaces are also evident in secondary cities in the global North "that are relatively disconnected from the centre of wealth and power". One such city is Manchester, where the local state has adopted a range of strategies to de-risk transnational real estate investment and transform the post-industrial city centre into a high-rise residential district. State inducements for institutional investors to build private rental accommodation include relaxing the requirements for affordable housing provision and facilitating access to finance and land for development (Goulding et al. 2023). The local authority has also entered into a joint venture with an Emirati investment fund to redevelop the deprived inner city neighbourhoods of east Manchester, with large tracts of public land being transferred into private offshore ownership in the process. Analysing this as an instance of the urbanization of state capitalism, Goulding et al. (2024) argue that this partnership enables the switching of capital from Abu Dhabi's oil frontier to Manchester's real estate frontier. The outcome has been both direct and indirect displacement due to the demolition of social housing and increased unaffordability in the area. However, the expansion of this frontier has been contested by east Manchester's residents and the city's wider housing movement, with growing calls for public land to be used to address the local need for social housing and public green space (Luke and Kaika 2019; Rose 2024). This illustrates how scholarship on urban frontiers in the global South can disrupt geographical hierarchies of knowledge production and inform understandings of capitalist expansion in Northern contexts.

The special issue papers

This introduction has reflected on the contemporary resurgence of scholarship on urban frontiers to argue that this troubled concept has the potential to generate insights into various dimensions of the 21st century urban. In the process, it has proposed a new typology of urban frontier thought encompassing urbanizing frontiers, peripheral frontiers, violent frontiers, and capitalist frontiers. The papers collected in this special issue all demonstrate that thinking through the frontier offers productive ways to expand urban theory without taking the inevitability of capitalist urbanization for granted. Drawing on research in the Ecuadorian Amazon (Bayón and Janoschka), Gurgaon (Cowan), Chennai (Ramesh), and the global geographies of sand extraction (Jamieson), the four papers offer new ways of thinking with the concept of the frontier that encompasses revisions established urban theory ("the rent gap"), new concepts from beyond urban studies ("articulation"), new materials (sand), and new geographies (the coast). .

Manuel Bayón and Michael Janoschka bring Marxist and postcolonial urban theory into dialogue to analyse how capitalist urbanization and uneven development is shaped by contextual difference in the Ecuadorian Amazon. They do so by extending rent gap theory through an ethnographic case study of Amazonian frontiers of resource extraction and extended urbanization. Proposing the modified concept of the "Amazonian peri-urban rent gap", they argue that rent gap formation and realization assumes a fundamentally different form in this context to that originally identified by Smith (1996) in his study of gentrification in North American cities. Rather than the post-industrial cycles of disinvestment and reinvestment associated with gentrification, Bayón and Janoschka argue that Amazonian peri-urban rent gaps are catalysed by the large-scale infrastructure projects that underpin neo-extractivism in Latin America. Furthermore, the realisation of these rent gaps is contested and subverted by indigenous territorial struggles for the commons. These struggles are informed by relational ontologies that defy coloniality and racism as it manifests in the territorial stigmatisation of indigenous communities. While mobility is typically associated with displacement in gentrification scholarship, the paper argues that migration is central to popular mobilizations to influence and disrupt rent gap realization. Rather than victims of dispossession, therefore, Bayón and Janoschka demonstrate that indigenous communities play an active role in shaping urban frontiers through their distinctive struggles, mobilities and ontologies.

Thomas Cowan's paper on agrarian urbanism in Gurgaon employs Stuart Hall's concept of "articulation" to elucidate the frontier dynamics at work in India's urban and industrial growth strategy. Cowan sees the agrarian world operating as an "articulating principle" that structures capitalist urban expansion "without guarantees". In other words, capitalist urbanization is not inevitable. The agrarian urban frontier does not proceed as a teleological unfolding of capitalist urban space, but is contingent - and indeed dependent - on agrarian social actors and institutions. As Cowan notes, what is useful about the frontier concept is the recognition that what lies beyond it is not simply an uncommodified "outside", but is in fact produced through the uneven geographies of capitalist development. For Cowan, Hall's notion of "articulation" helps to unpick the specific social relations of the frontier, including those of customary property regimes and elite practices of land value capture. But Cowan also points out that these practices can hinder land aggregation and development projects, or be captured and repurposed for other ends, including those that are not motivated by capital accumulation.

William Jamieson reflects on the relationship between sand extraction and urban development to respond to debates about the relationship between planetary urbanization and its "outsides". Situating the case of Singapore within the global geographies of sand extraction, the paper identifies three "granular frontiers" that demonstrate how sand constitutes a critical but understudied "outside" of the capitalist urban process. First, the growing demand for sand for urban property construction is driving processes of ecological destruction and deagrarianization, as traditional rural livelihoods become unviable and peri-urban populations are drawn into sand mining activities. Second, land reclamation for coastal urban megaprojects is dependent on the large-scale importation of sand, with the social and ecological costs of this territorial expansion displaced across borders via opaque and semi-illicit markets. Third, the operation of global supply chains is dependent on investment in logistical infrastructure projects such as high-volume container ports, which in turn rely on huge quantities of sand for their construction. In examining the importance of sand to theorizing the "outsides" of planetary urbanization, Jamieson demonstrates the dialectical relationship between the concrete and abstract frontiers of global capitalism. With respect to globalized trade, for example, the concrete frontier of sand extraction undergirds the abstract frontier of accumulation through the rapid circulation of commodities.

Niranjana R extends theories of agrarian urbanization to the oceanic in order to critically reflect on representations of Chennai's coastline as an urban frontier. Drawing on ethnography with coastal fisher communities, Niranjana questions the dominant frontier logic often applied to land-ocean geographies, as if the coast functions as a natural dividing line between the urban and non-urban. Rather, fishing can be understood as an agrarian activity that disrupts simple binaries such as sea/land and rural/urban. Tracing the ways in which fishers traverse and make use of the multiple coastal waterways to the north of the city, Niranjana argues that the agrarian sea is a space of social and economic activity that is unrecognized by either capital or urban theory. As such, the land-sea frontier that is stitched together through fishers' livelihoods should not be understood as an exceptional space awaiting inclusion in capitalist urbanization. Rather, "reading Chennai through its waterways" reveals that the agrarian activities of fisher communities disrupt linear and totalizing narratives of urbanization as a frontier process. .

Taken together, these papers illustrate the importance of situated research that is attentive to the geographically contingent ways in which frontiers are enacted at the urban scale. Furthermore, they demonstrate how it is possible to undertake critical and reflexive scholarship on urban frontiers in two respects. First, they challenge the colonial frontier myth of *terra nullius* by making visible the agency of those situated "beyond" urban frontier spaces, such as indigenous and agrarian resource users. While dispossession is often a feature of the urban process under capitalism, the special issue demonstrates that these groups also play an active role in producing, disrupting and reshaping frontier spaces. Second, the papers problematise the tendency to represent capitalist urbanization as a teleological process that progressively subsumes all that is non-urban within its logic. While frontiers are the spatial expression of a systemic logic of perpetual expansion, the subsumption of the non-urban is never total and complete. Rather, the special issue illustrates the reproduction of multiple "outsides", such as the granular or the oceanic, as an essential characteristic of uneven geographical development.

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