

Towards a cooperative urbanism? An alternative conceptualization of urban development for Johannesburg's mining belt

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Address: University of Liechtenstein, Fürst-Franz-Josef-Strasse, 9490 Vaduz, Liechtenstein; email: lindsay.howe@uni.li **ABSTRACT** This paper explores the multidimensional aspects of inequality that shape urban areas and imagines an alternative future for one such space in Johannesburg, South Africa. It builds on literature from urban studies and planning theory to explore planning practices that politicize inequality, valorize difference and promote the shared management of collective resources. Then, drawing on a decade of qualitative research, the paper imagines how cooperative urbanism could be applied in the factious context of Johannesburg, describing the potential for developing the former mining belt of the Witwatersrand as a series of multi-scalar interventions, networking sites of cooperative action to incrementally address the entrenched inequality of the region. Thus, the paper brings together interdisciplinary conversations on theory with empirical research, discussing concrete ways to continue shifting urban planning and development towards increased environmental and social justice.

KEYWORDS communicative and collaborative planning / cooperative urbanism / empirical research / extended urbanization / Gauteng City-Region / Johannesburg / transdisciplinary research

I. INTRODUCTION

The urgent challenges of climate change, migration, economic crises and social conflict are increasingly manifested in our cities and urban regions. From the 2008 financial crisis to the 2020 wildfires and coronavirus pandemic, we are confronted, as never before, with multidimensional aspects of inequality in urban environments. Planning and design do not typically address the scale of "urbanization" – a process that transforms society and space into a practically planetary-wide network. (1) Nor have we begun to adequately engage with the compound forms of inequality that will inevitably arise through climate change in the future, (2) exacerbating the existing causes and effects of uneven development. (3) By examining the territory of Johannesburg's former gold mining belt, which divides the city's north from its south, this paper demonstrates that inequality is not only a product of the changing structure of labour or of the housing market in urban areas, (4) but of how "status quo" processes of urban development perpetuate it. Bold experimentation and alternative conceptualizations of the urban are required to overcome the interrelated

- 1. Brenner and Schmid (2012).
- Borunda (2021).
 Beall et al. (2002), pages

29-42.

4. Cf. Crankshaw (2022).

challenges of environment, urbanization and inequality. The mining belt is historically one of the most divided spaces of the entire city-region – the "final frontier" of development⁽⁵⁾ – and therefore an ideal site to test the theory of *cooperative urbanism*, which this paper presents.

Urbanization unfolds according to different processes and at different times, globally and within local contexts. (6) Underprivileged populations, who are often marginalized as urban development takes place, are impacted by the fabric of space itself in ways that those with more resources may not be. For example, studies into environmental racism beginning in the 1990s identified both intentional and unintentional discrimination in the siting of the damaging elements essential to urbanization, such as pipelines or sites of mineral extraction. (7) Extractivisms generate negative outcomes of several kinds: first, the environmental damage that occurs through the act of extraction - fossil fuel emissions, pollution and destabilized terrain. Hard labour, health impacts and, in cases like apartheid-era South Africa, familial separation for people working in extraction are socially negative externalities immediately associated with the process. Then, long-term environmental and social consequences of extractions, as demonstrated by the case of Johannesburg in this paper, (8) result from the extended urban fabric that develops between sites of extraction and urban centralities.

In his research into extractivisms in northern Chile, Arboleda⁽⁹⁾ notes that urbanization cannot function without resource extraction, which operationalizes and exhausts the natural landscape. He asserts that this creates "sacrifice zones": places rendered invisible on the global urban peripheries, in which massive environmental damage occurs, and where people have few possibilities to exercise their agency. (10) Massive resources are required to fuel the large, fragmented urban areas that result locally and regionally. Land prices for affordable housing and everyday socio-spatial practices reinforce spatial disconnects, as people located on peripheries are compelled into movement, seeking opportunities in urban centralities. In this way, a nexus between the environmental damage, urbanization processes and socio-spatial inequality is perpetuated. These power relations and discriminatory practices mean that the very people who provide the hard labour to enable urbanization experience disproportionate burdens related to its outcomes. (11)

In Johannesburg, inequality began with mining, and was cemented through the apartheid spatial policies that relegated Black populations to the geographical peripheries and consolidated control over spaces of exchange and encounter in urban centralities. As this paper discusses, drawing from an extensive review of policy documents, as well as empirical and primarily qualitative research conducted over the course of a decade, central Johannesburg (its industrial areas and Central Business District) is an essential site for peripheralized social groups to access opportunities. Yet the potential for innovative policy formulation remains largely absent from the more socio-technical discussions that shape urban development in the City of Johannesburg (COJ) and the surrounding region. When people's needs are not adequately included in planning processes, inequality remains embedded and can impede even the best intentions for equitable development processes.

Another South American scholar studying extended urbanization, Monte-Mór, (12) notes that policies and practices are primarily shifted through activism; he cites Henri Lefebvre in calling for a new conceptualization of

- 5. Butcher (2018), page 2200.
- 6. Schmid et al. (2018).
- 7. Cf. Bullard (1993); Kipfer (2013).
- 8. Cf. Bobbins and Trangoš (2018); Butcher (2018).
- 9. Arboleda (2016), pages 97–99.
- 10. Arboleda (2020).

11. Howe (2021).

12. Monte-Mór (2004).

13. Monte-Mór (2018), page 214.

14. Lefebvre (1991 [1974]).

15. Cf. Healey (1997); Hillier (2003): Innes and Booher (2003).

16. Forester (2007); Mouffe (1993).

17. Sandercock (1998); Wright (2010).

18. Iveson (2009).

19. Pernegger (2020).

20. Ostrom (1990).

21. Simone and Pieterse (2017).

22. Fraser (1995).

23. Healey (1997, 2003); Hillier (2003); Innes (1995); Innes and Booher (1999); Mandelbaum et al. (1996).

24. Allen (2003), page 136.

the urban that "privileg[es] complementarity and complexity, collectivity and solidarity, diversity and communion"⁽¹³⁾ over consumption, accumulation and production. Similarly, by pushing back against the status quo of the state and global capital – through actions ranging from overt protests to everyday subversions of the system – the dialectics between reality and envisioned utopias can lead to social transformation.⁽¹⁴⁾ When this kind of vision is enacted in space, the abstract can become concrete, and the experimental can forge a path for a new kind of socio-spatial reality. The urban realm is precisely where such experimentation can and should occur, at the interstices of social organization, the political sphere and the built environment.

Following the collaborative and communicative turn in planning theory, (15) this paper asserts that academics, planners and designers – who are tasked with creating theories and delivering solutions for the built environment – are in a unique position to imagine these new forms of cooperation, and to negotiate them without extinguishing difference. (16) Cooperative urbanism encourages actors like the state to reorient policy to valorize difference and promote flourishing (17) for marginalized social groups rather than focusing on growth and competition; (18) it calls for an agonistic approach in conducting transdisciplinary engagement; (19) and encourages experimentation with cooperatives to manage collective resources and surmount shared challenges. (20)

After discussing the paradox of planning and cooperation in the next section, the paper introduces the mining belt, then builds on these theoretical and contextual explorations to posit new institutional arrangements aligned with cooperative urbanism. By linking spatial practices to the uneven geographies of global urbanization, the case of Johannesburg's mining belt reveals possible moments where more equitable and sustainable transformation could begin on both local and regional scales and shows how a cooperative urbanism could continue shifting current practices towards increased socio-environmental justice. These processes could gradually unsettle the neocolonial tendencies and path dependencies of the built environment and question the long-accepted capitalist hegemony that renders abstract socio-spatial inequality in Johannesburg and beyond.

II. CAN PLANNING BE COOPERATIVE?

Simone and Pieterse call for a praxis of "doubleness"(21) – an approach to intervention that attempts to bridge the formal structures of government with the insurgent practices, mobilizations and modes of resistance that constitute the details of everyday living. In other words, they call for new forms of cooperation that transcend normative standards, and that legitimize these notions of difference in alternative practices in envisioning a more socially just future.(22) This paper asserts that the epistemologies of environmental racism and extended urbanization, focusing on marginalized social groups, can be mobilized to contest urban inequality, building on the new turn in planning theory since the 1980s(23) that views planning as a co-productive process to serve the public good, as distinct from the planning traditions of colonial imperialism and the export of master planning.(24)

This fundamental shift in planning theory was strongly oriented towards the processes behind finding consensus, based on Habermas's theory of communicative rationality.⁽²⁵⁾ Yet Southern scholars in particular criticised Western-based approaches and assumptions that directed attention away from justice and sustainability in the outcomes of planning interventions.⁽²⁶⁾ Sandercock, for example, asserted that the focus of collaboration should instead lie in recognizing and valorizing difference.⁽²⁷⁾ This drew on Fraser's claims⁽²⁸⁾ that the public sphere is subject to power relations, and that Habermas neglected to acknowledge the social, economic and cultural inequalities that block inclusion in and transformation of the masculinist, property-based and elitist public sphere.⁽²⁹⁾ Hillier even described consensus as the "death of difference"⁽³⁰⁾ for failing to halt the cooption of processes that result in reinforced power relations and continued hegemonic control.⁽³¹⁾

The concept of cooperative urbanism attempts to respond to these theoretical critiques by first carefully analysing the context and placing an explicit focus on methods that reveal various forms of inequality. Healey notes that observing everyday life can always lead to potential "windows of opportunity" for transformative ideas. (32) Cooperative urbanism relies on ethnographic research of everyday life to assert that:

- Urban planning and development should seek to politicize inequality, and prioritize the needs of the underprivileged rather than growth and competition;
- The production of knowledge about the urban should include agonistic, transdisciplinary engagement, with planners acting as "negotiators"; and
- The state should foster moments of collective experimentation in the production of urban space as a "commons".

In what follows, these ideas are briefly elaborated by bringing urban studies and planning theory into conversation with one another, grounded in the optimistic belief that, as Mouffe describes, passion can be mobilized towards democratic decisions and partial consensus.⁽³³⁾

a. Politicizing multidimensional urban inequality

The first proposition of cooperative urbanism is the formulation of planning and development policies that meet the needs of most or all of the population, instead of prioritizing economic growth through "spatial fixes". (34) Specifically, this involves transitioning the focus of the state from growth and competition to an approach that takes the perspective of the least privileged and promotes their "flourishing". As defined by Wright, flourishing refers to the extent to which people can develop their talents and capacities, realising their potential as human beings. (35) It also involves examining how the structure of space can preclude this, meaning that policy can directly acknowledge and rectify urban inequalities. Under cooperative urbanism, the multiple dimensions and forms of inequality are actively "politicized" as the goal of planning and development across multiple scales of engagement.

In his epistemological conceptualization of the urban, Lefebvre juxtaposed the idea of difference with capitalism, describing it as a

25. Habermas (1998).

- 26. Huxley and Yiftachel (2000); Watson (2002, 2006).
- 27. Sandercock (2004).
- 28. Fraser (1990).
- 29. Cf. Young (1990).
- 30. Hillier (2003).
- 31. Cf. Mouffe (1993).
- 32. Healey (2003).

33. Mouffe (2002), page 9.

- 34. Harvey (2001).
- 35. Wright (2010).

36. Cf. Brenner and Schmid (2012), page 155.37. Caldeira (2017).

38. Iveson (2009), pages 212–215.

39. Osman and Bennett (2014).

40. Iveson (2009), page 217.

- 41. Fraser (1995); Sandercock (1998).
- 42. Hillier (2003); Mouffe (2016); Pernegger (2020).
- 43. Pernegger (2020), page 3.
- 44. Cf. Young (1990).
- 45. Charlton (2014).
- 46. Howe (2020).
- 47. Watson (2002), pages 36-38.
- 48. Watson (2002), page 43.

contrasting means of producing space connected to everyday life. (36) Difference is particularly relevant to underprivileged populations, whose "transversal logics" (37) are necessary for their sustained presence in capital-driven spaces, serving as the basis for improved flourishing. Iveson describes cooperative urbanism in terms of "progressive entrepreneurialism". (38) He refers to allowing non-capitalist activities to proliferate, from phenomena like the popular construction of urban environments, to street vending and cultural networks. Progressive entrepreneurialism is often localized, requiring "catalyst" individuals and organizations (39) and is hence difficult to implement as a policy. However, codifying its practices into planning law is promising, for example in the demarcation of areas for activities like street vending.

A means of effecting the change Iveson discusses is the formation of progressive coalitions across interests that represent multiple social milieus: "This could work to challenge the neoliberal logic which equates the interests of capital with the interests of the city," he notes. (40) Although the national political climate is often resistant to such forms of change, the time is ripe for testing these logics on the local and regional levels.

b. Mediating and valorizing difference

The second proposition of cooperative urbanism is the exercise of agonism and transdisciplinary engagement, legitimizing and valorizing difference. (41) In recent years, scholars have increasingly turned to the concept of agonism, (42) or the acceptance of difference and protest as natural components of a just society and healthy democracy. According to Pernegger, agonism promotes expressions of dissensus, "rather than trying to sidestep conflict through formal consensus-seeking mechanisms". (43) As a process, agonism implies the involvement of a truly representative spectrum of individuals from the broader civic population, and a strategy to place potentially vulnerable actors in positions of power. (44)

The negotiation of urban space to create opportunities unfolds in highly individual and specific ways. The mobile waste pickers of Johannesburg's inner city⁽⁴⁵⁾ and people carving out residences in abandoned warehouses near urban centralities⁽⁴⁶⁾ are making opportunities as best they can; they deserve to be included in the plans that impact their lives. They also need to be identified specifically by their everyday routines and spatial practices – in preference to seeing members of civil society as "communities", which thus masks vulnerable voices in service of consensus. This aligns with Watson's claims⁽⁴⁷⁾ that normative theories of planning cannot effectively mitigate the high levels of dysfunction inherent in civil society in places like Southern Africa.⁽⁴⁸⁾ A true consensus is rare in factious contexts like the Gauteng City-Region (GCR), where there are low levels of trust, particularly between underprivileged populations, government and the private sector.

Valorizing complex differences thus requires long-term engagement after identifying the widest range of stakeholders possible through careful transdisciplinary research. In Johannesburg, COJ actors cited their planning priorities as a move "from consultation to enabling" (interview with a development planning director, 2016). From their perspective, this involves information being made available, such that non-experts can also engage with the city directly, rather than through official and

professional channels only. But if organizations are to communicate and collaborate with members of government and civil society and to valorize difference, they must be highly motivated and carefully guided. Planners and urban researchers can thus embrace the role of negotiator and mediator of urban space, (49) identifying stakeholders and vulnerable voices. A focus on specific individual needs, rather than abstract or designlevel objectives, can build trust and engender what Beard called "collective agency", (50) laying the foundations for cooperative action over time.

c. Sharing resources and experimental cooperation

The third proposition of cooperative urbanism is the creation of spaces based on the idea of shared and collectively managed resources. In economics, a good is considered "collective" if its consumption by an individual does not reduce the possibility for its consumption by other individuals. (51) Classic examples include clean air or public infrastructure like non-toll highways. The global climate is also a form of collective good, because a bottom line must be ensured for all people in order for humankind to survive. However, collective goods mean individuals have an incentive to use them "without limit – in a world that is limited", as Hardin puts it. (52) Thus, traditionally it has been difficult to conceive of incentives for different individuals regarding collective goods; this is one of the key challenges in addressing inequality through cooperation.

However, and particularly for those with limited means, collectivisms have often proved an essential means of securing livelihoods and contesting inequality. South African scholar Pithouse builds a narrative of an alternative in the form of the "urban commons", (53) based on Ostrom. (54) He concludes that commoning cannot succeed without "some sort of state structure"(55) providing public goods, but that it should be done in a way that is grounded in local knowledge and self-organization. The idea of the collective, outside formal markets or government control, is also embedded in South African socio-economic interactions in the practice of the stokvel: self-organized groups whose members regularly contribute savings to a common pool. Lukhele describes the stokvel in South Africa as "a type of credit union in which a group of people enter into an agreement to contribute a fixed amount of money to a common pool weekly, fortnightly or monthly". (56) Studies have estimated that 50 per cent of adult Black South Africans are stokvel members and invest more than 12 billion ZAR (ca. US\$750 million) annually. (57) These kinds of practices address the need for economic citizenship as a collective consumption good. This is precisely the way cooperative urbanism could function: if the state chose to politicize inequality and work with people to understand their lives and livelihoods, it could build on such existing networks to scale up collective practices and anchor them in the built environment.

III. THE INTRANSIGENCE OF THE JOHANNESBURG MINING BELT

This section presents the mining belt in context, considering the regional- and local-scale phenomena that shape urbanization and inequality. The information is drawn from a literature review of policies

49. Forester (2007).

50. Beard (2003).

51. Samuelson (1954).

52. Hardin (1968), page 1244.

53. Pithouse (2014), page 34.

54. Ostrom (1990).

55. Ostrom (1990), page 34.

56. Lukhele (1990). Mukwevho (2017) discusses the benefits and drawbacks of the stokvel system, describing it as a "bridge" between the informal saving sector and the formal stock market or investment sector. Bophela (2018) has delineated eight categories of stokvel: basic, grocery, burial, birthday, lobola (marriage), investment, high-budget and other. The basic form is a savings scheme whereby members receive a lump sum on a rotational basis for specific events, for example following the death of a family member.

57. Townsend and Mosala (2009).

58. This paper examines the context of Johannesburg: other recent literature is just beginning to explore the connections between these concepts and the city. For example, Mundoli et al. (2019, page 221) analyse the concept of an urban commons in the global South; Foster and Iaione (2019) provide a detailed application of Ostrom's principles of collective goods to the concept of urban commoning, including a series of "design rules" and policy examples.

59. Cf. Parnell and Pirie (1991).

60. Bobbins and Trangoš (2018), page 45.

61. Butcher (2018). 62. Lewis (2011).

63. Harrison and Zack (2012), page 559.

64. Coetzee et al. (2004); Humby (2013).

65. Bobbins and Trangoš (2018), pages 74–5, 162–9.

66. Butcher (2018), page 2186. The former mining sites on the peripheries of the GCR exhibit much more dire circumstances than centrally located sites like the Witwatersrand south of the CBD. As the mines gradually close, settlements with tens of thousands of residents are situated sometimes nearly 100 kilometres outside of city centres, connected by taxi and bus transit. This paper focuses on what cooperative urbanism could create in more centrally located sites in the GCR, and the topic of the peripheries is discussed in several other papers (cf. Howe, 2021, 2022).

and projects related to the Witwatersrand mining belt,⁽⁵⁸⁾ as well as empirical research conducted around the GCR since 2011. The focus of this work is a qualitative investigation of the geographical peripheries and informal settlements of this extended urban region. It relies on primary sources, including 36 expert interviews conducted with representatives of government institutions and professional planners.

a. Regional perspectives: Countering the legacy of extraction and inequality

Johannesburg was founded when gold was discovered on the Witwatersrand ridge in 1886, and this geographical element became a key feature of the way space was partitioned under apartheid. For example, the ridge blocked the privileged White neighbourhoods north of the ridge from dusty mining winds, divided the Central Business District (CBD) from townships like Soweto built for Africans during apartheid, and remains a physical divide composed of what Bobbins and Trangoš describe as "reprocessed mine dumps, blank veld, blue gum trees and toxic, yellow soil" today. Most of the gold has long been extracted, and this land is now at the centre of an extended and polycentric urban region approximately 225 kilometres in diameter. It is gradually transitioning from corporate to state control; hill in this suspended state, people live there and even mine informally.

This transition is a highly factious process because it represents both the contemporary challenges of remediating contaminated land, as well as the potential for redressing the historical processes that entrenched inequality. The overarching strategy has been for the local or regional state to take possession of the land, consolidating mine tailings to process trace amounts of gold. (63) However, in many areas, the ground is severely polluted by heavy metals, radioactivity and acid mine drainage; the earth itself has been destabilized by deep mine shafts. (64) To date, the mining companies have not been effectively incentivized to remain involved in plans to redevelop the land, nor forced to make environmental management plans or concessions to address the damage they generated. (65) As Butcher argues: "the current liminality of Johannesburg's mining land is a product of state-sanctioned and co-produced corporate power over that territory". (66) Many collaborative efforts in this space have previously failed, despite efforts by planning officials, because profit and growth end up being prioritized (interview with a spatial planning professor, 2015), and the path dependencies of the built environment, particularly on the regional scale, have not been shifted. (67)

On the urban and regional scale, the COJ has primarily politicized inequality through its transit-oriented development (TOD) policy – formerly known as the "Corridors of Freedom" – by aiming to increase density around existing transportation routes with bus-rapid-transit (BRT) lines, consolidating investment along arterials connecting Soweto to the Johannesburg CBD and Sandton, and offering developers incentives, such as density bonuses and a "direct line" to discuss permit applications with planning officials, in order to promote these objectives (see Figure 1). (68) TOD policy does address environmental sustainability, reducing vehicular transportation in and around this massive urban region, but it alone cannot counteract 150 years of mining

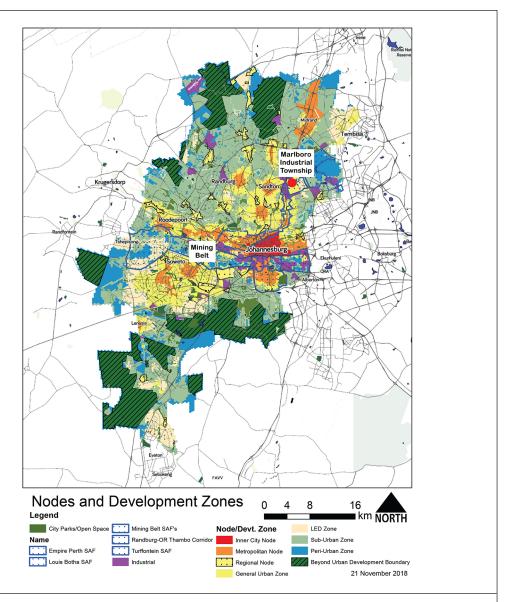


FIGURE 1
Nodes and development zones as identified by the COJ

NOTES: This plan proposed transforming COJ land-use planning tools, essentially aiming to raise densities in "well-located areas", primarily along transit corridors, to create a polycentric city model. It overrides regional spatial development frameworks (SDFs) and was approved in February 2020. See Nodal Review (2019) and Webster (2020).

SOURCE: Image courtesy of COJ.

67. One reason several key interviewees noted for the prioritization of growth was pressure on local municipal government by national government policy for the rapid delivery of subsidised affordable housing on the urban peripheries. This has been discussed extensively in the context of the "mega human settlements", for example by Ballard and Rubin (2017).

68. GSDF (2013); interview with an urban and regional planning expert (2014); Harrison (2016).

69. Cf. Chapple and Loukaitou-Sideris (2019); Howe (2020).

70. Todes and Robinson (2019), page 299.

71. Todes and Robinson (2019), page 305.

72. Rubin and Harris (2018).

73. Klug et al. (2013).

74. Rubin (2016).

75. Cf. Allen and Frediani (2013); Butcher (2016).

76. Moyo (2009).

77. Cf. Culwick and Patel (2020).

78. In the following section "the state" refers to the City of Johannesburg unless otherwise designated.

and apartheid. It does not adequately shift the structure of space itself, and in some cases consolidates privilege along corridors that already have better access to transport and opportunities, threatening the most vulnerable with displacement.⁽⁶⁹⁾

Yet COJ policies show that politicizing inequality and sustainability has begun to gradually shift the rhetoric of development – particularly when these interests align with the housing market. In the half-decade since TOD policy was implemented, Todes and Robinson have observed the policy engendering small transformations: "transit corridors have emerged as a space for experimentation, where new forms of private property development focused on the affordable rental housing market are being attempted, and where bespoke solutions to both form and finance have been found". (70) They cite emerging developers who are less tied to the dominant practices of geographically peripheral development as having particular promise relating to the creation of more sustainable, socially just development. (71) However, there remain too few experimental projects or scaled-up ideas for collaboration to show what could replace typical models of urban development, and where initiatives should occur if not related to TOD.

On the site scale, several recent projects in the COJ have included small moments of experimentation with collective resources, but with insufficient cooperative processes. Fleurhof is a well-located area along both the TOD corridors and Johannesburg's mining belt and the site was co-developed into a mixed-used project with affordable cluster housing.⁽⁷²⁾ As discussed by Klug, Rubin and Todes, it was the result of the unity of a political-spatial vision for integration and new settlement types.⁽⁷³⁾ Favourable market conditions, in part involving international finance, and state imperatives including an extreme housing backlog, together forced concessions from developers and generated a "politics of mutual satisfaction".⁽⁷⁴⁾ But overall, the COJ market remains highly developerdriven, and provision of affordable housing in central areas is more a response to changing market conditions than an attempt to create a city better aligned with the principles of socio-environmental justice.⁽⁷⁵⁾

Unless strategies like comprehensive land reform or restitution⁽⁷⁶⁾ can alter the strong centre–periphery dynamics of the GCR, the messy, complex task of working together to ensure collective resources across multiple scales will remain necessary. However, the large swathe of land along the Witwatersrand and many former mining sites around the GCR could play a pivotal role in stitching together the fabric of this uneven city-region, and in planning for climate change in ways that do not further exacerbate inequality.⁽⁷⁷⁾ Because the land is so centrally located, with shorter and cheaper transport pathways to economic opportunities for the least privileged, it would also be an invaluable resource for the creation of centrality, in the form of experimental projects or affordable housing models. However, this idea has never yet come to fruition, in part because of the "mining-industrial complex", as described below; also because there is no road map for creating alternatives.

b. Local perspectives: State, landowner and civil society in the mining belt

There is a complex relationship between the state, (78) landowners and developers in the mining belt, as recent policy documents from COJ's

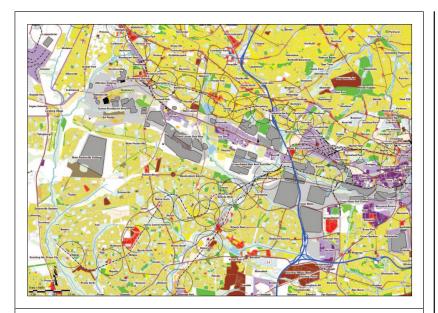


FIGURE 2

Overview of Witwatersrand and major place names west of the CBD, discussed by the COJ largely between 2014 and 2019, and still applicable within the framework of the Nodal Review (2019)

SOURCE: Image courtesy of COJ (MBP LUM, 2016, page 7).

planning departments reveal. (79) These relations are described in detail by Butcher, (80) who traces how Crown Mines evolved from a twentiethcentury gold mining house into the Rand Mines Properties (RMP) real estate company in 1968, and then into the rebranded Innovative Property Solutions (iProp) of the present day. "Currently developing a conservative 40 to 70 hectares per year, 2000 hectares of historically RMP land remained undeveloped as of 2013, despite the local state's ambitious spatial plans to reconstruct the apartheid city, combined with stronger environmental regulation", Butcher noted in 2018. (81) This case demonstrates how the objectives of a large-scale landowner are intertwined with those of the state – an "urban regime" that is extremely difficult to dislodge. Members of civil society complain that, because of this, "the consultation process is a sham" in the mining belt, and their needs are unilaterally disregarded. (82) In what follows, this is illustrated by the section of the Western Rand between Leratong and the Johannesburg Central Business District (see Figure 2), in order to frame the opportunities and challenges of implementing cooperative urbanism in this context.

Currently, most of the land in the Western Rand, particularly the eastern section near the Johannesburg CBD, is owned by the mixed-use land developer iProp.⁽⁸³⁾ The company has retained strong control over the territory throughout the city's recent history, through rights it holds to mine below ground and build above ground. Its focus on industrial and commercial development, and occasionally small residential projects, is

79. The state's thinking on the mining belt is paraphrased from the documents that are made publicly available by the City of Johannesburg under the title of "Policies, Plans and Strategies". This includes for example the 2019/2020 Nodal Review documents, "West Mining Belt: Formulation of a Strategic Area Framework" (WMB SAF, 2016), and "Mining Belt West Strategic Area Framework Presentation to LUM" (MBP LUM, 2016). Available at: https://drive.google.com/drive/ folders/1YVB5sXacuk3Yzk5gd8-RG59pmB3LuNga.

- 80. Butcher (2018).
- 81. Butcher (2018), page 2188.
- 82. Humby (2013), page 91.
- 83. Innovative Property Solutions, "Current Developments". Available at: http://www.iprop.co.za/currentdevelopments.

84. Butcher (2018), page 2186.

85. Cf. Howe (2017), pages 32–39.

86. Butcher (2018), page 2204; WMB SAF (2016), pages 67, 109.

87. Robinson and Attuyer (2021), page 320.

88. Nodal Review (2019), page 6.

89. The mining belt first came to serious attention in 1991, just before the transition to a democratic South Africa. See Butcher (2018, pages 2197-2199) for a detailed explanation of the discussions and conflicts in the 1990s, in particular, one of the few mentions of civil society engaging with mining landowners. For example: "Civic associations representing residents from segregated and marginalised townships, and supported by planning activists from an organisation called Planact, lobbied for 'infilling' [the 60,000 hectares unbuilt along the mining belt] through low-income housing" (Butcher 2018, page 2197). Under Mandela's post-apartheid government, the Reconstruction and Development Programme (RDP) aimed to provide governmentsubsidised mass housing for every citizen of South Africa earning less than 3,500 ZAR per month. There is a "gap market" between approximately 3,500 ZAR and 22,000 ZAR per month, at which point one can qualify for a "bond" mortgage from a bank.

90. WMB SAF (2016), page 107.91. Cf. Klug et al. (2013); Rubin and Harris (2018).

92. MBP LUM (2016); WMB SAF (2016).

93. MBP LUM (2016).

94. WMB SAF (2016), page 110.

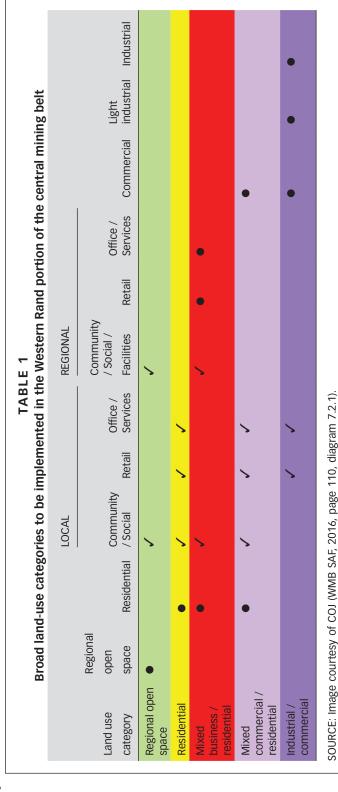
95. Klug et al. (2013).

essentially what Butcher calls "a state-sanctioned corporate hegemony over mining land". (84) The state has been complicit in supporting the dominance of such former mining houses, in part because of their sole possession of the geotechnical knowledge about the space, and in part because the state has always been complicit in facilitating the needs of the mining sector as a practice of value capture. (85) Fluctuating gold prices – and the possibility they may increase in the future – has led both the developer-landowners and the state to leave their options open to continue mining if it becomes profitable once more. (86)

As Robinson and Attuyer note in the case of London: "value capture has become the main vehicle for achieving state objectives for urban development".(87) In Johannesburg, along the mining belt the state primarily aims to extract value in the form of affordable housing. The city's Johannesburg Development Agency (JDA), for example, is interested in finding land for affordable housing and developing it through public-private partnerships(88) and sees itself as responsible for making this happen. It advocates for the expansion of existing townships into areas deemed safe for reclaiming - which of course relies on the expertise of the mining landowners - within the RDP (Reconstruction and Development Programme), gap and affordable housing sectors. (89) There is a preference for residential development in the western half of the study area between Fleurhof and Leratong(90) such as the Noordgesig project, which extends existing housing from Soweto north into the mining belt, attempting to extrapolate principles that were successful in creating such housing in Fleurhof. (91) There is also a strong emphasis on commercial and industrial development in the eastern sectors that belong to iProp (see Figure 2).

However, the state is currently limited by its own planning practices. While zoning laws lead to a clear spatial definition of land use, and there is also a clear focus on expanding the housing market for the higher end of low- and middle-income urban residents, (92) the outcomes continue to exclude those most in need. First of all, the zoning categories are extremely broad (see Table 1) and are conceived by private sector planning agencies, which are commissioned by the state to design "precinct-level" plans in accord with spatial development frameworks (SDFs) on the regional scale. In the mining belt, there are 11 principles followed for developing the land – many of which may sound familiar from international precedent projects on brownfield development. (93) These "buzzwords" and categories (94) reflect little of the distinct realities of Johannesburg on the ground (see Figure 3).

Secondly, the focus on housing development ensures profit maximization for released land; this involves returns for the developer and achievement of social targets for COJ. Thus, where housing is possible on iProp-owned land, the focus is on housing at the upper end of the affordable market, to enhance "up-filtering" into more profitable housing development categories that could increase value capture for the land. Otherwise, land is reserved by the owners for more profitable commercial and industrial uses – or simply held until the prices go up. Otherwise, land is reserved by the owners for more profitable commercial and industrial uses – or simply held until the prices go up. Otherwise, if residential construction for upper market segments is consolidated towards the western sector of the Witwatersrand in Johannesburg, and the most central parts of the city in the eastern sector



•Primary land use.

96. WMB SAF (2016), page 38. 97. Butcher (2018), page 2204.

98. Butcher (2018, pages 2197-2199) details this; as a brief summary, Planact proposed that RMP should enter into negotiations with the City of Johannesburg, which in turn could incentivize the process to allow housing production, and for which Planact produced a study locating possible areas. RMP claimed they were aiming to reserve the land for employment - and funded its own study (with support from an outgoing apartheid-era planning agency) to lean on original "triple rights" and geotechnical complexity to preserve its hegemony over the land.

99. Humby (2013).

100. Charlton et al. (2022).101. MBP LUM (2016), pages 4, 48.

102. Research in Marlboro South was conducted in evaluation of the proposed "Corridors of Freedom" project and included extensive quantitative mapping and qualitative research methods. Howe (2016, pages 49-52) identified four key development challenges from conversations with civil society, which are relevant for the mining belt: (1) allowing multi-functionality on the micro-scale from a zoning perspective; (2) expectations for service delivery and shared common facilities; (3) provision of rental stock or alternative forms of home ownership with tenure; and (4) direct inclusion in participatory planning processes (instead of through political channels).

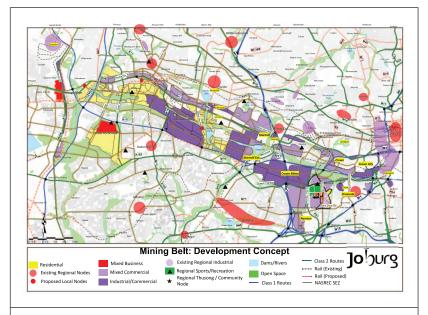


FIGURE 3
Mining belt development concept for the Western sector of the central Witwatersrand

NOTES: Industrial areas targeted by the City of Johannesburg for development are indicated in yellow; those both targeted by COJ and being developed by iProp (projects in progress or in development) are highlighted in yellow and bolded in a larger font.

SOURCE: Image courtesy of COJ (MBP LUM, 2016, page 10; MBW IIC, 2016, page 2).

are continually dedicated to further industrial and commercial use rather than to the public and the common good?

Civil society has had little voice regarding this use of space since the well-known debates led by the NGO Planact in the 1990s. (98) There are court cases documenting the needs of populations residing in mining belt informal settlements and advocating for their legal rights (99) and research into the *zama zamas* who conduct dangerous informal mining within the belt and typically reside nearby. (100) Yet organized citizen initiatives regarding use of the mining belt are practically invisible within the planning discourse, where these citizen groups are referred to simply as "possible stakeholders" or "local private stakeholder groups". (101)

There are integrated development planning (IDP) requirements in place at multiple jurisdictional levels, but little evidence that these have been observed. In another part of the city, research into the informal settlement of Marlboro Industrial Township⁽¹⁰²⁾ sheds light on the disconnect between planning processes and the public. In this case – where the primary issue was the implementation of TOD and possible outcomes for informal settlement residents occupying abandoned warehouses – mixed-methods research revealed that public participation was selective

and exclusionary. As in the mining belt, the COJ conceived Spatial Area Frameworks (SAFs) and commissioned private sector planning offices to develop precinct plans. Then, developers filled in the details in their own plans, within the constraints of SAF and precinct plans, balancing the state's development objectives with their own. In Marlboro, local ward councillors (who are politically elected) were tasked with assembling people for public sessions to comment on these plans.

However, the ward councillor for Marlboro Industrial Township, who lived in nearby Alexandra Township, failed to engage the Marlboro Warehouse Crisis Committee (MWCC), a major civil society organization representing more than 5,000 people living in warehouses in the industrially-zoned area. This led to a failure to hear the needs of the majority population, and to incorporate this large group of urban residents into development plans. Finally, because developers primarily rely on housing to fund their ventures, most mixed-use programme elements and more innovative housing types – including rental accommodation – did not survive the tender process. Anything too "new" or experimental is considered too risky for property companies, or for banks to finance; it is further constrained by zoning plans shaped by Western ideals, limited in their capacity to deliver anything to enable the flourishing of microactivities and economies that proliferate in Johannesburg.

This again echoes the findings of Robinson and Attuyer, who describe how in London: "there are no systematic procedures for public influence on how these choices might be made, although they are broadly informed by planning politics. . . . Instead, it is in the unscripted informal settings of negotiations between developers and planners that crucial decisions are taken, by weighing up competing demands on the production of the built form of the future city."(103) The "Johannesburg style" of development in the mining belt seems to be subject to path dependencies that have existed since before apartheid. The case of the Western Rand illustrates precisely how this can unfold: long-term land rights, hegemonic control over geospatial knowledge, chaotic policy approaches across the tiers of decentralized government, and the imposition of inappropriate planning and zoning concepts. The documents reviewed indicate that the state never explored Planact's suggestions from the 1990s, including incentives, land swaps or forms of withholding and trading rights.(104) There are now included many more options, like tax credits, fast-tracking of approvals, density bonuses, bulk and link infrastructure. (105) The mining belt remains a multidimensional territory of extraction.

Despite this complexity, it is too important an opportunity to allow "status quo" planning approaches and dealings with mining corporations or property companies to drive urban development in the mining belt. Reclaiming the space that literally and physically symbolized apartheid for Black and peripheralized populations could be the ultimate spatial transformation of the local and regional urban environment. If change cannot unfold through established channels, people could instead be directly involved in the production of mixed-use housing on the mining belt. The next section explores how people could develop their living spaces themselves, essentially scaling up the idea of a *stokvel* into a building practice, not dissimilar to the *Genossenschaften* (housing cooperatives) of places like Zurich that arose out of the housing struggles in the 1980s and allowed civil society to reclaim some of its power. (106)

103. Robinson and Attuyer (2021), page 320.

104. Butcher (2018), page 2200; Charlton (2008).

105. Klug et al. (2013), page 670

106. Apostol (2015).

IV. IMAGINING COOPERATIVE URBANISM IN THE MINING BELT

The rest of the paper explores cooperative urbanism as a possible answer to the factious and fractured nature of spaces that have been historically segregated and exploited through extractivisms in Johannesburg. In sum, the "corridor" logic of TOD could be applied to the development of green and public space throughout the mining belt and on the regional scale, and to shaping experimental forms of housing on the project scale. Instead of fully top-down zoning and housing production, land swaps and incentives could allow some land, safe for building, to be designated for development by and for people within the mining belt. This could "restitch" the city in a more ground-up fashion, standing in stark contrast to the status quo practices of further densification at the will of landowning companies. To date, these companies bear no responsibility for rehabilitating the areas that they extracted value from for decades⁽¹⁰⁷⁾ and they now expect profit margins of between 25 and 30 per cent through property development.⁽¹⁰⁸⁾

First, city planners and urban researchers could locate a network of sites to provide linked brownfield opportunities on a regional scale. (109) They could seek out shared objectives leading to potential common resources, such as natural resource preservation, infrastructure provision, space for shared public services, or mixed-use cooperative housing. Public squares, community hubs, government offices and services could also be located in such spaces; they could be designated as special mixed-use development zones, or for creative and performing arts facilities. Any activities that foster an urban public life, allowing people to express difference and access opportunities - denied so long through the practices of apartheid - could be a part of this environmentally and socially oriented regeneration. Then, a transdisciplinary engagement process could begin to assess individual needs amongst stakeholders directly associated with the sites - mining corporations as well as vulnerable members of civil society - in order to forge moments of reciprocity and provide space for agonistic differences to remain. Projects could then be concretized in central areas as a form of "associational democracy", in which civil society, landowners, banks and state power come together to determine the allocation of these resources and control of production and distribution, (110) networking sites throughout the GCR on reclaimed mining and deindustrialized land.

Cooperative housing is the kind of precedent that could drive change.(111) If members of civil society were included in the design and development process from the onset, according to the principles of cooperative urbanism, the stokvel concept could provide a base market for the mix of rental or home ownership, space for micro-businesses or whatever activities already proliferate on the site, and public functions, all depending on the results of the planning collaboration. Developers could also be enticed to participate in projects with so-called guaranteed markets. In the Fleurhof project, Klug et al. described how the developer Calgro was: "able to draw on government subsidies for low-income and social housing . . . and the developer works in partnership with the municipality as co-developers, reducing risk".(112) A market is also practically guaranteed through the location itself. Small "toeholds" of space are occupied all over the Witwatersrand wherever land is accessible; being located centrally is life-changing for people who lack the transport that more peripherally located areas require. (113) A range of possible options remain unexplored:

107. Humby (2013), page 91.

108. Klug et al. (2013), page 675.

109. Cf. Pieterse and Pulker (2019), pages 136–143.

110. Wright (2010), pages 136–137.

111. Cf. Appadurai (2001), page 29.

112. Klug et al. (2013), page 675.

113. Howe (2022)

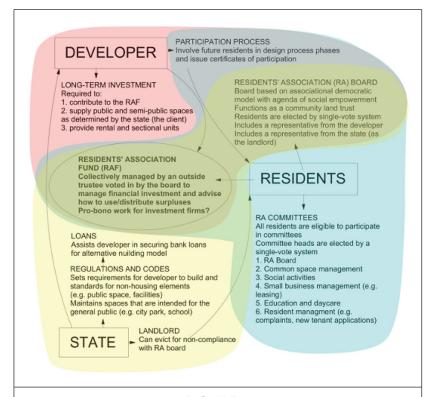


FIGURE 4

Diagram representing an attempt to outline an association according to the principles of cooperative urbanism

NOTES: This model targets long-term involvement by the developer to motivate the production of high-quality urban and architectural spaces, empowering residents through "communing". It aims to create space for the developer, residents and the state – the primary landowner along the corridors slated for dense development in Johannesburg – to incorporate their differences. Since the state has high leverage at these sites, it could promote co-creating something experimental.

SOURCE: Author.

for example, a powerful landowner/developer like iProp could retain the land rights and lease to cooperative projects, co-developing with civil society or state actors, and remain involved in its board (see Figure 4).

Underprivileged stakeholders from civil society could be incentivized to remain actively involved in associational democratic organizations for public projects or housing cooperatives by participating in a board, or in a series of committees managing small subsidies from the state. A possibly more radical step would be the establishment of a managed Residents' Association Fund (RAF). A departure from purely capitalist modes of development, an RAF essentially functions as a body to invest capital, either from businesses within the cooperative or investors, to

114. Cf. Butcher (2016); Todes and Robinson (2019).

115. Cf. Köbel et al. (2020).

116. Cf. Humby (2013).

117. Cf. Todes (2016).

118. Nodal Review (2019).

119. Miraftab (2009); Roy (2006).

benefit site stakeholders. A qualified trustee – for example, an employee of an investment firm conducting pro bono or environment, social and governance (ESG) work - could manage the contributions and invest dividends. The primary contributor to the fund could be the developer, already often backed by global financial capital. (114) This follows global trends towards "impact investing", which has increased exponentially in recent years and provides new avenues for companies like iProp to turn profits. (115) In a smaller proportion, according to their capacities, residents themselves could contribute. Because investment would be professionally managed, in principle it would be no different than investing in any fund - except that it would be mandatory to reinvest a set percentage of the returns in "impact" for the site and its collective resources. While this likely means (significantly) lower profits for developers, they could be enabled to build in places like the mining belt by collaborating with what are otherwise considered "troublesome" informal settlement residents,(116) working closely with the state to co-develop urban development, all while reducing the time and hassle associated with it. (117)

Such an endeavour entails risks. When this model was presented to members of the Department of City Transformation and Spatial Planning at the COJ, a discussion emerged around the viability of bodies such as resident associations for lower-income populations. Because people must work or seek work so urgently, their level of commitment to voluntary associations tends to be comparatively low (interview with a COJ spatial planning director, 2016; interview with a COJ spatial planning specialist, 2017). And while residents may be happy to have modest profits filter back into the development through the RAF, city officials claimed that developers are much less likely to be interested in such small returns on investments. The scales of engagement and investment, as well as the degree of regulation by the state and willingness of developers for compromise, are crucial aspects for such a model to succeed.

Negotiating conflict has always been one of the greatest challenges facing planning in the COJ. An official within its administration commented: "The City in the past has been very careful not to enforce adversarial relationships with developers. But maybe we should take a stronger stance to get the outcomes we want" (interview with a COJ spatial planning director, 2016). As climate change intensifies and resource scarcity increases, grappling with the complexity of sustainable and equitable development is becoming more necessary than ever. While new conceptions of the city as polycentric(118) are steps in the right direction, further fine-grained research is essential to devising more sensitive strategies for a plurality of sites around the region - research on such topics as where vulnerable populations live, how they are connected to opportunities, and how these pathways could be made more sustainable. Collaborative strategies have the potential to build trust and transformative change in the urban realm. The idea that stakeholders bear responsibility towards one another on multiple scales is a radical way of reimagining the urban, transforming institutions, transcending modes of thought and further decentring planning theory to the potential benefit of the public interest. (119)

V. CONCLUSION

Planning equitably for the future while simultaneously overcoming spatial legacies of urban inequality is a daunting challenge for any city or region, especially for large swathes of the Global South. The concept of cooperative urbanism aims for the kind of "doubleness" (120) that bridges formal planning systems and the spatial practices of everyday life to improve social and environmental justice in extended urban regions. By focusing on the mining belt in central Johannesburg, this paper confronts the legacy of the mining industry's hegemonic control over the most central areas of the entire GCR. Examining spaces like the Western Rand presents a unique opportunity to politicize inequality, critique the status quo of development, and suggest an alternative conceptualization of projects where civil society can play a significant role.

The mining belt is indeed the "final frontier" of the apartheid legacy: it is logistically extremely central⁽¹²¹⁾ and also highly symbolic as the physical manifestation of the entire socio-spatial inequality originating through mining and apartheid. If the Western Rand can be enriched with mixed-use functions that are oriented towards the underprivileged segment of the public, it would be a true break with apartheid planning traditions and could bring the city together in a way that is hard to imagine until it is tried. Planners and urban researchers can take the lead in this, because there is already a relationship between planning agencies and mining corporations. Bold, research-based alternative concepts should be proposed.

Following postcolonial critiques of urban studies, cooperative urbanism emphasizes research that theorizes from below, potentially beginning from any "ordinary" place globally. (122) In examining the everyday production of space across the urban region of greater Johannesburg, studies into the lives of the underprivileged have revealed that many of the most dynamic urban qualities of life are generated through networks of commons-based activities. (123) These networks are practically invisible in conceptions of the urban focused on the narrative of capital, but these implicit actions are essential to the functioning of Johannesburg. From the street vendors downtown to the unregulated recycling practices and taxi routes of the city's peripheries, people are the infrastructure that allows the region to function. (124) Following the logic of Amin, a "good city" seeks to understand how the underprivileged function as such a form of hidden infrastructure. (125) Planning institutions should give more significant emphasis to the value of these implicit networks and include them more fully in their collaborative processes. As is evident in this case study of Johannesburg, there is the potential to infuse the dominant policy narrative with the principles of cooperative urbanism. However, these impulses will continually face resistance from monied and privileged interests. Therefore, the main question in the context of Johannesburg is how willing and able the state and civil society are to demand this potential be realized.

We require far more transdisciplinary research, focused on spatial practices and lived experiences, to identify mutually beneficial opportunities for development. Planning professionals are uniquely situated to lead this process. It requires forging reciprocity between powerful and vulnerable individuals and emerging with ideas for new and experimental projects that do not seek consensus but rather incorporate difference agonistically. It is much to ask of a profession once conceived of as technical, and then socio-technical; however, this paper asserts that these practitioners must step outside the "internal worlds" of their profession⁽¹²⁶⁾ to face urgent contemporary challenges. It is an obligation to engage with transdisciplinary processes on specific sites, as well as

120. Simone and Pieterse (2017)

121. Kretz and Küng (2016).

122. Robinson (2006).

123. Cf. Charlton (2014).

124. Simone (2004).

125. Amin (2006).

126. Huxley and Yiftachel (2000); Innes (2004).

127. Simone and Pieterse

128. Pieterse (2008), page 8.

to consider the greater environmental and social consequences – on both urban and regional scales – particularly for people who have been negatively impacted by urbanization, and who will become exponentially more so in the future, as climate change worsens globally.

This paper presents an experimental search for the "resonance" described by Simone and Pieterse:(127) a thought experiment along the mining belt that could begin to decouple the narrative of development from neoliberal agendas and the path dependencies of the built environment. Testing the ideas outlined here would mark a significant step towards securing a plurality of voices, discovering new forms of living that allow these differences to flourish, and connecting spaces on a larger scale to systematically challenge the logic of structural spatial inequality. Even if change is incremental, or is at first only capable of preventing some of the most predatory trends in contemporary development, it is a place to begin experimentation. As Pieterse concludes in his analysis of inclusive governance: "empowerment is fundamentally an individual process that deepens with time if individual efforts are consciously embedded in more collective forms of solidarity and mutual empowerment".(128) These efforts must be coordinated; planners and institutions have the skills to lead the change. Cooperative urbanism might be messy, time-consuming and complex – but linking planning's moral obligation to the public with the discourse on inequality has far-reaching potential to benefit society as a whole, and especially its most vulnerable people.

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