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Why does everyone think cities can save the planet?

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Abstract

This article identifies and explains an underlying transition in global urban policy and discourse from the city as a sustainability problem to the city as a sustainability solution. We argue that contemporary policy discourses of cities saving the planet should be understood in the context of three major historical developments which have their roots in the 1970s and which intensified throughout the 1990s. The first is sprawl: the urban sustainability policy agenda in the Global North has been in large part a reaction to several decades of urban expansion and car-based planning. The second is informal settlements: since the introduction of UN-HABITAT in 1978, an international policy agenda has formed around addressing the environmental deficits associated with processes of informal urbanisation above all in the Global South. And the third is climate change, as the overarching concern that connects urban-environmental problems and policies in the North and South. We then contextualise the articles in this special issue by outlining a new research agenda for decoding the notion that cities can save the planet, which emphasises the need for an historical, multi-spatial, political and representational analysis of urban sustainability thinking and policy.

Keywords

climate change, informal settlements, sprawl, urban sustainability

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摘要

本文识别并解释全球城市政策和话语的一个潜在转变，即，城市从一个可持续性问题变成了一个可持续性解决方案。我们认为，当代关于城市拯救地球的政策论述应该在三大历史发展背景下理解，这三大历史发展根源于1970年代，并在整个1990年代得到强化。第一个历史发展是城市蔓延：全球北方的城市可持续发展政策议程在很大程度上是对几十年的城市扩张和基于私家车的规划的回应。第二个历史背景是非正规住区：自联合国人居署 (UN-HABITAT) 于1978年成立以来，围绕解决与非正规城市化进程相关的环境赤字（首先是在全球南方）形成了一个国际政策议程。第三个历史背景是气候变化，它是连接北方和南方城市环境问题和政策的首要问题。然后，我们概述了一个新的研究议程来解读"城市可以拯救地球"的概念，强调需要对城市可持续发展的思想和政策进行历史的、多空间的、政治的和代表性的分析，从而将这些文章置于本期特刊的背景中。

关键词

气候变化、非正规住区、蔓延、城市可持续性

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Introduction: From the city as a sustainability problem to the city as a sustainability solution

While fears of global warming and environmental catastrophe loom ever greater, urban areas continue to expand unevenly. And, in the face of environmental crisis and urban crisis, the ideal of the 'sustainable city' increasingly takes a leading role in urban planning and policy discourse. Policymakers focus on the vulnerability of cities – as global population and economic centres – to sea level rise, droughts, storms and other impacts of climate change, and on the role of the built environment in determining sustainability outcomes, particularly through influencing greenhouse gas emissions. Planners and pundits increasingly recognise the interdependence of local sustainability problems faced by cities around the world and thus the necessity for a 'common front' to address these problems, alongside a widespread belief in the failure of national politics to address climate change. Social movements, activists and scholars all target cities as locations for progressive visions of future sustainable life. Accordingly, sustainable urbanism has become a new policy common sense. As Parnell (2016: 529) argues, 'there is no longer a question of whether cities are important for sustainable development, but rather why and how the urban condition affects our common future'.

In short, everyone now thinks cities can save the planet. But given the current ubiquity of political, cultural and academic discourse connecting cities and sustainability, it is clarifying to observe that fewer than two decades ago, the influential environmentalist Herbert Girardet (1999) was still posing the relationship between the two as a potential 'contradiction in terms'. What happened? Why does everyone think cities can save the planet, and why now?

The emergence of this policy discourse can be traced to the 1990s, when 'sustainable city' initiatives began to emerge in different parts of the world (Wheeler, 2000), following the broader development of sustainability thinking after the 1987 publication of the UN's Brundtland report and the 1991 Earth Summit (Brundtland, 1987; Du Pisani, 2006).

Girardet (1996) was one pioneer of a specifically urban understanding of sustainable development, while Jenks and colleagues made a contemporaneous argument for the 'compact city', motivated by the insight that variations in urban form are systematically linked to socio-environmental outcomes (Breheny, 1992; Burgess and Jenks, 2002; Jenks et al., 1996). The subsequent 'smart growth' movement applied the same insight to more suburbanised contexts in the USA (Burchell et al., 2000; Duany et al., 2010). And though the sustainability of urban density was still a relatively counterintuitive idea in 2004 when David Owen (2004) re-elaborated it for a popular audience, it has since become the foundation for municipal and national climate action plans around the world.

Current sustainability discourse reflects not just the assumption that cities can and should be green but also that they are the most likely solutions to our global environmental problems. Even as suburban modes of urban growth have continued to expand and intensify across the globe in the last 20 years (Hamel and Keil, 2015; Keil, 2013), this period of time has also seen the emergence of something close to a policy consensus around the idea that urban density has environmental value, particularly with respect to the necessity of reducing greenhouse gas emissions and associated energy use. Current conceptions of the smart city involve many of the same assumptions – that the built environment can be re-engineered in ways that can improve both local and global sustainability trajectories – although from a new perspective of techno-optimism (Hollands, 2008). The arrival of 'resiliency' as a new urban policy concept and buzzword reframed these sustainability imperatives again in the context of environmental crisis (Ahern, 2011; MacKinnon and Derickson, 2013). Today, in short, urban sustainability policies promoting green amenities and the environmental value of density have become ubiquitous, and a vision of sustainability as dense, green urbanism is the norm.

Urban scholars have subjected this urban sustainability vision to growing scrutiny, especially regarding its governance (Bulkeley and Betsill, 2005), economics (Knuth, 2017), ideologies (Greenberg, 2015) and inequalities (McClintock, 2018; Ranganathan and Balazs, 2015; Sampson, 2017). Alongside such critical appraisals, we have previously argued that urban-environmental research has been too narrowly focused within city boundaries (Angelo and Wachsmuth, 2015) and that expanding the frontiers of urban sustainability offers a more spatially and socially inclusive vision of urban futures (Wachsmuth et al., 2016). Here, we add a temporal dimension to this intellectual project (see also Angelo and Vormann, 2018; Wachsmuth and Angelo, 2018), in order to interrogate a shift that otherwise risks being naturalised: *from the city as a sustainability problem to the city as a sustainability solution*.

In this article, we provide a historical account of the emergence of the 'cities saving the planet' common sense, focusing on the trajectory of international urban sustainability policy efforts from the 1960s onward, first to address the environmental deficits of urban areas and eventually to harness urban political energy to improve global sustainability trajectories. This account identifies three major historical developments which collectively established urbanism as a plausible policy solution to global environmental concerns: sprawl, informal settlements and climate change. Then, on the basis of this account, we lay out an agenda for contemporary urban-environmental research which is historical, multi-spatial, political and representational, and contextualise the contributions to the special issue within this research agenda.

Sprawl, informal settlement and climate change: The emergence of a global urban sustainability imaginary

What established cities as common-sense solutions for global environmental problems? We argue that three major historical developments that had their roots in the 1970s and intensified throughout the 1990s contributed to this discourse and policy shift. The first was the growth of urban sprawl in the Global North, especially the USA, which led Northern environmentalists to worry about endless urban expansion threatening the natural environment and depleting natural resources. The second was the growth of informal settlements in the Global South, deemed environmental problems by international development experts because of their rapid growth, physical precarity and rampant public health problems. Though both of these issues are now correctly understood as global problems, policy strategies for addressing them developed in relative isolation, as separate conversations in two different professional and geographical spheres. The third development was climate change, which became a global threat connecting concerns across North and South as understanding of cities as key sources of greenhouse gas emissions – and therefore key arenas for reducing emissions – grew.

In the past few decades, there has been a parallel shift in proposed solutions to each of these socio-ecological problems. Urban and environmental thinkers and policymakers have proposed first *non-city solutions* and then *city solutions* to all three. Following several decades of worries about sprawl's potential for endless expansion, a city solution to sprawl as an environmental problem emerged in the form of the compact city. By the 2000s, informal settlements even began to be touted as solutions to environmental problems in some design and policy circles, as the former came to be seen as a kind of vernacular form of sustainability (flexible, impermanent, dense and low cost) and as models for 'resilient' urbanism. Finally, thanks to increasing awareness about the vulnerability of coastal cities and the relative failure of the Kyoto and Paris international treaty efforts, cities have assumed the role of leading anti-climate-change protagonists.

Each of these problems had a common pattern – first highlighting the connection between cities and the natural environment in an oppositional relationship, and then in a potentially harmonious one. Taken together, the urban-environmental agendas that emerged in response to these concerns have added up to a decisive shift in the environmental imaginary of the city: from a 20th century sustainability problem (requiring non-city solutions), to a 21st century sustainability solution.

Sprawl

Although it is most commonly associated with post-war USA, urban sprawl has been a leading symbol of the city as a sustainability problem across a range of spatial and historical contexts. It is now broadly understood as an urban challenge worldwide, with affluent – often secessionist – suburbs and poor informal settlements both accounting for a disproportionate share of new urban development in Global South metropolises (UN-Habitat, 2008: 11). Sprawl also has a far longer lineage than standard US-post-war-centred history acknowledges; as Bruegmann (2006) argues, low-density urban development has been a constant of urbanisation across space and throughout history. At the same time, the onset of automobility as a way of life during the 20th century (Sheller and Urry, 2000) provided for the *generalisation* of urban sprawl in the parts of the world where car ownership became ubiquitous. Nowhere was this more

true than the USA after the Second World War – the most car-dependent country on the planet, where suburban sprawl achieved its most extreme form. In the USA, far more so than other advanced capitalist countries, suburbanisation played a central role in the broader economic regulation of post-war national capitalism (Florida and Feldman, 1988; Walker, 2018) and the USA continues to be a global outlier with respect to the dispersed spatial form of its urban growth patterns (Schneider and Woodcock, 2008). The USA is thus a key site to document the historically changing relationship between urban sprawl and sustainability thought.

From the early days of industrial urbanisation into the post-war era, suburban development in the USA was a commonly proposed *corrective* to the environmental deficits of urban life – from questions of poor health and overcrowding in polluted, densely packed tenements (Jackson, 1987) to racially uneven exposure to industrial pollutants (Pulido, 2000). But the USA, in addition to being the epicentre of post-war suburbanisation itself, hosted the first major popular and intellectual opposition to suburbanisation on environmental grounds, beginning in the 1960s (Rome, 2001; Sellers, 2012). Inspired by works such as Rachel Carson's (2002 [1962]) *Silent Spring*, Barry Commoner's (1971)*The Closing Circle* and the Club of Rome's *The Limits to Growth* (Meadows et al., 1972), the growing environmental movement saw in suburban sprawl unsustainable patterns of resource consumption, land use and pollution. Importantly these critiques all tended to see suburbanisation as synonymous with urban development more broadly and therefore derived generic critiques of urbanisation from more specific characteristics of suburban sprawl. In identifying economic growth as the driver of sprawl and therefore environmental degradation, many of these critiques effectively made anti-capitalist – as opposed to simply anti-suburban – arguments. Ernest Callenbach's influential novel *Ecotopia* (2009 [1975]) is exemplary in this regard: it posits a near-future where the Northwest USA secedes from the rest of the country and establishes an ecologically sustainable polity. Cars are abolished, energy production is decentralised and cities are returned partway to nature. But 'economic progress' is also abolished and replaced with a 'stable-state' system in which human and non-human ecological imperatives are balanced. For such environmental critics, post-war urban development was understood as one expression (albeit an important one) of a broader socioeconomic system which was fundamentally incompatible with ecological principles. The 'solution' to the problems posed by this system was to dismantle both the economic engine (capitalist growth) and its spatial expression (sprawling urban development).

In contrast to previous waves of opposition to sprawl throughout the 20th century, however, current anti-sprawl ideals of urban density and the compact city have become the concrete imaginary of the city as a sustainability solution. This shift began with the oil crisis of the 1970s (Girardet, 2007), which foreshadowed the end of cheap oil, and grew throughout the 1980s and 1990s as city governments began trying to attract the white middle class back from the suburbs by reinvesting in hollowed-out downtowns, and as concerns about pollution and carbon emissions grew.

Already by the mid-1980s, the architect Peter Calthorpe (1985: 1) argued that 'Ideally, the city is the most environmentally benign form of human settlement. Each city-dweller consumes less land, less energy, less water, and produces less pollution than his counterpart in settlements of lower densities'. The influential Australian urbanists Peter Newman and Jeffrey Kenworthy (1989) made a similar point in *Cities and*

Automobile Dependence, while Jenks et al. (1996) brought the idea of the 'compact city' to academic and policy prominence several years later. By 1998 the Sierra Club had launched its 'Challenge to Sprawl' programme, with an accompanying report which explicitly cast suburban sprawl as an ongoing environmental catastrophe (Sierra Club, 1998). What these perspectives have in common, and which they share with more recent density-focused visions of green urbanism such as Owen (2004) and Glaeser (2011), is that they clearly distinguish suburban sprawl from dense urban development and locate environmental problems with the former and solutions with the latter. Even though small-scale communities scattered across a lightly urbanised landscape may still appear 'greener' than the dense 'grey' cities they surround (Wachsmuth and Angelo, 2018), urban policy common sense now increasingly sees dense urbanism as the more sustainable choice.

Informal settlements

As far back as the beginning of the 20th century, futurists were predicting the urbanisation of the world. But few would have predicted that, when global society began to concentrate decisively in cities in the second half of the century, it would do so in informal settlements, or 'slums', as they are often referred to by local organisations and the international development community (Satterthwaite, 2016: 3). Early 20th century urban slums were understood as by-products of industrial development and were expected to give way to formal settlements as that development progressed. But by the 1970s, informal settlements were expanding rapidly in cities throughout the Global South and largely unaccompanied by the predicted industrialisation. Because of their apparently inexorable growth, these settlements also rapidly began to be seen as environmental problems – a perception that remained through the end of the 20th century. Mike Davis (2006: 134–142), for example, described two facets of unsustainability in his apocalyptic *Planet of Slums*. On the one hand, informal settlements contribute to environmental degradation by polluting surrounding recreational space, agricultural land, water sources and natural habitat with human waste and pathogens. On the other hand, informal settlements endanger residents lacking health care, infrastructure and public services through exposure to 'natural' disasters such as flooding and landslides as well as contaminated food and water, and infectious diseases.

The framing of urban informal settlements as environmental problems is consistently visible in global policy discourse in the final quarter of the 20th century. The 1976 Vancouver Declaration on Human Settlements, the product of the first United Nations Conference on Human Settlements (Habitat I), did not yet use the word 'slum' or anything comparable, but was focused on the rapid growth of under-resourced informal settlements, and listed among its problems 'social, economic, ecological and environmental deterioration' and 'uncontrolled urbanisation'. The famous 1987 Brundtland Commission report *Our Common Future* featured an urban chapter about environmental problems and problems of the urban poor in 'Third World Cities': agricultural and industrial pollution, water and sanitation, very fast growth and inadequate infrastructure, housing and services (Brundtland, 1987: 201). In 1996, Habitat II – 'The City Summit' – 'focused essentially on managing urbanisation in the global south and on the urban poor' (Parnell, 2016: 532). The 2003 UN-Habitat report, *The Challenge of Slums*, highlighted dangerous and unhealthy environmental conditions in informal communities (UN-Habitat, 2003).

Through the beginning of the 21st century, the main strategies for coping with informal settlements were to clear or 'upgrade' them (Anand and Rademacher, 2011; Burra, 2005; Mayo et al., 1986), in both cases in the name of 'development'. But even as informal settlements were being widely cited as environmental problems and international development touted as a solution, a second narrative – of informal settlements as vibrant, innovative forms of a potentially sustainable urbanism – was growing. 2010 marked something of a watershed in this regard. In contrast to some of its earlier work, UN-Habitat's (2010) report, *Cities for All: Bridging the Urban Divide*, changed its tone, describing urbanisation as a 'positive force for transformation' in the Global South and noting that 'too many countries have adopted an ambivalent or hostile attitude to the urbanisation process, with negative consequences' (2010: 26). That same year, Stewart Brand (2010), the American environmental visionary and founder of the Whole Earth Catalogue, wrote an article entitled 'How slums can save the planet', in which he described informal settlements as 'unexpectedly green' by virtue of their extreme density. Brand observed a 'reversal of opinion about fast growing cities – from bad news to good news' for the environment – across the first decade of the 21st century, as researchers conducting interviews in informal settlements started to notice their unexpected positive qualities: their efficiency, walkability, recycling practices, economies of scale, thriving informal economies, strong networks of community support and residents' steadily improving quality of life (Brand, 2010: 31, 35–44).

Earlier scholarly work made similar points, but sporadically and without widespread popular take-up. Particularly notable was Gilbert et al.'s (1996) *Making Cities Work*, which discussed in detail how Northern cities could learn environmental lessons from informal settlements in the South, and concluded: 'The goal of sustainable development should be as much to make the North like the South as it is to make the South like the North; indeed, protection of the global environment may require that the North be made more like the South than vice versa' (Gilbert et al., 1996: 14; see also Evans, 2002). But now, in response to widespread clearance and displacement, informal settlements such as Dharavi in Mumbai are upheld as hotbeds of creativity and ingenuity (Roy, 2011). And many of the very characteristics which were conceptualised as environmental problems in the 20th century – informality, impermanence, living with less and extreme density – are now being taken up as 'models for sustainable living' (Ross, 2014) as sustainability planners and designers 'take lessons from slums' (Smedley, 2013). In 2016, Chilean architect Alejandro Aravena won architecture's prestigious Pritzker Prize for modular housing based on informal settlements' design and incremental growth. In the same time period, critical scholarship recognising the ingenuity of residents has also flourished. While condemning the political economy that has produced them in the first place, scholars have nevertheless elevated informal settlements as important vantage points from which to theorise global modernity (Davis, 2006), as spaces of contested governance and citizenship (Appadurai, 1996; Holston, 2008), and of forms of distinct 'subaltern urbanism' (Roy, 2011) and urban practices and culture (McFarlane, 2008; Simone, 2004). In short, whereas informal settlements in the Global South were once understood as environmental problems for which 'development' was the solution, they are now seen as potential resources for sustainable urbanism on a global scale.

Climate change

In the last several decades climate change has decisively and appropriately emerged as the overarching environmental concern spanning the Global North and South, providing, as Matt Slavin (2011) has argued, the context for the global institutionalisation of urban sustainability. In 1987, the Brundtland Report argued that Northern cities, at least in theory, had the 'flexibility, space for manoeuvre, and innovation by local leadership' to deal with sustainability problems at an urban scale, unlike under-resourced Southern cities, but the report devoted more time to describing Northern cities' disproportionate resource use, energy consumption, environmental pollution and internal decay (Brundtland, 1987: 202–203). Throughout the 1980s and 1990s, as scientific understanding of climate change developed, discussion of cities as sustainability problems grew. Cities were understood to be key sources of global GHG emissions, both because of the growing percentage of the world's population living in them and the lifestyle and consumption practices of their more affluent residents.

The first formal international climate change treaty effort was the 1992 United Nations Framework Convention on Climate Change (UNFCCC), which established non-binding recommendations for limiting GHG emissions and the framework for the annual Conferences of the Parties (COP) meetings that have continued since. The second was the 1997 Kyoto Protocol, which established legally binding recommendations but was plagued by questions about the role of developing countries in bearing responsibilities for climate change and the scale of reductions in industrialised ones. Kyoto's eventually agreed-upon targets were 'purely political' compromises to get the European Union, USA and Japan on board. The targets had little to do with a scientific assessment of the reductions actually necessary to stabilise CO_2 levels (Bulkeley and Betsill, 2003: 32, 37–38). George W. Bush's withdrawal of the USA in 2001 did not prevent Kyoto's eventual ratification but underscored the challenges and volatility of these efforts. Since then, international agreements have continued to be fraught, with Donald Trump's withdrawal of the USA from the 2015 Paris Agreement the most recent notable breakdown.

As international efforts floundered, affluent Northern cities were increasingly cast as a great hope because of their nimble leadership, more direct accountability to constituents and feasible scale of action. According to Bulkeley and Betsill (2003: 22), it was at the 1992 Rio Conference that cities were 'fully recognised as an area through which sustainability could and should be pursued'. They cite Gilbert et al. (1996: 69), who argued that Rio 'had two important consequences for the role of cities:' it highlighted 'the potential role of cities in dealing with environmental issues' and 'emphasised the direct link between action on environmental issues and international cooperation between cities' (1996: 22–23). In 1996, Habitat II asked how to 'achieve sustainable human settlements in an urbanising world' (Girardet, 1996). Publications in the late 1990s focused on ways to help cities realise their sustainable potential through case studies assessing Northern and Southern cities' inequality, morphology and resource use (Gilbert et al., 1996) and by offering ways to assess and improve 'the environmental performance of cities in regard to the meeting of sustainable development goals' (Satterthwaite, 1997). Because the majority of the world would soon live in cities, scholars and policymakers argued, it was in and through cities that sustainability goals must be pursued. For the most part recommendations focused on optimising urban resource

use and reducing GHGs in ways that dovetailed with conversations about urban density discussed above.

By the late 1990s, the rise of the urban scale as an important target scale for governance, investment, policy and economic development also contributed to the idea that the urban might also be a scale at which to address environmental problems. Key policy developments outlining this city-based environmental agenda were the establishment of the International Council for Local Environmental Initiatives (1990), the Mayors' Climate Protection Agreement (2007), and the foregrounding of environmental issues in the Habitat III summit in 2016. In the last several years, mayors have remained high-profile and apparently successful climate actors, as represented in projects such as the C40 Cities Climate Leadership Group, 100 Resilient Cities and the Global Covenant of Mayors, and acts such as the Chicago Climate Charter – an agreement among mayors in Canada, Mexico and the USA to uphold Paris Agreement targets even after Trump announced the USA's withdrawal.

The 2000s have also been marked by a growing awareness of cities' vulnerability to climate change-induced changes in weather patterns and the rise of urban 'resiliency' planning and discourse. Extreme weather events such as Hurricane Katrina in 2005, Hurricane Sandy in 2012, and Hurricanes Harvey and Irma in 2017 – together causing hundreds of fatalities and billions of dollars in damages – highlighted the vulnerability of coastal cities' populations and assets to climate change. In the same years, flooding in South Asia, severe droughts in São Paulo and Cape Town, fires and mudslides in California, and snow and heatwaves in Europe all underscored these points. In response, city governments, international institutions and private foundations have invested increasing amounts of public and private funding in retrofitting cities for climate change: New York's Rebuild By Design, which began as a design competition launched by the US Department of Housing and Urban Development after Hurricane Sandy; new forms of private consulting such as the exportation and circulation of Dutch water expertise (Goh, 2020); Rockefeller Foundation's 100 Resilient Cities. Today, the profile of climate change issues is significantly urban; city leaders recognise 'both unusual vulnerability and significant responsibility' for climate change impacts (Toly, 2008: 348).

From non-city to city solutions

A transition from *non-city* to *city* solutions can be observed in each of the three urban-environmental problems discussed above (Table 1). The emergence of these urban-environmental problems was not simultaneous; sprawl, informal settlements and climate change developed as successive environmental problems between the 1960s and the 2000s. And each of these problems eventually led to distinctly different types of solutions, in spatial planning, architecture and design, and urban governance. But each of the three policy areas underwent a similar shift. Initial efforts were *non-city* – which is to say that initial proposed solutions to problems of sprawl, informal settlements and climate change (limiting growth, sustainable international development and multilateral treaty processes) did not target specifically *city* planning, *city* design or *city* governance. Only later did *city* solutions to sprawl, informal settlements and climate change become commonplace – in the form of compact/smart cities, 'resilient' neighbourhoods and strong mayoral networks – along with a distinctly urban vision of contemporary sustainability more generally.

This history illustrates the fact that the city as a solution to sustainability problems

Table 1. How cities are called upon to save the planet.

Global sustainability problem	Timeframe for problem emergence	Non-city solution	City solution	Type of solution
Sprawl				
Too much human resource consumption, as exemplified by suburban sprawl	1960s	Limiting capitalist growth (Meadows et al., 1972); limiting urban growth (Callenbach, 2009 [1975])	Concentrate people and resources in efficient urban spaces: compact cities (Jenks et al., 1996); densification (Glaeser, 2011; Owen, 2004); smart cities (Global Commission on Economy and Climate, 2015)	Spatial planning (solution for affluent Northern cities)
Informal settlements				
Physical vulnerability of population; sanitation, public health, extreme weather problems; too-rapid growth; lack of infrastructure and services	1980s	Sustainable development (Brundtland, 1987; Habitat I)	Informal settlements as model for resilience and sustainable design (Brand, 2010; Ross, 2014; Smedley, 2013) Sustainable urban development (Habitat II; Gilbert et al., 1996; Girardet, 1996)	Architecture/ design (solution for poor Southern cities; eventually a model for Northern cities)
Climate change				
The need for global governance coordination to reduce GHG emissions	1990s	Multilateral treaty process (UNFCCC, 1992; Kyoto Protocol, 1997)	Interlocal environmental networks (ICLEI, 1990); empowered mayors (Barber, 2013; Mayors' Climate Protection Agreement, 2007); international recognition of cities as climate protagonists (Habitat III)	Governance (everywhere)
Physical vulnerability of cities' infrastructure, populations and assets to extreme weather events	2000s	None	New investment in resilience in coastal cities (100 Resilient Cities; Rebuild By Design)	

was neither necessary nor inevitable. The sustainability conversation was not always urban – it *became* urban. Sustainability's urban turn was a consequence of urban change. This turn initially came in the form of concerns about the environmental impacts of sprawl and informal settlements (which were also problems of past planning efforts). Subsequently, concerns about climate change were understood as a new kind of environmental pressure resulting from urban growth: worries about the vulnerability of urban assets and populations to extreme weather events; increasing global emissions as a result of accelerating urban development in the Global South, particularly China; and large carbon footprints resulting from the lifestyle and consumption practices of the world's more affluent urban residents. The trajectory we are describing here is similar to the one Sue Parnell (2016) has identified in her history of the UN's Habitat conferences. Habitat I (1976) marked a recognition of the '*urban poor's exposure to environmental risk*' (1976: 531). By Habitat II, in 1996, cities were seen as 'strategic sites in a globalising economy,' and the international development community was '*focused essentially on managing urbanisation in the global south and on the urban poor*' (1996: 532). 2016's Habitat III marked a consolidated 'view of the world as an urban system' and, in terms of development practice, a 'shift from cities as sites for sustainable development action … to a call to see *cities as the drivers of global environmental change*' in which sustainable *urban* development became key to sustainable development more generally (2016: 532, 535).

Similarly, urban sustainability discourse need not have necessarily been 'planet-saving' in its ambitions. Given the global reality of environmental problems such as climate change – sustainability cannot only be achieved 'in one place' (Miller and Mössner, 2020) – some degree of global orientation in local sustainability thinking was probably inevitable. But the discourse of cities saving the planet also reflects the specific historical trajectory of sustainability as a policy issue. Contemporary sustainability policy thinking emerged out of an existing international development conversation that was already global in scope. Initial conversations about climate change were led by the United Nations, consisted of a global set of actors and social networks, and were explicitly focused on problems in both the Global North and South. The UN documents cited above are thus not simply a convenient way to trace the history of the rise of the 'cities saving the planet' discourse but are actually part of the social, institutional and intellectual framework out of which this common sense emerged. We would not go so far as to argue that international development efforts simply 'turned into' global urban sustainability discourse. But it is noteworthy that this non-urban set of actors, social networks and decision-making and funding processes already existed and, as such, could turn their attention to cities as sustainability solutions.

Finally, while all three of the problem domains we have discussed show a similar trajectory from 'non-city' to 'city' solutions, sprawl and informal settlements differ from climate change in one significant way. While the first two sustainability problems were initially to be solved with 'less city' (by limiting growth in the North and supporting sustainable development in the South), climate change has (thus far) offered no obvious 'less city' solution. Retreating from affluent coastal cities would have involved an unthinkable loss of assets, while by the 2000s the 'urban age' ideology (Brenner and Schmid, 2014) was already consolidated. 'Less city' – or anti-urban – visions of global

sustainability do exist, for instance in the form of a 'back to the land' ethos of small-scale living, but for the most part they are paths not taken in international sustainability planning and policy efforts. Instead, in the past decade cities have become the dominant solutions to the world's sustainability problems, along with a new kind of pressure to design better – understood as more resilient and sustainable – cities in the future.

A contemporary research agenda on cities saving the planet

Today, urban sustainability discussions usually involve aspects of all three of the once-understood-to-be-separate issues of sprawl, informal settlements and climate change. What began as two separate conversations about urban-environmental problems – sprawl in Northern cities among urban planners and policy makers and worries about the growth of informal settlements in the Global South in the international development community – consolidated as a unified global effort called 'urban sustainability'. This discourse emphasises the environmental benefits of density, technology, resilience and liveability (Wachsmuth and Angelo, 2018): above all, 'more city'. This special issue develops a critical viewpoint on contemporary urban sustainability policy debates and especially the idea that 'cities can save the planet'. In so doing, it also offers a research agenda for critical urban-environmental research investigating the emergence of the city as a solution to environmental problems rather than the source of those problems. This research agenda has four dimensions:

(1) *Historical*, emphasising the embeddedness of specific urban-environmental concerns within specific historical junctures, and the path dependency of urban-environmental problems and solutions.
(2) *Multi-spatial*, emphasising the co-constitution of urban-environmental concerns across city/non-city boundaries, the multiple (sometimes conflicting) geographical scales at which urban-environmental concerns are articulated, and the uneven spatial development of urban nature.
(3) *Political*, emphasising the power differentials and conflicting interests which characterise actually existing urban sustainability questions, and the centrality of both growth and equity questions to environmental concerns.
(4) *Representational*, emphasising the importance of cultural, aesthetic and ideological framings of cities and nature in the formation of urban sustainability policy 'common sense'.

We now proceed to elaborate these features along with some of their implications and contextualise them with respect to existing scholarship as well as the contributions to this special issue.

(1) Historical

Contextualising present trends in urban sustainability policy and politics – including the notion that cities can save the planet – in historical terms reveals both important continuities and ruptures (see also Angelo and Vormann, 2018). The history of capitalist (urban) development has always been predicated on new mobilisations and exploitations of nature (Moore, 2015), and an emphasis on the historical embeddedness of particular configurations of the urban–environmental nexus is a potentially powerful corrective to ahistorical thinking which sees the return of nature to the city as a uniquely contemporary development. An historical approach to urban nature, such as that which Loughran (2020) applies to the case of 19th-century Chicago, reveals what has endured in urban

sustainability thinking – including concerns about the socially induced disappearance of nature, environmentalism as an accumulation strategy and patterns of racial exclusion. Keil (2020) highlights these dynamics of continuity and change, grappling with the accelerating temporalities of the urban–environmental nexus – as observed through extreme weather events, the ever-shortening time frame for action to limit climate change to 2 °C, etc. – while acknowledging the Dutch 'centuries-old rhythm in dealing with living under the sea level'.

At the same time, the historical account of the emergence of the 'cities can save the planet' paradigm offered above suggests that *different modes of urban development facilitate different framings of environmental problems and solutions*. The land-intensive mode of suburban expansion which characterised the post-war Global North encouraged a particular set of concerns related to unsustainable resource and land consumption, while the rapid expansion of informal settlements in the Global South from the 1970s onward prompted a set of concerns related to the environmental deficits of unplanned growth. Extending this observation into the present, technology-led urban development in post-industrial cities should likewise be expected to yield its own characteristic set of environmental concerns, which is indeed what several of the contributions to the special issue identify. Janos (2020) documents narratives of 'eco-cityism' arising from a nexus of concerns about climate change, industrial pollution (specifically the designation of the Duwamish River Valley in Seattle as a Superfund site) and the 2008 financial crisis, while Arabindoo (2020) shows how Modi's response to climate change-driven needs for emissions reductions was to outline a 'path to prosperity' accomplished by shifting to renewable energy sources.

In a similar manner, an historical approach allows us to identify political counterfactuals: other possibilities for how urban environments and urban environmentalisms might have developed, and which still might serve as resources for the present. In its dominant and most visible forms, urban sustainability policy to date has been markedly city-centric and system affirmative. Especially in the context of present concerns regarding climate change and growing social inequality, it is interesting to note that early strands of urban sustainability discourse exhibited seeds of concern for other issues that were never really taken up. Early thinking on cities as potentially sustainable environments made arguments about desirable urban sustainability agendas which still read as cutting edge. Gilbert et al.'s *Making Cities Work* (1996), for instance, insisted that inequality and climate change – 'protecting the environment and combating poverty' – were 'interlinked issues' that had to be solved together (1996: 12) and in a spatial frame that took both cities and their hinterland, and the place of cities in the world, into account (see also Satterthwaite, 1997). This work underscores the fact that there were other possible directions in which sustainability policy could have headed. It may be worth revisiting these paths not taken, given contemporary sustainability planning's now better-understood shortcomings.

(2) Multi-spatial

Urban studies has increasingly embraced a vision of urbanisation as a multi-spatial process which exceeds the traditional concept of the city (Wachsmuth, 2014). However, and in spite of their self-consciously global scope, *dominant forms of urban sustainability planning and thinking focus too narrowly on cities*. Planetary urbanisation (Brenner and Schmid, 2015) is not simply a world of cities, and the global dimensions of urban-environmental processes are likewise not

simply nature in the city (Angelo and Wachsmuth, 2015). Accordingly, one key issue for urban sustainability research to address is the relationship between cities and other place-distinctions within the urban fabric, such as rural, suburban and peri-urban spaces. In some cases this relationship is scalar, for example in Miller and Mössner's (2020) analysis of the regional contradictions of local sustainability policy in a comparative analysis of Freiburg, Germany and Calgary, Canada – where the central city's 'sustainability fix' is met with a suburban 'counter-sustainability fix'. Likewise, Janos (2020) uncovers the limits of the 'territorial city' and its ability to solve multi-scalar environmental problems. In other cases, the urban–environmental relation presents itself as an edge condition, as in Gururani's (2018) exploration of the reconfiguration of the commons which is occurring in the urban–rural interface outside of Delhi. Environmental interconnections between localities also take more distantiated form, though, and the development of global/local networks of urban sustainability policy expertise is also an urgent topic for research, as Goh (2020) documents with respect to the colonial and postcolonial pathways connecting Amsterdam to New York and Jakarta, along which local climate adaptation planning expertise has propagated and been transformed. Finally, further afield from the city or even the global city network, in the absence of a multi-spatial framework, 'operational landscapes' (Brenner and Katsikis, 2014) of energy, resource extraction, logistics and waste processing which support urban agglomerations risk being rendered invisible (Arboleda, 2020; Castriota and Tonucci, 2018).

(3) Political

Contemporary urban sustainability research should entail a recognition of – and challenge to – the fact that dominant forms of urban sustainability planning and thinking are socially, economically and racially narrow. In the American context, the environmental justice movement has advanced this critique both intellectually and politically for more than four decades (Bullard, 2018; Pulido, 2000; Sze, 2020), although it has been slow to reach other patches of the urban-environmental field, as Keil (2020) notes. Indeed, Loughran (2020: 2334; see also Loughran, 2017) describes the co-production of racial and spatial exclusion as 'the overarching historical issue looming over the politics of urban green space in the USA'. More recently, as city governments have begun to embrace a more substantive policy engagement with environmental sustainability, they have tended to do so in ways which focus on the liveability concerns of wealthy urban residents to the exclusion of the poorer residents of urban peripheries (Wachsmuth et al., 2016). This is true even as evidence mounts that the consumption-heavy lifestyles of these wealthy urban residents produce an amount of carbon pollution comparable with the carbon savings of the walkable and energy-efficient downtown landscapes they inhabit (Rice et al., 2019).

Urban sustainability policy has developed in a pro-growth, system-affirmative direction that stands in rather stark contrast to its explicitly or implicitly anti-capitalist antecedents from the post-war era. For example, Tretter (2013) has explored the way in which the growth machine in Austin, Texas used environmentalism to accomplish a revanchist 'clean up' of the downtown, which 'shifted the costs of growth from the natural ecology onto the city's homeless population' (Tretter, 2013: 2222). While it would be a mistake to posit too clean a distinction between earlier, radical forms of sustainability thinking and the present embrace of sustainability by the 'power elite' (Greenberg, 2015), the fact remains that an earlier system

of environmental thought premised on concepts such as the 'limits to growth' (Meadows et al., 1972) has been largely supplanted by a system of thought premised on sustainability as the sustainability of growth. Given the present centrality of urbanisation to global capitalist development, interrogating the contradictions of urbanising green capitalism is an important and promising line of research (Knuth, 2017). As Greenberg (2015: 108) observes, 'insofar as a market-oriented discourse of sustainability becomes a dominant and powerful agent within contemporary capitalism and capitalist urbanisation, it has the capacity to render other, nonmarket goals – whether ecological or social – unsustainable'. For instance Arabindoo (2020: 2303) argues that in spite of the Modi government's celebration of a 'new' renewable energy regime in India, 'by pegging it to a speculative value of market-based energy production, renewables … import assumptions of an existing system'. By contrast, Castriota and Tonucci (2018) have drawn attention to the limits of the capitalist subsumption of the environment under urban development, and to the corresponding possibilities of radical politics to contest this process. They argue, following the work of Roberto Monte-Mór, that 'the extended urban fabric can be locally appropriated in different ways, pointing towards processes of re-politicisation and extended citizenship in spite of the capitalist and industrial character of urbanisation' (Castriota and Tonucci, 2018: 513).

(4) Representational

Lastly, an adequate research agenda into the politics of cities saving the planet should be attentive to the different representations and ideologies which structure and constrain these politics. As we have explored elsewhere (Wachsmuth and Angelo, 2018), contemporary urban sustainability thinking is strongly characterised by a pair of opposing but also complementary representations of the city–nature relationship: 'green urban nature' and 'grey urban nature'. These aesthetic bundles of associations between what is urban and what is sustainable inform implicit but consequential policy common senses and imaginaries. A common and arguably dominant version of this imaginary is the techno-utopian, birds'-eye-view approach to urban sustainability that characterises corporate-led policy solutionism (Keil, 2020). However, as Castán Broto (2020) observes, urban sustainability imaginaries are always practically embedded in local contexts, often in quite varied ways, with multiple and often contradictory interpretations existing simultaneously. In Peck's (2011: 792–793) formulation, these imaginaries 'are not, in some metaphorical sense, molecules circulating within an extraterrestrial space, "touching down" or "getting picked up" by earth-bound policy actors; rather, they occupy the same earthly domains as the policymakers themselves, as creatures and creations of grounded processes of institutional reproduction, regimes of discursive framing, and contours of political power'.

Contributions to this special issue primarily explore these processes, regimes and contours from the perspective of global policy and governance. Lauermann (2019) examines the imaginaries of sustainable urbanism which are produced through new techniques of visualisation. Montero (2020) discusses other, non-aesthetic dimensions of urban sustainability representation also structure how environmental policymaking common senses are formed. His research on the positioning and 'leveraging' of Bogotá, Colombia as a model for policy 'solutionism', shows how privileged ideas of urban environments circulate alongside the policies themselves, in the form of the narrow set of 'global cities' which supply a

disproportionate share of international best practices. Indeed, the very notion of 'cities saving the planet' is arguably a subset of a broader political and ideological yearning for 'mayors ruling the world' (Barber, 2013). Localities and their political leaders are valorised as nimble, pragmatic actors in contrast to supposedly ineffective and obsolete nation-states, and current developments in the realm of sustainability thinking are to some extent a rehashing of earlier political and economic debates. In the 1990s, economic globalisation sparked emphatic pronouncements by scholars and policymakers about the declining relevance of national borders and nation-states (Ohmae, 1996), with the result that the local became understood 'as a site of empowerment in the new global age' (Brenner and Theodore, 2002: 342) and a 'new localism' was proposed as a political strategy (Goetz and Clarke, 1993). Critical correctives explained new global/local dynamics as forms of state 're-territorialisation' (Brenner, 1999) and 'glocalisation' (Swyngedouw, 1997) rather than a diminishment of place, nation state or territorial identity in absolute terms, but those insights have arguably been underdeveloped in urban sustainability research (although see Marvin and Guy, 1997).

Conclusion

Why does everyone think cities can save the planet? This question serves as a convenient shorthand for two related premises. The first is that, in the face of environmental crisis and urban crisis, the ideal of the 'sustainable city' is taking a leading role in urban planning and policy discourse, as well as in broader circuits of entrepreneurial and competitive urban governance. The second claim is that urban planning is becoming increasingly prominent in global sustainability efforts more broadly. In other words, on a global scale, urban planning and sustainability planning are becoming two sides of the same coin. The special issue considers the reasons for, and political implications of, these two interrelated phenomena.

The purpose of this article has been to identify and explain the development of a new frame for understanding the relationship between cities and the environment in contemporary urban policy. Sustainability and urbanism have become a powerful pair of master discourses for our time, and their intersection offers up sustainable cities as a solution for a wide set of social, economic and environmental problems. We have narrated the emergence of the 'cities saving the planet' frame through the historical development of three successive juxtapositions of cities and environmental problems – suburban sprawl, the proliferation of informal settlements and the challenge of climate change. We have indicated how these juxtapositions collectively demonstrate a movement from 'less city' to 'more city' in sustainability thinking – from cities being understood as environmental problems towards cities being understood as the *solution* to environmental problems on a global scale. On the basis of this discussion, we have elaborated a research agenda for investigating contemporary, extrospective urban-environmental policy, based on the four principles of historical, multi-spatial, political and representational analysis.

'Urban sustainability' has quickly become a guiding concept of contemporary urban planning and policy, such that the notion of cities as sustainability solutions already appears commonsensical and even inevitable. However, in our telling of this story of cities saving the planet, we, as urbanists, have only told one side of a two-sided story. The city–environment conjuncture, in other words, is not simply a matter of urbanists turning to the environment but also of environmentalists turning to the city. Just as the environment has entered urbanists' field of vision, at least Western,

bourgeois environmental movements have increasingly turned to cities. American environmentalism's traditional concerns were the conservation of wild animals and 'unspoiled' habitats, from national parks in the 19th century to the efforts of organisations such as the World Wildlife Fund and the Nature Conservancy in the 20th century. But the Nature Conservancy has recently launched an urban programme, which aims to 'demonstrate what nature can do for cities – and what cities can do for nature' (The Nature Conservancy, 2020). This parallelism in urban and environmental movements deserves to be explored in greater detail. So, too, do the broader parallels between material and representational transformations and dispossessions currently taking place in rural or agrarian spaces in tandem with the celebration of urban sustainability (Paprocki, 2019).

New ways of conceiving the urban have always been linked to the identification of new problems and strategies for urban governance – and to the production of new blind-spots and new dynamics of socio-political contestation. The same is also true of nature: changing ideologies of nature suggest new understandings of environmental problems and solutions, and provoke new socio-environmental crises. A promising direction for future urban–environmental scholarship is to examine the interconnectedness of these two propositions.

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