# 1. Introduction to the *Handbook of Urban Geography*
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## 1.1 INTRODUCTION

It is no exaggeration to say that in the twenty-first century Urban Geography has become one of the most exciting fields in the discipline of Geography. There are multiple reasons for this; one is the advent of the Urban Age now that, according to a wide variety of agencies and authors, more than half of the world's population lives in cities (e.g. UNFPA, 2007; Seto et al., 2010). While it has been criticized heavily, not least by geographers (Gleeson, 2012; Brenner and Schmid, 2014), the Urban Age thesis has certainly caught the imagination. It has amplified 'the new urbanology' (Gleeson, 2012) – a set of typically optimistic, future-oriented frames and understandings about cities and urbanization as solutions to all kinds of ills and sites of growth, innovation and wellbeing (e.g. Glaeser, 2011; Hambleton, 2015). It has also strengthened more pessimistic, to some extent neo-Malthusian narratives of cities and urban areas as increasingly overpopulated, deeply unequal usurpers of resources and sources of emissions (e.g. Okulicz-Kozaryn, 2015; *Science*, 2016). Predictably, however, it has generated and refracted many, nuanced discourses and perspectives that cut across these positions (e.g. Gleeson, 2014; Amin and Thrift, 2017; Beauregard, 2018).

Partly because of the (renewed) centrality of the city and urbanization to public and cross-disciplinary academic debates, Urban Studies as an interdisciplinary ensemble of discourse, method and praxis has grown rapidly and gained several younger siblings. Urban ecology, for instance, has become a burgeoning field of research, which is also in recognition of the observation that '[c]ities themselves present both the problems and solutions to sustainability challenges of an increasingly urbanized world' (Grimm, 2008, p. 756; see also Alberti, 2016). Another sibling is what Michael Batty (2013) has called the 'Science of Cities' – a confluence of new computational capabilities, big data, Urban Age discourse and concepts and ideas from across academic disciplines, including physics and quantitative geographical analysis from the heydays of the Quantitative Revolution and more recently (see also Barthelemy, 2016; Acuto et al., 2018; Chapter 5 below).

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A second set of reasons for the resurgence of Urban Geography lies in developments within the field or sub-discipline itself. In the twenty-first century there have been several significant theoretical and methodological debates of which three stand out. Partly in response to earlier work on 'world' or 'global cities' (Friedmann, 1986; Sassen, 1991; Taylor, 2004), post-colonial geographers and planners – many of whom have also been influenced significantly by feminist and Marxist theories – started to develop a set of different and differing approaches to theorizing the city and the urban (e.g. Robinson, 2002, 2006; Roy, 2009). These go under different names, including 'Urbanization 2s' (Derickson, 2015; see also Chapter 2), and have introduced a suite of new concepts or borrowed them from other disciplines; examples include – but are not limited to – 'ordinary cities' (Robinson, 2006), 'worlding' (McCann et al., 2013) and 'provincializing' (Sheppard et al., 2013). There are important differences between such concepts; suffice to say that they all try to move beyond the imposition of Euro-American concepts and modes of thinking about cities and urbanization onto sites and processes across the planet. They thus aspire to theorizing and understanding cities in the Majority World on their own terms as much as possible. This does not amount to full-scale rejection of concepts, theories and practices developed by 'Western' urban geographers (cf. Chakrabarty, 2000) but a significant reworking as well as the invention of new modes of thinking and doing research that can shed light on the potentialities, complexities, contradictions and marginalizations in Majority World cities. One of the most productive strands of literature to have come out of these attempts is on relational comparison of cities, often in quite different parts of the world (e.g. McFarlane, 2010; Robinson, 2016; Hart, 2018) and of sites within a given city (McFarlane et al., 2017).

However, the work by authors like Jennifer Robinson and Ananya Roy has also drawn criticism. According to Allen Scott (2012, p. 31), for instance:

> Robinson (2006) is correct to call for a cosmopolitan and non-dualistic urban theory for today's work . . . The point is not to assert that cities everywhere are converging towards a common future destiny [as some post-colonial thinking seemed to have argued – TS]. The point is that cities in an increasingly capitalistic world can be understood by reference to a set of fundamental principles that are nonetheless accompanied by enormous divergence of empirical outcomes on the ground.

The risk, then, for geographers such as Scott is that post-colonial perspectives on cities and urbanization fail to strike the right balance between the general and the particular (see also Storper and Scott, 2016). Roy (2016),

in turn, has argued that historical difference – in particular if produced through colonialism – is too constitutive of urbanization to be reduced to empirical variation. She has also proposed a differentiation between the general and the universal. Her and others' work does aim to achieve generalizations in the sense of conclusions that apply beyond the specific site where empirical research has been conducted but she is not aspiring to make universal claims that are valid everywhere.

A clear difference in epistemological 'temperament' – to borrow a term from pragmatist philosopher William James (2000[1907]) – can be identified here, but also a difference in methodology. Scott and Storper, and many of the protagonists of the planetary urbanization thesis discussed below, prefer to study the city by 'start[ing] from the outside in; that is, they want to see the city as a whole and map aspects of it, for they want to see the city as an expression of a larger force' (Amin and Thrift, 2017, p. 4). Robinson, Roy and colleagues, in contrast, prefer 'to see the city from the inside out . . . because cities work from the ground up' (Amin and Thrift, 2017, p. 4).

This last practice and temperament can also be found in scholarship on assemblage urbanism (McFarlane, 2011a, 2011b; see also Chapters 4 and 7). Much has been written about the concept of assemblage over the past 15 years in Geography and beyond (e.g. Anderson et al., 2012; Baker and McGuirk, 2017; Buchanan, 2017). The term is widely used to describe and conceptualize gatherings of heterogeneous elements whose arrangements are emergent, provisional, fragile and continually made and remade. It has been deployed to great effect, as exemplified in research on informal settlements in Majority World cities such as São Paulo or Mumbai (e.g. McFarlane 2011a, 2011b) or on policy mobilities between cities (e.g. Pow, 2014; Wang et al., 2016; see also Chapter 7). Nonetheless, assemblage perspectives on cities and urbanization have also been criticized intensely, amongst others for being naively empirical without searching for more structural underlying processes, their flattening of power relations and social hierarchies, their conception of agency, and their abstract nature (for further discussion, see Brenner et al., 2011; Storper and Scott, 2016).

Both post-colonial and assemblage perspectives, which are much more interrelated than the discussion here might suggest, have also been criticized for 'methodological cityism' – 'an overwhelming analytical and empirical focus on the traditional city to the exclusion of other aspects of contemporary urbanization processes' (Angelo and Wachsmuth, 2015, p. 16). This concern needs to be placed in the context of the wider literature on planetary urbanization (Brenner and Schmid, 2015), which is first and foremost a critique of the idea of urbanization as city growth. In fact, Neil Brenner and colleagues follow and expand on Henri Lefebvre's

claims that the city and the urban need to be separated – the former being an empirical category, the latter a theoretical construct (Brenner, 2013) – and that '[s]ociety has been completely urbanized' (Lefebvre, 2003[1970], p. 1). In the most detailed theoretical statement of the planetary urbanization thesis to date, Brenner and Schmid (2015) argue that urbanization needs to be understood as the result of three 'moments': (1) concentrated urbanization – the agglomeration of population, infrastructure and capital in particular sites, conventionally denoted as cities (see also Wachsmuth, 2014), (2) extended urbanization – the uneven stretching and thickening across the planet of the practices, infrastructures and relationships that were once associated with the city and its hinterland (see also Monte-Mór, 2014), and (3) differential urbanization – the creative destruction of existing configurations for the generation of new forms of urban space and capital accumulation (a set of arguments building on, for instance, Harvey [2001]).

The planetary urbanization thesis has rapidly become very influential. In her recent review of urban theory in the Urban Age, Derickson (2015) denotes it 'Urbanization 1', as if (versions of)[1] the planetary urbanization approach is (or are) the only game in town when it comes to temperaments oriented towards generalization/universalization and methodological practices of seeing from the outside in. As Chapter 3 below suggests, (semi-)Marxist approaches to the city and the urban, such as Urban Political Ecology, have been adapting themselves to the new realities of theorizing the urban that have emerged with the planetary urbanization thesis. Moreover, the thinking by Brenner and colleagues has spurred a re-imagination and re-conceptualization of suburbs as often vibrant and central places in the twenty-first century (see Keil, 2018). At the same time, there have been strong criticisms. These range from concerns over the reduction of the city to an empirical rather than a theoretical category (Davidson and Iveson, 2015; Storper and Scott, 2016) and the absence of an 'outside' to urbanization (see also Jazeel, 2018; Ruddick et al., 2018) to a scaling of the 'universalizing from the European experience to a new extreme' (Derickson, 2015, p. 654) and insufficient attention being paid to human subjectivity, difference and everyday experience (e.g. Ruddick et al., 2018).

The strict separation between the city and the urban, as well as the inclination to give both clearly defined and stable meanings, in planetary urbanization thinking have been criticized by Barnett and Bridge (2016). These authors seek to steer 'attention away from trying to apprehend just what the city or the urban *is* [which is a central concern for Brenner and colleagues – TS] towards inquiring into what it is that cities and urban processes are presumed to be able to *do*' (Barnett and Bridge, 2016, p. 1195, emphasis in the original). They discuss the case of the development of the

Sustainable Development Goals (SDGs), during which the urban issues obtained increased visibility in UN circles. Barnett and Bridge suggest that over the course of the negotiations around the formulation of SDG 11, which revolves around inclusive, safe, resilient and sustainable cities and human settlements, three different spatial imaginations of the urban featured prominently: agglomeration – with the proximity associated with cities allowing all kinds of efficiencies and benefits to emerge; hub – with urban settlements being nodes of condensation in wider networks of people, trade, food, water, and so forth; and scale – the city as a figure for concentrated action and solutions rather than bearer or source of challenges. These imaginations overlapped, intersected and sometimes contradicted each other during the negotiations. The 'lack of clear-cut, singular clarity in definitions' (Barnett and Bridge, 2016, p. 1197) was not a problem but productive as it helped to turn cities into sites for governing and action.

The implication of this example for Urban Geography as a sub-discipline or field of research is that crystal-clear and generic definitions of core concepts are not necessarily required or even helpful; meanings are at least to some extent context-specific, emergent and shaped by the problem(s) at hand. Moreover, different and changing meanings and imaginations can help to open up different forms of action and thus be productive. Surveying Urban Geography as a field of action suggests as much: different researchers across 'epistemic cultures' (Knorr Cetina, 2009),[2] and to an extent across different localities, work with different understandings of the city and the urban, thereby generating a wide range of insights and knowledges that both overlap and diverge.

Moreover, there are risks to imposing one understanding, or at least a tightly bounded set of understandings, of the city and the urban onto different strands of research or bodies of scholarship and to evaluating them in relation to that (or those) understanding(s). According to Isabelle Stengers (2011), the imposition of a standard and comparing different entities or practices with that standard erases from view the specificity, or what she calls the divergence, of those entities or practices; it might even destroy that specificity. Importantly, she understands divergence not as relational – as in divergence from others – but as constitutive: each entity or practice, including a particular mode or strand of Urban Geography, 'does have its own positive and distinct way of paying due attention; that is, of having things and situations matter. Each produces its own line of divergence, as it likewise produces itself' (Stengers, 2011, p. 59).

Divergence thus understood is generative as it makes different ways of understanding, imagining, experiencing and acting upon the city and the urban possible; it needs to be harnessed by urban geographers. This

does most certainly not mean that anything goes: the effects of practices – theorizing, conducting empirical research, communicating research to peers or non-academic stakeholders, and so forth – need to be evaluated on their own terms and be acceptable to others within a particular strand of research. There should also be a place for 'engaged pluralism' – open, inclusive, respectful, constructive, non-sanitized debate across boundaries of bodies of scholarship (Bernstein, 1988; Barnes and Sheppard, 2010; Kwan and Schwanen, 2016; Brenner, 2018) – given that the objects of interest to different constituencies within Urban Geography do have at least some elements in common.

At the same time, harnessing divergence à la Stengers also means situating the theoretical debates about post-colonial perspectives, assemblage and planetary urbanization that have been touched upon above. These debates are of key importance to Urban Geography in the twenty-first century but urban geographers are positioned differently in relation to them. Some may be consumed almost completely by them, others follow or take notice of them to different extents, whereas still others may remain more or less unaffected by them. There is a geography to these debates as well. They seem to be present most in Anglo-American Urban Geography, although even within that broad constituency different epistemic cultures are engaging in different ways. Elsewhere, for instance in countries in Continental Europe, in East Asia or Latin America, these debates may not only be (slightly) different in nature but also carry a different weight than in, say, the UK.

## 1.2    ABOUT THE BOOK

The *Handbook of Urban Geography* aims to convey and make understandable the vibrancy and heterogeneity of Urban Geography at a time when the twenty-first century is well underway. It seeks to harness divergences à la Stengers (2011, see above) within Urban Geography whilst also providing opportunities for 'engaged pluralism' (see above). So, what for some might look like a rather unfocused collection of quite disparate contributions can also be understood as the result of a deliberate attempt to bring together specific strands of scholarship focused on the city and the urban with their own particular histories, problems, concepts, methods, and so forth. The point is to convey the richness of engagement with the city and urban in Geography – and indeed beyond (see below) – and to push against all too settled understandings of what Urban Geography is or should be.

To what extent the book successfully achieves its aims is for readers and users to decide. From an editor's point of view, the book does offer a good

palette of colours, as any good paint sample card would do. Not only does it cover a wide range of substantive topics (discussed in Section 1.3 below), it also brings together different epistemic cultures, recognizes interdisciplinarity and includes contributions from topic specialists at different stages in their academic careers. In terms of epistemic culture, the book includes contributions that sit squarely within, or draw significantly on, Marxism (e.g. Chapters 3, 19, 24 and 26), the new data sciences (Chapter 5), a more established version of quantitative geography or spatial analysis (e.g. Chapters 7, 17 and 18) and materialist and more-than-human scholarship (e.g. Chapters 4, 7 and 21). Regarding disciplinarity, the book recognizes that the boundaries between Urban Geography and other disciplines' engagements with the city and urban are fluid, porous and fuzzy rather than hard, impermeable and sharp. It therefore also contains contributions by scholars whose work evolves in conversations with geographers and others but who may not readily self-identify as geographers. This is healthy and even logical, given the emphasis on, and valorization of, interdisciplinarity across many academic institutions and the complexity of the city and the urban.

At the same time, there are always different end results that could have been achieved. As a whole, the book speaks more from the West – and more specifically the Anglo-American world – than originally intended. Similarly, there are topics and perspectives that could, and perhaps should, have been covered but are absent from the final version. It would have been useful, for instance, to have separate chapters on the planetary urbanization thesis (but see Chapters 2 and 3 for reflection on this), on austerity urbanism, the urban commons, urban greenspaces and vulnerability and adaptation to climate risks. Other edited volumes focused on cities and the urban can be consulted for discussions of these and other themes (see, for example, Parnell and Oldfield, 2014; Hall and Burdett, 2018; Jayne, 2018; Ward et al., 2018).

## 1.3   ABOUT THE CHAPTERS

Apart from this Introduction, the *Handbook of Urban Geography* consists of 29 chapters by specialists on the topics that are covered. The chapters are divided into seven Parts. Six of these cover broad and general themes in the Urban Geography literature of the twenty-first century: urban networks, urban redevelopment, urban inequalities, urban socialities, urban politics and urban sustainabilities. These six substantive themes, which relate to the urban and the city as an object of study for geographers, are preceded by a Part on theories and methods.

The division into Parts, and the allocation of individual chapters to specific Parts, is to some extent arbitrary. The division and allocation have changed somewhat during the preparation of the Handbook and when the chapters took shape. Like any categorization of internally heterogeneous entities, the final division and allocation risk occluding some of the connections between chapters. Two examples will suffice to support this point. Chapter 5 by Zook, Shelton and Poorthuis deals not only with big data, which is why it is included in Part I on theories and methods, but also with gentrification; it could also have been placed in Part IV on urban inequalities and thereby in more direct conversation with Chapter 19 on gentrification by Cocola-Gant. In addition, a draft classification at an earlier point in time had a Part on urban mobilities, containing most of the chapters now included in Part II, as well as Cousins and Newell's chapter on urban political ecologies (now in Part I), Chapter 15 by Coaffee on anti-terrorism measures and urban resilience in London (now in Part III), Chapter 20 by Warf on digital im/mobilities (now in Part IV) and even Chapter 23 by Kraftl on children's geographies (now in Part V).

In the end, however, the current classification worked best insofar that it draws attention to the key themes of networks, redevelopment, inequality, sociality, politics and sustainability. This is certainly not to suggest that these are the only major or most important themes in the recent Urban Geography literature. They are, however, convenient 'hooks' for offering an overview of the many developments in Urban Geography as a vibrant and heterogeneous research field.

The network theme is very well-rehearsed in Urban Geography. This is not least because of developments outside the field of Urban Geography, including Castells's thinking on the 'network society' (Castells, 1996) and divergent developments in actor-network theory (ANT) (e.g. Latour, 2005), although the reception and reworking of the thinking by Friedman (1986) and Sassen (1991) – diverging in yet other ways – has been at least as influential. It is therefore not surprising that five quite different and diverging chapters have ended up in Part II. Chapter 6 by Derudder and Taylor needs to be placed in the long-standing Urban Geography tradition of inquiry into hierarchical networks of global cities. It surveys research on such networks, identifies methodologies and issues and provides insights into the complex nature of global city connectivities. Chapter 7 by Temenos, Baker and Cook would not have been possible without the integration of insights from ANT with longer-standing concerns among geographers with territoriality, place and stability/fixity. It offers a very useful framework for understanding how policy mobilities contribute to mobile urbanism (McCann and Ward, 2011) and illustrates this through a historical example of high-rise urban development.

Meanwhile, the Chapters 8 by McIlwaine and Ryburn, 9 by Van Liempt and Vecchio and 10 by Schwanen and Nixon engage with, and draw inspiration from, wider debates about networks in various ways. McIlwaine and Ryburn concentrate on transnational flows and networks of low-paid migrants, arguing for the importance of theorizing these from the South in line with the post-colonial scholarship introduced above. Van Liempt and Vecchio focus on another group at risk of marginalization and unequal treatment – that is, refugees, most of whom now live in cities. The latter, the authors suggest, should be understood as hubs of geo-political, networked economies. The emphasis in Chapter 10 is more on infrastructures than on networks of people, although infrastructure has become a very broad concept in Urban Geography; the authors also discuss understandings of social infrastructure (McFarlane and Silver, 2017) and people as infrastructure (Simone, 2004).

Urban restructuring or redevelopment is a theme of seemingly perennial interest to geographers, whether this operates through logics of globalization, culture, new technology and/or security. These are, therefore, the foci of the chapters in Part III. Using Germany as a case study, Hesse discusses in Chapter 11 how, in response to globalization and the perceived need to increase their international competitiveness, urban areas consisting of core cities with surrounding daily commuter sheds are consolidated in larger-scale spatial units, primarily with the help of discursive means. Chapter 12 by Hutton offers a wide-ranging overview of how the cultural industries continue to be implicated in urban redevelopment in the Western world in the twenty-first century, whereas Ward and Hubbard in Chapter 13 discuss more specifically how local authorities and planning officials seek to mobilize the arts and cultural activity for urban regeneration purposes; their empirical case concerns the coastal area around Folkstone in South-East England. There are multiple parallels between the two chapters, including some discussion of the implications for labour in the form of increased informality and precarity. Luque-Ayala and Marvin's discussion in Chapter 14 concentrates on the role of smart technologies and smart urbanism discourses and practices in contemporary urban (re) development. Finally, Coaffee in Chapter 15 focuses on securitization in urban areas, offering a historical overview of how the City of London has been securitized since the 1990s in response to perceived terrorist threats.

Cities have long since been places of profound social and spatial inequalities (see also Chapter 16), as only a cursory glance through Engels's (2009[1845]) *The Conditions of the Working Class in England* about Manchester in the 1840s will reveal. The relationships between urbanization and inequalities have changed in many ways since the Industrial Revolution through numerous developments, including – but certainly not

limited to – the rise of Fordism and later neoliberal capitalism, the export of Western development models to other parts of the world, gentrification and the rise of digital technologies. The chapters in Part IV document different spatial manifestations of, and dynamics associated with, inequalities in cities. Proponents of the planetary urbanization approach rightfully draw attention to the spatial differentiations and inequalities that have emerged from, and have been reworked by, extended urbanization (see Section 1.1). However, it also remains the case that inequalities are most intense and spatially concentrated in cities.

Hamnett in Chapter 16 offers a broad overview of what is urban in inequalities, what inequality is and how it manifests itself, what the underlying processes are and what roles the state plays in these. Chapter 17 by Oka and Wong concentrates on manifestations of a specific set of inequalities in cities – spatial segregation – through a discussion of the intricacies of conceptualizing and measuring such segregation. The application of their measurement techniques to data from Chicago and St Louis generates some powerful visual results. Musterd, Andersson and Galster also discuss a wide range of conceptual and methodological issues in Chapter 18, which focuses on the question how neighbourhood effects on social stratifications and individuals' progress in life can be identified in a robust manner. Chapter 19 by Cocola-Gant is devoted to gentrification as a key urban redevelopment process under capitalism. It foregrounds the global character of gentrification and pays specific attention to the displacement effects associated with the process. Warf in Chapter 20 concentrates on the digital dimensions of urban inequalities through a discussion of digital divides and the (im)possibilities of addressing some of those through e-governance and Web 2.0 technologies.

Debates about the socialities associated with urban life are perhaps not as old as those about inequalities but they have a long history too, particularly in Sociology (e.g. Tönnies, 2001[1887]; Simmel, 1971[1903]). They are ever more topical now, at least in Europe and North America, cities have become sites of (1) 'super-diversity' (Vertovec, 2007) due to increased ethnic and demographic differentiation; (2) 'hyper-diversity' (Tasan-Kok et al., 2014; Kraft et al., 2018) with additional variation in attitudes, lifestyles, behaviours and materialities that cut across traditional social identities; and (3) most recently renewed ethnic nationalism, xenophobia and a surge in the popularity of the Radical Right. Part V, therefore, consists of three chapters dealing with different dimensions of urban sociality. In Chapter 21 Watson offers a broad introduction to the theme and critically evaluates the contributions of the 'material turn' in Cultural Geography and cognate fields in the 2000s to the understanding of urban socialities, in part by drawing on some of her own recent

empirical research. Schuermans, in Chapter 22, engages with the literature in Urban Geography and his own empirical research on the themes of encounters with difference and the question if and how such encounters contribute to urban cultures of conviviality. Finally, in Chapter 23 Kraftl reviews existing, and discusses original, research on the experiences of children – as one social group in urban environments with specific socialities notwithstanding its large internal heterogeneity – in cities, foregrounding how children are key agents in urban spaces.

As the etymological roots of the word politics in the ancient Greek *polis* demonstrate, the city and politics also have deep and intimate historical connections. As Karaliotas and Swyngedouw also discuss in Chapter 24, it is the city where protests continue to be concentrated and flourish. Consider, for instance, the Arab Spring, the Occupy protests, Critical Mass cycling events, Black Lives Matter manifestations and the Rhodes Must Fall campaign yet also many events in support of the Radical Right, including the Unite the Right rally in Charlottesville, Virginia (August 2017). Often what is at stake in the (socially progressive) movements listed here is the 'right to the city', Lefebvre's (1968, 1996) influential concept and rallying cry for a different form of urbanization configured around logics of use value, *autogestion* and play rather than exchange value, centralization and efficiency (see also Purcell, 2013). However, any discussion of urban movements as well as policy needs to reflect critically on the nature of politics and the political, especially in light of debates in Urban Geography and beyond over the last decade about the emergence of a post-political condition. Defined in different ways by leading thinkers like Mouffe, Rancière and Žižek (see Wilson and Swyngedouw, 2014), the post-political condition is widely seen to be associated with the erasure of dissensus from how public life and cities are governed and its replacement by post-ideological consensus, technocratic management and problem-focused governance (e.g. Swyngedouw, 2007).

In light of these considerations, the four chapters in Part VI address different aspects of contemporary urban politics. Karaliotas and Swyngedouw, in Chapter 24, discuss the implications of progressive urban social movements or urban theory and practice. They argue that the urban needs to be rethought in terms of political encounter, interruption and experimentation and the aforementioned movements as forms of democracy premised on an egalitarian urban being-in-common. Meanwhile, Chapter 25 by Raco and Freire-Trigo engages questions about the political in a different way. These authors evaluate the top-down versus bottom-up distinction which has long been used in relation to urban policymaking and suggest it needs to be replaced by more relational perspectives that are based on more antagonistic understanding of politics as inherent to public debate.

Qian and He concentrate on the right to the city concept and apply it to understand developments in grassroots activism in Chapter 26, which also offers an empirical assessment of the difficulties rural-to-urban migrants experience in asserting their right to the city in Beijing. Finally, Hankins and Martin, in Chapter 27, return to the neighbourhood level and the potential of neighbourhoods as sources of place-based activism in different parts of the world. They suggest a reciprocal relationship according to which such activism and neighbourhoods constitute and shape each other, even the nature and strength of that relationship differs spatially.

Part VII is concerned with a much more recent set of urban issues than inequalities, socialities and politics, that is, the relationships between global environmental change and urbanization. While cities and urban areas are sometimes seen as the pre-eminent producers of greenhouse gas emissions (e.g. Seto et al., 2010), discourses that position cities as the places from which societal transformations to low-carbon living will unfold are perhaps more widespread. Geographers have played a key role in drawing attention to, and critically analysing, the role of cities and urban areas in such transformation in the interdisciplinary literature on sustainability transitions (Loorbach et al., 2017; Schwanen, 2018; see also Chapter 28). Part VII entitled Urban Sustainabilities brings together some of the insights that geographers and urban scholars have offered with regard to the role of cities in the governing of global environmental change. Chapter 28 by Rutherford provides a critical overview of different literatures on the urban nature of transformations towards greater sustainability and low-carbon societies. Amongst other things he draws attention to the deeply political and uncertain nature of those transformations. In Chapter 29 Cowley discusses one of the literatures introduced by Rutherford in much greater depth, concentrating on the eco-city phenomenon and critically assessing its potentialities, ambiguities and pitfalls with regard to sustainability transitions. Finally, Castán Broto in Chapter 30 focuses on the role of cities as sites of social learning, experimentation and – importantly – contradiction when it comes to governing climate change. Through the example of an NGO working to improve the lives of waste pickers in Mumbai, she highlights the importance of linking low-carbon with social justice agendas so that urban experiments can create the conditions for 'just' sustainability transitions (see also Newell and Mulvaney, 2013).

While the city and the urban are considered as objects of interest in Parts II–VII, the contributions in Part I are concerned explicitly with how geographers are conceptualizing and examining the city and the urban. To some extent this Part pays tribute to the fertile period in urban theory and methodological thinking in recent Urban Geography. However, and as explained before, the distinction between this and subsequent Parts

is far from watertight. For instance, Chapters 7 by Temenos, Baker and Cook and Chapter 24 by Karaliotas and Swyngedouw also make claims about how the urban can or should be understood. Nonetheless, the four chapters brought together in Part I entitled Urban Theories and Methods engage most explicitly with thorny issues around modes of thinking and researching the city and the urban. Chapters 2 and 3 by, respectively, Cesafsky and Derickson and Cousins and Newell deal with some of the implications of the rise of planetary urbanization thinking, albeit in different ways. Cesafsky and Derickson depart from the aforementioned distinction between 'Urbanization 1' and 'Urbanization 2s' as different epistemological styles of theorizing the urban. They discuss how post-colonial and/or comparative approaches within Urbanization 2s can open up an inductive trajectory to theorizing the contemporary urban condition(s). Cousins and Newell, for their part, survey how the Urban Political Ecology approach, which has since the 1980s sought to understand the nature of urbanization process and the entanglement of the natural and the urban under capitalism, has adapted to the aforementioned criticism of methodological cityism.

Chapters 4 and 5 take a different approach to understanding the urban. Blok and Farías ground their analysis in thinking in Science, Technology and Society studies (STS) and its interface with Urban Geography. They outline an approach to understanding the urban at a time of ecological crises that revolves around the concepts of *agencements*, assemblies and atmospheres and draws heavily on the thinking of Bruno Latour and Isabelle Stengers about cities in what the former calls the new climatic regime (Latour, 2017[2015]). Zook, Shelton and Poorthuis are on a genuinely divergent trajectory in Chapter 5, exploring the potential contributions of research that makes innovative – 'smart' – use of big data to long-standing Urban Geography concerns, in this particular case gentrification. Their call for a dual rejection of (1) the naive empiricism of some data scientists and (2) certain critical geographers' deep antipathy against engagement with the new data sciences is significant and important. At a time of a new Science of the City urban geographers cannot afford to remain on the sideline, even if they dislike some of the empiricist and neo-positivist inclinations in sectors of the transdisciplinary and differentiated Science of Cities literature.

## NOTES

1. The planetary urbanization literature is less homogeneous as it is sometimes made out to be (see also Brenner, 2018). Brenner and Schmid (2015), for instance, have been very

clear on the merit of combining their thinking with post-colonial perspectives on the city and urbanization; they offer a less totalitarian universalizing approach than some critics have suggested.

2. Epistemic culture is a concept by Knorr Cetina (2009) to denote the specific arrangements and 'machineries' that make knowledge construction possible; have distinct technical, social and symbolic dimensions; and exist within and across disciplinary boundaries. Marxist scholarship, ANT or GIScience are but three examples of the epistemic cultures that cut across contemporary Urban Geography.

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