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Chapter 25

On the deployment of scientific knowledge for the new urbanism of the Anthropocene

On the deployment of scientific knowledge for the new urbanism

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Introduction

According to Eugene McCann (2017: 312), urbanism "*connotes the widest sense of the urban, addressing not only urbanization and development but also ways of life that define urban areas in specific historical periods*." The scale of unprecedented global environmental change, including climate change and mass extinctions at a planetary level, generates social responses that become expressed in a new urbanism of the Anthropocene. This new 'climate urbanism' is linked to the historical rise of climate change agendas that prioritize the urban as a site of action (Parnell, 2016). At the same time, climate urbanism underpins accelerated efforts to securitize urban areas both in terms of gaining protection from climate change impacts and reducing the effects of decarbonization actions on privileged lifestyles (Long and Rice, 2019). The global urbanism of our time is a climate one, motivated by our collective anxiety about our capacity to survive the global environmental crisis and grounded on our joint efforts to understand the Anthropocene.

The Anthropocene is also the age of global environmental assessments. These assessments examine the current state of knowledge about environmental problems and solutions on a planetary scale. They include various modalities of deliberative panels of international scientists, such as the Intergovernmental Panel on Climate Change (IPCC), UNEP's International Resource Panel, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), UN-Habitat's World Cities Report, and the Global Commission on Adaptation, among others. These assessments examine the organization and planning of human settlements, among other aspects of life in the Anthropocene. Global environmental assessments connect future visions and aspirations across multiple international contexts, supporting a scientific-led brand of global climate urbanism.

Global environmental assessments are tools to increase the scientific influence on policy decisions over time. Thus these assessments may shape how urban areas are seen and lived. For example, in 1983, the United Nations Secretary-General appointed Gro Harlem

Brundtland as the head of the World Commission on Environment and Development, with the explicit purpose of building a shared global vision for all countries to pursue sustainable development. The report published in 1987 (Brundtland et al., 1987) inspired the 1992 Rio Declaration, a short but bold document that pointed toward an international consensus on the concept of sustainable development. Sustainability then entered the mainstream, influencing social life from political debates to daily practices (Banister et al., 2019). Cities and urban areas became central in the implementation of sustainable development, despite growing critiques of the predominance of techno-economic fixes in urban sustainability agendas (Marvin and Guy, 1997; Hodson and Marvin, 2017).

Today's mission for international scientific panels is not only to deliver a consensual vision of a planetary plan for action in urban areas and elsewhere but also to provide new arguments for hope in the context of the impending catastrophe. Environmental activists like Greta Thunberg repeat the phrase "ask the scientists" as a mantra. However, neither assessments provide an ultimate objective truth nor are scientists infallible automata with the right answers at hand. The mantra "ask the scientists" is valid only insofar as global environmental assessments result from painstaking deliberation between people who have dedicated their lives and careers to understanding the subject matter. They are also developed with a sense of respect for policy makers, urban planners, infrastructure managers, business leaders, community organizers, activists, and citizens who put ideas in practice and who become the active agents of any form of global urbanism.

The influence of these assessments cannot be overstated. While they are all different in their conception and operation, some common characteristics explain their impact on shaping contemporary global urbanisms. Assessments act as institutions that validate what knowledge is relevant or not to address urgent problems. They make visible the connections between knowledge generation and environmental politics. In the long term, discourses advanced by international scientific panels become part of our daily vocabulary and repertoire of actions. In this chapter, I reflect on the experiences of working within international scientific assessments and expert groups and working to build new vocabularies for urban futures in the hope of influencing new climate urbanism models of the Anthropocene. Rather than providing ultimate truths, scientific panels at their best become open, deliberative forums for the generation of multiple alternatives and ideas that

can be materialized in multiplex urbanisms. However, as the sections that follow explain, existing structures of knowledge production may limit their potential.

Building consensus in a heterogeneous, chaotic world

The literature on science and technology studies has linked the construction of particular imaginaries of the future to the actual performance of science as a form of consensus. Jasanoff (2015: 11) explains how "the imaginative work of varied social actors" enmesh science and technology "in performing and producing diverse versions of the collective good, at expanding scales of governance from communities to nation-states to the planet." The emphasis on consensus around complex environmental policies is not always actionable in concrete measures and plans for action (Gillard, 2016). Often, leadership is framed as consisting of daring activities to lead complex and sometimes not-so-popular green agendas. A critical barrier to deal with socio-ecological complexities in international scientific assessment is the limited dialogue between disciplines and the realization that most scholars will always use the frame of reference of their discipline as a starting point to engage in any form of scientific dialogue (Castan Broto et al., 2009). Since many cultural and personal boundaries have to be negotiated simultaneously in a short period, finding common disciplinary ground is essential.

Such dynamics disadvantage critical social science. For example, a critical social scientist whose analysis requires questioning deeply entrenched assumptions about knowledge production may find it challenging to reaffirm an opinion against a self-assured engineering scientist who automatically links a precise definition of the problem to the delivery of a solution on the ground. The critical social scientist may focus on problematizing the issue at hand. In contrast, the engineering scientist is already engaged in thinking about how to solve such a problem, accepting that finding a solution will require defining the problem in a precise (also read: narrow) way. Most scientists receive limited training in communicating across disciplines. In the end, only interpersonal relations may enable negotiating these painful divides (most often around a beer, which further excludes those who do not share that way of interaction).

If global environmental assessments are to play a role in shaping global urbanism, they must establish the relationship between citizens and resources. Urban infrastructure models define service provision within a set of socio-ecological relations. But what is urban

infrastructure? I find it hard to imagine urban infrastructure as characterized by anything else than a profound heterogeneity that emerges from the assemblage of physical elements, alongside social relationships, expectations, and emotions. The focus on heterogeneous configurations of infrastructure requires also thinking about how multiple ways of governing and accessing that infrastructure coexist in cities (Lawhon et al., 2018). However, such a perspective is not immediately suited to the construction of a space of intervention through infrastructure actions. Classical models of infrastructure, structured in a more or less centralized network, provide more persuasive answers routinely shared across the disciplinary spectrum. As a social scientist, I often find myself arguing for citizen and community-led alternatives for environmental management. These alternatives become immediately criticized for their lack of scale and replicability in the face of the promises of public and private provision of centralized infrastructure.

Many urban infrastructure models found in almost every report on sustainable urbanism are wholly inadequate to address the notions of urban infrastructure in actual cities, mostly characterized by incompleteness and heterogeneity (Lawhon et al., 2018). Most cities operate with multiple hybrid arrangements that planning models consistently overlook (Monstadt and Schramm, 2017). Heterogeneous, hybrid arrangements become visible alongside forms of spatial informality, but they are also present in urban areas thought of as 'formal' where change and experimentation are ongoing. There cannot be a consensual view of urban infrastructure, as it is built from complex arrangements of materials and social institutions and embedded in practices of everyday life. Static models of homogenous infrastructure are unable to explain how the urban environment is constructed through daily practices by urban dwellers in a myriad of overlapping infrastructure landscapes (Castán Broto, 2019). Nevertheless, models of infrastructure as organized in centralized networks pervade global environmental assessments.

I have so far been unable to communicate this understanding of infrastructure in any assessment. I struggle to describe it in a manner that makes my definitions workable in a solutions space. Nevertheless, the very complexity of urban infrastructure and the difficulties of translating this heterogeneous vision into a viable, solutions-oriented definition haunts many such reports. Taxonomical descriptions of urban infrastructure map the realm of intervention dividing it into ideas of green infrastructure, physical

infrastructure, and social support infrastructures, which in the end become inadequate to address the challenges to the non-networked infrastructure on which the most disadvantaged people rely (circuits of fuel provision, shared support systems, informal structures of financial support and debt, and many other parts of the invisible city).

In conclusion, even the most considerable efforts to deliver diversity and plurality in sustainability assessments may struggle to bring to the forefront visions of global urbanism as analytical models struggle to reflect the particular, the quotidian, the chaotic, and the random nature of urban life. These assessments seek to organize the world in neatly packaged spaces for action, which do not always match the realities of urban life. Areas of discussion, patience, and openness may enable engagement with temporary models of urbanism still open to negotiation. However, this may not be sufficient when confronting the entrenched hegemonic paradigms that support global environmental assessments.

The elusive policy-making audience

Delimitating the audience is key to global environmental assessments. Who will read the assessment and for what purpose? Scientists are one of the primary audiences for these assessment reports. They use the reports to frame and inform research. Assessment reports are routinely cited in the introduction of journal articles and have a powerful impact on helping define the relevance of research. In this context, authors can assume that the reports will be read with nuance by their colleagues and that the assessment will help to bridge debates across disciplines.

However, scientists are not necessarily considered the primary audience of global environmental assessments. Instead, global environmental assessments are thought to support deliberative processes in policy making (Kowarsch et al., 2016). In the changing context of environmental policy making,

> as *assessments have become an established feature of the international environmental policy landscape, decision-makers, practitioners and scholars are demanding more explicit focus on analyzing the suitability of specific response options and policy pathways that range from technologies and behavioral change to policies, such as regulatory measures or market-based instruments.* (Kowarsch and Jabbour, 2017)

In this new framework of solutions-oriented assessments, there is an increasing wariness about the extent to which such assessments can include out-of-the-box perspectives or alternative public policies, such as those which engage with radical, bottom-up experimentation in urban areas. Instead, scientists are called to consider the interest of policy makers and governments at the heart of the assessments in a context of constrained coordination capacities and spaces for dialogue (Carraro et al., 2015).

When assessments focus on cities and urban areas, they have to address the interests of policy makers, city managers, and planers in ways that restrict the framing of the report and define what is within or without its scope. For example, the terms of reference of a consultancy contract to deliver an urban-based assessment contained the following prescription:

> *The primary audience of [this assessment] are policymakers. Another major audience for [this assessment] is the general public. It is thus essential that the discussion…should be empirical and evidence-based. Furthermore, it is essential that the chapter is written in a non-academic language, taking into account that many readers of [the assessment] will have English as their second language*.

What policy makers are and what they want is a difficult question and one that requires situating those policy makers in a specific context of decision making. However, the image of the policy maker is a powerful one, and one that decidedly shapes the content of this type of assessment. The policy maker becomes a 'receiver' of the information. This image also informs judgments about what the report should include and exclude. While there is often an expressed aspiration that policy makers should define the problems for scientists to contend with, scientists or experts continue to identify issues in terms that fit their points of view regardless. However, the image of the policy maker as an audience alone shapes the justifications that scientists would offer for the framing of the assessment as something that is acceptable/useful/valuable for the imagined policy maker.

I experienced this recently when I tried to introduce an ecocentric (rather than an anthropocentric) perspective on environmental valuation in urban areas. As I presented an outline to a group of international experts, I argued for the consideration of ecocentric

values with a perspective necessarily building on theories deriving from critiques in philosophy and critical social theory. The panel suggested that my proposal was too academic and out of the scope of the report. Despite the long history of ecocentric thought in environmental philosophy and politics, it remains an approach that eludes practical application (Hettinger and Throop, 1999). Moreover, ecocentric thought has been systematically excluded from political life, even among sectors promoting radical thinking about the environment (Kopnina, 2012). In the case of urban areas and climate urbanism, there is still a gap in terms of how far the ecological foundations of cities can be incorporated into assessments of global environmental futures beyond utilitarian perspectives on nature-based solutions and green infrastructure.

This experience is not uncommon. I have frequently observed that members of global environmental assessments put aside radical ideas as examples of elite academicism. Is this a common mechanism of exclusion of any form of radical thought? At the time of this anecdote, I was reading Reni Eddo-Lodge's popular best seller *Why I'm No Longer Talking to White People About Race*. The parallel reading made me realize how this style of argumentation is frequently deployed in other spheres of public life. Eddo-Lodge explains why she finds it useful to use the label "white feminism" to reflect on the negation of black feminists' critique of a particular brand of feminism defined in terms that respond to the needs of the white population (Eddo-Lodge, 2018). According to Eddo-Lodge, claims of elitism silence concerns that emerge from within marginalized and less-heard groups, such as black feminists in the context of British politics. Black feminists, for example, have embraced the notion of intersectionality as a means to advance politically both the agendas of feminism and anti-racism. However, as Eddo-Lodge explains, this has had complex consequences. She states,

> *When black feminism started to push for an intersectional analysis in British feminism, the widespread response from feminists who were white was no one of support. Instead, they began to make the case that the word 'intersectional' was utter jargon – too difficult for anyone without a degree to understand – and therefore useless*. (Eddo-Lodge, 2018: 160–161)

She then goes on to describe examples in which high-profile white feminists in the United Kingdom disregarded intersectionality as an esoteric, elitist discourse that cannot be used by girls or women (or policy makers!) for practical purposes. This dynamic is common and very dangerous. By signaling concepts and ideas as elitist, they are quarantined and remain undiscussed. New examples, empirical materials, and out-of-the-box ideas for possible responses lack development because the discussion gets stuck on the legitimacy of the debate alone. However, those who claim elitism are often those in better positions to argue the case. White feminists over black feminists in the case of Eddo-Lodge calls for intersectional analysis. Engineers over critical social sciences in my case. If addressing this debate is difficult when we talk about minorities with a clear-cut claim to public life, such as black feminists in Britain, it is even more complicated when we are thinking about the political representation of those parts of the world that have no access to humans' representation of consciousness – e.g., advancing ecocentrism or ecological values or the values of future (not yet existing) generations.

The possibility for a more just, ecologically sound global urbanism of the Anthropocene requires the use of all the tools at our disposal, from complex theory to ready-made solutions. The sheer complexity of socio-ecological relations and their embeddedness in politics makes it impossible to ignore that climate urbanism requires sophisticated, theoretically rich critiques and that the charge of elitism may also silence the concerns of the most vulnerable and neglected in favor of an abstract, mythical figure of 'the policy maker.'

Toward recognition of multiple knowledge systems

Amid these conflicts, I find myself drawn to these global environmental assessments not only because of their importance but also because of their true potential to facilitate the kind of radical change to address the ecological crisis of the Anthropocene. Global environmental assessments have the potential to improve processes of deliberative governance and transform entrenched frames and paradigms. They are increasingly linked to multilateralism in international politics (Jabbour and Flachsland, 2017). Despite the criticisms, the Brundtland remains an admired effort to deliver a policy discourse on sustainability (including urban sustainability) still relevant today after 32 years.

Members of current assessments, such as the IPCC (Ford et al., 2016) and IPBES (Díaz et al., 2015; Löfmarck and Lidskog, 2017; Tengö et al., 2017; Peterson et al., 2018), have made efforts to make the assessments open to a variety of ways of seeing the world. The incorporation of indigenous knowledge and local knowledge, for example, is increasingly a concern for both intergovernmental panels. However, the integration of indigenous and local knowledge into a scientific assessment means that such knowledge has to be validated in scientific terms. Indigenous knowledge views, however, cannot be subsumed or validated through scientific means (Gratani et al., 2011; Matsui, 2015). Validation may disrespect indigenous peoples' own identities and histories and overlooks the fact that, for indigenous peoples, the structural drivers of oppression and endangerment are associated with Western civilization and the knowledge structures that support it (Ford et al., 2016). Thus the question is not only bridging different disciplines and different theoretical and empirical orientations but also, most of all, bridging non-commensurable systems of knowledge. The strategy has to go beyond a mere question of integration, focusing on the recognition of the fundamental incompleteness of human expertise in any part of the world and the need for deliberative methods that enable the development of collective, solidary, transient agreements about making together a sustainable world. This is particularly relevant to understand the progressive potential of global urbanisms, through the recognition of the multiple ways of interpreting social and ecological relations and how they shape urban life.

I see three ways forward. First, to counteract the scientific and managerial consensus that tends toward the consolidation of uniform models of urbanism, we need to celebrate the defining characteristic of contemporary urbanism in a global context: its heterogeneity. Despite attempts to incorporate plural views, the style of scientific debate tends to privilege models of urbanism based on engineering assumptions about the world. How can we resist perspectives that reduce the range of interventions and the actors that can be included? Emotion-based or experiential arguments need to find a space in mainstream understandings of valid scientific knowledge.

Second, as actors within scientific assessments attempt to shape their messages to the needs and demands of policy makers (as argued by Carraro et al., 2015), we need to practice the art of constructing a diverse audience. Such art, of course, includes thinking of who are the experts/scientists authoring the report but also who are the various audiences that will

receive it. Constructing the audience in this way means going beyond narrow imaginations of who are the policy makers and what do they want. Given the mandate of being policy relevant without being policy prescriptive (Blythe et al., 2018), how can these assessments shape meaningful debates about the potential for urban transformations?

Third, scientific assessments have the potential to drive progressive models of urbanism through challenging established paradigms of knowledge production, not only through the inclusion of multiple voices but also through questioning how forms of knowledge production appear to construct hegemonies that affect disadvantaged groups in line with postcolonial thought. The deliberate attempts to include indigenous knowledge in the IPCC and IPBES are an example of the efforts within those reports to reflect upon the hegemonic dominance of scientific thought. These efforts so far are not sufficient, but the commitment to change is, in itself, an advance.

Overall, global environmental assessments have so far fallen short of challenging hegemonic practices of knowledge-making in the quest to address the root drivers of socio-ecological inequality. However, they have showcased the importance of deliberative approaches at the root of knowledge production. While knowledge-making processes are still shaped by the same unequal socio-political conditions that shape our society (racism, colonialism, patriarchy, and ableism), opening them to dialogue is a brave move and the only hope for a progressive global urbanism in the Anthropocene. But we need to make further efforts to ensure decolonizing, not just knowledge itself but also the fundamental processes whereby knowledge is produced.

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