Where the streets have no name:
Rethinking the role of cities in global climate governance

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David Gordon, University of California, Santa Cruz (david.gordon@utoronto.ca)
Craig Johnson, University of Guelph, Canada (cjohns06@uoguelph.ca)
Michele Acuto, University College London (m.acuto@ucl.ac.uk)

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1. *Introduction*

Within a context of growing disillusion about the efficacy of multilateral environmental agreements, cities have come to claim for themselves a position of centrality in global climate governance. Underpinning such claims are trends towards the consolidation of transnational city networks, such as the Cities Climate Leadership Group (C40), the International Council on Local Environmental Initiatives (ICLEI) and the recently established Compact of Mayors, whose membership activities have entailed advocacy, awareness raising and the dissemination of norms, knowledge, metrics and financial resources aimed at reducing emissions and vulnerability to climate change (Bouteligier, 2015; Gordon, 2013; Gordon and Acuto, 2015; Johnson et al., 2015; Lee, 2015; Toly, 2008; 2011).

Nowhere was the enthusiasm for this leadership role more apparent than in the run-up to the 21st Conference of the Parties in Paris, where cities were widely portrayed in social and print media as innovators or saviours whose actions were instrumental in providing critical leadership in the global fight against climate change (Weiss, 2015; Worland, 2015). Immediately prior to COP 21, the Compact of States and Regions, a consortium of sub-national governments from six continents, announced plans to cut emissions by a cumulative 12.4 gigatons by 2030 (Worland, 2015). The NAZCA website now proclaims that companies, cities, subnational governments, regions, investors, and civil society organizations have engaged in 11,615 climate change commitments.[1] In the words of Seoul mayor, Said Park Won-soon, "local governments are actually leading national governments. They are the driving force" (in the fight against climate change).[2]

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[1] http://climateaction.unfccc.int/; last accessed May 10th 2016
[2] http://time.com/4140172/paris-cities-states-climate-change/ last accessed 6 May 2016

Yet, amidst the euphoria, there is also a sense that the power that has been ascribed to – and assumed by – cities has been overstated; that the power of cities to make a difference in global climate politics is not what it appears. Although many cities are now "speaking the language" of climate change governance, the ability of urban planners and politicians to implement policies that regulate emissions and vulnerability is often highly dependent upon the administrative channels that govern a wide range of sectors, including transportation, water and sanitation, health, housing and emergency services. (Acuto, 2013; Gordon and Acuto, 2015; Johnson et al., 2015; Lee, 2015). Indeed, the factors affecting the viability and effectiveness of urban climate policy initiatives (e.g. trade policies, globalization, food and fuel subsidies) are often well beyond the power of any single municipality or local authority. Separating the rhetoric of urban climate policy commitments from the reality is therefore a difficult undertaking, highlighting the need for careful research and analysis on the ways in which cities and transnational urban networks are now interacting with global climate policies and institutions.

This paper explores the implications of the Paris Climate Agreement on city engagement in global climate politics, examining specifically the ways in which the apparent devolution of country responsibility (in the form of INDCs) and the inclusion of "southern" actors in the global climate agreement affects the distribution and nature of city power within global climate politics. It starts from the premise that international agreements – in the form of formal negotiated settlements such as Paris and Kyoto – create new sets of actors, norms and expectations about what can achieved in the context of climate governance (Bernstein and Cashore, 2014; Bernstein, 2001; Bulkeley et al., 2015; Paterson et al., 2014). In the words of the conference organizers, "the (once) prospective Paris Agreement is likely to entail a reconfiguration of the institutional landscape of global climate governance and substantive new priorities."

We start by tracing the road from Kyoto to Paris, outlining specifically the ways in which cities and transnational city networks have positioned themselves in relation to the UNFCCC and the now-defunct Kyoto Accord. Next, we offer a theoretical framework aimed at understanding the changing nature of city power in global climate politics. At the heart of the framework is an idea that city engagement in global climate politics can be usefully understood as a form of orchestration that situates and renders cities visible in relation to climate policy actions and decisions. In subsequent sections, we review the basic parameters of orchestration theory, placing it in the context of other efforts to understand coordination in transnational governance, and identifying the need for further theoretical innovation so as to better account for the nature, role, and experience of power in transnational climate governance.

Our basic proposition is that we need to refocus attention from the power of orchestration to the presence of *orchestrating power*, or the ability of particular actors to leverage distinct sources of influence or authority so as shape the process and purpose of orchestrated governance.[4] In the subsequent sections we apply this

proposition to set out three distinct modalities of orchestration that can be observed in the domain of transnational urban climate governance, and advance some propositions with respect to whether and how they might connect up to the broader system of global climate governance. We suggest that this conceptual framework holds a great deal of potential, but could be applied in novel ways to address two as yet under-represented issues in the domain of transnational urban climate governance: the orchestration dynamics that take place within particular governance initiatives or domains (that of transnational urban climate governance in the case of this paper), and what kind of *politics* surround and accompany the process of orchestration.

2. *En route à Paris: What a long strange trip it's been…*

With the benefit of hindsight, the Kyoto Protocol now appears a modest attempt at coordinating international action on climate change. The policy critiques are now well-known (Hoffman, 2011; Keohane and Victor, 2011; 2016; Paterson et al., 2014): the Protocol lacked a credible compliance mechanism for verifying emissions reductions; it failed to incorporate some of the world's largest emitters (e.g. China and the United States); it was too dependent upon economic instruments; it was too reliant on nation-states; it provided little in the way of stable and secure financing for adaptation and mitigation efforts in the developing world (cf. Biermann, 2011; Keohane and Victor, 2011; Hurrell and Sengupta, 2012; Hochstetler and Milkoreit, 2013; Stevenson and Dryzek, 2014).

In the run-up to Paris, international negotiations aimed to address these and other shortcomings by pursuing the following objectives:

- Reducing global emissions to maintain global temperatures at 2°C above pre-industrial levels (and ultimately pursuing an aspirational goal of 1.5°C);
- Achieving emissions reductions commitments on the part of "non-Annex 1" countries, such as China, India, Indonesia and Brazil;
- Providing stable financing for adaptation and mitigation, primarily in the form of the $100bn per year commitment to the Green Climate Fund;
- And in what was widely perceived to be a concession to the small island states, making progress on the so-called "Loss and Damage" mechanism that came out of the Cancun Adaptation Framework.[3]

At the heart of the Paris Agreement are the "Intended Nationally Determined Contributions" – or INDCs – that most signatories developed in advance of the meetings at COP 21. Here the expectation is that the INDCs will be used (or revised in the form of Nationally Determined Contributions) as the basis for reducing global

[3] Here it's worth noting that although Loss and Damage received favourable mention in the final agreement, it contained the explicit proviso that recognizing or observing the existence of loss and damage "does not involve or provide a basis for any liability or compensation," (Paris Agreement, Article 52).

emissions to remain within the 2°C target. National progress on the NDCs will be subject to a third party peer review that will take place every five years after ratification of the agreement. Notably, Article 118 of the Agreement "welcomes the efforts of non-Party stakeholders (including cities) to scale up their climate actions, and encourages the registration of those actions in the Non-State Actor Zone for Climate Action," a point we take up below.

The 2015 Paris Climate Agreement therefore embodies a conscious effort to move away from time-bound targets and deadlines to a more flexible mechanism that vests responsibility for reporting and compliance in the hands of national governments (cf. Keohane and Victor, 2016). From a geopolitical perspective, such flexibility was instrumental in bringing otherwise reluctant partners (e.g. China, India, the United States) into a global agreement. From an environmental policy perspective, it leaves much to be desired. According to a report that was released shortly before COP 21 by the UNFCCC Secretariat,[4] a successful agreement is projected to slow the growth in global emissions of carbon dioxide by about 4 billion tons per year by the year 2030. However, without further action, it estimates that global average temperatures will rise by 2.7 °C by the year 2100. Another recent study by the World Bank suggests that already-existing plans to develop coal-fired power plants in China, India, Indonesia and Vietnam will "spell disaster" for the Paris Accord and for the planet.[5]

Concerns about the inability of national governments and international institutions to achieve meaningful cuts have reinvigorated discussions about the role of cities and other non-state actors in filling the gap. At the international level, considerable attention has been paid to the role of cities, NGOs, corporations and other non-state actors in reducing greenhouse gas emissions (Abbott, 2013; Bernstein and Cashore, 2012; Hale and Roger, 2014; Hoffman, 2011; Paterson et al., 2014). Included in this emerging field are international environmental NGOs, such as Greenpeace and WWF, international development NGOs, such as Oxfam and Save the Children, cities like London and New York and transnational urban alliances, such as the C40 and ICLEI (Acuto, 2013; Bulkeley, 2010; Bulkeley and Betsill, 2013; Gordon, 2013; Gordon and Acuto, 2015; Johnson et al., 2015).

At the heart of this transformation is a recognition that global climate governance has now shifted away from purely multilateral governance arrangements (where authority derives primarily from the power of nation-states) to a hybrid of transnational (Abbott, 2013) and polycentric (Ostrom, 2010) governance arrangements, in which a much larger range of actors is now shaping (or at least trying to shape) the "global climate governance landscape," (Betsill et al., 2015). For cities, Kyoto was often invoked as a source of inspiration (or despair, as the case

[4] http://newsroom.unfccc.int/unfccc-newsroom/indc-synthesis-report-press-release/ last accessed May 6th 2016

[5] http://www.theguardian.com/environment/2016/may/05/climate-change-coal-power-asia-world-bank-disaster?CMP=share_btn_tw; last accessed May 10th 2016

may be) that urban leaders could use in framing their own climate change initiatives (Bulkeley, 2010; Bulkeley and Betsill, 2013; Burch et al., 2015; Johnson et al., 2015; Setzer et al., 2015). Indeed, there is now a large body of evidence that many cities used the language of the Kyoto Protocol and of climate change more generally to justify new forms of policy and investment at the urban scale (Bulkeley and Broto, 2012; Bulkeley and Betsill, 2013; Gordon and Acuto, 2015; Johnson et al., 2015).

However, separating the rhetoric of climate policy pronouncements from the reality of energy and resource consumption transitions has posed a number of conceptual and methodological challenges. Early studies of transnational urban climate governance documented a clear disconnect between the talk of cities and the actions they were taking. Bulkeley & Kern (2009), Gore & Robinson (2005), and Hakelberg (2014) each observe, in studies of transnational city-networks engaged in climate governance, a wide gulf between small numbers of cities taking concrete action and a much larger group of laggard cities doing little more than making nominal commitments. Elsewhere, scholars have lamented the geographic bias in both the practice and study of urban climate governance (Betsill & Bulkeley 2007) and challenged the notion that cities could in fact be a meaningful part of the *global* climate response (Wiener 2007).

Recent years, however, have seen cities come to consolidate in important and interesting ways around a shared project of climate governance: not only within specific city-networks like the C40 Climate Leadership Group, Metropolis, or ICLEI (Acuto 2013; Gordon 2015, Bouteligier 2013), but also across and beyond them. Such consolidation is indicated, *inter alia*, by the overall number of cities that are now actively engaged in the task of climate governance (C40 2011, 2015; Carbonn 2014; CDP 2014); in the integration of climate considerations into core elements of urban governance (Bulkeley 2010; Hodson & Marvin 2010; Aylett 2014); in the governance norms and practices enacted by cities (Gordon 2015, 2016a); and in the coming together of cities and other governance actors around a common understanding of their role in the global domain (Bloomberg 2015, Summit for Local Leaders 2015).

Consolidation of this kind is deeply intertwined with the broader transition that is taking place in the global climate regime. As formally enshrined in the Paris Agreement reached at the UNFCC COP21 in December 2015, the global climate regime has moved from a top-down to a bottom-up approach to global climate governance. The consolidation of cities thus offers a window through which to assess the possibility and probability that such an approach can in fact generate coordinated action and the production of meaningful and timely collective effects (Jordan et al 2015; Hermwille et al 2015; Hsu et al 2015; Bernstein & Hoffmann, n.d.).

The consolidation of urban climate governance is nonetheless a relatively nascent phenomenon, and as such there is a great need for research - oriented towards both academic and practitioner audiences – so as to better understand its empirical

manifestation, its inner working, its governance potential, and its limitations or barriers in light of its connection to the broader domain of global climate governance. Especially important is the need to consider how the consolidation of urban climate governance relates to (a) the ability of cities to produce meaningful collective effects (b) the influence of consolidated urban governance on other elements of the global climate regime and (c) the implications of consolidation in terms of whose/which ideas inform and guide the process, and how those ideas are translated into local context. In this paper, we set out to map the contours of this exciting research terrain, contributing to and carrying forward an exciting discussion that has already been started.

3. *Consolidation in Transnational Urban Climate Governance*

It is now widely acknowledged that formal, top-down climate governance is poorly suited for, and has proven incapable of, producing a governance response that matches the complex nature of the problem (Rayner & Prins 2007; Victor 2005; Hale et al 2013). Attention has correspondingly shifted from large-scale multilateral agreements to the diverse array of governance initiatives undertaken outside of the formal process of inter-state climate negotiations, by cities and a variety of other non-nation state actors (Abbott et al 2016; Hoffmann 2011; Bulkeley et al 2014; Green 2013; Hale & Roger 2014).

These governance initiatives have been characterized most broadly as "governance experiments" taking place outside of formal systems of political authority.[5] Operating "beyond" rather than inside the climate regime[6] governance experiments employ non-hierarchical levers of authority, legitimacy, and influence in an effort to achieve collectively meaningful action and produce collectively meaningful effects.[7] Governance experiments are more than the activity of interest groups, they push beyond advocacy and lobbying and embody conscious efforts to "steer" the actions and interests of a target audience in a particular direction. The experimental aspect is thus comprised of the novelty inherent in actors making forays into transnational terrain, while the governance is operationalized through the making of rules, creation and diffusion of norms, development of standards, forging of partnerships, and offering of incentives.[8] As such, they comprise "…a plethora of forms of social organization and political decision-making that are neither directed towards the state nor emerge from it."[9]

Cities have been, from the early 1990s and on, prime sources of such experimentation in not only local but increasingly the transnational governance of climate change. Transnational city-networks established in the early 1990s such as ICLEI and the Climate Alliance focused mostly on getting climate change onto the local government agenda. These networks were essential in establishing a toehold for cities but were largely incapable of moving their members beyond rhetorical commitment towards concrete or, more importantly, coordinated action. Transnational urban climate governance, as a result, was until the early years of the 21st Century, for most part symbolic and had a limited or narrow impact (Kern

& Bulkeley 2009; Keiner & Kim 2007). In the terminology that we employ in this paper, transnational urban climate governance lacked consolidation and appears fragmented in a variety of ways.

What Bulkeley (2010) characterizes as the second 'wave' of urban governance emerged around 2005, and with it cities, both individually and collectively, have become more assertive, more ambitious, and more active. Broadly speaking, cities have re-oriented themselves towards the issue of climate change. This is illustrated, for instance, in the re-framing of urban development and growth as inherently linked to the issues of sustainability and climate change (Rutland & Aylett 2008; Hodson & Marvin 2010) and by the now widely held notion that climate change offers both risk and economic opportunity for cities (LSE 2013; Bloomberg 2015).

Aylett illustrates, for instance, that a substantial majority of cities participating in ICLEI are now integrating climate change into core elements of urban planning and development, addressing issues of mitigation and adaptation, conducting local GHG emissions inventories, dedicating local staff resources, and making efforts to identify and quantify emissions reductions generated from local policy interventions (Aylett 2014). A similar pattern of consolidation emerges in Gordon's analysis of climate governance in the C40. While there remains a great deal of variation with respect to the specific policies and projects employed by individual cities, the members of the C40 have come, since 2005, to consolidate around a common set of governance practices: setting citywide emissions reduction targets, developing integrated climate action plans, measuring (in increasingly standardized ways) urban GHG emissions, and disclosing both emissions and actions through independent third party platforms (Gordon 2015b).

An ever-increasing number of cities thus appear to be consolidating in interesting ways around common approaches to, practices of, and organizational instances of transnational climate governance. This in itself is an interesting phenomenon, and yet it begs the question as to what it might mean with respect to the global response to climate change. To address this essential question we propose the need to consider more carefully how consolidation is produced, by whom, and in the service of what ends. Before doing so, however, we set out the conceptual and theoretical context for our contribution.

4. *The Orchestration of Global Climate Governance*

Scholarly attention to the phenomenon of experimental climate governance (by cities or more broadly) has for the most part focused on mapping a variety of urban climate governance experiments (Castan Broto & Bulkeley 2013; Bulkeley et al 2015) and has identified patterns in the broader domain of transnational climate governance (Bulkeley et al 2014; Hoffmann 2011). Yet important questions remain with respect to whether, and how, a collection of voluntary commitments and actions might come together to create meaningful and timely collective effects. If we

now know that top-down climate governance is ill-suited to the task, we as yet have a limited sense as to how (if at all) bottom-up, polycentric climate governance works. How might the voluntary commitments and actions of a diverse and disparate collection of cities drawn from all corners of the world might be drawn together and directed towards the production of collective effects? How, as well, do the transnational governance activities undertaken by cities relate to the broader global climate regime complex that is (and, for many, should be) organized around the UNFCCC (Moncel & Asselt 2012; Hermwille et al 2015; Green et al 2014)?

Some promising steps have been taken, in recent years, towards developing answers to these important questions. These have emerged around the concept of orchestration.

Orchestration offers a means of theorizing governance relationships in instances where a governor lacks coercive authority, or the capacity to assert "hard control" over those who it seeks to govern (Abbott et al 2015). Orchestration is akin to Thaler & Sunstein's (2008) popularized notion of "nudging" individuals to make better decisions about what they eat, how much they save, and how they live. Transposed to the realm of world politics, orchestration recognizes the proliferation of governance domains in which coercive authority is limited or absent, and relationships are between actors are horizontal rather than hierarchical. Orchestration is undertaken by actors as a means of accomplishing governance objectives under such conditions, and relies on "soft inducements" such as the provision of material or ideational resources as a means of steering actors towards particular objectives and actions (Abbott et al 2015).

In recent years, the concept of orchestration has also been applied to the domain of transnational climate governance (TCG), largely as a means of addressing and possibly overcoming fundamental problems inherent in bottom-up climate governance (i.e. fragmentation and lack of coordination).[10] Abbott (2014) proposes a functional need in the domain of TCG for what he terms "regime entrepreneurs" – actors that deploy authority and legitimacy in an effort to "orchestrate" transnational governance initiatives towards coordinated action and collective effects. In so doing, Abbott opens the analysis up to the possibilities and mechanics of effective bottom-up climate governance in promising ways. Drawing upon and amending these ideas, Hale & Roger (2014) differentiate between types of orchestration (initiating and shaping), specifying the sources of authority upon which orchestrators might draw (material, epistemic, moral, relational).

Hale & Roger (2014) suggest that orchestration is by its nature a bridging device that links together top-down and bottom-up governance dynamics – a form of governance that emerges from the interaction between these two. This implies that to orchestrate is to do top-down governance in another way, a proposition that is illustrated in the presumption that orchestrators are likely to be either states or international organizations (Hale & Roger 2014; Abbott 2014). We see no reason why orchestrators might not emerge endogenously within transnational governance

initiatives, or from the broader firmament of non-nation state actors engaged in the process. Nevertheless, application of the conceptual apparatus of orchestration has largely, to date, focused on specifying the ways in which the UNFCCC might leverage its authority and resources to orchestrate a fragmented system of voluntary transnational climate governance towards coordination (Pauw & Chan 2014; Chan et al 2015; Hermwille et al 2015; Chan, Falkner, Asselt, Goldberg 2015).

We suggest that this conceptual framework holds a great deal of potential, but could be applied in novel ways to address two as yet under-represented issues in the domain of transnational urban climate governance: the orchestration dynamics that take place within particular governance initiatives or domains (that of transnational urban climate governance in the case of this paper), and what kind of *politics* surround and accompany the process of orchestration.

Consider first the question of orchestration *within* the domain of transnational urban climate governance. Cities have largely, if not exclusively, participated in transnational climate governance through formal city-networks such as the C40, ICLEI, Metropolis, and UCLG. Such networks are, in the case of ICLEI, more than 20 years old, possessing, to varying degrees and in various forms, a dedicated organizational entity and set of institutional characteristics. These networks are comprised of cities, but engage a variety of stakeholders as part of their operations and activities (Roman 2010; Acuto 2013; Gordon & Acuto 2015).

This suggests the need for agnosticism with respect to where orchestration might come from, and who attempts to *be* an orchestrator – to treat the identity (and thus the authority, interests, and objectives) of the orchestrator as a potentially meaningful variable rather than a pre-ordained given. Orchestration may be pursued by cities, or city-networks, themselves. At the same time, orchestration may be employed by other actors involved in city-networks (private corporations, philanthropic organizations, environmental NGOs, state governments, international financial institutions, or international organizations) as a means of steering cities in particular directions and towards particular types of actions and objectives.

It also implies the need to be sensitive about the relationship between orchestrator and orchestrated. According to Abbott (2013), the ability to achieve coordination rests on the tacit agreement of the orchestrated to *be* orchestrated – to voluntarily adopt and implement a particular set of actions or objectives. Such voluntary acquiescence must necessarily rest (if we are to avoid recourse to an argument premised on false consciousness) on a reconciliation of interests, such that orchestrators claim to be able to deliver that which the orchestrated want. Rather than rendering orchestration as a one-directional force acting upon the orchestrated (as in the case of Sunstein & Thaler's paternal libertarianism, which acts in stealth-like manner upon its intended target audience) it may be worthwhile to consider the agency of the orchestrated, and the terms upon which they grant their willingness to be orchestrated (Sending 2015).

Such an orientation leads to questions of the following sort:

- Who is pursuing orchestration or attempting to orchestrate?
- On what basis is orchestration accepted, or why are actors voluntarily complicit (what benefits are they promised or do they desire to receive)?
- What is the goal or objective of orchestration?

Questions of this kind illustrate the need for a greater emphasis on power and the politics of orchestration. Both are notably under-represented in the extant scholarship on orchestration in global climate governance is a consideration of its political dimensions and dynamics. Power, in this work, is muted and rendered to the margins as orchestration is premised to operate absent political struggle or contestation. This is a not uncommon approach to instances of horizontal or voluntary governance, such that power is equated with explicit coercion and formal hierarchy and evacuated from the analysis of relationships that operate on a nominally egalitarian footing.[11] However, as per political geographer John Allan (2010) we propose that power in such settings is best understood as ever-present but operating along "quieter registers" as opposed to the "brash counterparts of command and coercion". The analytic and explanatory challenge, then, is to specify what counts as power and how it is employed and experienced in the domain of transnational urban climate governance.

While the scholarship on transnational climate governance has drawn, in recent years, on Foucauldian notions of governmentality (Lovbrand and Stripple 2013; Okereke et al 2009; Methmann 2013) and Gramscian hegemony (Levy and Newell 2005), a Bourdieu-inspired analysis may offer a useful set of tools which can be used to situate agents and agency in relation to normative and institutional structures that they create and in which they are embedded.[12] Sending (2015) for instance, drawing on the Bourdieusian concept of social fields, argues that power is both present and prominent in all instances of transnational governance in the process through which authority is claimed, contested, and granted.[13] Bringing this insight to the domain of orchestration, there would seem little reason to expect that it will be pursued by single actors, or by a collection of actors with harmonious or homogeneous ideas as to (a) how to orchestrate (b) who to orchestrate or (c) to what end to orchestrate. This raises the spectre of contestation and conflict, as prospective orchestrators set out in pursuit of different goals and along potentially divergent pathways.

Orchestration thus offers a potent means of re-conceptualizing the dynamics that take place within and between transnational city-networks. To focus on orchestration is to move analysis beyond an emphasis on the efforts of the network organization to "steer" its membership in particular directions (Selin & VanDeveer 2007; Bulkeley & Kern 2009) and look instead at the often heterodox collection of actors involved in this domain and the various ways in which they attempt to produce coordination of a particular sort or in the pursuit of particular ends (Acuto 2013; Bouteligier 2013).

What this suggests is the need to ask questions with respect to:

- who attempts to produce consolidation in transnational urban climate governance?
- on what basis do they base their claims or attempt to assert influence?
- do others accede to these efforts?
- If so, on what basis do they accede and to what end?

In each case, there is a clear need for empirical acuity and sensitivity with respect to the identity or prospective orchestrators, and the manner in which they link the pursuit of particular objectives to the goal or producing coordination around specific actions or behaviours. In the subsequent section we set out three manifestations of consolidation, and assess each with respect to who orchestrates, what kind of orchestrating power is employed, and what this might imply for the broader project of global climate governance.

5. *Orchestration in Three Forms: A Conceptual Framework*

From the preceding, we can infer that increasing attention is now being paid to the question of how to "galvanize the groundswell" of non- and sub-state climate actions (Groundswell 2014). However, whereas the extant scholarship has largely focused on how the actions of cities and others might be orchestrated by institutional actors like the UNFCCC Secretariat (Chan et al 2015) or some other such entity (Pauw & Chan 2014) we argue that this represents only one possible process of consolidation, and that there are others that are both possible and empirically evident. In this section we set out three distinct logics, as it were, of consolidation and identify for each (a) who is orchestrating (b) the logic of orchestration employed, and (c) the objectives towards which orchestration is oriented.

Table 1: Modes of Orchestration in Transnational Urban Climate Governance

Mode of Orchestration	Who orchestrates	Orchestrating logic	Audience and Objectives
Integrating	International institutions, states	Inclusion	International • contribute to state-led governance
Coordinating	Cities, city-networks, IFIs, MNCs, ENGOs	Recognition	Global • produce autonomous governance
Aggregating	Accounting firms, ENGOs, private actors	Competition	Capital markets, investors Secure investment

Integrating Orchestration embodies orchestration of the sort that is most prevalent in the extant literature. In this approach, orchestration is undertaken by actors who assert influence that is derived from their position in the global climate regime complex and the authority delegated to them from sovereign states. The UNFCCC Secretariat is the most obvious actor engaged in this form of orchestration (along with the support of various sovereign states), and has begun to take measures that evince a process of what we term *integrating* orchestration.

Orchestration is oriented towards the integration of cities within the broader governance regime, with the expectation that actors will comply as a function of the legitimacy of the regime, not in a functional sense but rather as a result of the underlying norm of state sovereignty and location of authority in world politics. Put simply, orchestration in this sense operates in the "shadow of the state" (Borzel 2010) and the underlying need is to find ways to align city actions so that they can be made to fit with, or complement, those of states.

Illustrations of this kind of orchestration can be found in initiatives such as the UNFCCC non-state actor zone for climate action (NAZCA), the EU Covenant of Mayors and the recent IPCC decision to integrate cities into the forward work plan. In all of these cases, orchestration is being undertaken by a delegated agent of the state (thus suggesting a blurring of the distinction proposed in Abbott et al 2015) and cities are expected to acquiesce on the basis of securing formal participation and inclusion in the inter-state process. Recent calls for a global climate action framework (Pauw & Chan 2014) or more assertive UNFCCC Secretariat (Chan et al 2015) are premised on this notion of integrative orchestration, and rely on the provision of material resources, information, and transparency as a means of catalyzing and corralling city actions. Such an approach

is not, however, the only possible or observable means through which cities are being orchestrated.

Coordinating Orchestration is one such alternative. In this mode, orchestration is undertaken with an eye to coordinating the activities and actions of cities so as to produce autonomous effects. Orchestration, in other words, is oriented towards shaping the actions of cities so as to produce collective effects, but this does not necessarily imply or require that it is undertaken with an eye to the inter-state climate regime. We might think, in other words, of coordinating orchestration as organized around a different baseline approach to the task of global climate governance, one premised not on coordination amongst fragmented parts of a whole (Biermann et al 2009) but rather on the autonomous activities of self-similar components of an emergent system (Bernstein and Hoffmann n.d.). Orchestration, as a result, can be employed (or at least pursued) by a heterogeneous set of actors – cities themselves, city-networks, philanthropic organizations, multi-national corporations, or international financial institutions – with the potential for conflict and contestation amongst these. The logic of orchestration itself operates on a different basis, with the acquiescence of cities premised on the pursuit and provision of collective benefits to those who submit to "being" orchestrated. Cities, for instance, have a shared interest in the acquisition of material resources and jurisdictional authority – both necessary to address the functional needs facing municipal governments around the world. As a result, orchestrating power rests on the credibility and capacity of actors to create a bridge between the external and collective demands of cities with the internal production of order and orchestration amongst cities (Gordon 2015b; Sending 2015). Recognition provides one such bridge, in that the ability to secure recognition *for* cities from external audiences may offer potential orchestrators a means of securing acquiescence around a particular set of practices or actions *from* cities.[14]

Evidence of this form of orchestration can be found in the internal consolidation of individual city-networks, most prominently the C40 where a variety of actors – cities like New York, philanthropic organizations like Bloomberg Philanthropies and the Children's Investment Fund for the Future (CIFF), non-governmental organizations like the Clinton Foundation, and international financial institutions like the World Bank and Inter-American Development Bank – have engaged in contestation over efforts to orchestrate cities towards particular kinds of actions and joint objectives (Gordon 2015b).

Coordinating orchestration is also evident, more recently, in the creation of meta-networks like the Compact of Mayors or the Global Parliament of Mayors (Compact of Mayors 2014; http://www.globalparliamentofmayors.org/). Such meta-networks have been created in recent years as a means of producing consolidation across the broader domain of transnational urban climate governance, but have emerged largely in parallel with the inter-state climate regime.[15] Coordinating orchestration in these initiatives is oriented inwards, rather than outwards; towards the ordering of actors within and across the domain of transnational urban climate

governance rather than fitting them into a larger inter-state system. Yet efforts to orchestrate cities "beyond the regime" – to use Okereke et al's (2009) phrasing – is not confined to those who participate in specific city-networks. A third mode of orchestration offers a broader perspective.

Aggregating Orchestration captures efforts to produce order in an indirect manner. It represents orchestration through the voluntary adoption of technical standards, common methodologies, or standardized measures. Orchestrating power is thus akin to what Grewal (2008) refers to as "network power" – it rests on the ability to establish those standards that become widely accepted amongst all actors located within a common domain. Whereas Grewal focuses analytically on the power of the standards themselves, in a manner similar to Barnett & Duval's (2005) characterization of structural and productive forms of power, we want instead to direct attention to the process through which such standards are developed, diffused, and come to be dominant. Orchestrating power is thus more akin to what Hansen & Porter (2012) refer to as the phenomenon of "governance by numbers" – a distinct mode of governance that rests on the transformation of activities into numerical representations so as to facilitate aggregation and comparison. Broome & Quirk (2015) suggest that this sort of governance by numbers, employed through mechanisms such as benchmarking, render complex and contested political domains legible and logical, and at the same time serve to suppress political contestation through a process of "objectification" and normalization (see also Kuzemko 2015, Barry 2002). Power thus resides with those who are able to lay claim to expertise with respect to quantification – those with the technical expertise and capacity to develop mechanisms, platforms, and methodologies of measurement (Kersbergen & Van Waarden 2004).

The logic of orchestration in this case rests on a combination of instrumentality and structural inescapability. Cities may acquiesce to being orchestrated as either a means of, ironically enough, differentiating themselves from one another (to render oneself comparable is to establish the conditions on which to achieve status versus others). They may come to see the adoption of particular standards, or of practices of quantification and disclosure, as portals through which to access material or epistemic resources, as is the case for gaining access to a World Bank direct funding window for cities, for example (Bloomberg 2011; Zoellick 2011). And at the same time, the willingness to be orchestrated may end up being rendered taken-for-granted, as actors come to accept that climate governance requires (via cognitive presumption or norm-based appropriateness) adherence to particular practices of quantification (Kuzemko 2015).

Evidence of this mode of orchestration can be seen in initiatives like the Carbon Disclosure Project Cities and Carbon Cities Registry disclosure platforms, each of which serve as public repositories of urban GHG emissions, objectives, and governance actions (CDP 2014; cCR 2014). It can also be seen in standardization schemes like the Global Greenhouse Gas Protocol for Cities (GPC n.d.) an emissions measurement methodology for city greenhouse gas emissions; the ISO 37120 series

of technical standards for measuring and benchmarking city governance (http://www.dataforcities.org/wccd/); and the Gold Standard Foundation standards for measuring and verifying sustainability outcomes from local governance interventions (http://www.goldstandard.org/articles/cities-programme). A final illustration of this mode of orchestration are rating or ranking initiatives such as the Siemens Green City Index (http://www.siemens.com/entry/cc/en/greencityindex.htm) which renders cities comparable from a distance by rendering various aspects of local environmental, climate, or sustainability legible and comparable. Each of these initiatives aims to orchestrate cities by rendering them collectively comparable.

6. *Where the rubber meets the road: Orchestration après Paris*

Underlying the preceding is an assumption that the orchestration of city power in global climate politics can be usefully understood by differentiating the ways in which (and terms on which) cities are incorporated – or are incorporating themselves – into transnational environmental networks, institutions and processes. This section now explores the implications of the Paris Agreement on city orchestration, examining specifically the ways in which the apparent devolution of country responsibility (in the form of the NDCs) and the inclusion of "southern" actors in the global climate agreement affects our understanding of city power in global climate politics.

At the heart of the Paris Agreement are the Nationally Determined Contributions that national governments pledged (and have the option of expanding) in advance of the Paris COP. In principle, the Agreement provides ample scope for enhancing what we have been calling "integrating orchestration". The language is explicit, for instance, in recognizing the role that cities and "non-Party stakeholders" will play in "scaling up" their climate actions, documenting these actions through the NAZCA platform. The Agreement recognizes "the need to strengthen knowledge, technologies, practices and efforts of local communities and indigenous peoples related to addressing and responding to climate change," highlighting the importance of financing and technology transfers in building capacity for climate adaptation and mitigation. Finally, Article V (137) of the Agreement reiterates the importance of national policies in framing the possibilities for climate action at the urban scale.

Taken together, the Paris Agreement is clearly framed in relation to the formal roles and responsibilities that are outlined explicitly in the Lima-Paris Action Agenda and the UNFCCC, vesting considerable responsibility in the reporting mechanisms that national governments will put in place to evaluate the performance of their NDCs. The Agreement provides ample text on capacity building (and related fields, such as finance and technology transfer), but developing institutional mechanisms for data collection and evaluation will present challenges. Notwithstanding the (monumental) task of ensuring compliance on the part of nation-states, the agreement implies considerable resources, research facilities, reporting procedures,

and compliance mechanisms that are arguably in short supply in low-income countries and regions. Building the capacity of national and sub-national governments to achieve and report on their progress will entail new forms of financing (see below) to ensure that the data being used to inform national emissions reporting are accurate, reliable and transparent.

Under the auspices of the LPAA and the NAZCA, the Agreement is therefore strongly oriented towards securing and enhancing the legitimacy of the global climate regime that is organized around the UNFCCC. At the same time, it devolves greater responsibility for setting and reporting progress on national commitments, creating new openings for negotiation and contestation, suggesting a tension between integrating and coordinating forms of orchestration at national and sub-national scales. Prior to Paris, non-state actors (including cities, provinces and sub-national states) were able to use the failure of national engagement in Kyoto as a way of justifying more ambitious commitments at the local and urban scale (Aylett, 2015; Burch et al., 2015; Johnson et al., 2015; Setzer et al., 2015). Making specific reference to Kyoto and the UNFCCC, many cities were able to successfully frame and legitimate new forms of urban climate policy (Bulkeley and Betsill, 2013), and at the same time enhance their political profile on the international stage (Acuto, 2013; Gordon and Acuto, 2015).

In contrast with Kyoto, the Paris Agreement now vests far more power in the reporting mechanisms that have been established through the NAZCA platform. The implications of cities subjecting themselves to observation and self-comparison we explore below, but here it is also worth noting the methodological challenges of using self-reporting mechanisms as a means of documenting all of the possibly climate-related actions and commitments that are being made by non-state actors, including cities. By the NAZCA website's own admission, the (NAZCA) "portal has been constructed to rely on the underlying data providers,"[6] suggesting that the data being provided is prone to errors of consistency and comparability across time and space. There is also the problem of determining whether national and sub-national commitments are actually having a discernible impact on climate policy outcomes (cf. Keohane and Victor, 2016). The objective here appears to be less about stimulating local action or coordinating city governance and more about demonstrating to the world that there is a lot of "action" going on out there by various actors. At the same time, city-driven efforts (i.e. the Compact or C40) are similarly oriented towards establishing the legitimacy of cities as global governors, a claim that rests on both the amount of action undertaken by cities, the coordination of those actions, and their aggregation into meaningful collective effects.

An apparent tension therefore exists between the integrating efforts that the UNFCCC is now establishing through the LPAA, NAZCA and other mechanisms and the coordinating responses that cities and city networks are already establishing on the ground.

[6] http://climateaction.unfccc.int/about; last accessed 11 May 2016

A final tension concerns the aggregating mechanisms that are reflected in the actions and effects of cities subjecting and integrating themselves into systems of surveillance and comparison. Explicit in the Paris Agreement is an expectation that multilateral donors (like the World Bank and Green Climate Fund), transnational city networks (like the C40 and ICLEI) and multinational corporations (like Siemens) will be instrumental in providing (or funding) the systems, capital and expertise that are essential in building local capacity for NDC reporting and evaluation. An important function here is the role that donors, networks and MNCs play in pooling resources, sharing ideas and building capacity at the urban scale (Funfgeld, 2015; Gordon and Acuto, 2015; Lee, 2015). For many cities, transnational networks have been shown to provide critical points of entry and access to finance, technology and expertise used in the development or low-carbon and climate-resilient strategies (Chu et al., 2012; Carmin et al., 2015; Gore, 2015; Hughes and Romero-Lankao, 2014; Funfgeld, 2015; Romero-Lankao et al., 2015; Setzer et al., 2015). Engaging in networks - either through membership or through informal affiliations - clearly provides an important means through which cities may showcase new policy initiatives, attract and emulate best practices that may also further solidify the orchestration of transnational city networks.

At the same time, engagement in transnational city networks implies processes of standardization and surveillance – what we have called "aggregating orchestration" – that appear to be at odds with the voluntary, reciprocal and horizontal assumptions we typically use to classify and define network engagement. Consider, for instance, recent initiatives oriented towards increasing the ability of cities to secure access to various sources of climate finance. We can see efforts to orchestrate cities being undertaken by cities themselves such as the Cities Climate Finance Alliance (http://www.citiesclimatefinance.org/), from IFI's like the World Bank Program on City Creditworthiness Initiative (http://www.worldbank.org/en/topic/urbandevelopment/brief/citycreditworthinessinitiative) or the GEF Sustainable Cities Integrated Approach initiative (https://www.thegef.org/gef/sustainablecities), and from a variety of ENGO and non-state organizations. How these various initiatives relate to one another, and what kind of effect they might have with respect to both their proximate (securing increased amounts of financial investment and funding availability for cities) and ultimate targets, likely depend on their internal logics and the nature of orchestrating power that is employed in, and between, them.

A related theme is the critical role now being played by multinational corporations (e.g. Siemens, ARUP) and international consultants in shaping the issues, goals, instruments and content of urban climate policy (Abbott, 2013; Bouteligier, 2015; cf. McCann, 2011). Insofar as cities now purchase or receive (through aid transfers) a great deal of their technical assistance from companies, transnational networks, donors, and the UNFCCC, it appears likely that many of these policies will have the effect of replicating the practices of generic approaches to urban climate governance. Is this necessarily a problem? On one hand, corporations, networks,

donors and the UNFCCC are clearly filling a need that stems from a lack of domestic urban capacity and expertise (Archer et al., 2014; Bouteligier, 2015; Chu et al., 2012; Carmin et al., 2015; Gore, 2015; Hughes and Romero-Lankao, 2014; Funfgeld, 2015; Romero-Lankao et al., 2015; Setzer et al., 2015). On the other, they are perhaps working at odds with the processes of innovation and experimentation that are often ascribed to urban systems (Bulkeley et al., 2015). If cities are simply adopting corporate packages and policies, the scope for experimentation appears limited, although this of course is an empirical question (see below).

Beyond the implications that standardized cookie-cutter approaches may have on local capacity (and democracy) are wider questions about the effects they may have on the rigidity and vulnerability of large interconnected systems. The theoretical literature on complexity and resilience suggests that systems become increasingly rigid and vulnerable as they become increasingly centralized and interconnected (Holling, 2001; Perrow, 2011). In ecological systems, rigidities manifest themselves when a particular species becomes dominant, thereby preventing other competitors from utilizing resources within the system. Within human systems, they may take the form of rules and path dependencies that sustain existing structures, but at the same time make it less able to adapt and change in response to new pressures and events. Complex systems are ones in which interactions are multiple, unpredictable and generally unintended. Multiple feedback mechanisms, inter-connected sub-systems, multiple and interacting controls, indirectly obtainable information and an incomplete understanding of the system make for high levels of unpredictability, which heighten the possibility of "cascading effects," events in which failures in one part of the system lead to unpredictable and uncontrollable failures in other parts of the system.

For cities and city networks, system failures (e.g. blackouts, food shortages, financial crises) often manifest themselves when critical flows of resources, finances and energy are disrupted by system-wide dynamics (e.g. currency speculation, inflation) or ad hoc shocks (e.g. heat waves, droughts, etc.) (Perrow, 1984; 2011; Kennedy, 2011; Leichenko, 2011). Here the ability of cities to recover and adapt to system failures becomes highly dependent upon their ability to *de-couple* from system processes that have the effect of overwhelming local capacities (e.g. electricity grids dealing with catastrophic load demands), to *re-couple* with pre-existing systems and/or to *replace* old systems with new ones entirely.

Whether cities and city networks will make a difference in terms of reducing emissions and vulnerability to climate change will depend on the ability of municipalities, businesses, epistemic communities and civil society organizations to invest in infrastructure and institutions that can be replicated and maintained in the face of future social and environmental stress (Atkins, 2012; Leichenko, 2011; World Bank, 2010). But it will also depend on the ability of cities to support policy initiatives that work with a wider range of state and non-state actors whose interests, actions and institutions have important bearing on the ability to engage in mitigation and adaptation at wider scales of interaction.

A final set of questions therefore concerns the processes of marginalization and dispossession that occur as a result of - or alongside - processes of network orchestration. At the heart of the literature on urbanization and globalization is the notion that cities undergo processes of social and spatial restructuring that enable them to occupy new and strategic niches within the world economy (Brenner and Theodore, 2002; Brenner, 2013; Brenner and Schmid, 2013; Friedmann, 1986; Harvey, 2006; McCann, 2011; Sassen, 2001; Taylor, 2001). One is a shift away from "traditional" manufacturing and services into advanced producer and financial services. A second is the liberalization and removal of national restrictions on economic development and trade. A third is a new international division of labour, in which regional city centres have become increasingly specialized towards global production, processes and services in banking (London, New York), outsourcing (Bangalore) electronics (Shanghai, Shenzhen) and textiles (Dhaka, Ho Chi Minh City) (Roy, 2009; 2010; 2011; Sassen, 2001; Friedmann, 1986; Taylor, 2001). A fourth is a process of dispossession, in which processes of speculation, inflation and outright eviction have displaced marginal populations from hitherto low-value areas surrounding wetlands, waterbodies and peri-urban fringes (Harvey, 2006; Johnson and Chakravarty, 2013; Satterthwaite et al., 2010; Roy, 2009; 2010; Webster, 2011; Leaf, 2011).

One possible implication here is that transnational orchestration is dependent upon the dispossession and displacement of populations that are most exposed to the impacts of climate change (e.g. homeless people, slum dwellers, migrant labour) (cf. Roy et al., 2013; Boyd et al., 2015). From a policy perspective, important questions can therefore be raised about the challenge of protecting or incorporating marginal populations into local and transnational decision-making networks and processes (Archer et al., 2014; Boyd et al., 2015; Carmin et al., 2012; Chu et al., 2015; Forsyth, 2013; Gore, 2015; Haque et al., 2014; Roy et al., 2013). From an analytical standpoint, more fundamental questions can be raised about the processes of dispossession, displacement and resistance that underlie the orchestration of network power (Brenner and Theodore, 2002; Brenner, 2013; Brenner and Schmid, 2013; Harvey, 2006; McCann, 2011).

7. Concluding remarks

This paper has explored the impacts of the Paris Climate Agreement on city engagement in global climate politics. A central aim was to develop an analytical framework that may be used in understanding the ways in which transnational city network power presents itself at the urban scale. By way of conclusion, we now highlight a number of tensions and contradictions that underlie the empirical and theoretical discussion, offering further questions for future research.

At the heart of our analysis is the notion that city engagement can be usefully understood by theorizing and differentiating orchestration as forms of integration, coordination and aggregation. An important point here is that disaggregating

orchestration into these three modes offers valuable analytic leverage by providing a tool with which to identify and assess the plurality of efforts at orchestration and potential (or prospective) orchestrators. As a result, it offers a means of considering orchestration oriented towards different audiences and reliant on different logics of acquiescence, how different types of orchestration might produce different kinds of governance outcomes, and how these might be brought into alignment.

In so doing we hope to establish the outlines of a research agenda, one with empirical, theoretical, and normative elements, oriented specifically towards the question of cities and their relationship to broader systems of global governance. The hybridity of cities – which is encompassed, as per Bulkeley & Schroeder (2011) in the fact that they are both state and non-state, private and public actors – and their centrality in global circuits of finance, infrastructure, travel, and technology (Sassen 2001; Taylor 2005; Amen et al 2011) render them an interesting and important unit of political analysis. The agency of cities, however, continues to be under-explored, leading to a consequent need for careful investigation into the politics of transnational urban governance (cf. Alger 2010; Acuto 2013; Ljungkvist 2016).

We put forth the framework presented above as one means of addressing these important issues. Stepping back to consider the politics – the power struggles – of orchestration, and the competing efforts undertaken by various actors to exert orchestrating power, offers a means of opening up interesting lines of inquiry. In parallel with recent work by Bernstein & Hoffmann (n.d.) it opens analysis up to considering how experimentation might connect to the prospects for systemic transformation. Parsing different modes and logics of orchestration provides analytic tools with which to consider the tension between contestation and reproduction in the broader system of global climate governance. Instances of integrating orchestration, for example, appear at first glance to be premised on the preservation and reproduction of prevailing norms that are embedded in the global climate regime (Hermwille et al 2015; Moncel & Asselt 2012) as we might expect given the deeply structuring nature of these norms (Bernstein 2001). Whether orchestrating initiatives organized around modes of coordination or aggregation are brought into alignment, or constitute possible sources of norm contestation, is an open question that may well help to assess the transformative potential of experimental governance broadly conceived.

At the same time, by parsing the politics of orchestration we offer a means of assessing the tension that is ever-present between the local embeddedness of cities and their efforts to produce meaningful transnational governance. Picking up on the work of political geographers such as Eugene McCann, Jamie Peck, Nik Theodore, and Neil Brenner, how orchestration is pursued and produced offers a means assessing the tension between flexible responsiveness to local demands/needs and the flattening of local experimentation and innovation as it is mobilized and made transnational; or conversely when it is marginalized and not mobilized at all (Peck, Theodore and Brenner 2009; McCann 2010; McCann & Ward 2010). Tracing, for example, what kinds of local governance interventions "go" global (bike sharing,

bus-rapid transit for example) and which do not (municipal level emissions trading; congestion charging) could offer a means of assessing the dynamics and implications (both local and global) of orchestration.

Coming back to the Paris Agreement, it appears likely that early climate action (i.e. efforts prior to 2020) will be framed (and conceivably orchestrated) primarily in relation to the LPAA and the UNFCCC. What this implies is that the UNFCCC will continue to provide a central frame of reference through which cities and city networks will design, document, monitor and evaluate their climate change commitments. Where we can expect more in the way of contestation (and coordinating orchestration) is in the now powerful expectation that national governments and "non-Party stakeholders" collaborate in documenting their progress on the NDCs. Prior to Paris, cities were able to "engage with Kyoto" and make their commitments largely in the absence or "in the shadows" of the formal climate Protocol. In the context of Paris, there is now a powerful expectation that vests far more authority and responsibility in the hands of nation-states, raising interesting empirical questions about the ways in which cities and city networks engage with national authority structures.

A related question concerns the metrics and methodologies being used to document and disseminate climate change commitments and achievements at the urban scale. From the preceding, we can infer that donors, networks and MNCs will play a critical role in building local capacity for monitoring and evaluation, and that these dynamics constitute new forms of power in global climate politics. As an aggregating device, orchestration of metrics, methodologies and monitoring and evaluation systems constitute new forms of power that hold the potential for subjecting and comparing cities (and major constituencies within cities) on terms that affect their ability to engage in other social fields, such as trade and investment.

Finally, important theoretical, empirical and normative questions can be raised about the analytic utility of using the orchestration framework as a means of understanding the power of cities in global climate politics. At the heart of the framework is an assumption that urban power can be usefully understood by differentiating the actors, logics and interests that underlie different social fields. From the preceding, we can readily discern that the conceptual categories being used to investigate these fields (i.e. integrating, coordinating, aggregating) are by no means water-tight. How, for instance, do we distinguish between orchestrators, intermediaries, and targets in a domain (global urban climate governance) that is comprised of so many different actors? Is the C40 an intermediary or an orchestrator - or better yet, is it the Board of Directors, particular funding partners, the C40 staff, or particular cities that are orchestrators? How do we make sense of the nesting of actors such that C40 is both an intermediary of the UNFCCC and an orchestrator of cities?

Questions of this kind underline the need for future empirical and theoretical work on the nature of city power in global climate politics.

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