CLIMATE CHANGE POLITICS AND THE URBAN CONTEXTS OF MESSY GOVERNMENTALITIES

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ABSTRACT

The purpose of this lecture is two-fold. In the first part, I diagnose three limitations of current thought on the urban governance of climate change. First, current action emerges within a wave of urban optimism with limited historical sensitivity to previous climate change action. Second, the mobile nature of climate change policies is overlooked in studies that emphasize cities as the unit of analysis for climate action. Third, the focus on global cities or alternative locations that are constructed as exemplary sites takes attention away from the ordinary contexts of action where climate action is most needed.

In the second part, I use this analysis as the main motivation for a call for studies of climate change governance to engage with the messiness of urban knowledge and action. Three theories of messiness are put forward. The first relates the idea of governance as messiness to postcolonial analyses of radical environmental action. The second emphasizes the messiness embedded in current methods of knowing the city, and the logic of situated knowledge. The third emphasizes messiness in the relations between the body, the society, and the emotions characterizing the interactions of everyday life.

Keywords: climate change governance, urbanization, governmentality, messiness

INTRODUCTION

Addressing climate change in cities is more urgent than ever. An international policy consensus exists regarding the need in cities and urban regions to enable action for climate change. Some have referred to this as part of a 'rapid consolidation of urban optimism' in sustainable development agendas (Barnett and Parnell 2016: 88). Achieving the emission reductions needed to avoid dangerous climate change will require aligning subnational and national-level action for a coordinated global response (Chan, van Asselt et al. 2015; p. 134). Global environmental politics have increasingly focused on city-based initiatives that support the development and harmonization of a global, multilevel partnership to tackle climate change. The sustainable city is now more than ever intrinsically linked to the low carbon city.

Climate change action should address the actual material requirements of low-carbon transitions in cities. The infrastructures that will emit the majority of emissions in the next century have not been built yet (Davis and Socolow 2014). Meeting current growth rates will require an annual investment of approximately US$3.3 trillion until 2030 (4% of the global GDP in nominal terms, each year) (Woetzel, Garemo et al. 2016). The key question is as follows: where will such infrastructure needs emerge? UN data suggests that over 60% of the population growth in urban areas between 2010 and 2030 will occur in cities that had less than 1 million inhabitants in 2010 (UN 2014). The urban transformation depends on routine decisions on infrastructure made in thousands of smaller cities, particularly in rapidly urbanizing areas in South Asia, South East Asia, and Africa. Crucially, these are the cities we know less about.

These cities have been ignored in debates on urban governance and climate action. Academic interest in documenting forerunner actions and leading networks with global impacts has tended to prioritize visible actions in global and strongly branded cities. Also, low carbon

urban development has not been seen as a priority for less developed areas, notwithstanding the infrastructure imperatives explained above and the wider sustainability benefits associated with low carbon urban development. However, delivering a low carbon urban future requires engaging with the contexts of 'ordinary cities.' Robinson (2006) has argued against urban theory's focus on the experiences of global, wealthy cities that are perceived to be leading innovators, in contrast to an indistinct mass of ordinary, less developed cities. The construction of a discourse of global cities has dominated climate politics, even though many cities find themselves struggling between modernity and development, regardless of their location. An emphasis on famous examples and transformative potential has directed attention to cases which are deemed to have global relevance (Bulkeley, Schroeder et al. 2009, Hodson and Marvin 2010, Castán Broto and Bulkeley 2013). Even when there is a deliberate intention to highlight action in unusual places, an understanding of the findings is hindered by a focus on city-based case studies (see for example Hughes, Chu et al. 2018).

How can we theorize low carbon action in 'ordinary cities'? Decentralizing the knowledge hegemonies that characterize contemporary thought in climate change governance requires alternative theorizations of urban governance. In this lecture, I first characterize the current moment of urban optimism about the possibilities of delivering the sustainable, low carbon city in the climate change governance literature. I do this by identifying three limitations in this literature: the limited historical sensitivity of climate change action; the emphasis on cities as the unit of analysis; and the focus on global cities or alternative locations that are constructed as exemplary. I move on to discuss these limitations and explore possible responses. Ideas of messy governance emerge as an alternative to the current assumptions shaping the climate change debate.

LIMITATIONS OF CURRENT CLIMATE CHANGE GOVERNANCE RESEARCH

The first decades of climate change and cities research evolved through a detailed analysis of the history and conditions of climate change action in urban areas (Betsill and Bulkeley 2007). However, global assessments of climate change action at the local level are currently fragmented because they emphasize the comparison of a small number of case studies of examples of best practices in specific cities (e.g., Carmin, Anguelovski et al. 2012, Bartlett and Satterthwaite 2016, Hsu, Weinfurter et al. 2017). The combination of large-n data methodologies and case studies to study global trends in climate change action in cities has helped to navigate a multilevel context (Castán Broto and Bulkeley 2013, Castán Broto 2017, Castán Broto and Westman 2017). However, there are three limitations that impede a global understanding of urban climate action:

The first limitation of this body of literature is the interpretation of the current wave of urban optimism as a moment of 'discovery' of cities as new sites for climate change action (Hughes, Chu et al. 2018). This assumption downplays the historical development of the relationship between local action and global environmental policy. Consequently, research in this area tends to overlook crucial historical lessons, especially, the lessons of the local action experiences of sustainability that followed the 1992 Rio Declaration on Environment and Development. For example, the insight that climate change action will be more effective if it reflects environmental and social co-benefits (Harlan and Ruddell 2011, Bain, Milfont et al. 2016) has a long pedigree in environmental thought. Moreover, previous experiences of sustainability action should foster learning regarding key institutional aspects of climate change action, including aspects of sectoral integration, participatory planning, or multi-institutional coordination, to mention a few examples.

The second limitation is the emphasis on cities as the unit of analysis for climate change

action. The definition of cities in relation to local government jurisdictions and administrative boundaries reduces the terms of the debate because it circumscribes policies to single contexts of action. This generates two forms of analysis: one being focused on the strategic level and the types of plans and commitments made by key institutional actors (Kern and Alber 2009, Reckien, Flacke et al. 2014, Seto, Dhakal et al. 2014), and the other focused on individual initiatives and experiments, both time- and place-bound, whose aggregate results are uncertain (Hoffmann 2011, Bulkeley and Castán Broto 2013). These analyses overlook the fact that climate change policies are rarely generated in one single site. Social, technological, and institutional innovations travel across locations and mutate to adapt to the conditions of implementation in different urban contexts. Such 'urban policy mobilities' (McCann 2011) are observable in the course of climate change policy across locations. One strategy is to move the unit of analysis away from the city to policy to reveal the key factors that enable policy development and implementation.

The third limitation is a focus on global cities and exemplary action. A few large-n studies of low carbon action in cities have built upon the comparative analysis of commitments and self-reported action (e.g., Castán Broto and Bulkeley 2013). Policy platforms such as NAZCA (the Global Climate Action portal of the UNFCCC) have adopted a similar approach to track commitments (e.g., Ven, Bernstein et al. 2017). Another strategy is to compare plans for climate action in a circumscribed area (Reckien, Flacke et al. 2014). However, we lack an assessment of the extent to which those commitments translate into actual transformations. Assessment of impacts has mostly taken place in single case studies or in the comparison of a few case studies from which it is difficult to extract lessons about the global trends of climate action (as shown in Frantzeskaki, Castán Broto et al. 2017, Hughes, Chu et al. 2018).

The implications of each of these limitations are explored in the following sections, attending

particularly to responses already emerging within the current scholarly literature on low carbon governance.

The post-2015 wave of urban optimism and the discovery of cities as sites of action

The 2015 Paris Agreement for Climate Action (henceforth PA) represented a radical change in global environmental policy. What began with a concern for the role of urban areas in producing carbon emissions in the 2000s soon turned into a wave of optimism about how climate change action in urban areas could reduce carbon emissions and facilitate climate change adaptation (Bulkeley, Castán Broto et al. 2010, Frantzeskaki, Castán Broto et al. 2017). Solecki and Leichenko (2006) already predicted that climate change action in urban areas could transform global environmental politics. At the Conference of Parties (COP) in Copenhagen in 2009, the failure within the international climate regime to negotiate the replacement of the Kyoto Protocol marked a shift away from regulatory approaches to climate governance and towards voluntary commitments for climate action. The possibility to address climate change at subnational levels (outside the COP framework) became increasingly relevant in the context of the failure of the international climate regime (Hoffmann 2011, Jones 2012). International attention ensued as multilateral organizations coordinated a series of high-profile reports that underscored the urgency of climate change action in urban areas (World Bank, 2011; UN-Habitat, 2011; IPCC, 2014). Since the debacle at the 2009 COP in Copenhagen, subnational actors have responded to gridlocks and delays in international negotiations with voluntary interventions and innovation (Hale 2016).

As voluntary approaches to climate change policy have gained ground over regulatory ones, models of governance have also diversified (Newell, Pattberg et al. 2012). Such diversification of governance entails the coordination of multiple forms of state and nonstate action (Rosenau 2000) and thus, a recognition that a climate resilient society depends on the

interventions of multiple actors (Okereke, Bulkeley et al. 2009, Newell, Pattberg et al. 2012). Local governments are particularly important because they can shape urban trajectories towards low carbon resilient futures, delivering climate change strategies whether this is on their own, or through partnerships with the business sector, civil society organizations, or community groups.

Following this, the PA recognized the need to engage with subnational level institutions to deliver climate action. The PA provides the enabling conditions to foster a simultaneous national and subnational transformation. It provides tools to record and promote subnational action as a means to bridge the gap between the aggregate national intended contributions agreed in Paris and the actual requirements of emissions reductions needed to maintain the increase in global temperature to under 1.5 degrees. Initiatives such as the Non-State Actor Zone for Climate Action (NAZCA) have emerged to capture the actors' expanding role beyond that played in the traditional international climate regime. In this context, the UNFCCC has adopted a role as an orchestrator of a range of state and nonstate actors, to steer action in the right direction (Bäckstrand and Kuyper 2017).

Simultaneously, the view of cities as strategic arenas for climate change action is spreading into other domains of international policy. The 2015 Sustainable Development Goals reflect a pro-urban policy consensus in international sustainable development policies (Barnett and Parnell 2016). The United Nations adopted a New Urban Agenda (NUA) at the III United Nations Conference on Housing and Sustainable Urban Development (UN-Habitat, 2014) in Quito in October 2016. The NUA, a generic document full of good intentions but limited in practical recommendations for practitioners, makes a case for harnessing the potential of urban areas to deliver sustainable futures (Parnell 2016). The NUA foregrounds the value of urbanization as a means to deliver solutions for sustainability and resilience (Bureau of the

Preparatory Committee 2016) However, the technological focus on smart solutions reveals a tension between the need to integrate proposals for sustainable development within specific contexts and the quest for innovations and technologies to revolutionize the urban agenda. There is a risk in the 'rapid consolidation of urban optimism' (Barnett and Parnell 2016: 88) that views the city as a site of opportunity and action but advances technologies whose potential impacts are not fully examined. Barnett and Parnell (2016) recommend approaches that engage with both global policy networks and specific locations, focusing on the needs of the urban areas and regions where sustainability action occurs.

These international agendas are characterized by a lack of engagement with the history of environmental thought and project implementation in cities. Debra Roberts, a leading voice in the climate change and cities debates (and now co-chair of Working Group 2 of the current round of the IPCC assessment) has stated publicly that one limitation of agreements, such as the New Urban Agenda, is that they provide little guidance to urban managers who are actually operating on the ground. Since the publication of the Brundtland report in 1987, we have lived through three decades of a global environmental consensus on the need for sustainable cities (Hodson and Marvin 2017). However, there is a sense of rediscovery within the climate change governance literature (Hughes, Chu et al. 2018). This problem has historical roots. In the decades that followed the formation of the international climate regime with the adoption of the United Nations Framework Convention on Climate Change in 1992, climate change was framed as a global problem requiring global solutions (Bulkeley 2013, Bulkeley and Newell 2015). Climate change was largely delinked from the emphasis on local action that followed the sustainability agendas from the 1992 Rio Declaration on Sustainable Development to Local Agenda 21, despite international efforts to coordinate what was often perceived as two separate realms of action (e.g. Gebre-Egziabher 2004). Now, with the newfound interest in urban areas as engines of climate change action, it is time to revisit

those historical roots and examine how past experiences might shape future possibilities of action.

Mobile nature of climate change policy

The literature on urban climate change governance has focused on cities as the unit of analysis, establishing an equivalence between the city and its government or between the city and the constellation of actors that operate within a bounded site (often characterized in relation to administrative boundaries). This type of approach has generated debates about the institutional conditions that enable effective climate action. In a recent review, I attempted to summarize this body of literature, to reflect upon discussions regarding normative ideas of governance and the complexity of establishing multilevel governance across different levels of government and domains of action, which have remained stagnant (Castán Broto 2017).

Climate change challenges have to be addressed in the context of enormous gaps in urban infrastructure and service delivery in rapidly urbanizing areas, particularly in informal settlements with deficient urban equipment (Satterthwaite 2007, Baker 2012, Dodman, Bicknell et al. 2012). Scholarly debates have also examined at length the institutional factors that enable effective climate change action; however, they have chiefly relied on experiences in global cities and networks based in the global north. One important question has been what motivates local government to deliver climate change action, an how different exogenous and endogenous drivers facilitate or condition local capacities to respond to climate change imperatives (Anguelovski and Carmin 2011, Carmin, Anguelovski et al. 2012).

This body of work points to the need to engage with the rapidly changing, mobile and messy context of climate change action in urban areas. For example, empirical analyses have

consistently demonstrated that climate change strategies need to be adapted to the context of action, when not developed within those specific conditions. There are not ready-made recipes for action that will be effective in every situation. For example, the persistent interest on traditional notions of political leadership as a driver of effective action (e.g. Sanchez-Rodriguez 2009, Burch 2010, Janjua, Thomas et al. 2010, Shey and Belis 2013) contrasts with an increasing realization that horizontal collaboration and self-organization are often central to deliver climate resilient pathways of urban development (Djalante, Holley et al. 2011, Sovacool 2011). Both styles of governing are relevant to deliver climate change action, in messy processes that require the combination of multiple strategies. A vision of climate change governance as a process of 'muddling through' has progressively gained ground in institutional analyses of how climate change policy is actually delivered on the ground (Marsden, Ferreira et al. 2014).

These debates suggest that for any action to bring about a radical change in cities, spurring a low-carbon transition requires messy interactions across different realms of operation. Studies of multilevel governance highlight the multitude of actors that lead and deliver climate change action alongside local governments (Bulkeley and Betsill 2005, Betsill and Bulkeley 2006, Bulkeley and Betsill 2013). Effective action depends on the alignment of state and nonstate actors (Okereke, Bulkeley et al. 2009, Biermann and Pattberg 2012). For example, local governments often depend on the resources and support of state actors at the national level to deliver local-level actions (Fidelman, Leitch et al. 2013, Hughes 2013, Jones 2013, van Stigt, Driessen et al. 2013, Dodman and Mitlin 2015). The role of international organizations in providing information and facilitating innovation has long been documented (Monni and Raes 2008). Finally, a range of other nonstate actors, including business, networks, and communities intervene in urban governance, particularly adding capacities where these may be lacking (Dodman and Satterthwaite 2008, Amundsen, Berglund et al.

2010, Leck and Simon 2013, Burch, Shaw et al. 2014). Normative ideas of multilevel governance have gained currency as a response to the perceived complexity of a governance landscape populated by many actors (e.g. Sperling, Hvelplund et al. 2011, Jones 2012). However, the organizational impulse of multilevel governance theory fails to overcome the messy character of the processes of governance on the ground (Smith 2007). While multilevel governance theory is now an indispensable element of the conceptual toolbox for articulating debates on climate change policies, it falls short of explaining the global dynamics of policy innovation, and in particular, the translation of social, technological and institutional innovation across different contexts.

The literature on urban policy mobilities proposes a view of policy transfer as a process in which different components of the policy are reassembled to fit the context rather than as a rational process of adoption conducted by leading actors (Temenos and McCann 2013). An analysis of policy mobilities engages with both the specificity of the context in which policy is assembled and the aspects of policy that remain consistent regardless of the context where it is implemented (Temenos and McCann 2013).

Processes usually described simply as linear policy transfers consist of complex and overlapping interactions during which tools of policy calculation are appropriated and reimagined (McCann and Ward 2012). The analytical focus is not only on how policies move but also on how policies are disassembled and rearranged to suit the characteristics of particular contexts (McCann and Ward 2012). This is something that directly matches the insights gained from empirical analyses of climate change governance in cities that attend to, among other things, the processes whereby climate change interventions are rendered feasible and made compelling to a wide range of actors (Bulkeley, Castán Broto et al. 2014). Policy mobilities are central to the construction of visions of green cities (McCann 2013), although,

within this literature, less attention has been paid to climate change governance in urban areas.

Methodologically, approaches for policy mobilities propose 'following policy,' for example, by looking at the manifestations of an idea in different contexts and its materialization in specific events (Peck and Theodore 2012). Thus, policies are no longer implemented in a bounded space (i.e., a city within a set of administrative boundaries) but rather they manifest across the multiple and mobile situations whereby cities are produced (McCann and Ward 2012). Another key implication is that policies become the result of a social process of assemblage in particular locations (Peck and Theodore 2012).

One methodological strategy is to follow the carriers of policies or the actors who embody certain principles and ideas and who transfer them across locations. However, it should not be assumed that thinking about mobile policies requires looking only at mobile actors, as policies can be adopted and appropriated through other mechanisms. Roy and Ong (2011), for example, have described the active role played by middling bureaucrats in negotiating an intervention space between global discourses of competitiveness and sustainability and the specific local demands of the contexts in which they operate. In climate change policy, for example, local policymakers can translate environmental sustainability discourses into programs of action that advance elite agendas without addressing urban inequality and the challenges of delivering health and services (Boyd, Ensor et al. 2014). Meanwhile, the identification of mobile policies requires understanding those aspects of action that remain immobile—that is, not relatable across contexts (McCann and Ward 2015). A focus on the movement of low carbon policies beyond the context of the exemplary city is a strategy to rethink low carbon action in the context of 'ordinary cities.'

Decarbonization challenges call for engagement with messy, unusual sites of action

The third limitation of contemporary scholarship is its fixation with global cities as key sites of governance, emphasizing exemplars and best practice examples. Often, the examples available are unattainable for medium-sized cities (Hodson and Marvin 2010). Alternatively, there is a suspicion that most cities outside global circuits of promotion and exposure will move towards addressing the lowest common denominator, sometimes limiting themselves to low-hanging fruit, even when this opportunity can be an avenue to initiate more meaningful climate action (Aylett 2014). Moreover, there is a need to understand how such action in ordinary cities affects the lives of urban citizens.

Urban infrastructure landscapes represent the co-constitution of societies, ecologies and technological worlds in particular places (in the field of energy see: Bridge, Bouzarovski et al. 2013, Calvert 2015). Landscapes are constituted through the interaction of material flows, ideological representations, and the actual experiences of the world in specific locales. Simultaneously, landscapes have been explored through a rich tradition of empirical studies which take experience as an analytical point of departure to examine socionatural relations (Wylie 2006).

In my previous work, I have engaged with the concept of urban infrastructure landscapes to understand energy-related transformations occurring in contemporary cities (Castan Broto, 2019; Castán Broto, 2016; Castán Broto et al, 2015; Castán Broto et al, 2014). Initially, I was inspired by Owens' (1986) classic work on the relationship between energy systems and spatial structure. First, Owens explains that the development of spatial structure depends on the nature, location, and availability of energy sources. Second, Owens argues that spatial factors also shape energy requirements. Finally, Owens explains that energy sources, spatial structure, and energy requirements impose constraints on innovation and the possibility to

introduce deliberate changes in energy systems. Sustainable urbanism scholarship has focused on improving energy efficiency through interventions in urban morphology and urban form (examples include Salat 2009, Wong, Jusuf et al. 2011, Howard, Parshall et al. 2012, Rode, Keim et al. 2013, Zanon and Verones 2013, Zhou, Lin et al. 2013). A key concern has been the uncritical application of one-size-fits-all approaches to deliver sustainable urbanism models that fail to recognize the diversity of human settlements, such as with the imposition of compact city standards (for a seminal critique see: Jenks, Burton et al. 1996). Attention to the urban context is essential for the creative development of multiple, parallel models of sustainable urbanism that address the challenges of specific locales (Williams, Jenks et al. 2000).

Following this, urban energy landscapes canbe understood as a means to capture the mutual constitution of urban energy infrastructures, energy governance processes, and spatially-embedded practices of energy use (Castán Broto 2019). Urban energy landscapes result from diverse and overlapping activities that involve energy use (lighting, communication, thermal comfort, cooking) and the means of provision of energy services (infrastructure and governance systems). The concept of landscape makes it explicit that all energy-dependent activities are contingent to socioecological relations and have a territorial expression. In practice, urban energy landscapes are no more than assemblages of socioecological and sociotechnical artifacts that acquire coherence and retain specificity as they are deployed in specific contexts:

> "For example, buying street food for dinner may require a lighting system, cooking devices, and perhaps a system of communications to pay for the meal with a credit card. Even when using similar technologies, the experience will be completely different in each city, from Munich to Marrakesh. From the structures of the built

> environment that support both cooking and selling to the lived experience of the city and how cooking is shaped by a specific culture, urban space shapes energy use and the means that support its provision" (Castán Broto, 2017; p. 756).

Analyses of urban energy landscapes do not show a deliberate engagement with purposive attempts to claim authority over the contested fields of climate change governance in urban areas. From the perspective of urban energy landscapes, low carbon innovations constitute new modifications in historical, situated trajectories of change. It is from this perspective that I propose to reimagine current governance theory through an engagement with the concept of messiness as a strategy that embraces the methodologies of policy mobilities and urban energy landscapes and responds to global debates on climate governance.

GOVERNANCE AND MESSINESS: REIMAGINING CLIMATE CHANGE GOVERNMENTALITIES

Governmentality theory supports a critical perspective on governance that emphasizes how governing actions unfold in practice. Governing is presented as a process of 'orchestration,' that is, as attempts at conducting and coordinating actions that involve surreptitious machinations to facilitate the alignment of interests, the persuasion of a variety of actors, and the overall integration of policy ideals with the material and practical conditions of action (Bulkeley 2015, Bäckstrand and Kuyper 2017). Foucault's governmentality theory has inspired the adoption of the idea of 'governing as an art' in climate change governance. For Bulkeley (2015), governmentality theory highlights power as relational, that is, as emerging from the interactions between the actors and things that need govern and are governed. Governing requires, as well, enrolling people and things in the process of governing.

Certain tools or rationalities- governmentalities- are essential to facilitate a form of governing

that requires an alignment between actors and things (Bulkeley, Castán Broto et al. 2014). Governmentalities are developed to define interventions and strategies. Persuasion is the essential tool that enables the creation of subjects to be governed, subjects who regulate their own conduct and both adapt to and adopt appropriate dispositions that make governing possible (Bulkeley 2015).

Climate change governmentalities include a series of calculus that relate material actions with rationales of intervention (While, Jonas et al. 2010). For example, measuring carbon has been central to carbon governance as mitigation efforts are defined in relation to reductions in Green House Gas emissions (e.g. Rice 2010, Pearce and Cooper 2011, Bulkeley 2015). Linking material, spatial, and social contexts of action to actual intervention possibilities is a means to demonstrate effectiveness and to persuade and enroll multiple climate publics (Knuth 2010). In this sense, urban areas constitute arenas for climate politics within broader institutional and economic networks (Rutherford and Coutard 2014). Multiple forms of knowledge are integrated into institutions alongside material artefacts in urban infrastructure networks (Monstadt 2009). Governing climate change requires not only organizing existing materials and spaces but also providing new imaginations of urban futures and implementing new forms of urban service provision that can be validated at the global scale (Bulkeley, Castán Broto et al. 2014). As explained above, orchestration platforms such as NAZCA are examples of mechanisms that aim to compute and value the new landscape of climate governance (Ven, Bernstein et al. 2017).

Self-governing is also central to the delivery of climate change governmentalities, as individuals regulate their behaviors and those of others. Self-governing entails a deeper process of cultural change, whereby bodies are integrated into newly imagined futures. Urban areas provide the grounds for different attempts to govern climate change through processes

of behavior change (Revell 2013, Rice 2014). Local authorities may emerge as intermediaries who facilitate broader cultural change for pro-environmental behavior that focuses on controlling carbon and structural vulnerabilities to climate change (While, Jonas et al. 2010, Dowling, McGuirk et al. 2014). Self-governing is also a key form of governance for municipal governments that have attempted to lead by example through greening their operations (Bulkeley and Kern 2006). These kind of orchestrating governmentalities explain the configuration of the international climate regime in the post-Copenhagen context (Bäckstrand and Lövbrand 2016).

However, within governmentality theory, there is a weaker sense of the relationship between the deployment of climate change rationalities of material and personal control, and the material changes that transform urban areas over time. The specific ways in which urban socioecological systems are known and lived without recourse to strategic projects are less visible in a theory that emphasizes deliberate mechanism for orchestration and control. Is there an opportunity for the development of alternative theorizations of governance and messiness that emerge from within the particular debates and concerns in specific cities and how cities change? Following Haraway's understanding of knowledge (see below), can we engage with the politics of situated governmentalities?

Conceptually, we can imagine governance as a messy process that depends on multiple random connections between technologies, discourses and actions. While governance is conventionally thought as a means for ordering the world, effective governance depends on navigating disorder and engaging with the confusion that emerges from having multiple points of view about what is possible or desirable. Rather than seeking success, policymakers often talk of governance as a process of 'muddling through' (cf. Marsden, Ferreira et al. 2014).

In this lecture, I want to end with a call for the development of a conceptual framework that reflects messiness in governance, as this messiness is noticeable in particular locations and moments of action. While governmentality theory is often associated with efforts to establish order and control, I argue that messiness is central to any attempts to govern. Here I make a modest proposal to look at governmentality theory through the lens of messiness in governance. Governmentality theory links three aspects of governance (Li 2007, Bulkeley, Castán Broto et al. 2014): a will to improve associated with strategic intent, a repertoire of rationalities of government grounded on the production of knowledge and calculations, and an emphasis on the conduct of conduct through the regulation of bodies. Strategy, knowledge, and bodies are the three legs of analysis to engage with a theory of messiness. In this vein, climate change action is explained as the result of three different elements: the strategic ideas that motivate it, the calculations and technologies that make it possible, and the fit of action to a particular context.

Theories of messiness and urban change

The three aspects of the practice of governing explained above have been documented in climate change arenas (Bulkeley, Castán Broto et al. 2014, Dowling, McGuirk et al. 2014, Bulkeley 2015). First, the deployment of governmentalities is associated with an interest to build forms of authority over a given space. In other words, governmentalities emerge associated with purpose and intention, particularly in the sense of mobilizing the future through a plan for something to be done. For Li (2007), in the context of international development in Indonesia, such purposes or intentions are intrinsically linked to ideas of improvement that relate both to value enhancement and to the purposeful use of resources of development. Second, governmentalities imply some form of calculation. While et al. (2010) explain that controlling carbon depends on the deployment of strategic calculations, crafted

through the deployment of environmental policy. Third, environmental governmentalities are not only linked to a particular will to gain power and authority over the world and the territory but also to the ability to control the self (Paterson and Stripple 2010, Stripple and Bulkeley 2013). The exercise of power in the environmental field depends on the multiple abilities to reach the sites of governing: strategy, knowledge, body.

On this basis, let's hypothesize the importance of messiness in the deployment of climate change governmentalities. The most immediate reaction is that in a messy and uncertain world, governmentalities are directed towards creating forms of order that enable intervention: identifying purposes, creating calculations, pointing at the individuals who would deploy those calculative rationalities over themselves and the world. In other words, it is the encounter with the world's messiness that moves policymakers, activists, and organizations to establish forms of control and intervention. What if we could turn that approach on its head and put forward the idea that the art of government depends on messy experiences to enable governing and that in the encounter with the world (messy or not), the ability to harness mess ultimately determines which strategies, calculations and bodies become important in the act of governing climate change? If we start from the perspective of the classical anthropologist Mary Douglas, who looked at messiness as 'matter out of place,' we immediately engage with messiness as something that incites revelation (Douglas 2003). The placing of one's shoes on the table, Douglas argues, is an act of quotidian transgression that reveals the cultural basis of human organization. The most fundamental of human fictions are those that help us to conceive of the orderly world through the establishment of boundaries between what is 'in' and 'out' of place.

Returning to a reflection on messiness and its interaction with strategies/knowledges/bodies, first, consider the deployment of strategic projects. An encounter with a city's

ungovernability opens up ideas of messiness. In some cases, low carbon action is related to the possibility of mobilizing heterogeneous infrastructure configurations (Lawhon, Nilsson et al. 2018). Silver (2014), for example, defends a focus on incremental infrastructures as one that examines infrastructures 'in-the-making, under constant adjustment, and shifting technological and material configurations.' In his experiences in Accra and other African cities, Silver highlights how citizens themselves configure how infrastructures work, and in so doing, they also reveal what strategic futures are possible. Messiness in conceptualizations of infrastructure can open up alternatives to dominant mechanisms of making urban strategies in a postcolonial context. This becomes particularly important in low carbon action because of the need to move away from triumphal analyses of initiatives in global wealthy cities and to examine instead the mundane spaces of spatial transformation in the city: strategic projects become distributed and relatable, something never entirely apprehended in high modernist projects à la Scott. In a postcolonial context, hegemonic projects often appear to be ridiculous in their intent to govern, resembling fantasies of urban domination that nevertheless do not compromise the landscape of intervention but rather await their opportunity to jump from the corners into the spotlight of governance discourses.

Second, consider calculations. In an article about the governing impulses of environmental programs in US universities, Luke's study (1996) described his environmental concerns as concerns of knowledge:

> "*In and of itself, Nature is meaningless unless or until particular human beings assign significance to it by interpreting some of its many ambivalent signs as meaningful to them. The outcomes of this activity, however, are inescapably indeterminate, or at least, they are a culturally contingent function of who decodes which signs when and how they find decisive meaning there. Because human beings will observe natural*

> *patterns differently, choose to accentuate some, while deciding to ignore others, Nature's meanings always will be multiple and unfixed* (…) *And, once Nature is rendered intelligible through these discursive processes, it can be used to legitimize many political projects*."

That act of rendering nature intelligible reveals a utilitarian approach to bound, identify, and fill in 'resources. Luke highlights the meaningless, disordered character of Nature before humans, in the ultimate act of making nature intelligible, decide to ascribe meaning to it, in a process that is fraught with lack of understanding, multiple meanings, and different interpretations. However, what is the act of creating intelligibility, if not one, strictly, of ordering? How do things become known? The philosopher of science Paul Feyerabend (1993) stood against contemporaries by refusing to accept the idea of science based on methods that follow from clearly delimited principles. He did so on the grounds of two unacceptable assumptions: first, the idea that there was a certain autonomy between facts and theory that would enable humans to identify discontinuities and inadequacies in theory by simply bringing those facts to light; second, the idea that in science, there is a clear uniformity in which scientists tend towards conformity rather than towards distinguishing themselves. For Feyerabend, such a conceptualization of an ordering science in which facts help to perfect theory (as a reaction to his own enchantment with Popper's ideas) and organize social-scientific life not only is inadequate to explain how science 'should be' but also how it actually is—for example, how it is embodied in passions and an anarchic drive that helped scientists such as Galileo to make believe what was unbelievable by the standards of his time.

The challenge for governmentality scholars who share Luke's concerns is the critical examination of any putative straightforward relationship between intelligibility and purpose.

Nature commodification is preceeded, Luke says, by an inherent understanding of nature as a resource, ready for human manipulation and use. However, the forms of knowledge that make manipulation and use purpose are not predetermined. Here I follow Feyerabend's objection to the autonomy of facts and theory: the process of observing nature itself is chaotic and led by commitments and passions. Knowledge cannot solely be a means for ordering, even though ordering itself may need of certain knowledges to make it possible. Similar intent inspires Law's (2004) claim that attempts to transform science into a hegemonic, unified (ordering) project limits what science is and how it happens.

Fast forward to Haraway's (1988) critique of objectivity, and we find ourselves liberated by the idea that knowledge is produced within a given relational, situated setting, and hence, free from constraints that attempt to reduce science to instances of mutually agreed universal knowledge. Later in Haraway's work, this realization would translate into recognizing knowledge production as a committed rather than an objectivist and cynical enterprise (not that far from Galileo's commitment to his intellectual project, as per Feyerabend's analysis). Aside from the descriptive claim, the idea of situated knowledge put at the core of knowledge, making activities 'a view from the margins,' and the question of the lack autonomy between facts and theory becomes a question of lack of autonomy between understanding and experiencing in the contingent contexts in which knowledge is produced (Widerberg 2005). In practice, messiness for researchers means 1) engaging with the material, contingent contexts of knowledge production; 2) recognizing the lack of boundaries between understanding and experiencing; and 3) recognizing the contingency of knowledge-making encounters, where it is impossible to separate between subjective accounts and objective facts (Askins and Pain 2011). In climate change governance, there has been a growing interest in the dynamics of experimentation as a means to build alternative actions in the context of uncertainty. However, there has been a continuous production and re-

enactment of the rationalities that underpin the experimentation processes. Making an experiment requires assembling narratives of intervention, but experiments themselves remake those narratives. Both processes of engaging with and making messiness are central to knowledge-making and, therefore, enable governing.

Third, consider the body. If the body is the central site of both disciplining and knowing, how do we confront the ever-increasing realization that the body itself is not amenable to clear ordering patterns? A biopolitical project will depend on the identification of bodies whose conduct is understood and regulated and that can be disciplined but in specific contexts. However, if bodies are messy and leaky (Longhurst 2004), then governing requires engaging with such messiness. For example, carbon control policies have drawn strongly on ideas of individual carbon budgets and other devices to help individuals make a rational choice about the carbon emissions they produce (Paterson and Stripple 2010, Stripple and Bulkeley 2013). This has had some effects: for example, it may create visible areas of action. However, accepting that there is a linkage between such visibility and the inclination of people to do something about low carbon, let alone bring about a societal transformation, is grossly exaggerated. Such changes depend on multiple forms of attachment to spaces and the generation of emotional linkages that make different actions possible. Some carbon activists are already moving in that direction by seeking to activate societal transformations through creative means, including theatre, creative writing, or storytelling. The body and its relations are highly unstable sites of action that can hardly be disciplined.

Thus, if we think of ‘mess’ as a point of access to deliver change, then we find an action that emerges at the intersection of messy interactions between strategy, knowledge, and bodies (Figure 1). In terms of urban governance and climate change, those intersections raise three starting points for analysis:

- Mess draws attention to the semiotic-material interlinkages between bodies and the worlds they inhabit as a key to understand the possibilities for intervention in a particular context, as exemplified in the ideas of bodies as infrastructures of everyday life.

- Mess, with respect to knowledge production processes, relates to a situated, experiential notion, which emphasises the contingent character of social innovation.

- Mess requires an open approach to understand the relationship between the observer and the observed in the process of making sense of the processes of governing, as they are intrinsically linked in the mobilization of actions.

[Insert Figure 1 around here]

CONCLUSIONS

Babha (1994) wrote that "*the political moment of cultural difference emerges within the problematic of colonial governmentality and eclipses the transparency between legibility and legitimate rule*." Scholarship on policy mobilities and urban energy landscapes has generated methodologies to study situated trajectories of change but there is a need to translate those analyses into concrete insights to deliver global assessments of climate change governance in cities. Messiness reimagines alternatives to hegemonic governmentalities by opening the climate change sphere as a governing arena that can also be appropriated to contest the structures of power and forms of domination that emerge in a postcolonial context. Mess challenges that thing that Babha beautifully calls 'the transparency between legibility and legitimate rule.' It not only challenges strategies, knowledges, and bodies but also how the three are brought together in attempts to build authority.

The academic debate within the climate change governance literature has focused on the low carbon experiences of wealthy, globally connected cities that are perceived to be leading innovators rather than focusing on a mass of undifferentiated cities whose urban experiences are thought of as ordinary. All that which is ordinary in climate change governance becomes unremarkable. However, if we are to witness the kind of transformational change that will bring new cultures, societies, and economies, we need a new politics of change that is built upon the efforts of such ordinary actions not only because climate change action must be on a scale that engages with the multiplicities and the repetition in ordinary lives but also because ordinary actions point towards the political potential of messiness: while such messiness is constantly appropriated in the readaptation of high modernity strategies to changing environments, it continues to offer opportunities for the creation of what Babha calls ‘the political moment of cultural diference’ in specific contexts of climate action.

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