

## Governing Climate Change

### *The Promise and Limits of Polycentric Governance*

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#### 20.1 Introduction

Ever since the first attempts were made to govern climate change in the late 1980s, it has been widely assumed that states and international organisations would perform key roles. But it is becoming increasingly apparent that many other actors – cities, charities, private companies, universities and faith organisations – are also directly involved in governing climate change. By the late 2000s, Elinor Ostrom was at the forefront of those arguing that these new activities were not just possible (and indeed necessary to limit warming to a safe level) but were already appearing around, below and to the side of the main international body addressing climate change – the United Nations Framework Convention on Climate Change (UNFCCC).

Ostrom's primary contribution to the debate about the rapidly changing contours of the climate governance landscape was to describe it as 'polycentric' (Ostrom, 2010a) and to invite other scholars to employ that framing to understand its emergence and modes of operation. The primary aim of this book is to critically evaluate what is to be gained by thinking about climate governance as an interconnected and evolving polycentric system. Chapter 1 noted that polycentric theory originally dates back to the early 1960s, but Elinor Ostrom was keen to explore what it added to the academic understanding and practical enactment of climate governance. In Chapter 1, we identified and explored its essential elements, which we recombined into a set of five theoretical propositions. We explored what each proposition implied for the ways in which climate governance is described, explained and subjected to normative analysis.

In this chapter, we reflect back on that aim by examining the main actors and domains (Part II), governance processes (Part III) and substantive challenges (Part IV) in the area of climate change. We structure our concluding reflections around the four main objectives identified at the end of Chapter 1. Section 20.2 investigates the degree to which climate governance is polycentric, both in its totality – as

a broad, interconnected system – and in its constituent parts, or, as Ostrom termed them, *domains*. Section 20.3 analyses when, how and why climate governance has become more (or in some cases less) polycentric over time. Here, we critically reflect on the value of the five theoretical propositions introduced in Chapter 1. Section 20.4 considers what the implications of the shift to greater polycentricity are for the governance of substantive climate challenges (such as accelerating decarbonisation, transferring climate mitigation technologies to developing countries and adapting to climate impacts), as well as the accomplishment of broader, system-wide functions (e.g. facilitating innovation and addressing equity, justice, legitimacy and accountability concerns). Section 20.5 steps back and reflects on what could and perhaps should be the purpose of polycentric theory in the light of our findings. Ostrom (2010a) was confident that it could simultaneously serve three important purposes: *describing* the landscape of governance, *explaining* that landscape, and *prescribing* new ways to make it function more effectively. In Chapter 1 we noted that since Ostrom's death these distinct purposes have become somewhat blurred. We conclude by offering our own reflections on the promise and the limits of a polycentric perspective on climate governance.

## 20.2 How Polycentric Is Contemporary Climate Governance?

In what we termed her essential definition (see Chapter 1), Ostrom (2010a: 552) argued that polycentric systems have:

multiple governing authorities at different scales rather than a monocentric unit. Each unit with a polycentric system exercises considerable independence to make norms and rules within a specific domain (such as a family, a firm, a local government, a network of local governments, a state or province, a region, a national government, or an international regime).

Chapter 2 noted that there is no single monocentric global governance arrangement in the area of climate change (the first limb of Ostrom's definition), in which a single, hierarchical unit structures the activities of all other units. Although the UNFCCC has established a common set of norms and rules, its hierarchical steering power remains relatively limited. Even during the Kyoto Protocol period, when the international community moved in a more monocentric direction by adopting and implementing a set of binding international targets, the majority of states were only loosely bound. Hence – and contrary to what some have claimed – the overall degree of monocentricity has always remained relatively limited. Moreover, over the past two decades the pattern that has gradually emerged at the international level is even more polycentric in nature, with multiple governing authorities operating on many different scales (Kim, 2013).

Several important points flow from this observation. The first is that the resulting governance landscape incorporates but goes well beyond what Keohane and Victor (2011) have termed a ‘regime complex’. Regime complexes comprise interlocking networks of international agreements and international organisations. By contrast, contemporary climate governance incorporates a much greater variety of actors and institutions operating at multiple scales (Cole, 2015; Jordan *et al.*, 2015). These include states and international organisations, but also companies, cities and non-governmental organisations (NGOs). As many of the chapters in Part II make clear, these actors have claimed the authority to address climate change in various ways, sometimes working alone, sometimes working in tandem through hybrid forms of governing. The emerging pattern is relatively fragmented, with multiple centres of authority, which are often functionally overlapping rather than nested. They tend to be linked and work across many geographical scales. The broad system of governing, therefore, is essentially polycentric in nature.

A second observation is that the system of governance is not simply multilevel (Saerbeck, Jörgensen and Jänicke, 2017), with actors operating at and across a number of discrete levels of governance. Instead, the governance landscape has a much more hybrid and modular form in which the governance activities of states and a wide array of non-state actors are not neatly separated, but functionally overlapping. Again, these patterns broadly correspond with Elinor Ostrom’s essential definition of polycentric governance.

Third, her essential definition of polycentric governance also draws attention to the existence of multiple units and domains of governing within a broader system or landscape of governance. The chapters in Part II discussed a number of particularly important domains. These included international (Chapter 2) and national governance (Chapter 3). The latter – as state-based forms of governance – have a formal legal underpinning and access to unique resources such as tax receipts. Others are more novel, such as the domain of transnational climate governance (Chapter 4), which includes many forms of private governance by businesses and industry associations. Still others coalesce around a particular instrument of governing, such as emissions trading (Chapter 13) or particular actor types (e.g. city-level networks; see Chapter 5).

The fourth observation is that the degree of polycentricity varies significantly across these domains. Amongst the nation states engaging with climate change, for instance, we find relatively unitary states such as the United Kingdom that have adopted very long-term targets and strategies (Chapter 3). At the other end of the spectrum of different degrees of polycentricity, we find a loosely coupled network of national emissions trading systems, each with its own array of internal processes, emission reduction targets and carbon prices. At present – and despite the ‘epistemic authority’ enjoyed by emissions trading, underpinned by a strong ‘instrument

constituency' (see Chapter 6) – it is very unlikely that the various national systems will coalesce into a tightly linked structure in the short term, with harmonised rules and a single, common trading strategy.

Fifth, even within an individual domain, it is possible to observe a significant degree of internal variation, implying that the system as a whole is not simply polycentric but 'doubly polycentric' (Chapter 11). For example, Chapter 4 revealed that the transnational climate governance domain includes a wide variety of initiatives which come in many colours and seek to discharge different governance functions (e.g. agenda setting, capacity building, soft regulation, information sharing and financing). Moreover, these initiatives are unevenly distributed across the world, with consistently low levels of participation from developing country actors (Bulkeley *et al.*, 2014: 117–133). Some initiatives have a handful of members whereas others – e.g. city networks – have many hundreds. Even within a single transnational initiative, there may be a significant degree of internal variation. Likewise, within the many national domains of governance, new research is usefully revealing the huge internal variation in the types and quantity of legislation adopted. Thus, some countries have adopted more than 20 separate climate laws, but around 25 per cent have not adopted a single statute. Even within the single category of national laws, there are many subtypes, such as those incorporating legislative targets (e.g. Brazil, European Union (EU), Mexico, UK), those relying on executive orders (Indonesia, Russia, United States) and those employing non-legislative strategies (Germany, South Africa) (Averchenkova, Fankhauser and Nachmany, 2017).

### 20.3 Polycentric Climate Governance: Assessing the Five Propositions

To claim that contemporary climate governance is polycentric begs many questions. How did it emerge? To what extent is experimentation taking place? Do those governing climate change even believe that they are 'experimenting' and if they are, to what extent are they taking one another's behaviour into account and thus engaging in mutual adjustment? To address these and other questions, we reflect back on the five core propositions derived from polycentric governance theory. In order to maintain a logical argument and avoid repetition (in Chapter 1 we noted that the propositions are interwoven), we start with the fifth proposition and then move between the other four, illustrating our points with examples from various book chapters.

#### *Proposition 5 – Overarching rules*

Local initiatives are likely to work best when they are bound by a set of overarching rules that enshrine the broader goals to be achieved and allow any conflicts to be satisfactorily resolved.

By definition, polycentric systems do not have a central authority that exerts significant hierarchical authority. But in Chapter 1 we also noted that most mainstream definitions of polycentric governance make repeated reference to a set of overarching rules (sometimes termed the *rule of law*). These rules are assumed to serve a number of functions. They provide a means to settle disputes between individual units and domains, and maintain the degree of diversity (i.e. polycentricity) by preventing any actor from becoming overly dominant. Consequently, climate governance scholars should try to identify whether such rules are present, and account for their form and function. In relation to climate change, the UNFCCC is the source of many of the most significant rules, norms and values. Chapter 10 refers to it as the ‘centre of gravity’ of the system; Hickmann (2017: 446) claims it is the ‘core institution’. The UNFCCC certainly satisfies one of Ostrom’s conditions for a rule to be deemed ‘overarching’ – i.e. it clearly defines the broad goals of climate governance (Chapter 2). These are to ‘stabilise greenhouse gas concentrations in the atmosphere to prevent dangerous anthropogenic interference with the climate system’. It also defines a number of other broad norms and principles, such as the one noting that states have ‘common but differentiated responsibilities and respective capabilities’. In light of this, it governs the flow of financial and technological resources from the North to the South and requires state parties to submit regular reports on their emissions and policies (see Chapter 12).

The idea that a shift has occurred from the Kyoto model to one embodying a more polycentric form is generating a great deal of lively discussion amongst scholars of climate governance (e.g. Chapter 2), but whatever the precise extent of that shift, the jury is still out on how *capable* it is of significantly accelerating decarbonisation (see also Chapter 14). After all, states have a lamentable record of achieving self-declared emission reduction targets (Bang, Hovi and Skodvin, 2016: 212), although other actors also engage in symbolic action (Chapter 12). The Paris Agreement did more than the Kyoto Protocol to clarify the overall direction of travel, for instance by establishing two temperature reduction goals (1.5°C and 2°C) and emphasising the need for emission neutrality between 2050 and 2100 (i.e. the new ‘net zero’ goal) (see Chapter 2). Many commentators have remarked how the main purpose of these goals is to give a clear signal (for instance to the financial sector and investors) that decarbonisation will eventually happen and hence must be taken into account when making long-term investments. The Paris Agreement also achieved two other significant innovations (Falkner, 2016): it extended emission reduction commitments to all countries, not just the richest and most industrialised ones; and it put in place a global adaptation goal. In the past, mitigation has tended to be viewed as a concern primarily of the global North, whereas the countries of the global South were widely thought to require greater adaptation

(Chapter 17). By bringing mitigation and adaptation together and giving them a more equal status, many commentators hope that some of the unproductive disputes between developing and developed countries may eventually be resolved. Were this to happen, the international rules would become more widely shared and hence more ‘overarching’.

Because practically every country in the world participates in the UNFCCC, its claims to legitimacy enjoy particularly strong authority (Chapter 19). But whether the more universalising tendencies of the Paris Agreement imply that all the conflicts around climate change are more likely to be resolved remains in serious doubt. After all, any failure by a state to honour its nationally determined contribution will not in and of itself constitute a breach of international law (Falkner, 2016). As the Trump administration in the United States demonstrated in 2017, any party to the agreement that wishes to withdraw is quite at liberty to do so, having completed the appropriate withdrawal procedures. In other words, the prevailing rules may be ‘overarching’, but their enforceability is limited. This may sound like the standard, rational account of international climate politics, but Ostrom was eager to explore whether the advent of greater polycentricity allows it to be reframed. After all, Ostrom was at pains to underscore the cleverness of polycentric systems, i.e. that they are not as reliant on the performance of a particular unit or domain as monocentric systems. Thus for scholars of polycentric governance, international law is not the only potential source of overarching rules; other examples could also be investigated, such as national framework laws. These establish the basic rules of the game at the national and even the subnational level. Some even embody very long-term mitigation objectives, which are justiciable and are backed up by systems of monitoring and review (Chapter 3).

To conclude, in relation to climate change there are undoubtedly many examples of ‘overarching rules’, but not all of them are universally overarching and relatively few are enforceable. Some are quite limited, in the sense that they are restricted to specific domains, such as particular states. Two prominent examples are Norway’s Climate Change Settlement and the Climate Change Act in the United Kingdom. Although these rules are not universally overarching, they may have longer-term potency, for example in facilitating the subsequent development of more specific and binding laws in certain jurisdictions and/or governing particular sub-issues (Fankhauser, Gennaiolia and Collins, 2015a, 2015b).

*Proposition 2 – Mutual adjustment*

Units are likely to freely and spontaneously develop collaborations with one another, which over time produce more trusting relationships.

Once the constituent units and domains have emerged within a polycentric system, polycentric theory suggests that they will start to interact with one another. In the

absence of a monocentric authority, their interaction is expected to be spontaneous and bottom up. This explains why polycentric systems are often likened to complex adaptive systems (Tarko, 2017: 58), the capacity for mutual adjustment being the means by which the system as a whole responds to external stimuli.

From an explanatory perspective, Chapter 1 suggests that the main implication of Proposition 2 is that analysts should seek to chart the boundaries of, and the interactions between, the constituent elements of polycentric systems. As Chapters 2 and 10 explained, scholars of international regimes were among the first to turn their hands to this task, revealing many horizontal and vertical interactions and linkages within and amongst international regimes. This work has stimulated a lively debate about the causal mechanisms of institutional interactions, and the various ways of dealing with institutional interplay at the international level (Oberthür and Gehring, 2006; Oberthür and Stokke, 2011). But polycentric governance theory argues that it is not sufficient to only explore the interactions at an international level. Betsill *et al.* (2015) have hypothesised that consequential linkages can in principle form between a much wider array of units and domains. According to Chapter 4, the linkage that has attracted the most scholarly attention thus far is that connecting international and transnational domains (see also Hickmann, 2017). The general argument here is that transnational climate governance emerges in the ‘shadows’ of the UNFCCC process (Bulkeley *et al.*, 2012: 693), giving substance to areas of governance that have only been partially determined by international negotiators. In the area of clean technology transfer, the provisions of the UNFCCC were sparse, so particular ‘lead’ states (see Chapter 8), private actors, development banks and even some international organisations stepped in to plug the gaps that had not been resolved when diplomats established the Clean Development Mechanism (CDM) (Chapter 15). Moreover, around the CDM, numerous other transnational initiatives have emerged to certify offsets and measure emissions. Finally, the ‘net zero’ goal enshrined in the Paris Agreement has provided a new anchor for transnational action aimed at long-term decarbonisation, principally the divestment movement (Chapter 4). The resulting pattern of governance is complex and rather web-like.

Meanwhile the international domain has mutually adjusted to these developments. With hindsight, the 2009 Copenhagen conference was a ‘critical juncture’ in the development of two-way interlinkages (Hale, 2016: 15). Following the failure of governments to adopt a new agreement, UN officials were anxious to present the flowering of transnational action as a complement to multilateral action, and after 2012 they established mechanisms to catalyse (or ‘orchestrate’) them – e.g. the Non-state Actor Zone for Climate Action, technical expert meetings, high-level events, etc. By 2015, politicians were portraying transnational climate action as an integral ‘pillar’ of the Paris climate summit (see Chapter 4). Time will tell whether

President Trump's decision to pull back from the Paris Agreement marks another critical juncture in the further development of polycentric governance. Immediately after his announcement, 900 American businesses, 300 mayors and numerous universities announced that they were 'still in' the Agreement and willing to do what it takes to ensure the United States delivers on its pledge, at least on emissions if not finance (Watts, 2017: 201). In time, some observers expect the new transparency and global stocktake provisions of the Agreement to open up new windows of opportunity for non-state actors to engage in compliance and monitoring activities. Initiatives such as Climate Action Tracker certainly made their presence felt prior to Paris and seem determined to hold governments to their pledges (van Asselt, 2016). As Chapter 12 made clear, in a polycentric system, the incentive for international actors to defect also creates an incentive for non-state actors to mutually adjust and engage in surveillance activities.

Another significant axis of mutual adjustment is that connecting the international and national domains. This axis goes well beyond the classic two-level games played by substate and national actors to determine national preferences (Putnam, 1988). The cases reported in Chapter 7 confirmed that national actors use the negotiation of international agreements as a window of opportunity to push for stronger commitments at a national level and quantitative analyses have confirmed the general validity of this hypothesis. For example, Fankhauser *et al.* (2015b) have shown that the adoption of national climate policies is correlated with international-level factors (e.g. hosting the UNFCCC Conference of the Parties, ratifying the Kyoto Protocol, keeping up with what neighbouring states are doing, etc.) as well as those that are internal to jurisdictions (the partisan character of the governing party and the presence and vibrancy of NGOs, for example) (see also Fleig, Schmidt and Tosun, 2017). As argued in Chapter 9, polycentric governance does, seem to provide an opportunity structure for the diffusion of climate governance approaches, whilst at the same time being an outcome of the very same processes of diffusion.

But the axis of mutual adjustment that arguably holds the most capacity to surprise commentators is that lying between national and transnational domains. A decade ago, transnational governance was assumed to be an *alternative* to state-based action, hence little or no interaction was foreseen. Ostrom (2009) certainly did not devote much attention to it. Yet there is mounting evidence that pioneering states such as the United Kingdom, working either independently or through international organisations, have initiated around a third of the transnational climate initiatives (Hale and Roger, 2014; Roger, Hale and Andonova, 2017; see also Chapter 11). It is also becoming obvious that the extent to which national-level actors participate in a particular transnational initiative is strongly affected by prevailing national policy frameworks. For example, the existence of strong



national policies encourages national actors to engage transnationally to build on and ensure the implementation of their state's commitments and/or ensure they achieve wider regulatory equivalence (Andonova, Hale and Roger, 2017). Meanwhile, when and where national policies are comparatively weak (e.g. in Australia, Canada and the United States) and/or local governmental capacities are inchoate (e.g. China, Indonesia), transnational action appears to provide a means to strengthen national policy action. These findings open up the thought-provoking possibility that transnational actions may provide a means by which civil society actors exert leverage on their governments to ratchet up their nationally determined contributions post-Paris (Hale, 2016: 19).

*Proposition 3 – Experimentation*

The willingness and capacity to experiment is likely to facilitate governance innovation, which in turn leads to learning about what works best.

According to Ostrom (2010a: 556), a polycentric approach allows – even encourages – actors within domains to experiment with different approaches. By experimenting, actors can ascertain what works in particular settings, thus facilitating upscaling. Moreover, if experiments in one domain actively inform experiments in other domains, the likelihood of mutual adjustment (Proposition 2) rises significantly.

The chapters of this book are replete with references to experimentation. If experimentation is defined loosely to refer to the act of tinkering with new governing devices, then it seems safe to conclude that climate governance is awash with experiments. From cities to private companies, to nation states and even within the UNFCCC (Chapter 2), climate change has witnessed an explosion in the number and types of governing devices, and experimentation is often cited as both an enabler of and a motivation for that growth. In the absence of strong overarching rules (see Proposition 5), actors have been able to adopt, blend and trial a number of devices. Emissions trading is probably the most emblematic of this trend (Paterson *et al.*, 2014: 426; see also Chapter 6). It started out as an experimental device within a couple of large oil companies, then over the course of two decades gradually transformed into one of the most popular instruments of national and EU policy. Ideas and knowledge about what worked were transferred horizontally between different jurisdictions via a network mostly comprised of non-state actors (Chapter 13). Cities, too, are widely regarded as active sites of experimentation (Chapter 5). The relative absence, until recently, of references to adaptation in the UNFCCC framework has meant that many actors have also had room to experiment with various approaches to building resilience at the local level (Chapter 17).

Those that have adopted a narrower definition of an experiment (McFadgen and Huitema, 2017a; Kivimaa, Hildén and Huitema, 2017) have still been able to identify many examples of experimentation. But if an experiment is defined very narrowly as a controlled process of investigation under quasi-laboratory conditions, then the extent of experimentation is probably considerably less than Ostrom originally predicted. There are two points to take away from the discussion of experimentation. First, Ostrom did not offer a parsimonious definition of an experiment. Second, were a common analytical definition to be arrived at, experimentation would still not be an entirely unproblematic category of action amongst practitioners (McFadgen and Huitema, 2017b). In practice, many important political calculations are likely to be at work when a particular group of actors decides to come together to initiate ‘an experiment’. In turn, the ways in which that experiment is designed and run are also unlikely to be entirely open and neutral (Chapter 6).

Two other important reservations about Proposition 3 are also raised in various chapters. First, does experimentation actually produce innovations in governance, as Ostrom claimed? Much depends on how narrowly or broadly one defines ‘innovation’ (and experimentation). If it is taken to mean the development of new policy and governance inventions (i.e. entirely new to the world), then it is fair to admit that the fruits of all the experimental activity noted earlier have not been that spectacular, at least thus far. For example, a fair degree of rebranding has taken place in relation to the announcement of new climate initiatives (Widerberg and Pattberg, 2015: 47, 52). Those that have examined city networks have concluded that a great deal of experimentation is symbolic, i.e. only a minority of networks set numerical reduction targets that are significantly more ambitious than those emerging within the UNFCCC (Bansard, Pattberg and Widerberg, 2016) or at a national level (Jordan *et al.*, 2015). Indeed, many governance initiatives arguably operate within a particular understanding of what is desirable and possible to achieve through governing – one that reflects the core tenets of liberal environmentalism. Having reviewed three sets of transnational initiatives in some detail, Chapter 4 concluded that they rely upon active collaboration with large companies and thus broadly accept their motives of profit maximisation. The only exception is the divestment movement, which is mounting a more fundamental challenge to prevailing business practices (albeit using a rather capitalistic strategy – i.e. inducing investors to invest their money elsewhere). Chapter 16 goes further still, flagging some potentially darker sides of experimentation – namely direct, sometimes uncontrolled experiments with the climate system through the use of climate engineering techniques such as iron fertilisation of the oceans. Such experiments operate in legal grey areas, backed not by states or even private companies (the economics of climate engineering are still not viable enough at scale), but wealthy

philanthropists. In short, polycentric theory has drawn attention to the eagerness of actors to engage in governance innovation. But whether these forms of governance are themselves innovative or indeed laudable from a legal or normative perspective remains a very moot point (Jordan and Huiteima, 2014a, 2014b).

Second, to what extent is experimentation generating societal learning? Almost by definition, policy experiments seek to derive transferable lessons by building in ex-ante and ex-post evaluation. In monocentric systems, there is a strong expectation that higher authorities will manage and legitimise these activities. But when governance is more polycentric, it becomes harder to work out who is doing what, let alone evaluate their activities and learn universally applicable lessons. Apart from having diverging goal and instrument preferences, different units may well adopt approaches to evaluation that actually conflict with and/or fail to share their findings with neighbours. Evaluation itself can also easily succumb to collective action problems, leading (at best) to a lack of standardised methods and (at worse) a proliferation of *à la carte* approaches that approximate a race to the bottom (Schoenefeld and Jordan, 2017a; see also Chapter 12). The picture that emerges from many chapters of this book is that climate governance is succumbing to some of these pathologies. For example, little has been done to monitor and evaluate transnational climate initiatives (e.g. Widerberg and Stripple, 2016; van der Ven, Bernstein and Hoffmann, 2017). Those evaluations that have been undertaken have tended to be few in number and mostly ex-ante in nature (i.e. approximating optimistic predictions of what could be delivered as opposed to what actually is delivered) (Hsu, Whitehouse and Schwarz, 2015; but see Chan *et al.*, 2018). In short, evaluation does not appear – at least, not yet – to be self-organising in the way that Ostrom (2009) implied, which has limited the extent to which experimentation (however defined) has facilitated an scaling up of the most promising initiatives (for a critique of the term scaling up, see Chapter 6).

#### *Proposition 4 – Trust*

Trust is likely to build up more quickly when units can self-organise, and as a result collective ambitions increase accordingly.

The basic ontology of international political studies is one of states struggling to collectively adopt credible commitments in the context of high uncertainty and very low trust. But Ostrom argued that trust is more likely in a polycentric setting, because of the greater ability of actors to interact directly with one another (Ostrom, 2010a: 554). A great deal of Ostrom's other work on environmental problem solving focused on (local) communities managing environmental resources together. At that level, monitoring is relatively easy and, through monitoring, a trusting division of labour amongst the various actors is more likely to

emerge over time. One additional – and key – contention made by Ostrom is that trust building is possible at all levels, including the global level.

When researchers began to study governance outside and below the international regime, it was more or less expected that these assumptions would continue to apply. So, for example, the various domains outlined in Part II were assumed to be complements, not substitutes (Hale, 2016: 19). Similarly, Green (2014) suggested that global climate governance is a positive-sum game, in which efforts by state and non-state actors grow simultaneously and in a mutually reinforcing manner. The UNFCCC process, meanwhile, would simply establish long-term targets and outline possible implementing strategies (Bulkeley and Newell, 2010: 105–106). As the limits to state- and international-level action became steadily more apparent, non-state actors would be drawn into processes of delivery and implementation. And where the international regime was less prescriptive (on issues such as adaptation or technology transfer), non-state actors would self-organise to plug any remaining governance gaps (Widerberg and Pattberg, 2017: 68). In effect, a process of self-organisation was being indirectly invoked by researchers, without any explicit referencing to the work of the Ostroms.

As the landscape of governance has grown more congested with initiatives, researchers have begun to pay much closer attention to the interactions between units and domains. This work has uncovered evidence of collective self-organisation born of trust, but also of conflicting priorities and approaches. For example, in the domain of city-level initiatives, Chapter 5 documents the competition and conflict that has emerged between networks for members and between city regions for inward investment. In relation to carbon finance, banks, donor organisations and NGOs compete with one another to shape the flows of carbon finance ‘creating problems of duplication and turf wars over who funds what’ (Bulkeley and Newell, 2010: 106). Meanwhile, in relation to adaptation, funding conflicts are emerging between different cities and regions over how to protect themselves against impacts. If adaptive measures are not taken in a planned and coordinated fashion, they may not be sufficiently ‘synchronised’ (e.g. a flood defence system that ends at a political border between two administrative units; see Chapter 17). In short, the relationship between initiatives could very well be a conditional one (e.g. complementary in some conditions, but potentially substitutive in others) (Andonova *et al.*, 2017).

The central role which polycentric theory ascribes to trust should, in other words, not be taken for granted. In principle, different types of interaction are possible: climate initiatives and policies could complement one another without actually interacting; but they could also merge; they could compete and conflict with one another; or some may actively replace other types. These forms of interaction – termed *co-existence*, *fusion*, *competition* and *replacement* – should form the basis

for a new programme of research (Jordan *et al.*, 2015), which is informed by polycentric theory, but which problematises the role of trust. For example, has the growth in polycentric governance over time increased the occurrence of competition and replacement? Similarly, how do the patterns of interaction vary between state jurisdictions that embrace different levels of climate ambition (e.g. lead states versus followers; see Chapter 8)? And is trust greater in domains which are actively and independently monitored and evaluated, or does external oversight increase conflict and competition (Chapter 12)?

Ostrom argued (2009) that trusting relationships are much more likely to emerge when there are common systems of monitoring. She expected monitoring to self-organise at all levels and in all sectors of governance (Ostrom, 2014: 98). Yet across the emerging landscape of climate governance, very few of the new forms of governing appear to be that well monitored. For example, the majority of transnational city networks have few or no monitoring provisions (Chapter 5), potentially rendering them mere talking shops. The same could be said of the initiatives reported under the UNFCCC's 'Action Agenda' (Widerberg and Pattberg, 2015: 47, 53). It seems reasonable to assume that amongst the many new forms of governing, state policies would be the most actively monitored; after all, many have been in existence for longer, and many states already have evaluative bodies that could be mobilised. Yet the rather sobering conclusion of Chapter 12 is that very patchy evaluation and monitoring make it very difficult to assess the impacts of mitigation policies across countries over time. There are a number of reasons for this, including very significant technical difficulties in demonstrating causality through to the political sensitivities that emerge when policymaking is opened up to external scrutiny (Dorsch and Flachsland, 2017: 58; Schoenefeld, Hildén and Jordan, 2018).

Greater monitoring would reveal the extent to which the various forms of governance that now exist actually contribute to a reduction in emissions. From the perspective of climate change mitigation, it does not really matter where the emission reductions are made. But from a governance perspective, it is very important to know which actors fulfil their commitments (as well as how and why), and which actors fall short. If these matters are opened up, perhaps through processes of mutual evaluation, trust may eventually start to build from the bottom up, as politicians learn. After all, most governance interventions fail to some extent, and if the causes of failure are made clear to all, then it may encourage politicians to trust one another more, not less.

It may be politically convenient at the present time to assume that the Paris Agreement's transparency framework and the five-yearly global stocktakes starting in 2023 will eventually address these issues. But when so little is being monitored, an entirely different scenario which resembles some of the characteristics of more

monocentric governance may come to pass, i.e. disputes over technical matters such as causality may spiral, and governors could squabble over the attribution and the double counting of emissions arising from state and non-state governance (Widerberg and Pattberg, 2017: 84). Monitoring may thus mirror ongoing contestations about accountability, rather than overcoming them (Gupta and van Asselt, 2017; see also Chapter 19). If this happens, the bottom-up architecture of the Paris Agreement will struggle to generate more trust and emissions reductions could falter, making the more radical technological alternatives (climate engineering) appear even more attractive (Chapter 16). In summary, the steady progression from self-organisation through to deeper trust, by way of greater monitoring and more reflexive evaluation, appears to be more problematic than Ostrom originally assumed.

*Proposition 1 – Local action*

Governance initiatives are likely to take off and prosper at a local level, through processes of self-organisation.

Finally, we investigate what may be motivating the appearance of the more polycentric forms of governance. Polycentric theory generally assumes that actors will mobilise against a problem when it is in their self-interest to do so. In Chapter 1, we noted how Ostrom's original hypothesis was that many actors would address climate change to reap co-benefits such as improved human health, lower energy costs and better local air quality. Proposition 1 emerges out of decades of research on how local actors address local problems. But how well does it carry across to climate change – a more global issue, with many more actors operating across a multitude of scales?

In general, the changing landscape of climate governance suggests that more non-state actors are making a rational calculation to act against climate change. They are not waiting to be told what to do by an external authority; they are, in other words, taking matters into their own hands (Ostrom, 2010b: 6). The most powerful illustration of this point is the wide variety of non-state actions. In the past decade or so, private and civil society organisations have demonstrably shifted tactics. Instead of seeking to influence international policy processes or waiting to 'take' policy instructions from states, they have self-organised. According to Chapter 4, transnational climate governance is 'by definition' local action.

But why are actors behaving in this way? Studies confirm that the expectation of co-benefits (or at least 'non-climate' concerns) is significant across a large number of cases. For example, transnational governance appears to have many triggers, including moral concerns, a desire to forestall new regulation (or at least shape it), the pursuit of direct financial rewards and the satisfaction of consumer expectations (Hoffmann, 2011; Abbott, 2012). Meanwhile, for around 40 per cent of the 1,200

climate change laws reported in Chapter 3, energy efficiency and energy security are primary foci, not climate change per se (Averchenkova *et al.*, 2017). Similarly, amongst businesses, local action is motivated by many calculations: pressures to minimise costs (arising from high energy prices through to supply chain disruptions caused by extreme events), the urge to exploit new market opportunities and the need to satisfy shareholder concerns (Gies, 2017). So while Proposition 1 maybe generally true, further research is required to produce more fine-grained explanations of the precise motivation(s) to act locally (Jordan *et al.*, 2015). New typologies of motivation could be tested against the many different forms of new climate governance to shed light on what is arguably the most fundamental question of all: in what conditions does polycentric governance emerge in the first place (Galaz *et al.*, 2012: 23)? This could build on the work on mutual adjustment (see Proposition 2) to parse out the relative influence of international and national governance from other factors.

It is important to note that Proposition 1 does not necessarily assume that all actors have the capacity or indeed the motivation to act locally. For example, Chapter 4 documented the uneven geographies of participation in transnational climate governance. Chapter 3 identified the equally uneven pattern of legislative activity across different countries. Chapter 4 emphasised that the membership of transnational city networks is also very heavily skewed to the richer countries. And Chapter 17 reported the existence of many capacity deficits in relation to adaptation, and suggested that even more would be revealed if analysts focused more on the ‘non cases’ of little or no local action, a case also made by Chapter 5. In these and other settings, action may only occur when a particular type of actor is present – a policy entrepreneur, a leader or an orchestrator (see Chapters 7, 8 and 11). Several chapters confirm that certain actors somehow manage to ‘punch above their weight’ (Chapter 7) in driving action (and governance) forwards. In fact, many of the more innovative examples of governance can be originally traced back to the activities of one or more of these very special types of actor.

Ostrom was attentive to the possibility that these special actors are not necessarily present in all circumstances (McGinnis, 2016: 12, 16). But two additional points about the viability of polycentric governance arise from our analysis of Proposition 1. First, if a small number of actors really do play such a disproportionately significant role in enacting climate governance, should we not critically reflect on how robust the whole system is? Ostrom (2010a) claimed that because they are multcentred, polycentric systems are inherently robust. But when the scale of climate change is so vast and the number of critical actors is so low, perhaps the implication of Proposition 1 is not how robust but how potentially fragile the whole system is in certain places. Certainly, analysts could helpfully ask who will lead when the barriers to action are especially high – for example, in

countries with relatively closed political systems (Andonova *et al.*, 2017) or where fossil fuel industries are especially powerful actors.

Second, local action has been sufficiently vibrant thus far to generate many new forms of governance, but it has not yet triggered a significant, economy-wide process of deep decarbonisation (see Chapter 14). At the very least, accelerated decarbonisation commensurate with achieving 1.5°C seems to assume a significant scaling up of what is currently being achieved through local action motivated by co-benefits (Millar *et al.*, 2017). Perhaps polycentric governance is mainly a means to encourage experimentation within a particular trajectory of climate governance, rather than to generate a step change in the level of ambition or diffuse significantly more impactful forms of governance. We consider these questions in more detail in what follows.

#### **20.4 Greater Polycentricity: Substantive and System-Wide Effects**

Ostrom (2010a: 552) maintained that polycentric systems would drive down emissions, trigger innovation, facilitate adaptation and produce more sustainable outcomes across a range of scales. These are very big claims. The chapters in this book document the emergence and spread of climate governance, but more efforts are required to understand what effects the new forms of governance are producing ‘on the ground’. To a large extent, this is a function of the immaturity of this particular field of research and the speed at which the whole landscape is evolving. As in many other areas of polycentric research, scholars have sensibly decided to ‘bracket off’ effects and outcomes in their analyses for now (e.g. Andersson and Ostrom, 2008: 89). To be fair, the UNFCCC was never solely about reducing emissions either – hence the multitude of references in the text to sustainable development, economic growth, capacity building and equity. And Green (2014) helpfully reminds us that for many of the newer forms of governance, ‘process’ contributions (sharing knowledge, enhancing awareness, etc.) were a significant initial motivation, rather than reducing emissions or rapidly accelerating technological innovation. However, the global climate is warming and the issue of substantive effects will eventually have to be addressed. Atmospheric concentrations of greenhouse gases continue to rise, and without a source of comparable and transparent information on governance outcomes (see above) it will be very difficult to determine whether the high hopes invested in polycentric governance are warranted. In fact, polycentric governance theory reminds us that when governance is interconnected, a political price may have to be paid by governors and especially politicians – for not investing in assessment capacities. Ostrom (2010a) argued that by revealing the co-benefits of acting, politicians could motivate the public to act faster on climate change. But if credible evaluations of co-benefits are



unavailable, politicians will surely have to work that bit harder to muster a convincing case for deeper decarbonisation (Chapter 14). There is an interesting paradox at work here. Politicians may be wary of investing in new assessment capacities or imposing them on private actors in case they reveal cases of under-performance that are politically embarrassing. But if they are weak or absent, politicians may find it harder to engage in fact-based arguments in favour of stronger climate measures.

What about broader, system-wide functions such as facilitating equity, justice, legitimacy and accountability? In Chapter 1 we noted that polycentric systems are known to be weak at discharging more structural tasks such as these. Matters of equity and justice have been at the heart of political debates since the inception of the climate regime. They are clearly flagged in the text of the UNFCCC, and have directly informed the preferences and strategies of many actors, particularly those in the developing world. Indeed, Chapter 18 claims that the perception that unmitigated climate change risks perpetuating current injustices has done much to accelerate the development of new forms and sites of governing (e.g. in the areas of climate finance, market-based mechanisms and technology transfer). In other words, justice and equity concerns may have stimulated action (Proposition 1), in turn increasing the polycentricity of governance.

The link between polycentric governance on the one hand and equity and justice on the other has triggered two reactions, neither of which will surprise polycentric theorists. The first is that greater polycentricity provides new opportunities to address these concerns, which are long-standing and for the most part largely unresolved – opportunities that could not be delivered by a monocentric regime that had become more gridlocked. Thus, the Paris Agreement has given adaptation a much more prominent place, which may eventually trigger new governance innovations (Chapter 17). Many transnational forms of governance seek to effect a pragmatic interpretation of the ‘common but differentiated responsibilities’ principle in the UNFCCC, through enabling technology and finance to flow to developing countries. Transnational actors are in effect able to deliver on issues that had become simply too politicised in the UNFCCC (Castro, 2016: 400).

A second likely reaction is that polycentric governance suffers its own variant of the age-old North–South divide in environmental politics (Hale, 2016: 20). Thus the more bottom-up Paris Agreement allowed richer countries to make all sorts of pledges (on emissions, finance, etc.) that may not be met (Bang *et al.*, 2016). The weaker participation of developing countries in the design and running of many city networks and international cooperative networks also tells its own story. The poorest countries are being particularly badly treated in a number of key respects. Chapter 15 documents how larger developing countries with strong national policy support instruments and governance systems have benefited the

most from cleaner technology transfer. Some go further still, arguing that polycentric climate governance does not simply legitimise the status quo (Castro, 2016), but opens up new opportunities for private companies in the North to make money from climate mitigation and adaptation, thus accentuating current injustices (see also Chapter 18).

Polycentric governance systems are also known to be vulnerable to the charge that they are illegitimate and unaccountable (see Chapter 19). This line of critique is, we think, appreciated by many polycentric theorists, but should be taken more fully on board (as we noted in Chapter 1). It is abundantly clear that many non-state actors are taking on the responsibility and thus the authority for addressing climate change, but with so many hands at work, the risk grows that no one is ultimately accountable. Legitimacy is typically founded on one of two forms: governance inputs or governance outputs (Schmidt, 2012). How well do polycentric systems of climate governance fare against these two criteria? Output legitimacy has already been alluded to. It refers to the ability of governance to satisfy the public, chiefly through the delivery of public goods such as an habitable climate. As noted earlier, it is very difficult to determine what polycentric governance is providing against this criterion, given the fragmented systems of monitoring and evaluation.

Input legitimacy on the other hand corresponds to the participation of actors in shaping the contours of governance – through the following of rules governing who should participate, when and how. But when the climate governance landscape is in such deep flux, it is rather difficult to determine who is really accountable to whom (Widerberg and Pattberg, 2017: 84). And when there are only weak overarching rules (Proposition 5), actors may find it easier to shop between domains, and engage in free-riding or greenwashing. These risks are particularly starkly revealed in relation to radical emission reduction technologies which currently fall between a number of different international regimes (Chapter 16). Similarly, many forms of transnational governance were originally designed to perform quite functional tasks. City networks, for example, are not as transparent as is often assumed (Bansard *et al.*, 2016). Indeed, they are sometimes derided as exclusive clubs – networks of pioneers for pioneers (Chapter 5). Many of the world's largest cities are not members and hence their citizens have no voice. Meanwhile, orchestration is emerging as an important means by which some actors govern the landscape (Chapter 11), yet their associated transparency and accountability mechanisms are 'nascent at best, [and] non-existent at worst' (Bäckstrand and Kuyper, 2017: 22).

It would be tempting to conclude that polycentric systems are inherently illegitimate. However, before leaping to that conclusion, it is worth reflecting on what the basis for comparing between governance systems is, because in reality none is

perfect (see Chapter 1). Hence trade-offs across the two forms of legitimacy are probably necessary. Moreover, the legitimacy of any system is often intimately connected to that of cognate systems, which in our case include the international regime and systems of national policymaking. How well each actor goes about constructing and maintaining its legitimacy is thus a vitally important challenge deserving further research (compare Bulkeley *et al.*, 2014).

### 20.5 Conclusions: The Promise and Limits of a Polycentric Perspective

A vibrant debate is under way amongst analysts and practitioners concerning the origins, extent and functioning of polycentric climate governance. This debate is exciting because it appears to offer an empirical validation for a broader narrative of political dynamism in a world that remains acutely concerned about the risk of gridlock in the UNFCCC process. However, we believe that it is important that this narrative remains theoretically and empirically informed, given the tendency for overenthusiasm to creep into studies of innovative activity (Jordan *et al.* 2015). This is even more true when one is dealing with a relatively open theoretical concept such as polycentric governance. In the past, that concept has been used to inform a wide variety of empirical case studies, whose primary purpose has been to provide a proof of principle than a rigorous test of its veracity. To move the debate forward and address the criticism that it does not have a sufficiently clear core (Galaz *et al.*, 2012: 22), in Chapter 1 we unpacked the key ingredients of polycentric theory and expressed them in the form of five central propositions. In this final section, we examine the promise and the limits of a polycentric approach as a means to *describe*, *explain* and *prescribe* contemporary shifts in climate governance.

As a *descriptive* device, this book has revealed that polycentric terms and concepts have great value as a means to account for the rapidly changing contours of the climate governance landscape. In the past, climate governance has been examined from the standpoint of single levels and domains, producing a set of insights that are revealing but nonetheless only partial. Polycentric approaches seek to offer a more holistic perspective which furnishes a more synoptic appreciation of all the landscape's component parts and, even more crucially, the interactions between them. It goes beyond labels such as 'fragmented', 'multilevel' or 'complex'; instead, it seeks to transcend existing debates and categorisations (e.g. 'regime complexity').

The ability of a concept to offer a better description of a particular phenomenon is commonly underrated because description is automatically assumed to be inferior to causal analysis (Gerring, 2012). In practice, description often *precedes*

(and is a precondition for) good causal work. The work summarised in this book amply demonstrates the importance of undertaking careful descriptive work in an area which is developing very rapidly and is of huge societal importance. The construction of larger databases of transnational and national policy activity has not only revealed the value of adopting a holistic perspective but also opened up many new and important research questions. Elinor Ostrom was fond of saying that analysts should ‘unpack the complexity in order to understand it’ (Ostrom, 2010b: 19). We think that describing climate governance as polycentric provides a fresh reason to more fully unpack and understand its internal complexity.

This takes us neatly onto the *explanatory* perspective: the chapters remind us that when a governance landscape is polycentric, causal processes are likely to go in many directions, some rather unlikely. Polycentric theory’s main strengths – its breadth and openness – have, however, made it difficult to apply in the past. Structural issues, such as the exercise of political power, legitimacy and accountability are also not yet fully accounted for, although it should be remembered that all theoretical frameworks have their blind spots. The five propositions outlined here do, we think, provide a sound basis for a new, shared programme of interdisciplinary work on climate governance. As part of that broader programme, polycentricity could usefully serve as a meso-level concept around which other concepts and theories can be brought into a more productive dialogue with one another (see also Galaz *et al.*, 2012: 22). The chapters of this book have, for example, helpfully revealed what extra is learnt by drawing on theories of diffusion (Chapter 9), leadership (Chapter 8), orchestration (Chapter 11), experimentation (Chapter 6), entrepreneurship (Chapter 7) and accountability and legitimacy (Chapter 19). Many of these theoretical and empirical connections are already being made by analysts working from partial perspectives; polycentric governance provides a means to assemble the jigsaw pieces into a more complete picture.

Emerging from the chapters are at least two explanatory challenges that we think deserve further research. First, what role is the state performing in polycentric governance? The Ostroms have often been misread as being completely fixated with local action (see, for example, Mansbridge, 2014: 8), when actually polycentric theory is deeply concerned with the *balance* between monocentric and polycentric forces. At present, a rather binary view of the state risks taking hold in climate governance scholarship. One line of argument is that the state has been hollowed out by austerity, has been captured by neoliberal forces and is too deeply mistrusted by voters to make a difference (Rockman, 2017). According to this argument, non-state actors have responded by constructing new forms of governance in areas where the state cannot or does not want to go (Hoffmann, 2011). The second line of argument is that although pure monocentricity maybe a non-starter, the state nonetheless remains ‘an actor like no other’ (Chapter 3).

Polycentric theory seeks to work across this binary conception by paying greater attention to the more passive and active ways in which states shape polycentric governance, whilst acknowledging that their precise role is likely to be contingent (Ostrom, 1999: 281). We know, for example, that the structure of national systems exerts a passive effect through affecting the political opportunity structures encountered by subnational and non-state actors (Roger *et al.*, 2017). In general, closed-state structures inhibit transnational action and vice versa (Andonova *et al.*, 2017). States also actively nurture governance innovation by a variety of means. They are: creating policy instrument constituencies (emissions trading and feed-in tariffs being prominent examples) by intentionally engaging in policy feedback, facilitating the diffusion of governance innovations by funding learning capacities (Chapter 9); anchoring private standards (Green, 2014) and encouraging learning by establishing bodies with evaluative capacities. They are also orchestrating other actors, both directly and via international organisations such as the UN Environment Programme and the World Bank. In other words, state power is being expressed and rearticulated in new ways (Hickmann, 2017). Similarly, it is important to understand how state structures affect how new ideas (e.g. emissions trading; see Paterson *et al.*, 2014) circulate and become transplanted in national policy systems. Until now, these political choices have mostly been seen as binary: as alternatives rather than complements.

Second, what about the temporal dynamics of polycentric governing? How long does polycentric governance take to form and how and why does it change over time? Chapter 13 offers a salutary reminder that polycentric governance may take at least as long to emerge as conventional international agreements: the first experiments with emission trading were initiated as long ago as the 1970s. Furthermore, is there, for example, a natural upper limit to the number of initiatives and domains in a polycentric system? The growth in the number of transnational initiatives and national climate policies does appear to be tailing off (see Chapters 3 and 4) and some city networks have actually lost members in recent years (see Chapter 5). Does this finding hold for other forms of non-state governance and, if so, what explains it? Finally, how long do the newer forms of climate governance last? Polycentric theory reminds us that bottom-up governance is a perilous activity, vulnerable to lapses in funding and state support (Galaz *et al.*, 2012: 31). Experience suggests that many bottom-up initiatives are indeed ephemeral and quietly ‘sink’ (Benson, Jordan and Smith, 2013), particularly when states actively withdraw their support. Around 40 per cent of the public-private partnerships adopted at the 2002 World Summit on Sustainable Development have suffered this very fate (Hale, 2016: 18). If simply surviving is such a challenge, it may explain why many forms of bottom-up governance set such vague targets and incorporate weak monitoring systems.

Finally, to what extent does polycentric governance offer a means to *prescribe* how to govern climate change? The Ostroms thought that description, explanation and prescription were tightly interconnected (see also Gerring, 2012: 746). Elinor Ostrom promoted academic research that was doubly engaged – in addressing real-world problems and understanding the real-world complexity that governors confront on a daily basis. Table 1.2 in Chapter 1 is replete with policy prescriptions that are potentially testable. She maintained that they should be subjected to rigorous and critical academic analysis. It is telling that her 2010 article (Ostrom 2010a: 554) listed a number of potential weaknesses, including free-riding and carbon leakage, which should also be borne in mind. After all, she always counselled against reductionist and/or ‘panacea’ thinking – i.e. assuming that a prescription at one level or in one domain will neatly fix a particular problem (Ostrom, 2007). For example, making a governance intervention more effective and accountable by wrapping it in new systems of monitoring and evaluation risks removing the very sources of spontaneity that brought it into existence in the first place. Finally, she would not have been surprised to discover that in this particular area of governing, academics are still playing catch-up. The chapters of this book offer a very sobering reminder that practitioners were actively remaking and rescaling governance long before academics began to research the new landscape.

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