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The rise and fall of the global climate polity

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Chapter 12: The Rise and Fall of the Global Climate Polity

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Introduction

Not so long ago the idea that a global climate polity could exist would have seemed bizarre or simply nonsensical. ‘The climate’ was effectively just patterns of weather over time. Though there is a long history of attempts at affecting weather, these were generally limited to engineering local and temporary effects on rainfall, and historically many schemes ended in failure or even ridicule (Fleming 2012). Few if any people seriously entertained the idea that people, states, corporations and international organisations would mobilize and operate giant monitoring and regulatory systems in concerted attempts to change (or preserve) the chemical composition of the global atmosphere.

This raises not only the question of how the idea of governing something like the climate so rapidly became a matter of course but also how sure we can be that it will

remain so in, for example, another 30 years. Other objects today considered immutable or irrelevant may also become objects of governance of central importance while things we today regard as governable may disappear as targets of governance just as other objects of governance such as ‘Mesopotamia’ straddling modern day Iraq or ‘Danelaw – a power structure in Northern and Eastern England in the 9th and 10th Centuries – have come and gone. It is too early to write the definitive story of ‘the rise and fall’ of the global climate polity, but this chapter makes a start by considering the bigger picture of a climate polity, what one is, and what its future prospects might be.

In the following, first the question is asked whether examinations of localized governmental power and micro-techniques in the chapters of this book need to be accompanied by a consideration of a bigger picture or structural context. Next, the global climate polity is theorized beyond the models of hierarchy and anarchy that underlie the Westphalian paradigm. A generic theory of what constitutes a polity is elaborated from Foucault’s ideas about how changing objects of governance are central to the shape and logic of political entities, and the criteria for a ‘global climate polity’ are defined. The third part looks back briefly asking when and how a global climate polity thus conceived could be said to have evolved. The final section peers towards the future to consider differing visions of the demise of the global climate polity as we know it: will it be superseded by a more encompassing ‘Earth System polity’ centred on governing not only the climate but also other interrelated geophysical systems? Or could it splinter as it becomes increasingly clear that the climate is too complex and feral to be an object of governance? In this latter scenario the climate polity will split into smaller and more local polities based on carving out certain favourably located areas (not necessarily the nation states as we know them)

as enclaves of human survival in a new, hotter and less hospitable climate on Earth in a new climatic equilibrium 5-8 degrees Celsius above preindustrial levels.

Governmental Techniques and the Bigger Picture

Whereas most of the other chapters in this volume go ‘down’ to the nitty-gritty where subjects and objects are constructed, where micro-practices constitute truths or domains of governance and where assemblages of technical and human networks are forged, this section aims to take a step ‘up’ to elucidate a clearer picture or model of what a global climate polity is in terms of its totality: how are the elements of a global polity structured and what makes a polity a polity? Rather than beginning from a grand narrative or structural model of international politics, the chapters of this book tend to foreground practices of governing and how these shape and render subjects and objects real and governable in particular ways. Thus Hargreaves examines smart meters in terms of ‘techniques and tactics through which individual subjectivities are constantly made and remade to achieve particular ends’ (Chapter 7). For Sally Eden, ‘The power to shape carbon behaviour therefore resides neither in the state nor the individual consumer, but is distributed through the complex assemblage of humans and nonhumans’ (Chapter 6). Juliet Fall explores ‘how calculative practices and scientific discourses on biodiversity frame how mobile species are governed’ (Chapter 9) while Anders Blok emphasises that instead of assuming an integrated global climate polity, ‘climate governance is a shifting meshwork of superimposed local-global “problem geometries”’ (Chapter 2). Chris Methmann usefully explores the concept of hegemony as ‘the missing link between Foucault’s everyday and mundane micro-practices of power and broader macro-structures of governmental power’ (Chapter 3) but leaves these broad macro-structures largely implicit.

This tendency to bracket structural questions and the wider context of governmental techniques in favour of local techniques and tools of governing is common to many Foucault-inspired analyses of international relations intent on escaping the usual assumptions of states and anarchy. For Michael Dillon, for example, with a Foucauldian analytic of power ‘(t)he grand narratives of geopolitics, sovereignty, self-determination imperial conquest and ideological conflict would also be bracketed-off, replaced with accounts of the micro-practices by which individual and collective bodies are inscribed with power’ (Dillon 2004: 79). In an early statement on global governmentality, Larner and Walters also saw governmentality as a way of “bracketing” the underlying forces and causes’ (Larner and Walters 2004: 16) although theirs is also a project which ultimately aims to illuminate ‘how these [underlying] institutions, forces and realms come to be known, and to know themselves, in particular ways’ (Larner and Walters 2004: 15).

While bracketing can be a fruitful temporary methodological move to perform what James Rosenau called a ‘conceptual jail-break’ from statism (Rosenau 2006: 14), a failure to provide alternative overall accounts of the structural context of governmental formations and assemblages bears the risk of them subsequently being interpreted through conventional models of world order, only by default. In this volume the global climate polity itself gets characterized primarily in terms of what it is not: something ‘in-the-making’ or a ‘meshwork’ (Chapter 2), ‘complex assemblages’ and ‘imperfect systems’ (Chapter 6) the ‘heterogeneity and “messiness” of governmental regimes’ (Chapter 3). The complexity and messiness of a climate polity is in turn conceived in terms of an underlying simple or neat model of what

climate politics is *not*: just the business of states, working in ordered multilateral form within settled constitutional settings. The structural models of the Westphalian Age creep back in to fill the structural gap, in other words. To many, ‘global climate polity’ might evoke images of an emerging global political system that authoritatively distributes values and burdens connected with regulating the world’s climate (however imperfectly). For others, a global climate polity may refer to a situation where independent actors are engaged, via international institutions but with no central authority, in governing the climate through negotiation, competition and compromise. Hierarchy and anarchy are easy to recognize behind these two ways of understanding a ‘climate polity’. With these models the usual distinctions (domestic/international), actors (states and ‘non-state’ actors), and practices (diplomacy, negotiation, bargaining and institution-building) soon re-take centre-stage (Walker 1993, Bartelson 1995, Corry 2006 2010).

But bracketing the structural context of governmental techniques also risks marginalizing the governmental approach itself. Jonathan Joseph has argued that Foucault’s governmentality approach focusses on the ‘how’ of governing as opposed to the ‘why’, leaving aside structural conditions for governmental techniques: ‘To complete the picture, we need to move from strategies and rationalities to conditions of governmentality and to underlying social structures and processes’ (Joseph 2012: 14). He interprets governmentality not as constitutive of social relations *per se* but as a neoliberal set of governing techniques that are conditioned by an underlying capitalist system of production and a system of states. The state system generates realist ‘structural dynamics’ including ‘concerns of foreign policy and ensuring security in an uncertain world of rival states’ (Joseph 2012: 44) and governmentality

becomes one tool in this. In this way the anarchic structure of the international system and an underlying economic structure considered constitutive of governmentality are reintroduced to fill a lack in the governmentality approach which allegedly cannot account for what makes governmentality possible in the first place. This is a particular reading of governmentality in which it is largely stripped of strong claims to constitutive effects and is confined to examining the uneven spread of liberal forms of power in an international system. Choosing this reading of governmentality has its merits (although it does not take on board the central idea of governmentality that the intimate meshing of mentalities, technologies, and materialities condition how politics works (Brass 2000) but also illustrates how the absence of a model of overall structure of its own invites the usual models back into governmental analysis, somewhat defeating the original methodological move.

Here the aim is to examine the global climate polity as a structure in a fashion that does not bracket wider structural questions and does not render governmentality epiphenomenal leaving the theoretical stage empty for a re-entry of standard models of international order.

What is a Global Climate Polity?

So how is a global climate polity to be understood if not in the usual way as a system of major actors and international institutions? Like others in this book, I draw on Foucault's governmentality lectures to develop an answer but my aim is to use a model focusing on the role of objects in the constitution or 'anchors' of political structure. What if the object of governance is what organizes (or constitutes) the structure itself – i.e. what if the governance-objects are what constitute the polity?

Foucault suggested that regimes of knowledge about governing such as the new science called ‘political economy’ “[that] arises out of the perception of new networks of continuous and multiple relations between population, territory, and wealth” (Foucault 2002: 217) helped to advance the art of government. What emerged with the art of government was not just a new ideology, but a whole new range of ‘objects’, spheres and technologies of government. These depended upon and in turn fed a new mentality of governing, displacing amongst other things Mercantilism ‘trapped within the inordinately vast, abstract, rigid framework of the problem and institution of sovereignty’ (Foucault 2002: 214). This allowed new technologies of governing to be developed such as political economy and statistics. It is not just the emergence of social objects of ‘the economy’ and ‘the population’ but ultimately the emergence of a domain of ‘society’ as such, that is so characteristic of the modern liberal art of government that preoccupied Foucault’s later work

What was discovered at that time [...] was the idea of society. That is to say, that government not only has to deal with a territory, with a domain, and with its subjects, but that it also has to deal with a complex and independent reality that has its own laws and mechanism of distribution. This new reality is society. From the moment that one is to manipulate a society, one cannot consider it completely penetrable by police. One must take into account what it is (Foucault 2002: 352).

What Foucault describes is effectively how the governance-object of ‘territory’ was gradually replaced by ‘society’. Sovereign power over territory was merged with

disciplinary and police power over a new set of governance-objects such as economies and populations.

Moving an analytical step up, Foucault's narrative can be taken to imply that the existence of governance-objects can be constitutive of polities (Corry 2006; 2010; Methmann 2011). In these terms, 'climate polity' can be defined as a situation in which the climate is constituted and then treated as an object that can and should be manipulated purposively. In this way governmental techniques not only enact power over subjects but also help constitute the objects of governance that in turn structure political relations. Thus, if the global climate is emerging as a governance-object through apparatuses, discourses and technologies rendering the climate governable, including knowledge and disciplining regimes that frame the world as essentially one place ('global'), then a 'global climate polity' can also be said to be congealing. The very existence of the climate as a governance-object is constitutive for political relations. What is common to the infrastructure and actors (or 'actants' in ANT terminology) of a climate polity is that they define themselves or are oriented towards governing 'the climate'. They may disagree about how, and they may be located anywhere, and they may be state or non-state. But minimally they share an orientation towards the global climate (see also Corry 2013).

This approach suggests an understanding of the global climate polity that differs in several ways from the two standard models of political structure that saturate accounts of 'the international'. Firstly, conceived in this way, the idea of a 'global' polity should not immediately trigger a sterile debate about whether state sovereignty is being eroded or pooled, but about *whether 'global' objects – those understood within*

a frame of the world as one place – are beginning to become the focus of political struggles. States will likely be major players in governing global objects, so it is useful to be able to debate a global polity without having to imply that state power has been eroded or disappeared.

Secondly, with this understanding of polity we can debate the existence of a global climate polity *prior* to or separately from any debates about whether a global hierarchy of authority is emerging and whether states are still the ‘main actors’. Issues of power differentials (and forms of power) will affect how the climate is governed of course, but they are not the ‘way in’ to questions concerning whether a global climate polity exists, what it consists of, and where to look for one. A governance-object may be governed by an all-powerful monarch or in a giant muddle of unstable power relations between multiple actors of different kinds. Hierarchy is not the precondition for a polity.

Thirdly, this Foucault-inspired polity-approach shifts focus to include the ‘things’ being governed and the ‘how’ of climate governance – to the mechanisms of governance – and *via that* to the question of ‘who’. In effect, polity is recast as a structure in which an object becomes a target of power practices that organizes a field of politics. Anarchy and hierarchy are of course also viewed as structures, but of a slightly different kind. Kenneth Waltz’s theory of international politics started from the question: ‘in defining structure, the first question to answer is this: What is the principle by which the parts are arranged?’ (Waltz 1979: 81) but he limited his idea of ‘parts’ to actors (states). Realism is often labelled ‘state-centric’ while pluralist global governance-approaches draw in other ‘non-state’ actors with both remaining *actor-*

centric. Even most constructivist and poststructuralist approaches focus on (subject) identities (Wendt 1999; Lapid and Kratochwil 1996). This means that political structure is normally reduced to the constellation of actors, and thereby fails to register fundamental changes such as the transition from governing territories to governing populations or economies – or the governing of Earth systems such as the climate. Such changes are not necessarily ignored by subject-centric approaches to structure but are effectively excluded from their notions of structure. In contrast, a polity is conceived here as a structure though not one defined solely by relations between actors. between certain governance-subjects and governance-objects. This chimes with Anders Blok's suggestion of an 'issue-centric' perspective focused on 'new hybrid associations of humans and non-humans' where he also prefers to remain agnostic concerning the overall structure of 'nascent and as-yet-unpredictable chains of climatic authority and control' (Chapter 2, p. 11).

Finally, the global climate polity is not a territorial structure of power, as a state or an empire is, but neither is it un-bounded. Its limits are drawn instead by discourses, practices and apparatuses of climate governance that potentially criss-cross spatial (including national) borders as well as disciplinary and institutional boundaries. The global climate polity 'stretches' (to use a physical metaphor) from the negotiations between President Obama and the Chinese representative in Copenhagen in 2009 to the individual carbon conscious individual, who exercises climate discipline by taking the train, rather than the airplane. They may be subject to the different discourses about global warming, tipping points and carbon emissions, but they both orient themselves towards governing 'the climate' in some way. Yet the climate polity is not 'everywhere' either. In terms of subjects, the key distinction is not between state and

non-state actors but between those who do and those who do not orient themselves to governing the global climate. But a global climate polity is also constituted by physical and socio-technical structures: satellites that orbit the earth supplying data to models and research communities; measuring equipment in the air (at various altitudes), at sea and on land that monitor the climate; the carbon calculators we find online when planning minute details of our lives. Together in a giant assemblage of material and social (Latour 2007), the climate is being governed, albeit seemingly without the risks of catastrophic climatic change diminishing (the increased governance of the climate does not necessarily translate into a growing ‘solution’ to climate change). Along with the direct measurement of the climate as an object through the growth of apparatus and mentalities of governing it, ‘carbon control’ has become ‘a primary objective of political and economic governance at urban, regional and international scales’ (Bridge 2010: 821; see [Chapter 3](#)) and carbon is now the defining unit of account for a cartography of carbon resources (oil, gas, methane etc.), an ethnography of carbon management (systems of governing carbon, see [Chapter 6](#)) and a bio-politics of carbon that provides ‘conditions of possibility for the living of life’ (Bridge 2010, 821; [Chapter 7](#)).

How Did a Global Climate Polity Emerge?

How did a ‘global climate polity’ thus conceived emerge? This question has begun to be explored in the literature in two main ways corresponding broadly to the two elements in Foucault’s compound term ‘governmentality’ which was designed to signal the intimate mix of technologies and mentalities of governing: one focuses on the emergence of technical climate governance infrastructure, the other on the role of discourse positing the global climate as something that can and should be governed.

Climate polity-subjects inhabit a space defined by these two elements. The following presents illustrative examples of studies focussed on each.

The most comprehensive account of how the climate became a global governance object can be found in Paul N. Edwards' history of the ever evolving 'vast machine' of infrastructure of climate governance (2010). The global climate monitoring and modelling complex is an example (arguably the leading example) of what he also calls *infrastructural globalism*, i.e. 'projects for permanent, unified, world-scale institutional-technological complexes that generate globalist information not merely by accident, as a by-product of other goals, but by design' (Edwards 2010: 25). The climate polity has, in these terms, taken shape gradually through the emergence of a global climate governance-object constituted by the vast machine intertwined with 'the very idea of a planetary climate as something that can be observed, understood, affected by human wastes, debated in political processes, cared about by the general public and conceivably managed by deliberate interventions such as reforestation or gigantic Earth-orbiting sunshades' (Edwards 2010: 8).

This is a relatively new phenomenon, especially if we take the governance of the *global* climate rather than local weather as the governance-object of a climate polity. Attempts at affecting the weather in localities have a longer pedigree (Fleming 2012) closely connected to agricultural and military projects. Diverse theories have arisen throughout history about the local effects on weather of clearing forest, swamp drainage and other domestic practices. Weather monitoring infrastructure arose from time to time, such as the seventeenth century pan-European weather network of (only ten) stations with comparable measuring equipment set up by the Grand Duke of

Tuscany, Ferdinand II (Edwards 2010: 33). Early climatological maps of the entire climate system include Edmond Halley's map of the trade winds published in 1686 in the article 'An historical Account of the Trade Winds, and Monsoons, Observable in the Seas between and near the Tropicks, with an Attempt to Assign the Phisical Cause of the Said Wind' (Halley 1686).

Such grand schemas of global climate were rare while attempts at local weather forecasting useful for shipping and military endeavours began to accumulate. Over decades and centuries such practices spread and gradually and through a tortuous (and often flawed) process of standardisation and data harmonisation became integrated. This formed bodies of data of ever growing geographical reach and temporal scope. This eventually led to renewed concern with the global system as data covered more of the Earth and longer term trends led to climate data (as opposed to weather data). This in turn reinvigorated efforts directed at theoretical and graphic mapping of circulation patterns, this time based on empirical observations as well as models of the systems. Only by the 1930s had theoretical meteorology 'set its sights firmly on the planetary scale as the most fundamental level of explanation' (Edwards 2010: 140). Today Global Circulation Models (GCMs) integrate a truly vast array of both data and theories to model the entire global climate, drawing in more and more systems such as, recently, those describing ocean currents, changes in vegetation and ice cover.

Although this mapping and measuring gradually constituted the global climate as an object of study, this was not initially done with a view to governing it – indeed the rationale for considering whether or how to govern the climate came only really with

concern over human influence of the global climate. The history of anthropogenic global warming has been written several times elsewhere (Weart 2003) usually beginning with Joseph Fourier's 'greenhouse effect' and John Tyndall and Svante Arrhenius' work on greenhouse gasses from around the turn of the twentieth century. Arrhenius' 1896 publication of a paper that earned him the Nobel Prize is often cited as the starting shot of the anthropogenic global warming debate, but early efforts building on this were usually more concerned with global cooling and the fear of an approaching ice age. For our purposes, the idea that we can and should govern the makeup of the atmosphere with a view to regulating the climate was a later arrival and can arguably be dated to the post-World War II era. With the means and the idea of the climate as an object that can and should be governed widely established, however, we may say that the climate polity had been formed.

This process of polity formation has been driven primarily (though mostly inadvertently) by scientists, but states became intermittently interested in weather and climatic knowledge because of the lure of military or economic gain. Scientific bodies pragmatically piggybacked on these whims when they could in order to expand and consolidate their studies and informational infrastructure. They did this first to understand, then model, predict and finally to put forward the idea of regulating the global climate. This idea is reaching what is so far its purest form in the idea of 'geoengineering' – the deliberate manipulation of the global climate using solar radiation management (planetary sun shields and changes in the Albedo effect) or carbon trapping methods (Shepherd 2009). Eventually, the global climate became something in principle governable and has begun to structure politics to an ever greater degree – it has become a polity.

Turning briefly from technologies to mentalities (or from physical to informational infrastructure as Edwards calls it) framing the global climate as a governance-object, the idea of the globe as an operational and unified entity has its own discursive history. This was closely linked to first religion, then science, environmentalism and in more recent years particularly to space exploration and now climate change. According to Edwards, ‘meteorology participated in the larger scientific project of envisioning “the world” as a whole – a single, dynamic, coherent physical system’ (2010: 40) and space exploration was a significant milestone in envisioning the world as a whole (Jasanoff 2001). Lövbrand, Stripple & Wiman show more widely how scientific practices ‘constituted the global climate as an object of study’ and emphasize in particular the role played by ‘sophisticated mathematical representations – i.e. models – of ecological processes’ in establishing the Earth System as a governable object (Lövbrand et al. 2009: 9).

In popular discourse a recent account of the transformation of the ‘world picture’ makes the often heard case that a globalist perspective of the world as one place gained dramatically in strength and began to be popularized beyond narrow scientific forums when pictures of the Earth taken from space were circulated in the 1960s and 1970s. In a fascinating article, Benjamin Lazier points to the ‘rise of an “Earthly vision,” or a pictorial imagination characterized by views of the Earth as a whole’ (Lazier 2011: 605) flowing principally from two photographs taken by the Apollo missions: the ‘Earthrise’ picture taken of the Earth rising over the horizon of the moon and the ‘Blue Marble’ taken in 1972 of the Earth, showing ‘the disk of our terraqueous planet suspended in the void’ (Lazier 2011: 605-6). ‘As a stand-in for the

idea of the Whole Earth itself', Lazier concludes, 'it has acquired an iconic power that helps organize a myriad of political, moral, scientific, and commercial imaginations as well' (Lazier 2011: 606). For Lazier, this is a part of a longer history of the world picture, but with the Earthrise Era, the first part of the slogan 'Think globally, act locally' became more a general condition than something we have to be exhorted to do. Climate change has arguably slotted into – but also accelerated – the compulsion to 'think globally' although this has a long and complex history (see also Litfin 1997; Litfin 1998; Cosgrove 2003; Jasanoff 2001; Helmreich 2011).

The central tension of that Earthrise Era is between understandings of the globe as natural on one hand and as man-made – or at least as manipulable by human activity – on the other. The recent idea of the Anthropocene – the geological age of humans – suggested by Nobel Laureate Paul Crutzen (Crutzen and Stoermer 2000) sums up the idea that human influence on the Earth and its systems – not least through climate change – has made humans the main drivers of geological time, taking us out of the climatically relatively benign and stable Holocene era. Not just in specialist scientific circles but in philosophy and eventually politics and popular culture, then, the climate has come to be seen as something governed significantly by human activity, yet also as something potentially spinning out of human control.

Thus, via technological and symbolic structures constituting objects and subjects in certain ways, the climate polity now comprises the globalist infrastructure of climatology, international organisations such as the IPCC and the UNFCCC but also the International Meteorological Organization (IMO) as well as a melange of other systems of knowledge, epistemic communities and their artefacts focussed on ocean

currents, biological processes, states, con-joining scientific disciplines, regions, cities, NGOs, companies, individuals and micro-practices. Identities generated by these elements are all predicated on the existence of the global climate as a governable entity fit for steering operations. A political mass-mobilisation around that idea, that perhaps reached its most recent peak in 2009 at the UN Conference on Climate Change in Copenhagen, represents just the tip of the iceberg of an emerging but consolidating global climate govern-mentality that renders the climate governable and - perhaps - increasingly central to political identities.

Beyond the Global Climate Polity?

This sketch of the formation of a global climate governance-object is of course incomplete and in terms of the future, nothing is inevitable. That previously unthinkable entities such as a global climate polity can become taken for granted as natural (and perhaps one day will be thought of as timeless) testifies to the idea that other such entities will inevitably arise. If we instead cast our eyes briefly forwards speculatively, more limited or even more encompassing governance-objects can be seen competing for political prioritisation with the climate polity, indicating that there are other possible polities-in-the-making. One could potentially subsume the global climate polity in a greater 'Earth System polity' in which climate becomes just one element in a greater governance-object – a planetary boundary or tipping point interlinked with other systems in an aggregated human-natural Earth System governance-object (Lövbrand et al. 2009). Alternatively, the climate polity may fragment into more local polities such as national or regional ones if global mitigation efforts currently in vogue lose credibility and more local 'life-boat' politics and adaptive strategies gain discursive and institutional strength. In the following, Mark

Lynas' *The God Species* (2011) and James Lovelock's *The Vanishing Face of Gaia* (2009) are considered as harbingers of each of these potential post-climate polity scenarios, respectively.

In the first scenario the climate polity is subsumed within what we might term an Earth Systems polity. The governance-object that actors orient themselves towards would be transformed such that 'the climate' ceases to be regarded and treated as a meaningful object on its own. Only as a part of a greater 'Earth System' is it governable. Having identified and posited an object – 'the climate' – through the emergence of global climate infrastructure and information, scientists have increasingly begun pointing to linkages and connections between the climate and other physical systems. That climate is regulated by complex interactions among components of the Earth system is the second of seven *Essential Principles of Climate Sciences* suggested by the United States Global Change Program (US Global Change Program 2009). According to one characterisation of the Earth System approach, '(t)he atmosphere, hydrosphere, biosphere and geosphere form the simplest collection, though some would add the cryosphere as a special element dealing with polar regions and processes, and others would add the anthroposphere emphasizing human dimensions and impact on the planet' (Ruzek 2010). A conference including the four international global change research programs - the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme on Global Environmental Change (IHDP), the World Climate Research Programme (WCRP) and the international biodiversity programme DIVERSITAS – issued the so-called Amsterdam Declaration, declaring that:

‘the Earth System behaves as a single, self-regulating system, comprised of physical, chemical, biological and human components. The interactions and feedbacks between the component parts are complex and exhibit multi-scale temporal and spatial variability’ (Earth Systems Science Partnership 2001).

A scientific journal has been renamed *Journal of Earth System Science* and the Earth Systems approach has been described as ‘the concern of the Geological Society of London (with which the Gaia Society recently merged)’ and as ‘a major subject of inquiry and research’ that ‘no longer has to justify itself’ (Tickell 2010).

Whether an equivalent political and discursive infrastructure constituting the Earth System as a governance-object will be established remains to be seen but a related initiative indicates that this may be happening. The idea of planetary boundaries that ‘define the safe operating space for humanity with respect to the Earth system and are associated with the planet's biophysical subsystems or processes’ (Rockström et al. 2009: 472) has emerged with some fanfare. The Earth System is conceived as having nine critical boundaries (biodiversity, climate change, nitrogen boundary, land use, freshwater, toxics, aerosols, ocean acidification and the ozone layer) that cannot be crossed without potentially disastrous consequences, and each one potentially interacts with the other eight (hence the link to Earth Systems Science) to form limits to legitimate human activity. Mark Lynas has elaborated from this framework a rough blueprint of ‘managing the planet’ (Lynas 2011: 229) but points out that two of the nine boundaries have yet to be identified and quantified (chemical pollution boundary and atmospheric aerosol loading). In time, however, globalist infrastructure related to the nitrogen cycle, the ozone layer, the climate, global water use and the other

systems with ‘planetary boundaries’ may well become better developed, linked up and framed by an ‘Earth Systems govern-mentality’ (Lövbrand et al. 2009) that further establishes the Earth Systems Polity where actors are oriented principally towards governing the Earth System as one entity. The climate as a governance-object would in this case be effectively swallowed up, just as the governance object of ‘territory’ was overlaid by governmental power over economies, populations and societies with the advent of Foucault’s ‘art of government’.

INSERT FIGURE 12.1 HERE

Alternatively, this envisaged expansion of governance capacity may be a hubristic illusion that may be crumbling. Sooner than we perhaps think, the climate governance-object may unravel, since, though the global climate may be a meaningful entity, it may be deemed effectively to be an ungovernable one. Could the climate be undone as a governance-object?

Founder of Gaia–theory, James Lovelock comes close to this position in his recent books, *The Revenge of Gaia* (2006), and *The Vanishing Face of Gaia. A Final Warning* (2009). In these, Lovelock pours some scorn on the idea that mitigation is feasible, on the climate models that allegedly predict future climate scenarios as well as on claims that they provide meaningful guidance to the future (he thinks they are far too optimistic). The International Panel on Climate Change (IPCC) has ‘been able to make intelligent guesses about future climates’ but ‘these guesses have been unable to match the observed changes in climate closely enough for us to be confident about IPCC forecasts decades into the future’ (Lovelock 2009: 3). Efforts at mitigation have

so far been hopelessly inadequate and the idea that the entire energy system of the world's first global civilization might be redesigned in the short time-span now available is a project of social engineering of such eye-watering proportions that only the delusional or politically motivated can still maintain that it is possible. Much more likely is the conclusion that the Earth is heading for a much hotter equilibrium, much less conducive to human life and that only pockets of human life will therefore be able to survive. A life-boat strategy of adaptation in certain, mostly northern countries (including the British Isles, Scandinavia and Northern Canada), may be possible and governments should concentrate on planning for the transition to this decimated version of human civilization in manageable units. But 'the human world of the lifeboat islands and continental oases will be constrained by limited food, energy and living space' (Lovelock 2009: 12). Lovelock's account is not a lone voice since narratives of abrupt or 'chaotic' climate change are now on the ascendancy replacing earlier linear accounts previously used to frame climate politics (Methmann 2011; Mayer 2012). Essentially what he advocates is a form of 'risk management through contingency' where sovereign power is used to pursue human security (Table 11.1 this volume).

In this scenario, the governance-object is no longer the global climate, which is already out of kilter and way too complex to be meaningfully predictable and governable. Instead the governance-objects implied are more local and possibly still national entities such as the UK or regional ('Northern Canada') as well as other 'continental oases' (which of course like everywhere else would look somewhat different geographically as sea-levels rose and populations migrated).

The fall of the global climate polity follows logically from Lovelock's Gaia theory that holds that the Earth is effectively one giant organism of almost unfathomable dynamic complexity (but with some self-regulating capacity). Gaia is not described by Lovelock in terms of a governance-object, but rather as the framework within which we as humans carve out other more limited objects of control (and hence polities). Lovelock does not rule out that humans may effectively one day become 'Gaia's brain' such that if we survive 'there is a chance that our descendants will one day serve Gaia and assist her in the fine-tuned self-regulation of the climate and composition of our planet' (Lovelock 2009: 21). But currently 'our ignorance of the Earth system is overwhelming and intensified by the tendency to favour model simulations over experiments, observation and measurement' (Lovelock 2009: 103). Of course the climate polity may develop further and become more central as more governance techniques and identities become more centred on the climate as a governance object – or alternative polities may also develop in as yet wholly unforeseeable ways.

Rather than view governmentality as one particular type of liberal kind of power or as something only relevant at the micro-level of power techniques, this chapter has aimed to glean a model of structure from it: governing not only regulates actors and their behaviour in multiple possible ways, it constitutes objects of governance that structure politics into polities. If we consider the local governmental power techniques described in other chapters within a wider structure of polities constituted through the production of governable objects, then we will not be as bound by force of habit or the conventions of, for example 'the logic of anarchy' in our

understandings of the past and present of climate politics, nor in our predictions of the future. Anarchy and hierarchy as models concentrate solely on the relations of super- and subordination between subjects and fail to draw attention to the changing objects of governance. What is emerging is neither a global climate hierarchy nor just an anarchy modified by international cooperation. In a period in which materiality appears to be coming back into academic fashion (Connolly 2011), and human civilization is just beginning to face up to the task of ‘managing the Earth’, a structural model of politics that is open to changing constructions of objects of governance could come in useful as various increasingly wobbly earth systems appear to be in need of some deliberate steering efforts.

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Figure 12.1 Planetary boundaries pictured (Rockström et al., 2009:).