Regulating Climate Change

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Abstract

Concerns about global climate change have led to international and national commitments to reverse the growth of greenhouse gas emissions. Given the range and complexity of the climate issue, solutions are required at all levels, shifting the regulatory architectures of the environmental system and the traditional configuration of the state. A critical examination reveals a move away from the sovereign into a polycentric arrangement that, as a result, raises questions as to what is meant by regulation and regulatory activities. Any effort to address climate change raises the question of regulation, and yet this area remains unexplored. This should prompt serious concern for current and future climate change scholarship, which addresses the issues at stake, yet fails to delve into the foundations of climate change governance. This paper attempts to fill this void through an interdisciplinary approach to climate change, using the Kyoto Protocol as the prevailing example.

Introduction

Concerns about global climate change have led to international and national commitments to reverse the growth of greenhouse gas emissions that are seen as causing climate change. The aversion of climate change, or what has been termed as a global 'public bad', would in turn be a global 'public good'.[1] The law of climate change operates at the intersections of environmental law, energy

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[1] Todd Sandler, *Global Collective Action* (Cambridge University Press 2004); Carlo Carraro, *Governing the Global Environment* (Edward Elgar 2003)

law, business law, and international law.[2] Given the range and complexity of the climate issue, solutions are required at all levels, shifting the regulatory architectures[3] of the environmental system. Any attempt to address climate change raises issues about the appropriate role of the state as well as its relationship with other actors involved in combating social practices that are seen as contributing to the climate problem. The different regulatory regimes can be organised according to whether they address local, regional or global environmental problems. However, whilst the spatial scope of regulation normally coincides with the spatial dimension of the problem tackled, there is no necessary link between them. Global problems, such as certain aspects of climate change or ozone depletion, may be tackled at a local or regional level. Conversely, regional or local problems such as trans-boundary air pollution may be dealt with on a broader regulatory basis. The scope of the regulatory regime is further complicated by its dependence on external factors such as the scientific understanding of a problem and its political feasibility. The problem of the latter is currently seen in the difficulties of finding a successor to the Kyoto Protocol which, following the 2011 Durban Platform, must be adopted no later than 2015.

This paper begins by outlining the different regulatory models involved in rendering climate change a *governable* issue. It will be shown that whilst the

[2] For a good introduction *see* John C Dernbach and S Kakade, 'Climate Change Law: An Introduction' (2008) 29(1) Energy Law Journal 1

[3] The term 'shifting architectures' has been primarily adopted by Neil Gunningham, 'Environment Law, Regulation and Governance: Shifting Architectures' (2009) 21 Journal of Environmental Law 179

multilateralism of the Kyoto Protocol is central to climate governance[4] and acts as the state-centred model of regulation, the alternatives that materialised parallel to it shift the climate governance model away from a hierarchical form whereby governing is seen as the responsibility of the state into one of multilevel governance, where the power of regulation is dispersed between institutions of different levels of authority and nature. The second part of the paper will engage with the regulatory models through the Foucauldian concept of governmentality and the notion of productive power. Foucault's theoretical framework accounts well for the decentred forms of regulation and blurs the distinctive boundaries that previously separated 'the state' from any other actors[5] in regulating climate change. This new form of governance marks an important departure from the traditional configuration of state power in regulating, revealing a move away from the sovereign into a polycentric arrangement that as a result raises questions as to what exactly is meant by *regulation* and *regulatory activities*.

Regulatory Models for Climate Change

The phenomenon of climate change is now widely understood to be linked to the use of fossil fuels since the Industrial Revolution. Emissions of greenhouse gases (including carbon dioxide, methane, nitrogen oxides, as well as chloroflourocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), carbon soot

[4] In this paper, the term *governance*, unless mentioned otherwise, will be given its broad interpretation that 'relates to any form of creating or maintaining political order and providing common goods for a given political community on whatever level' (Thomas Risse, 'Global Governance and Communicative Action' (2004) 39 Government and Opposition 298)

[5] As well as blurring the boundaries between science and politics.

and many others) resulting from human activity (anthropogenic emissions) block heat from escaping the atmosphere towards space, increasing global temperatures. This is normally termed 'global warming'. The term 'climate change', however, is not limited to the issue of 'global warming', but also extends to covering the phenomenon of greater climate variability, such as extreme weather events. The consequences remain difficult to predict with certainty, but in all likelihood include, *inter alia*, rising sea levels, melting glaciers, extreme droughts and desertification, redistribution of species and risks to human health.

Whilst steps had already been taken in tackling the issue of climate change in other instruments such as the 1999 Gothenburg Protocol[6] or the 1987 Montreal Protocol,[7] the starting point in climate change governance is the system created by the 1992 Framework Convention on Climate Change ('UNFCCC'). The objective of UNFCCC is set out in broad terms in article 2. Under this provision: the ultimate objective of this Convention and any related legal instruments…is to achieve…stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.[8]

Whilst this broadly recognises the need for global action on climate change, it is the Kyoto Protocol that sets a binding commitment to reducing greenhouse gas emissions, 'treating tonnes of carbon dioxide like stockpiles of nuclear weapons

[6] Protocol to the 1979 Convention on Long-Range Trans-boundary Air Pollution on the Reduction of Acidification, Eutrophication and Ground-Level Ozone, Economic and Social Council EB.AIR/1999/1 (30 November 1999) ('Gothenburg Protocol').

[7] Montreal Protocol on Substances that Deplete the Ozone Layer, 1522 UNTS 3 (16 September 1987)

[8] United Nations Framework Convention on Climate Change, article 2

to be reduced by mutually agreed and verifiable targets and timetables'.[9] The Protocol forms a state-centred model of regulation by placing obligations on the state which in turn introduces changes in domestic law and imposes regulations on its citizens and industries. The Protocol requires industrialised states listed in Annex B of the Protocol[10] to reduce their greenhouse gas emission [11] in accordance with the targets envisaged. Kyoto's other mechanisms, the Clean Development Mechanism [12] (article 12), Joint Implementation [13] (article 6) and Emission Trading [14] (article 17) form complementary means through which parties may achieve their emission reductions. This is very much a top-down, market based solution to the problem whereby particular policies and measures that ought to be undertaken by actors of climate change are defined, that is the fixed emission targets, yet the freedom to decide *how* to reduce emissions and to a certain extent *where* and *when* to do so,[15] remains with the states. A bottom-up approach on the other hand, would allow the parties to define their own commitments.[16] Whilst

[9] Gwyn Prins and Steve Rayner, 'Time to Ditch Kyoto' (2007) 449 Nature Publishing Group 973, 973

[10] The list of parties in Annex B of the Kyoto Protocol is very much like the list in Annex I of the UNFCCC.

[11] Emissions of the six greenhouse gases listed in Annex A.

[12] Countries gain credit for assisting developing countries in creating projects that will result in emissions reductions. Any reduction obtained will be offset against the helping country's own target.

[13] Annex I parties may receive credit if they support projects that reduce another party's greenhouse gas emissions.

[14] Countries with surplus of emissions reduction may sell that surplus to those that are in deficit, or may stockpile it as a safeguard against the future targets.

[15] The multi-year commitment period and the provision for banking of unused credits allows states some flexibility as to when to reduce the emissions.

[16] See Kyle W Danish, 'International Environmental Law and the "Bottom-Up" Approach: A Review of the Desertification Convention' (1995) 3(1) Indiana Journal of Global Legal Studies 133 for analysis of the bottom-up approach in relation to the Desertification Convention.

such a top-down market approach has been touted for its flexibility, it can, likewise, be perceived as one of Kyoto's main downfalls.

The obligations under the Kyoto Protocol provide targets without identifying particular legal or other instruments that would have to be used. It follows that while the direction of the policy may be clear, the extent to which law will be used to attain its goals is uncertain and leaves much scope for discretion. Such discretion may either act to introduce stricter policies in climate change mitigation or relax the obligations to a point where the Kyoto standards are rendered without effect. Many have already noted the limited effect of environmental agreements such as the Kyoto Protocol in improving the climate system; some went to the extent of asserting that the 'Kyoto Protocol was always the wrong tool for the nature of the job'[17] and if it were not in existence it would 'represent no great loss to the international community'[18] with its allegedly 'moribund'[19] functionality. Such criticisms partly explain why it is no surprise that alternative modes of governance and social action have emerged.

Yet, Kyoto lends itself to polycentricity. Consider one of Kyoto's pillars, the trading of carbon emissions, whereby something akin to property rights are created in carbon stockpiles. Climate governance through such means becomes the responsibility of markets and traders, expanding the modes of governance with less reliance on international and national legislation, despite being built

[17] Prins and Rayner (n 9) 973

[18] Richard N Cooper, 'The Kyoto Protocol: A Flawed Concept' (2001) 3. Available at <http://papers.ssrn.com/abstract=278536> last accessed: 19 January 2014

[19] ibid 20

upon such foundations. Within that, the framework laid down in the UNFCCC and the approach taken in the Kyoto Protocol may be marginalised to being more aspirational in nature by procuring political pressure on the state and setting *accepted* standards rather than having direct effect on domestic law or individuals.

On the margins, it needs to be noted that not all large emitters have been willing to accept the internationally defined emission reduction targets under Kyoto. Meanwhile, while Kyoto currently (in 2014) has 192 parties, it only establishes emission targets for 37 countries.[20] States whose emission levels are the highest such as the United States, China, India and Brazil, among others, are under no quantified obligation to reduce emissions. Not only do the states with emission targets represent only about a quarter of global greenhouse gas emissions, they are also not the largest *current emitters* of greenhouse gases. Cooper, writing in 2008, contended that by 2010 the developing countries of China and India together would experience greater growth in emissions than all OECD countries combined.[21] Indeed, China has now surpassed the United States as the world's biggest emitter. Kyoto's principle of *common but differentiated responsibility and respective capabilities* has certainly worked in their favour.

It becomes clear that the state-centred model of regulation originally constructed from multiple treaties[22] which had previously dominated the

[20] Figures obtained from UNFCC documents <https://unfccc.int/2860.php> last accessed: 20 January 2014

[21] Cooper (n 18) 3

[22] Kyoto's construction relies on past treaties that dealt with stratospheric ozone depletion, acid rain and nuclear weapons.

regulation of the environment, for instance in protecting the ozone layer, is inappropriate to the character of climate change that requires more sub-national action in order to satisfy international engagements. It is often the case that 'command and control'[23] legislation is combined with a different regulatory approach to secure the most effective form of control. Governmental bodies must ultimately approve any broad arrangements such as the Kyoto Protocol, yet the practical implementation of such agreements requires the creation of other regulatory structures.

The Kyoto Protocol and its broader framework of UNFCCC, through 'expressing multiple objectives and constraints [that were] ambiguous and often incompatible, reflecting the plurality of interests represented in the regime',[24] *themselves* encouraged the creation of multiple regulatory structures because of this uncertainty and vagueness. It is then necessary that the administration[25] of climate change be carried out by means of decentred regulation, seen through the creation of administrative bodies to which the central government delegated regulatory functions. There, intergovernmental and non-governmental bodies initiate and implement their own alternative strategies in regulating social practices that are seen as causing climate change, making the state-centred model of regulation not 'the only game in town'.[26] The preferred and initial means of controlling the climate change issue lay in identifying targets, characteristic of the Kyoto approach. Putting legislation in

[23] The target is identified, such as a limit on a certain pollutant (the 'command'), and penalties are imposed if the target is not reached (the 'control')

[24] Ronald Brunner, 'Science and the Climate Change Regime' (2001) 34(1) Policy Sciences 8

[25] Responsibility for making, implementing and enforcing law and policy.

[26] Prins and Rayner (n 9) 973

place, however, is no more than the first step in achieving climate change objectives. Following Kyoto, it appears as though decisions are being made at a higher level and the provision of the resources for climate mitigation at a lower level. Bestill and Bulkeley contend that the 'local is the most appropriate political jurisdiction for bringing about any necessary [greenhouse gas] reductions',[27] and consider local governments to have significant authority in dealing with climate change issues which originate from these 'specific places'.[28]

From a more practical standpoint, the familiarity of "Think Globally but Act Locally" rings true in the long run. The activities of individuals, families, companies and governments will need to depart substantially from their present habits in the climate change era. As Ostrom points out, '[m]any of those who need to change, however, have not yet accepted the reality of the threat and their need to act locally in a different manner'.[29] Though, as some have rightly argued, the problem of climate change has been forcefully framed as a global issue to the extent that citizens of states can no longer see what good can be done at a local level.[30]

Despite this scepticism, there was a shift from *government* to *governance* with private actors performing state functions to tackle the climate issue. Mechanisms developed for influencing and addressing those activities

[27] Michele Betsill and Harriet Bulkeley, 'Cities and the Multilevel Governance of Global Climate Change' (2006) 12 Global Governance 141, 141

[28] ibid

[29] Elinor Ostrom, 'A Polycentric Approach for Coping with Climate Change' (Background paper to the 2010 World Development Report, Policy Research Working Paper 5095, 2009) 4

[30] Michele Betsill, 'Mitigating Climate Change in US Cities: Opportunities and Obstacles' (2001) 6 Local Environment 393

that are seen as causing climate change without the need to use statutory instruments. Non-governmental organisations (NGOs) play a role in regulating climate change through direct and indirect means, for instance by lobbying or organising public campaigns to raise awareness of climate issues, which is often the defining characteristic of these groups.[31]Environmental objectives may also be achieved through market mechanisms; this includes the use of economic incentives, deterrents and the use of prices in regulating social practices. Whilst most aspects of market mechanisms, even in an indirect way, rely on the use of law in regulation, there are numerous examples of non-legal factors being influential in reshaping social practices. Much of the recent governance literature[32] has focused upon voluntary models that do not depend on the role of the state. Mechanisms based upon voluntary action are one such example of a move away from direct methods of regulation towards self-regulation, although it should be noted that even through such incentives, the regulatory control would not be purely voluntary. Some form of compulsion is involved because of the commercial beneficial prospects that may be accrued as a result. Yet, self-regulatory mechanisms of this nature remain more acceptable to the companies that are regulated and the benefits obtained are likely to provide sufficient motivation for mitigating actions. Economic or social gains as well as

[31] The label of NGO covers a diversity of bodies, including large membership groups with international agendas such as Greenpeace as well as national groups such as National Trust and the Royal Society for the Protection of Birds (RSPB).

[32] Peter Newell, *Climate for Change: Non-State Actors and the Global Politics of the Greenhouse* (Cambridge University Press 2002); Michele Betsill and Harriet Bulkeley, *Cities and Climate Change: Urban Sustainability and Global Environmental Governance* (Routledge 2003); Kristine Kern and Harriet Bulkeley, 'Cities, Europeanisation and Multi-level Governance: Governing Climate Change through Transnational Municipal Networks' (2009) 47 JCMS: Journal of Common Market Studies 309

an enhanced public image may be brought through the sales of 'environmentally friendly' products, with the market approach relying on 'green' consumers who purchase on environmental grounds. Efforts to reduce greenhouse gas emissions are generally an example of a collective action problem and as such are addressed at appropriate multiple scales. This is particularly significant given the co-ordination required for a single global solution to climate change. One of the criticisms levelled at the current structures trying to reduce greenhouse gas emissions, however, is that there are now *too many* projects and activities operating at the same time, creating a chaotic system.[33] Whether this creates what has been termed in the past as 'the clumsiness of climate governance'[34] is dependent on individual ideologies about the appropriate form of governance.

The definition of regulatory activities alters through the above described non-interventionist approaches, which promote social attitudes that would encourage environmental responsibility instead of imposing direct regulation. However, because of the voluntary nature of these mechanisms in their implementation, there are no enforcement mechanisms attached, often leaving compliance or non-compliance with the policies to the individual parties. Hilson perhaps rightly labels regulation to be an 'elastic concept'[35] that 'at its broadest…is used to refer to any governmental rules which seek to organise or

[33] Ostrom (n 29) 27-29

[34] Mike Hulme, *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press 2009) 309

[35] Chris Hilson, *Regulating Pollution* (Hart Publishing 2000) 1

control behaviour'.[36] Traditional approaches to what constitutes regulation and regulatory activities obscure the governance of climate change, as they do not acknowledge the multiplicity of ways in which authority and power are distributed and articulated beyond the formal politics of international agreements.

The alternative forces of regulation as well as European integration have diluted the character of the state. Bottom-up solutions have been considered by some to be comparable in significance and performance to state-centred models of regulation.[37] The growth of alternative strategies has transformed the meaning of regulation and regulatory activities, no longer confined to the top down approach but incorporating multilevel processes, leading to regulation being characterised by institutional diversity. The Cities for Climate Protection Programme[38] (CCP) itself is a state and non-state actor as it operates on multiple scales of authority and regulation, forming a non-state actor by 'operat[ing] within the neoliberal state. As a product of neoliberalism, the campaign serves to regulate the interaction of the state and citizens by constructing the public as passive energy consumers – rather than as active citizens.' [39] This indirect persuasion can also be combined with economic mechanisms, as the CCP can also use tradable quotas. Through these multiple approaches a body can encompass several types of regulation. The alternative

[36] ibid

[37] Jouni Paavola, *Climate Change: The Ultimate 'Tragedy of the Commons'?* (Working Paper No 53, Centre for Climate Change Economics and Policy 2011)

[38] The programme is an initiative of Local Governments for Sustainability (ICLEI), a non-profit organisation.

[39] Rachel Slocum, 'Consumer Citizens and the Cities for Climate Protection Campaign' (2004) 36 Environment and Planning A 775

regulatory approaches act as a replacement or a supplement to the state centred model. Direct government regulation, for instance licensing backed up by penalties, is what normally would be perceived as regulation. The policies relating to climate change within that conception are seen to emerge through the power of a hegemon. Thus, the definition of regulatory activities depends much on the institutional superstructure of regulation. The state centred model of regulation implies that the state is central to regulatory governance and that state law is its instrument. It becomes difficult to reconcile this traditional meaning attributed to regulation and the nature of regulatory activities in view of climate regulation, which makes it clear that the state is no longer the locus of control and that regulatory activities are not exclusively performed on the state level.

Foucault's Concept of Governmentality

Reading the regulatory models with Foucault's concept of governmentality further assists in mapping the definitional changes in the conception of regulation and regulatory activities. Foucault introduces alternative configurations of the state[40] that depart from, and go beyond the exercise of sovereignty. Whilst sovereignty sees the state as the highest political community, governmentality on the contrary is defined as the ensemble formed by institutions, procedures, analyses and reflections, calculations and tactics that allow the exercise of this very specific albeit very complex, power

[40] Including discipline, biopower, liberal and advanced liberal state configurations.

that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its technical instrument.[41]

Accepting the patterns of decentralised webs of power, we can see that 'the state...does not have this unity, this individuality, this *rigorous functionality*, nor, to speak frankly, this importance. Maybe, after all, the state is no more than a *composite* reality and a *mythicised abstraction*, whose importance is a lot more limited than many of us think.'[42] This rather bold statement suggests that much of the control seen in modern society is pluralistic in character and the use of law is only one element among a 'range of multiform tactics'.[43]

Yet, Foucault in many respects offers a much more plausible approach if compared, for instance, to traditional and constructive approaches to regime theory which view the nation state as being the only source of authority and relegate, though not dismiss, the other actors involved in regulation to being *solely* under the influence of state power. Foucault does not suggest that one form of governmentality displaces the previous one but contends that each form of governmentality *draws* on the previous one so that elements of all types are present at one time.[44] This reconciles the multiple meanings attributed to regulation and regulatory activities, which are unsettled and constantly evolving.

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[41] Michel Foucault, *The Foucault Effect: Studies in Governmentality* (Graham Burchell, Colin Gordon and Peter Miller eds, University of Chicago Press 1991) 102-3

[42] ibid102

[43] ibid 95

[44] This is also something explored by Angela Oelsa, 'Rendering Climate Change Governable: From Biopower to Advanced Liberal Government?' (2005) 7(3) Journal of Environmental Policy & Planning 185

The legal theory of autopoiesis[45] may be applied to the climate change regulation system. The theory, like Foucault's work, provides an explanation for the problems of regulatory control, which it attaches to the problems of communication between politics, economics, society and law. Autopoietic systems may be described as social systems (interaction, organisation, society).[46] By the way the alternative models of regulation are structured, the environmental system lends itself to autopoietic descriptions. Decisions in the regime over climate change are largely taken by multiple bodies. The legal theory of autopoiesis accommodates this in that it goes beyond instrumentalist approaches to regulation and addresses the question of the relations between law and society, highlighting the limits of the use of law as the main regulatory instrument. Most areas of law, for instance private law, are concerned with the protection of private individual interests and would have difficulties in protecting the un-owned environment. If existing legal mechanisms were to be used, environmental protection would be an inadequate by-product coming from the protection of other interests. The theory of reflexive law stresses the limit of the law's capacity to direct social change in the face of complexity. The theory leans towards something that perhaps closely resembles the concept of governmentality as it emphasises that certain issues are outside the capabilities of state-centred institutions and thus ought to be addressed by alternatives.

[45] The theory was initially formulated by biologists and then was transferred to social sciences (Gunther Teubner, *Autopoietic Law: A New Approach to Law and Society* (Walter de Gruyter & Co 1987) 3).

[46] ibid

The concept of decentred regulation, namely that regulation is not only performed by the state but is also a function broadly performed by other institutions such as the previously discussed NGOs and voluntary models, changes the meaning of regulation and regulatory activities which traditionally lay within the concept of sovereignty. A further distinction can be drawn between internal sovereignty (supreme authority over jurisdiction) and external sovereignty (independence from outside interference).[47] Some engagement with historical background will underpin the initial definitions and in turn expose the transformation in the relationship between earlier forms of environmental regulation and the new environmental governance. This process is predominantly marked by a shift away from statutory commands and sanctions for breach which were dominant in the 1970s and early 1980s, also as part of the Thatcherite and Reaganite accepted roles of government that defined regulation and regulatory activities in the style of mandatory regulation and a set of imperatives. Rhodes[48] and Rosenau[49] viewed the absence of coercive state power as one of the main characteristics of governance. Turning this on its head, coercion was one of the elements present in what defined regulation and what governed regulatory activities in its traditional meaning. This may go back as far as Weber who viewed power, and so the power that

[47] ibid 4. Wendt is even more conventional in his distinction between internal and external sovereignty, defining the former as the 'supreme locus of political authority' and the latter as 'the absence of any external authority higher than the state' (Alexander Wendt, *A Social Theory of International Politics* (Cambridge University Press 1999) 206-8). The distinctions, however, are not of central importance to this paper as the general definition of sovereignty serves its purpose of showing how the regulatory models raise questions about what is regulation and regulatory activities.

[48] Rod Rhodes, *Understanding Governance* (Open University Press 1997)

[49] James Rosenau, 'Governance in the Twenty-First Century' (1995) 1 Global Governance 13

regulated social activities, as repressive. Weber notes that '[p]ower is the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance'.[50] This architecture shifted from the 1980s onwards to softer[51] approaches as complements to regulation, or as substitutes (particularly in the case of the US). These involved informal influence, negotiated agreements, partnerships and self- and co-regulation. Government instruments – financial ones of taxes, incentives or subsidies in regulating climate change – have not changed; the only transformation was in the 'explicit recognition of these devices, not as budgetary devices but as regulatory ones'.[52]

Conclusion

With the above alternative mechanisms of regulation, the role of state sovereignty is contested, as is the traditional perception of regulation and the form of regulatory activities. Whilst the sovereign state was a permanent fixture in setting regulation and regulatory activities, it is now, as Clark A Miller summarised, 'if not at death's door then diminished in relation to superstate and sub-state collectivities'.[53] Other theories of governance suggest nothing less than a 'crisis of authority'[54] or 'the end of sovereignty'.[55] This may well

[50] Max Weber, *The Theory of Social and Economic Organization* (Free Press 1997) 152

[51] Soft law is not normally binding in its form or readily enforceable.

[52] Julia Black, 'Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World' (2001) 54 Current Legal Problems 125-7

[53] Clark A Miller, 'Climate Science and the Making of a Global Political Order' in Sheila Jasanoff (ed), *States of Knowledge: The Co-production of Science and Social Order* (Routledge 2004) 48

[54] James Rosenau, *The Study of World Politics: Globalization and Governance* (Taylor & Francis 2006)

relate to globalisation, which is characterised by conditions that weaken the exclusive authority of national states. Black in 'Decentring Regulation' sees the shift from hierarchies to heterarchies as an implication for 'a different role for the state, one of mediator, facilitator, enabler, and for the skills of diplomats rather than bureaucrats',[56] and so many have been right to claim that 'the idea is not one of governance *above* the state…but rather of governance *beyond* the state'.[57]

This arrangement is contrary to Macrory's predictions that 'a new era of legal formalism in relation to pollution standards and objectives' [58] will materialise. This is a mistaken assumption. It has been shown in this paper that there is more to regulation and regulatory activities than what is implemented through state-based climate change policies. There has been an expansion in the meaning of regulation and regulatory activities that reaches beyond Macrory's predictions of the emerging legal formalism. Regulatory activities can take non-legal and non-interventionist approaches based on non-state actors, communities and more. They are more likely to work in networks rather than hierarchies through which they disperse their authority. All this suggests that regulation and regulatory activities have strayed a considerable way away from the classic precepts of their definitions. In this polycentric order, regulation will materialise in a bottom-up way as a result of collective action. Non-state actors

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[55] Joseph Camilleri, *End of Sovereignty?: The Politics of a Shrinking and Fragmenting World* (Edward Elgar 1992) 4

[56] Black (n 52) 145

[57] Tanja Aalberts, 'The Future of Sovereignty in Multilevel Governance Europe - A Constructivist Reading' (2004) 42(1) JCMS: Journal of Common Market Studies 5

[58] Richard Macrory, *Regulation, Enforcement and Governance of Environmental Law* (Cameron May 2008) 361. Pollution falls within the realm of the problems in climate change.

have indeed enjoyed a higher concentration of power than they once did; treaties such as the Kyoto Protocol are no longer the sole determinants of policies. However, it is still reasonable to suggest that in spite of the growth of a plethora of actors and the age of globalisation, the *'real'* regulation and regulatory activities happen at the state level, not diverging much from their traditional conceptions and reasserting the power of the state as it ultimately 'play[s] the major role in determining the *basic institutional setup*'[59] and retains the legitimate right to use coercion and the authority to make binding law. Yet, because climate change is characterised by such complexity, there is a need for policy coordination, particularly when governance in this area has been criticised. The Stern Review (2007) considered climate change to be an example of 'market failure on the greatest scale'.[60] This should not suggest that one form of regulation replaces the other, but rather that they co-exist, conforming to 'heterarchy…succeed[ing] in the shadow of hierarchy'.[61]

[59] Liesbet Hooghe and Gary Marks, *Multi-level Governance and European Integration* (Rowman & Littlefield 2001) 45

[60] Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge University Press 2007) 27

[61] Neil Gunningham, 'The New Collaborative Environmental Governance: The Localization of Regulation' (2009) 36 Journal of Law and Society 162

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