The Legally Disruptive Nature of Climate Change

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Abstract: Climate change gives rise to disputes and problems that are not easily addressed by existing legal doctrines and frameworks. This is because: it is a polycentric problem; the assessment of future climate impacts must deal with uncertainty; climate change is socio-politically controversial; and addressing climate change requires recognising a dynamic physical environment. As such, climate change can be thought of as legally disruptive in that it requires lawyers and legal scholars to reconcile the legal issues raised by climate change with existing legal orders. The legal disruption catalysed by climate change has not only led to the creation of new legal regimes but also given rise to a multitude of legal disputes that require adjudication. A study of some of these cases highlights the need for active and deliberate reflection about the nature of adjudication and the legal reasoning embedded in it when confronted by a disruptive phenomenon like climate change.

Climate change now figures frequently in adjudication. Between 2013 and early 2015, there were over 394 cases in the UK, US, Australia and Canada in which a legal dispute related in some way to climate change.[1] Unsurprisingly, much literature has been written on climate change in the courts: mapping climate change cases and considering how to define the scope

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[1] We would like to thank Randall Stephenson for undertaking this case review for us. For other surveys of the case law see (n 2) below and the Sabin Center for Climate Change Law, http://web.law.columbia.edu/climate-change accessed 27 July 2015.

of such case law;[2] examining litigation as a tool for forcing legal responses to climate change;[3] exploring the role of courts in possible legal responses to climate change;[4] and analysing specific cases.[5] Much of this literature has treated courtrooms as another forum for politics. As a consequence, policy, commentary and debate tends to pivot around discussion of whether or not courts should act as such a forum.[6]

The purpose of this article is different – it takes an 'internal' legal perspective[7] and explores the way in which existing legal doctrines and frameworks are forced to confront, respond, and perhaps even evolve to respond to climate change, beyond the application and incremental development of existing rules and doctrines. In this regard, climate change may be thought of as legally disruptive in that it requires a 'break' in the continuity of existing legal practices and doctrinal 'business as usual.' Climate change is not the only problem that provokes legal disruption,[8] but its highly polycentric, uncertain, socio-political charged and

[2] David Markell and J.B. Ruhl, 'An Emprical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?' (2012) 64 Florida L Rev 15; Jolene Lin, 'Climate Change and the Courts' (2012) 32 Legal Studies 35; Brian Preston, 'Climate Change Governance: Policy and Litigation in a Multi-Level System Climate Change Litigation (Part 1)' (2011) 1 Carbon and Climate Change Rev 3.

[3] Jacqueline Peel and Hari Osofsky, *Climate Change Litigation: Regulatory Pathways to Cleaner Energy* (CUP 2015); Richard Lord and others (eds), *Climate Change Liability: Transnational Law and Practice* (CUP 2012); Navraj Singh Ghaleigh, '"Six Honest Serving Men": Climate Change Litigation as Legal Mobilisation and the Utility of Typologies' (2010) 1 Climate L 31.

[4] Two recent high profile examples are: International Bar Association Presidential Task Force on Climate Change Justice and Human Rights, *Acheiving Justice and Human Rights in An Era of Climate Disruption* (International Bar Association 2014) and Oslo Principles on Global Climate Change Obligations, http://www.osloprinciples.org/ accessed 1 Nov 2015.

[5] For example the literature responding to *Massachusetts v Environmental Protection Agency* 549 US 497 (2007). See Elizabeth Fisher, 'Climate Change Litigation, Obsession and Expertise: Reflecting on the Scholarly Response to Massachusetts v EPA' (2013) 39 L And Policy 236.

[6] Compare Peel and Osofsky (n 3) with Lucas Bergkamp and Jaap Hanekamp, 'Climate Change Litigation Against States: The Perils of court Made Climate Change Policies' (2015) 24 European Energy and Env L Rev 102.

[7] Although such an internal approach is a 'highly flexible' one: Chris McCrudden, 'Legal Research and the Social Sciences' (2006) 122 LQR 632, 635.

[8] As Johns, Joyce and Pahuja point out in the international law context, 'wars, forced migrations, environmental catastrophes, pandemic outbreaks, trade breakdowns, mass grave exhumations, technological breakthroughs: the international legal imaginary is littered with ruptive instances': Fleur Johns, Richard Joyce and Sundhya Pahuja, 'Introduction' in Fleur Johns, Richard Joyce and Sundhya Pahuja (eds) *Events: The Force of International Law* (Routledge 2011) 1.

dynamic nature presents particular challenges for legal orders and adjudication. These characteristics potentially place climate change in a different category of legal disruption, as the widespread legal challenges it presents reflect the fundamental upheaval of social and economic orders threatened by climate change.

Most obviously, climate change causes legal disruption in that it has led to the creation of new legal regimes at all levels of government. However, climate change has also been highly disruptive of adjudicative processes and the article focuses on this form of disruption. Climate change is disruptive of adjudication in a variety of ways, including when courts are required to determine whether or not to decide a dispute; when the issues presented fit awkwardly into existing and well-honed grooves of legal reasoning; and when there are legal disputes about the nature and operation of bespoke climate change regimes. In all such cases, climate change requires lawyers and scholars to reconcile any legal disruption with the fundamental role that adjudication plays in maintaining the stability of legal orders. That process of reconciliation raises difficult and often nuanced questions about the legitimacy and limits of adjudication and about what amounts to robust legal reasoning.

The structure of this article is as follows. Section One examines the legally disruptive nature of climate change and shows how adjudication is a key site where legal disruption generated by climate change manifests. Climate change leads to legal disruption because of its inherent nature and in particular because: the causes and impacts of climate change are polycentric; our scientific understanding of the future impacts of climate change has limits; climate change gives rise to socio-political conflict; and it requires the development of a legal regime that can deal with an unstable physical environment.

Sections Two to Four provide examples of different forms of legal disruption occurring in adjudication. Section Two examines cases where the legal question before the court is essentially whether climate change should be legally recognised at all. Section Three

considers cases where climate change is legally recognised but where a court is faced with determining whether existing legal doctrines can be applied to a dispute concerning climate change, and if so how. These cases often involve the recrafting or rethinking of legal doctrine. Section Four examines cases where courts are dealing with disputes that arise in relation to climate change legislation and associated regulatory regimes. In these cases, courts often have to make legal sense of novel legal regimes and their obligations.

In Section Five, we consider the consequences of our analysis. If climate change generates significant legal disruption of adjudicative processes, we argue that this requires scholars and lawyers to reflect on normative and existential challenges that this disruption poses for legal orders. We argue that questions about the practical and symbolic nature of adjudication and the role of legal reasoning in stabilising legal orders are fundamental in exploring these normative challenges. In Section Six, we conclude.

Three points should be made before starting. First, to illustrate our argument, we draw on examples of cases from the US, UK, EU and some Commonwealth jurisdictions. This is not a comprehensive and/or rigorous comparative survey akin to the mapping exercises that can be seen in other scholarship.[9] Our focus is on identifying the type of legal disruption caused by climate change not on classifying all climate change related case law or carrying out a comparative law analysis.

Second, we define 'adjudication' in very broad terms to include triadic forms of dispute resolution, which involve some application of legal norms.[10] With that said, understanding adjudication is 'no easy task.'[11] It is at once a deeply jurisprudential pursuit, a

[9] For such a review, see the references in ns 1-4.

[10] This definition is adjusted from that of Shapiro's in Martin Shapiro, *Courts: A Comparative and Political Analysis* (University of Chicago Press 1981) 1.

[11] Lon Fuller, 'Adjudication and the Rule of Law' (1960) 54 Proceedings of the American Society of International Law at Its Annual Meeting (1921-1969) 1, 1.

socio-political consideration of the proper role of judges, and a practical question about the types of issues that can actually be resolved in a courtroom.[12] Adjudication 'presents itself in many mixed forms' and, as a form of decision-making, it can blend into mediation and even representative government.[13] It is also a collective practice. Adjudication is not the act of a single judge or a single party and its form and processes are embedded within the relevant legal, social and political culture. Thus, while our analysis is not strictly one of comparative law, we are acutely aware that understanding adjudication also requires an appreciation of how judging is done in different national and international contexts[14].

Third, we are not either for or against climate change adjudication. We take it as a given – 394 cases in 4 jurisdictions in less than 2 years says it all. What we are arguing for is the need for reflective, rigorous and creative discussion about the relationship between climate change and legal reasoning. A study of the types of legal issues that climate change is generating in adjudicative contexts is an important starting point for that discussion.

1. The Legally Disruptive Nature of Climate Change: A 'Hot' Situation

Legal orders are expected to be stable and coherent. This expectation is expressed in many ways: the importance given to legal certainty and the rule of law; the operation of precedent in common law systems; the emphasis on legal formalism; the circumscribing of the judicial

[12] Ibid 1.

[13] Ibid 2; Judith Resnik, 'Reinventing Courts as Democratic Institutions' (2014) 143 Daedalus 9.

[14] José Alvarez, *International Organisations as Law-makers* (OUP 2006) ch 9 ('The Nature of International Adjudication'); Laurence Helfer and Anne-Marie Slaughter, 'Towards a Theory of Effective Supranational Adjudication' (1997) 107 Yale LJ 273. In particular, the common lawyer's understanding is likely to be quite different from that of the civil lawyer and an American conception of adjudication will have a different emphasis to a British one: Susan Silbey, 'The Courts in American Public Culture' (2014) Daedalus 140; Resnik (n 13)

role; and the value placed on rigorous legal reasoning.[15] As Latour has noted, 'law has a homeostatic quality which is produced by the obligation to keep the fragile tissue of rules and texts intact'. As such, 'a premium is put on legal stability'.[16] Legal 'innovations' are thus more often than not presented as the 'expression of a principle that was already in existence'.[17]

This is not to say the law does not evolve. There is also vigorous debate around the nature of the judicial role, the rule of law, legal certainty, precedent and what is good legal reasoning. However, in legal orders that subscribe to a version of the rule of law, it is generally seen as important that any law or legal dispute is resolved in a manner consistent with the workings of the rest of the legal order. In summing up the importance of legal stability, Waldron notes:

> Since law's presence in people's lives tends to be intrusive if not coercive, it is important that its presence be made calculable, so that it can enter into their planning. And since other people's actions may also impact intrusively upon us, we need to know in advance how, and to what extent. These too will be controlled by law.[18]

Again, the 'calculability' of law should not be understood in some naïve way as an expectation that law is always certain and unambiguous. However, in whatever way it is understood, climate change gives rise to situations that are at odds with legal stability, coherence and knowability. In this regard, climate change can be thought of as legally disruptive. As indicated above, we use the term 'disruption' to refer to the way in which the

[15] There are many examples of these values being expressed but an excellent summary of the importance of legal stability can be found in Tom Bingham, *The Rule of Law* (Penguin 2010) 37-40.

[16] Bruno Latour, *The Making of Law: An Ethnography of the Conseil D'etat* (Polity Press 2010) 242-3.

[17] ibid 219.

[18] Jeremy Waldron, *The Rule of Law and the Measure of Property* (CUP 2012) 53.

legal issues arising from climate change cannot be addressed through the conventional application of legal doctrine. We argue that the legally disruptive nature of climate change is critical in making sense of the intellectual challenges that climate change presents to lawyers and legal scholars, just as other disruptive events pose significant challenges, and also opportunities, for legal and political orders.[19]

Our starting point is the fact that climate change[20] is not a discrete solvable problem – many scholars describe it as a 'wicked' problem.[21] As Hulme notes, wicked problems defy 'rational and optimal solutions' and are 'beyond the reach of mere technical knowledge and traditional forms of governance'.[22] Given the negative connotations of the word 'wicked', we prefer Callon's description of 'hot' situations in thinking about the complex dimensions of climate change as a problem.[23] Situations are 'hot' when:

> everything becomes controversial: the identification of intermediaries and overflows, the distribution of source and target agents, the way effects are measured. These controversies which indicate the absence of a stabilised knowledge base, usually involve a wide variety of actors. The actual list of actors, as well as their identities will fluctuate in the course of a controversy itself and they put forward mutually incompatible descriptions of future world states.[24]

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[19] Johns, Joyce and Pahuja (n 8).

[20] For further details on the science of .climate change see the reports at http://www.ipcc.ch/ accessed 15 July 2016.

[21] Chris Hilson, 'It's All About Climate Change, Stupid: Exploring the Relationship Between Environmental Law and Climate Law' (2013) 25 JEL 359; Richard Lazarus, 'Super Wicked Problems and Climate Change: Restraining the Present to Liberature the Future' (2009) 94 Cornell L Rev 1153.

[22] Mike Hulme, *Why We Disagree About Climate Change: Universtanding Controversy, Inaction and Opportunity* (CUP 2009) 334.

[23] Michel Callon, 'An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology' in Michel Callon (ed), *The Laws of the Markets* (Blackwell 1998) and discussed in Elizabeth Fisher, 'Environmental Law as "Hot" Law' (2013) 25 JEL 347.

[24] Callon (n 23) 260.

Inherent in this description is an expectation of what situations are normally (Callon describes such normal conditions as 'cold' situations). They are presumed to be manageable – the parties and interests at stake are identifiable and the facts ascertainable – so that understandings of rights and responsibilities can be applied in a rigorous way. In other words, normal situations are understood as being 'calculable' and law plays an important role in ensuring this.[25] It defines the parties, the relationships between them, the duties they owe each other, what are the relevant facts, and so on.

In 'hot' situations, the role of law becomes more 'hot' itself, in that existing legal frameworks no longer easily manage legal situations. Either legal frameworks must evolve or new authoritative legal frames must be developed so as to accommodate the number and variety of parties and the relevant contested facts and politics.[26] As Fisher notes, 'hot' law is not just controversial, but also raises issues which are 'structural and foundational'.[27] This is because there is difficulty in identifying the parties that are legally relevant and scientific uncertainty and socio-political conflict make it difficult to develop a robust factual base for decision-making and dispute resolution.[28]

Law is of course always evolving, and there are other examples of 'hot' situations that the law must deal with.[29] But climate change poses significant and arguably unprecedented challenges for legal systems. There are a number of reasons why climate change is a 'hot' situation and thus leads to 'hot' law, but four interrelated features of climate change are particularly important to note, since they show why climate change raises particularly disruptive challenges for law and dispute resolution processes. The first 'hot' aspect of

[25] Callon (n 23) 260.

[26] Fisher (n 23).

[27] Ibid 350.

[28] Ibid 350-1.

[29] Fisher (n 23).

climate change is that its causes and consequences are polycentric.[30] The idea of legal problems being 'polycentric' is not new to lawyers,[31] but the polycentric nature of climate change is a particularly extreme example of it. This is because anthropogenic climate change is caused by the cumulative and indirect impacts of human activities across a range of sectors, at various scales, across different countries. Its impacts are similarly indirect, multi-scalar and differentiated. For example, the emissions from a power station are the product of electricity production being used for a vast number of activities ranging from street lighting and home heating, to providing electricity to both local and multinational businesses. Likewise, the global nature of climate change requires engagement of governments and actors at a number of different levels.[32] Addressing climate change involves a range of different actors in complex interrelationships with each other.[33] All this means that climate change raises difficult and often novel questions about whose rights and interests should be taken into account in developing legal frameworks or in resolving a legal dispute.[34] Who should have

[30] For a discussion of polycentricity in environmental law, see Elizabeth Fisher, Bettina Lange and Eloise Scotford, *Environmental Law: Text, Cases and Materials* (OUP 2013) Ch 2.

[31] Abram Chayes, 'The role of the Judge in Public Law Litigation' (1976) 89 Harvard LR 1281; *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited* [2013] NSWLEC 48; [31-43]; and *Mott, R (on the application of) v Environment Agency* [2016] EWCA Civ 564, [75].

[32] Joanne Scott, 'The Multi-Level Governance of Climate Change' in Paul Craig and Grainne de Burca, *The Evolution of EU Law* (2nd ed, OUP 2011).

[33] Elinor Ostrom, 'Polycentric Systems for Coping With Collective Action and Global Environmental Change' (2010) 20 Global Environmental Change 550.

[34] Eg *Harvard Climate Justice Coalition v President and Fellows of Harvard College* 32 Mass L Rep 529 (2015); *Delta Construction Company Inc v EPA* 783 F 3d 1291 (DC Cir 2015); *Kanuk v State of Alas*ka 335 P 3d 1088 (2014).

standing?[35] Who should be accountable and for what and to whom?[36] What is legally relevant?[37]

Second, while scientific understandings of climate change are relatively settled, assessments of future climate change are not straightforward. This is important because the management of climate change is about controlling future impacts. As Stern has noted:

> It is almost as if the science of climate change has conspired to make the generation of action as difficult as possible. These difficulties arise from four key elements of the processes at work: (1) scale; (2) risk and uncertainty; (3) lags and delays in consequences; (4) the 'publicness' of greenhouse gas emissions - it is the total, global volume that matters, rather than an individual source.[38]

Furthermore, polycentricity means the relationship between cause and effect cannot always be linked in a linear way. Risk, uncertainty, and the delays in consequences of the changing climate, mean that assessment is heavily dependent on computational modelling. Scientific uncertainty is inherent in the process of modelling and, while models are developed as rigorous representations of reality so as to gain insight, they are not 'truth machines'.[39]

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[35] See Section 4 and *Massachusetts* (n 5); *Texas v EPA* 726 F3d 180 (DC Cir 2015); and *Haughton v Minister for Planning and Macquarie Generation* [2011] NSWLEC 217 (2 December 2011).

[36] *Brown v Carlisle City Council* [2014] EWHC 707 (Admin) (21 March 2014) [75] (aircraft emissions to be considered at the national level); *Hunter Environment Lobby Inc v Minister for Planning* [2011] NSWLEC 221 (24 November 2011).

[37] See Section 5 and *Kentucky Coal Assn Inc v Tennessee Valley Auth*ority 68 F Supp 3d 703 (2015); *WildEarth Guardians v EPA* 751 F3d 649 (DC Cir 2014); *Hunter Environment Lobby* (n 36) [33].

[38] Nicholas Stern, *Why are We Waiting?: The Logic, Urgency, and Promise of Tackling Climate Change* (MIT Press 2015) 4.

[39] Wendy Wagner, Elizabeth Fisher and Pasky Pascual, 'Misunderstanding Models in Environmental and Public Health Regulation' (2010) 18 New York U Env LJ 101.

The need to make legal decisions in circumstances of scientific uncertainty creates fundamental challenges for law and adjudicative processes, particularly because of the value placed on legal stability in applying legal rules and in resolving disputes. As Latour notes:

> Science can tolerate gaps, but the law has to be seamless. Science can draw on lively controversy but the law has to restore an equilibrium. Although one might speak admiringly of 'revolutionary science', 'revolutionary laws' have always been as terrifying as courts with emergency powers.[40]

Much legal doctrine and procedure operates on the basis that facts are ascertainable, or at least can be agreed upon through application of the rules of evidence. Computer modelling and other techniques are other forms of developing a robust understanding of the world.[41] These techniques not only raise the issue of how law understands what is an acceptable evidentiary basis for action,[42] but also how such decisions should be legally held to account – the latter question of public law is one that government and courts alike have struggled with.[43] There are also questions about how to attribute legal responsibility in such uncertain and polycentric contexts. [44]

The third 'hot' feature of climate change to note is that debates over climate change inherently involve conflicts about how communities wish to live and how losses and benefits are distributed in a society.[45] Issues of fairness in society are inherent in all law and legal

[40] Latour (n 16) 243.

[41] Wagner, Fisher and Pascual (n 39).

[42] Eg *In re Polar Bear Endangered Species Act Listing and § 4(d) Rule Litigation* 709 F 3d 1 (DC Cir 2013).

[43] Elizabeth Fisher, Pasky Pascual and Wendy Wagner, 'Rethinking Judicial Review of Expert Agencies' (2015) 93 Texas L Rev 1681.

[44] See the discussion in relation to standing in *Massachusetts* (n 5) and *Delta Construction* (n 34). For a general discussion, see Douglas Kysar, 'What Climate Change Can Do About Tort Law' (2011) 41 Env L 1.

[45] There are countless examples of this, including the ongoing and seemingly intractable negotiations of the UNFCCC Conference of the Parties (see http://unfccc.int/meetings/items/6237.php?filtbody=53), or differing

practice, but developing a coherent understanding of our ideal future society in circumstances of polycentricity and uncertainty makes this a particularly challenging exercise. Given the 'tragedy of the commons' character of climate change, such decision-making inevitably involves a role for the state and its role in promoting a particular vision of the good life.[46] As Steve Rayner has noted, '[c]limate change is not so much a discrete problem to be solved as it is a condition under which human beings will have to make choices about such matters as priorities for economic development and the way we govern ourselves'.[47] An obvious disruptive question from a legal perspective is whether disputes over climate change are socio-political disputes (and thus to be resolved in political forums) more than legal disputes. If they are, then responsibility for climate change is non-justiciable, and disputes over it are not for resolution in judicial forums.[48]

Finally, it is important to note that the earth's climate can no longer be taken as a 'given'.[49] As the physical state of the world is in flux, this has implications for legal, political and social frameworks that have rested on assumptions of stability.[50] In light of climate change, 'the assumption of an unchanging natural world clearly does not hold today and it will be even further from reality in the future'.[51] Sea level rise, flooding and drought are problems because they are physical conditions that affect our expectations of what it means to live in the world and what we can expect from it, particularly in terms of legal rights.

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views on major airport expansion (see the recent UK Airports Commission Final Report at https://www.gov.uk/government/news/airports-commission-releases-final-report vs the protests of Plane Stupid at http://www.planestupid.com/).

[46] Ostrom (n 33).

[47] Steve Rayner, 'Foreword' in Mike Hulme, *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity* (CUP 2009) xxii.

[48] Eg *Kanuk* (n 34) 1096.

[49] Daniel Farber, *Property Rights and Climate Change* (Wolf Family Lecture on American Law, University of Florida Levein College of Law 2014) 2.

[50] F Lawson and B Rudden, *The Law of Property* (Clarendon Press 2002) 3-4.

[51] Farber (n 49) 3.

Variation in climate is not new, but anthropocentric climate change brings with it changes outside the normal range of variation. The dynamic nature of climate change does not sit easily with legal orders that value stability and legal certainty. This arises because, if dynamism is taken seriously in disputes that involve environmental 'facts', then legal frameworks and obligations will need to change in light of the changing climate. This raises directly the issue of how to reconcile change and legal certainty, particularly in areas such as property law where there is an expectation that law will ensure stable relations.[52]

The above discussion makes clear that taking climate change seriously presents a series of conundrums for lawyers and legal scholars. Whilst it is obvious that climate change does not fit easily into legal frameworks developed for more manageable states of affairs – Callon's 'cold' situations – it is not obvious what types of legal norms should evolve to accommodate the causes and consequences of climate change. Should, for example, new forms of obligation, responsibility and causation be developed? Or should we persist with our existing norms and the values they perpetuate? These questions are not just discrete questions for those lawyers having to think about climate change, but they invoke questions about legal stability more broadly. In this sense, climate change is legally disruptive. These kinds of disruptive normative challenges arise in two main ways across legal orders – through the development of new and novel legislative and regulatory responses to climate change, and through the adjudicative challenges generated when climate change, inevitably, gives rise to legal disputes.

The most obvious aspect of the legally disruptive nature of climate change is that it is seen as a 'new' problem that has resulted in new international law agreements, new national legislation, and new regulatory regimes concerned with addressing both the causes and

[52] Regulating dynamic environmental problems is already challenging conventional notions of property rights, at least in English law: see Eloise Scotford and Rachael Walsh,' 'The Symbiosis of Property and English Environmental Law – Property Rights in a Public Law Context' (2013) 76 MLR 1010.

impacts of climate change. The most high profile of these is the UN Framework Convention on Climate Change (UNFCCC),[53] but there are many examples of national initiatives, often catalysed by the UNFCCC. Up until 2014, there were nearly 400 legislative measures passed in 99 countries, accompanied by over 400 policies created by the executive branches of governments.[54] These include bespoke statutes,[55] regulatory frameworks,[56] and 'soft' laws in the form of policies.[57] These laws regulate many things including emission limits,[58] emissions trading schemes,[59] building standards,[60] transport strategies,[61] and vegetation clearance schemes.[62] Inherent in these legal responses are a variety of strategies, including prevention, mitigation, and adaption.[63] Alongside these national measures are many initiatives by regional and local governments.[64]

[53] UN Framework Convention on Climate Change (adopted 9 May 1992, ratified 21 March 1994) 1771 UNTS 107.

[54] Michal Nachmany and others, *The 2015 Global Climate Legislation Study: A Review of Climate Change Legislation in 99 Countries Summary for Policy-makers* (Grantham Research Institute on Climate Change and the Environment 2015) 12. Also see the publications at Globe International: <http://globelegislators.org> accessed 15 July 2016.

[55] Eg Climate Change Response Act (2002) (New Zealand); Climate Change Response Act (2002) (Philippines); Climate Change Act 2008 (UK); Climate Change Mitigation Act (2014) (Bulgaria); Climate Change Act (2014) (Denmark); Climate Change Act (2014) (Finland)..

[56] Eg Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [2003] OJ L275/32 (as amended).

[57] Eg National Climate Change Adaptation Framework (2012) (Ireland); National Action Plan on Climate Change (2008) (India); National Adaptation Plan to Climate Change (2006) (Spain); National Climate Change Strategy (2012) (Singapore).

[58] Climate Change Act 2008 (UK).

[59] Eg Directive 2003/87/EC (n 56) and Climate Change Response Act (2002) (New Zealand).

[60] Buildings Performance Institute Europe, *Europe's Buildings Under the Microscope: A Country by Country Review of the Energy Efficiency of Buildings* (2011), Pt 2 < http://www.europeanclimate.org/documents/LR_%20CbC_study.pdf> accessed 15 July 2016.

[61] Eg http://ec.europa.eu/clima/policies/transport/index_en.htm accessed 15 July 2016.

[62] Eg Native Vegetation Act 2003 (NSW).

[63] On the distinction, see WG II (Impacts, Adaption, and Vulnerability) and WG III (Mitigation of Climate Change) of the IPCC reports (n 20).

[64] Michele Finck, 'Above and Below the Surface: The Status of Sub-National Authorities in EU Climate Change Regulation' (2014) 26 JEL 443.

Some of these regimes may involve the application of pre-existing legal obligations and concepts to the 'new' problem of climate change. In other cases, new legal obligations, responsibilities, forms of accountability and/or remedies are being created. Thus the UNFCCC regime since the Paris Agreement is becoming more hybrid and multi-level in its legal architecture and less centred on a set of international rules formulated in a single treaty.[65] Climate change legislation creates legal duties that extend into the future.[66] Emission trading schemes transform emissions into legal units that can be traded.[67]

As we shall see below, these 'novel' obligations can and do give rise to legal disruption. But legal disruption does not stop there. The legally disruptive nature of climate change is also reflected in the fact that climate change generates disputes, and in particular legal disputes. The case law concerning climate change and climate change related issues is extensive, and defining a 'climate change case' is difficult.[68] Legal disputes that can be identified as relating to climate change in some way can arise among a range of different actors and litigation is brought for a range of reasons. Some litigants may have political motivations,[69] but many actors (even those motivated by politics) are looking for some form of legal ordering in light of climate change – some are ideologically opportunistic, some are trying to reduce legal uncertainty, some feel a keen sense of injustice and some are simply needing a legal dispute resolved.

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[65] Lavanya Rajamani, 'The Devilish Details: Key Legal issues in the 2015 Climate Negotiations' (2015) 78 MLR 826.

[66] Climate Change Act 2008 (UK) s 1.

[67] On how these are disruptive of legal understandings of property, see Kelvin Low and Jolene Lin, Carbon Credits as EU Like It: Property, Immunity, TragiCO2medy?' (2015) 3 JEL 377.

[68] For a thoughtful analysis of this problem, see J B Ruhl, 'What is Climate Change Law?' OUP Blog, 22 August 2015, < http://blog.oup.com/2015/08/what-is-climate-change-law/> accessed 15 July 2016.

[69] These motivations will vary considerably. Compare *Urgenda Foundation v Netherlands* (24 June 2015) ECLI:NL:RBDHA:2015:7196 < http://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2015:7196> accessed 15 July 2016 and *Spencer v The Commonwealth* [2015] FCA 754 (24 July 2015).

Most legal disputes relating to climate change are in courts of first instance. There are also a significant number in other dispute resolution forums. Further, the legal issues that arise in these cases vary widely. Some of these legal disputes involving climate change are straightforward in a legal sense. Markell & Ruhl have noted the substantive legal question in *Massachusetts v EPA*[70] was a 'vanilla' statutory interpretation' one.[71] However, many disputes require judges to reflect on the nature and scope of existing doctrine. Thus *Massachusetts v EPA* also involved an unusual standing issue,[72] and in other cases the questions of statutory interpretation are not so straightforward.[73] In other cases, the issues presented are entirely novel.

In nearly all these disputes, however, courts are faced with the legal disruption created by climate change. In particular, they are faced with the challenge of trying to determine whether the issues raised by climate change are capable of legal resolution and if so how. In navigating these disruptive issues, judges and adjudicators must employ processes of legal reasoning. Cases are not 'to be decided by naturall reason but by the artificiall reason and judgment of Law, ... which requires long study and experience, before that a man can attain to the cognizance of it'.[74] The challenge for courts is to reconcile such expert and ingrained processes of reasoning with the disruptive challenge of climate change so that legal orders remain stable and evolve in as robust and coherent a way as possible.

The next three sections demonstrate this point by analysing the legal disruption caused by climate change in three different forms. Section Two examines cases that deal with

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[70] *Massachusetts* (n 5).

[71] Markell and Ruhl (n 2) 69.

[72] See for example *Massachusetts* (n 5).

[73] *Utility Air Regulatory Group v EPA* 134 S Ct 2427 (2014).

[74] Coke as quoted in Lord Mance, 'Should the Law be Certain?' Oxford Shrieval Lecture (11th October 2011), https://www.supremecourt.uk/docs/speech_111011.pdf accessed 15 July 2016.

the question of whether climate change should be legally recognised at all. Section Three considers cases where climate change is legally recognised, but there is a need to determine how legal doctrine should be recrafted in light of climate change. Finally, Section Four examines legal disputes that are arising in relation to specific climate change regimes. These categories overlap (and a single case may raise issues in all three categories) but we use this structure to show the pervasive nature of the legal disruption caused by climate change.

2. Jurisdiction and Justiciability: 'Opening the Door to Everything'?

Our first category of cases illustrating the legal disruption generated by climate change is comprised of 'threshold' cases. In these cases, courts and tribunals must consider whether law can and should recognize climate change as a problem and develop an adjudicative response to it when there are no existing legal obligations to do so. These issues usually manifest themselves as preliminary questions about a court or tribunal's jurisdiction, asking whether there is a 'case' or 'dispute' that a court can hear.[75] These disputes are legally disruptive in that they involve jurisdictional issues that are unusual or contentious for courts. The question for the court is whether by considering a novel question it will 'open the door to everything' and 'everything will be in flux' so that law becomes 'unstable, slippery and shaken'.[76] Crudely, this might be thought of as a floodgates argument, but it also directly relates to a desire for maintaining established legal stability and coherence.

As indicated above, climate change issues come before the courts in disparate and often novel ways and thus initial questions relating to jurisdiction are multifaceted and arise in unpredictable cases. These questions arise in the context of specific legislation that address

[75] *Massachusetts* (n 5) 516.

[76] Latour (n 16) 179, 178.

climate change,[77] the judicial review of policy decisions,[78] tort claims against major energy producers[79] and even employment cases.[80] Questions of justiciability, jurisdiction and competence are also framed differently in different courts or tribunals. In some legal cultures, domestic doctrines of justiciability are challenged by climate change when cases are brought for instrumental and campaigning reasons.[81] Section One examined how climate change often engages deeply political questions concerning economic policy and international relations and, for this reason, courts can be unwilling to engage with such issues as they are cautious about their constitutional competence.[82]

In *Friends of the Earth v Minister of the Environment and Governor in Council*,[83] for example, the Canadian Federal Court were asked, by way of judicial review, to compel the government to take more effective measures to combat climate change and to comply with the Kyoto Protocol Implementation Act 2007. The court concluded the issues before them were non-justiciable. This decision reflects, perhaps in a particularly strong form, the Anglo-American tradition of courts granting a broad discretion to public decision makers in matters of nationally significant public policy.[84] This is not to say that cases brought against governments seeking to compel action relating to climate change will always be non-

[77] *Massachusetts* (n 5); *Friends of the Earth Canada v Minister of the Environment and Governor in Council* (n 83).

[78] *R (People and Planet) v HM Treasury* [2009] EWHC 3020; *R (Dimmock) v Secretary of State for Education and Skills* [2008] 1 All ER 367.

[79] *Native Village of Kivalina v Exxonmobil Corporation* 663 F Supp 2d 863 (ND Cal 2009); *American Electric Power Company v Connecticut* 131 S Ct 2527 (2011).

[80] *Grainger PLC & Others v Nicholson* UKEAT/-219/07/ZT.

[81] See also *Kanuk* (n 34).

[82] Although it is not always the case that judges are constitutionally conscious when adjudicating the socio-political dimensions of climate change. See in particular the reasoning in the merits review tribunal case of Koppenol P in *Re Xstrata Coal Queensland Pty Ltd & Ors* [2007] QLRT 33 at [23].

[83] *Friends of the Earth v Minister of the Environment and Governor in Council* [2009] 3 FCR 201.

[84] *R v Secretary of State for the Environment; ex p Hammersmith and Fulham LBC* [1991] 1 AC 521.

justiciable.[85] Much depends on the legal culture involved, the policies that might have been adopted or representations made by a particular government, and the legal significance of the international law framework relating to climate change within a jurisdiction.

Furthermore, questions of jurisdiction concerning climate change do not always present themselves directly. In some jurisdictions, disputes may end up in forums in which there is no judicial expertise for dealing with a claim that raises climate change issues.[86] In the US, federal common law claims can be displaced by statutory provisions.[87] And, in some international adjudicative forums, a failure to exhaust domestic remedies can be a bar to jurisdiction.[88] An example of another kind of jurisdictional or competence limitation is seen in *R (People and Planet) v HM Treasury*, where English judicial review doctrine was applied so that climate change issues were not amenable to judicial reconsideration. Climate change concerns were to be weighed by government alone in making its investment decisions.[89] This case involved a challenge to HM Treasury's policy in relation to UK Financial Investments Ltd, a company owned by HM Treasury, which at the time owned 70% of the Royal Bank of Scotland (RBS). The applicant's claimed that HM Treasury's investment policy in relation to its RBS investment should have been more alive to adverse climate change impacts. Amongst other reasons for dismissing the claim, Mr Justice Sales (as he then was) held that the applicant's claim was too legally prescriptive and failed to respect the policy discretion involved in this government investment.

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[85] See *Urgenda* (n 69).

[86] For example Koppenol P engaged in an analysis of the scientific evidence surrounding climate change, displaying a lack of understanding of the technical information before him: *Re Xstrata Coal Queensland* (n 82) [15]-[20].

[87] *Kivalina* (n 79) and *American Electric Power Company* (n 79).

[88] For example, Article 31 of the Inter-American Commission on Human Rights Rules of Procedure requires a petitioner to exhaust domestic remedies before submitting a case to its jurisdiction.

[89] *People and Planet* (n 78).

The doctrine of standing is also legally disrupted by climate change. In most countries, standing doctrines have historically required litigants to show that their private interests have been directly affected, whether in private or public law claims.[90] While those doctrines have been liberalised for administrative law claims in Anglo-American jurisdictions, particularly in the environmental context,[91] the indirect, intergenerational and community-wide nature of climate change means that the standing of litigants where they are raising climate change issues does not easily sit with many forms of standing doctrine. Thus while 'public interest' standing is recognised in these legal cultures, a number of legal disputes involving climate change do not fit even within those more liberalised regimes and give rise to different legal questions about the nature of legal standing. This is not only in cases brought by public interest groups, but also in relation to industry actors wishing to challenge climate change action.[92] This highlights the fact that problems of standing are not caused by a political choice but rather by a mismatch between the understandings of legitimate interests in a legal system and the type of interests that are entangled in, and thus affected by, climate change.[93] Climate change thus raises disruptive legal questions.

A notable instance where a court found that an applicant in a climate change case did not have standing is *Native Village of Kivalina v Exxonmobil Corporation*.[94] In this case, the City of Kivalina, situated on the northwest coast of Alaska, brought a claim in public nuisance against numerous corporate producers of greenhouse gas emissions for damage

[90] Peter Cane 'Open Standing and the Role of the Courts in a Democratic Society' (1999) 20 Singapore L Rev 23.

[91] *Walton v Scottish Ministers* [2012] UKSC 44 and *Sierra Club v Morton* 405 US 727 (1972).

[92] Eg *Delta Construction Company* (n 34) and *Carbon Sequestration Council v Environmental Protection Agency* 787 F 3d 1129 (DC Cir 2015).

[93] Peter Cane, 'Open Standing and the Role of Courts in a Democratic Society' (1999) 20 Singapore L Rev 23.

[94] *Native Village of Kivalina* (n 79) The result in this case was surprising because Kivalina was a government claimant, as in *Massachusetts* (n 5), the consequences of coastal erosion for the City of Kivalina were incredibly serious, requiring the population to relocate and, as Douglas Kysar argues, they were an 'extremely sympathetic' claimant: Kysar (n 44) 27-28.

caused by erosion of the city's coastline. The District Court found that Kivalina lacked standing because it could demonstrate neither a 'substantial likelihood' that the defendants were responsible for Kivalina's injuries, nor that they produced the 'seed' of those injuries. The Court of Appeal, although the case on appeal was focused on displacement and not standing, added that Kivalina were not able to 'pick and choose amongst all the greenhouse gas emitters throughout history' in bringing their claim.[95] The reasoning in Kivalina, and in cases like it,[96] shows that the relevant issue is not whether the test for standing is too narrow to allow for such claims,[97] but that the 'peculiar form of presentation' afforded to affected parties in adjudicative processes is ill-fitting in cases involving climate change issues.[98] The failure of claimants' claims to standing in these cases represents a disruptive challenge for a legal order in recognising climate change as a legal problem.

The nature and complexity of this challenge is more fully seen when a court does legally recognise climate change. There are thus cases in which the legal approach is different and a climate change-related dispute is found to be justiciable or its litigants are found to have standing. An example of the latter case is seen in *Massachusetts v EPA*.[99] While the statutory interpretation question in the case may have been straightforward, the question of whether the Commonwealth of Massachusetts had standing was not.[100] It involved states petitioning the Federal government to take action. In applying the legal test for standing under Art III of the US Constitution – the 'injury in fact' test – the Court was

[95] Ibid 1676.

[96] *American Electric Power Company* (n 79); *Washington Environmental Council v Bellon* (9th Cir. No. 12-35323, Oct. 17, 2013).

[97] *Massachusetts* (n 5).

[98] Section 3.

[99] (n 5).

[100] Amy Wildermouth, 'Why State Standing in *Massachusetts v EPA* Matters' (2007) 27 J of Land, Resources and Environmental L 273, 274.

also accommodating climate change and incorporating it into the legal order. Justice Stevens for the majority stated:

> EPA's steadfast refusal to regulate greenhouse gas emissions presents a risk of harm to Massachusetts that is both 'actual' and 'imminent.' …… There is, moreover, a 'substantial likelihood that the judicial relief requested' will prompt EPA to take steps to reduce that risk.[101]

The problem for the court was not a classic 'public interest' standing issue, but concerned whether there was a legal controversy to be adjudicated upon. This legal issue arose because of the polycentric nature of climate change and the way in which it required an assessment of uncertain future impacts.

Another example of climate change being legally recognised through reasoning involving a doctrine of standing is seen in the decision in *Urgenda v Netherlands*.[102] This case provides a rich seam of legal reasoning in thinking about climate change and legal disruption, and is also considered in Sections Three and Four below. It is notable here for the civil procedure argument between the parties over whether Urgenda as an NGO had standing to bring the claim at all. The Netherlands government argued that Urgenda could not have standing in this matter as it effectively represented future generations and those living outside the Netherlands in seeking orders to require the Dutch government to introduce a more stringent climate change policy.[103] The court however interpreted the relevant rules of legal standing that apply to NGOs so as to include Urgenda, both applying the relevant technical requirements and recognising that Urgenda's remit as an NGO – striving for a more sustainable society 'beginning in the Netherlands' – inherently involves some international

[101] *Massachusetts* (n 5) 521.

[102] *Urgenda* (n 69).

[103] Ibid [4.5]-[4.8].

and future dimensions. This reasoning was a new step for the court in applying Dutch standing rules, which took into account the complex nature of the climate change problem at the core of the dispute.

In relation to questions of justiciability, courts have also shown that they can recognise climate change as a legal problem. Thus, in *Connecticut v American Electric Power* a public nuisance action was brought by eight states, the City of New York and three land trusts, seeking to cap-and-abate the defendants' GHG (greenhouse gas) emissions in light of their ongoing contribution to global warming.[104] The Second Circuit court found that the complexity of the case was no reason to find it non-justiciable,[105] reasoning that 'federal courts have successfully adjudicated complex common law public nuisance cases for over a century'.[106] The court cited a number of examples where federal courts have displayed a 'masterful handling' of complex issues in order to both resolve complex disputes and develop standards.[107] They also acknowledged that although there were policy aspects to the case, they had not been asked to adjudicate on them. The socio-political dimensions did not constitute an automatic bar to them adjudicating upon the legal questions of public nuisance raised. By acknowledging the disruptive aspects of the case, the court indicated that courts have an important role to play in addressing legal challenges that engage climate change issues.

The cases in this section reveal that there is no one dominant legal response to climate change cases when they appear before courts or tribunals, partly because they present in many different causes of actions and forums. Rather, climate change often presents a

[104] *Connecticut v American Electric Power Co* 582 F.3d 309, 332 (2d Cir. 2009).

[105] This was in contradiction to the District Court which had found that the claim was non-justiciable: *Connecticut v American Electric Power Co Inc et al*, (SNDY 2005) No 04 civ 5669 LAP. On appeal to the Supreme Court, there was a (4:4) split on the issue of justiciability: *American Electric Power* (n 79).

[106] Ibid 326.

[107] Ibid 327.

disruptive challenge to courts and tribunals in recognising cases or litigants within their jurisdictions and legal traditions. It is not a case of whether courts should say 'yes' or 'no' to hearing climate change cases, but how they can make *legal* sense of climate change as a problem when relevant disputes appear before them. This problem does not go away once a climate change is legally recognised by courts, as the next Section shows.

3. Developing Responses to Climate Change: Legal Disruption through Challenging and Recrafting Doctrine

Even if climate change is recognized as an issue that is subject to legal adjudication within a legal forum, it still presents a series of disruptive legal issues as courts and legal decision-makers are drawn into responding to it. Depending on the type of legal claim involved, a cascade of legal questions can appear – about valid statutory interpretation,[108] about the control of discretion,[109] about procedural fairness,[110] about liability, and about state responsibility.[111] In the context of climate change, these questions are often not easy to answer. Whilst, in most legal cultures, existing legal rules and doctrine provide a relatively stable framework for regulating behaviour and ordering relations between people, or between people and the state, this framework needs to become malleable in the face of a changing environment under the stress of a polycentric problem like climate change. The challenge is reconciling that malleability with the expectation that the 'fabric of the law has to cover

[108] *Utility Air Group* (n 73).

[109] *Minister for Planning v Walker* [2008] NSWCA 224

[110] *Warkworth Mining Limited v Bulga Milbrodale Progress Association Inc* [2014] NSWCA 105.

[111] *Urgenda* (n 69)

everything completely and seamlessly'.[112] As such, 'a judge has to ensure that holes are repaired immediately, that tears are darned without delay, gaps filled and cases resolved'.[113]

But how malleable should legal doctrine be? Consider, as an example, the US Supreme Court of *Utility Air Regulatory Group v EPA.*[114] This case concerned a challenge to the regulatory action the EPA had taken under the Clean Air Act after to the ruling in *Massachusetts v EPA.*[115] The question in this case was not the type of dichotomous question seen in the last section – should climate change be legally recognised or not? Rather the question was, given the problem of climate change, how should the powers of the EPA be interpreted under the Clean Air Act? The answer was a mixed one – the majority found that the EPA could not interpret the Act to regulate non-major sources, and the minority adopted a different perspective. As Jasanoff notes, the reasoning 'turned on a concern with the right forms and limits of legal interpretation'.[116] The case shows the difficulty of accommodating the polycentric causes of emissions under the Clean Air Act.[117]

Two trends in judicial reasoning in relation to the malleability of legal doctrine in the face of climate change can be identified: cases where existing doctrine remains awkward for courts to apply, and cases where doctrine evolves to accommodate the 'hot' nature of climate change. In both situations, the disruptive features of climate change mean that climate change-related disputes do not fit easily into existing doctrinal paradigms.

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[112] Latour (n 13) 243.

[113] Ibid.

[114] *Utility Air Regulatory Group* (n 73).

[115] *Massachussetts* (n 5).

[116] Sheila Jasanoff, 'Serviciable Truths; Science for Action in Law and Policy' (2015) 93 Texas L Rev 1723, 1735.

[117] Jody Freeman and David Spence, 'Old Statutes, New Problems' (2014) 163 University of Pennsylvania L Rev 1.

In the first type of case, there are no problems with courts or judges acknowledging the problem or facts of climate change, but legal doctrines and procedures are difficult to apply in resolving claims relating to climate change. An interesting example can be seen in the Dutch District Court decision *Urgenda v Netherlands*, discussed above, where the Court noted:

> The question whether the State is in breach of its duty of care for taking insufficient measures to prevent dangerous climate change, is a legal issue which has never before been answered in Dutch proceedings and for which jurisprudence does not provide a ready-made framework.[118]

Whilst this case was a symbolic 'win' for 'climate change litigation', as discussed below, the causes of action that did *not* succeed in this case are noteworthy. In particular, the claims based on Articles 2 and 8 of the European Convention of Human Rights (ECHR) failed due to the fact that the Urgenda Foundation bringing the case – a non-governmental organization with a sustainability agenda – could not be designated as a 'direct or indirect victim' within the meaning of Article 34 ECHR. This was a case in which the court very much acknowledged the nature of the climate change problem, but did not find that there were breaches of ECHR rights in respect of a claimant such as Urgenda that had no personal rights to be infringed. In ECHR doctrine, Urgenda was not the right kind of claimant to defend the human rights of those (including those unborn) affected by the impacts of climate change. Whilst this might appear an unremarkable application of a legal doctrine to a set of facts, the implication is that there might be no appropriate claimant to vindicate the rights of groups of people affected by climate change, particularly those of future generations. Climate change has widely dispersed social impacts and so does not fit easily into the individualised legal

[118] *Urgenda* (n 69) [4.53].

paradigm of human rights. This is a classic example of legal disruption generated by climate change.

Other (hypothetical) cases in which existing doctrines seem mismatched to the 'hot' aspects of climate change include those of tort law. As Douglas Kysar explains:[119]

> Built as it is on a paradigm of harm in which A wrongfully, directly, and exclusively injures B, tort law seems fundamentally ill-equipped to address the causes and impacts of climate change: diffuse and disparate in origin, lagged and latticed in effect, anthropogenic greenhouse gas emissions represent the paradigmatic anti-tort, a collective action problem so pervasive and so complicated as to render at once both all of us and none of us responsible. Thus, courts will have ample reason—not to mention doctrinal weaponry—to prevent climate change tort suits from reaching a jury [or courtroom in non-US tort cases].

However, as Kysar himself acknowledges, tort law *could* apply to climate change problems, to find for example that heavy industrial emitters of GHGs owe a collective duty of care to remote and unknown victims of climate change, who are 'neighbours' in an interconnected, ecological sense. Whilst the dominant doctrinal paradigm of tort law seems inapplicable in such a case alleged civil liability for climate change impacts, climate change is legally disruptive and tort law could yet evolve.[120]

In other cases, however, courts are developing new legal principles within particular legal orders, engaging in processes of doctrinal evolution that accommodate the 'hot' nature of climate change. There are various examples of cases in which courts have rethought and

[119] Kysar (n 44) 3-4.

[120] In Kysar's view, climate change is a welcome disruption for tort law: 'the effort to fit the mother of all collective action problems into the traditional paradigm of tort reveals much about how that paradigm more generally needs to shift': ibid 44. On the prospects of tort law evolving in the face of climate change, see Maria Lee, 'Climate Change Tort' (28 August 2015), available at SSRN: http://ssrn.com/abstract=2695107.

developed legal doctrine in climate change cases, lending their authority to controversial disputes involving climate change. These cases do not involve a single type of legal claim – they involve both private and public law doctrine – and they come from different jurisdictions. In these cases, judges have developed legal reasoning by taking into account the policy and legal background relating to climate change, both domestically and internationally, so as to justify, or as part of, their development of doctrine.

In *Urgenda*, this type of doctrinal evolution can be seen in the way that the Court relies on international, EU and Dutch law and policy relating to climate change,[121] mainstream climate science and ECHR case law to develop the Dutch legal doctrine of 'hazardous state negligence' so that it applied in the case. The Court thus held the Dutch government to a high standard of care in protecting its citizens from the dangerous and life-threatening consequences of climate change and as a result required the government to curb its greenhouse gas emissions more quickly than its current policies were aiming for. This was a stunning legal result – not just as a perceived victory for climate justice,[122] but also for its progressive legal reasoning and development of Dutch legal doctrine. The court took the absence of an applicable legal framework as an opportunity to generate one, and there are many aspects of the decision that involve an ambitious evolution of doctrine in the face of climate change, including in relation to causation[123] and questions of constitutional law.[124]

[121] And the principles on which this policy is based, including the precautionary, prevention and sustainability principles: [4.56]-[4.63].

[122] See the following news stories in response: http://www.theguardian.com/environment/2015/jun/24/dutch-government-ordered-cut-carbon-emissions-landmark-ruling accessed 18 July 2016.

[123] '[A] sufficient causal link can be assumed to exist between the Dutch greenhouse gas emissions, global climate change and the effects (now and in the future) on the Dutch living climate. The fact that the current Dutch greenhouse gas emissions are limited on a global scale does not alter the fact that these emission contribute to climate change.' [4.90].

[124] [4.94]-[4.102]. See also Ceri Warnock, 'The *Urgenda* Decision: Balanced Constitutionalism in the Face of Climate Change?', OUP blog, 22 July 2015, http://blog.oup.com/2015/07/urgenda-netherlands-climate-change/ accessed 18 July 2016.

By this reasoning, the Court showed how the legally disruptive nature of climate change can lead to new (and in this case politically controversial and highly symbolic) legal doctrine.

Another case in which courts have recognized climate change policy in the application and evolution of climate change doctrine is the decision of the New South Wales Land and Environment Court in *Taralga Landscape Guardians v Minister for Planning.*[125] This was a merits review administrative appeal against a planning decision to allow the construction of a wind farm. Legally, this is an equally interesting case where the court feels compelled to take into account pressing climate change policy to inform its administrative law doctrine and allow the construction of the wind farm in this case. A central feature of the court's reasoning was the principle of intergenerational equity, the doctrinal relevance of which Chief Judge Preston explained thus: '[the] principles of sustainable development are central to any decision-making process concerning the development of new energy resources'.[126] This reasoning represents a gradual evolution of doctrine in the NSW Land and Environment Court, in which the 'principles of ecologically sustainable development' have become ever more central in the Court's reasoning across all aspects of its jurisdiction.[127] This doctrinal evolution in *Taralga* is particularly sparked by the climate change context. Preston CJ discussed various policy developments and papers on climate change and wind energy to conclude that the 'broader public good of increasing the supply of renewable energy' justified granting planning approval for the scheme under consideration.[128] This was because renewable energy would serve to promote intergenerational equity in the context of energy production, by minimizing use of GHG-

[125] *Taralga Landscape Guardians Inc v Minister for Planning* [2007] NSWLEC 59.

[126] Ibid (emphasis added).

[127] Eg *Bulga Milbrodale v Minister for Planning and Infrastructure* (n 32). See further Eloise Scotford, *Environmental Principles and the Evolution of Environmental Law* (Hart Publishing 2016, in press) Ch 5.

[128] *Taralga* (n 125) [3]; [67]-[81].

producing fossil fuel resources to generate energy and 'thereby reducing the cumulative and long-term effects caused by anthropogenic climate change'.[129]

Both these cases – *Urgenda* and *Taralga* – are dramatic in their legal developments and also in terms of their policy implications for climate change. There are other cases that have had similar impacts due to their legal innovation and controversial political implications.[130] No doubt more such cases will follow in which legal evolution follows disruptive developments in climate change policy. In some cases, it can even be said that courts have not so much developed legal doctrine but distorted it to comply with compelling climate change goals.[131]

4. Legal Disruption and Climate Change Regulatory Regimes

Our final category of legal disruption is that caused by regulatory schemes and legislative frameworks that have been created to address both the causes and the impacts of climate change. Such regimes, and their legally disruptive effects, can be found across jurisdictions. The most high profile examples are emission-trading schemes (ETSs),[132] but a variety of other regimes exist and include: regimes that promote non-carbon based electricity;[133]

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[129] Ibid [74].

[130] Eg *R (London Borough of Hillingdon) v Secretary of State for Transport* [2010] EWHC 626 (Admin) (judicial review of the previously aborted UK government plans to expand Heathrow Airport, involving the doctrinally awkward but important public law relevance of climate change) and Case C-366/10 *Air Transport Association of America and Others v Secretary of State for Energy and Climate Change* [2011] I-13755 (considering novel and complex questions of EU constitutional law in considering whether aviation emissions were lawfully included in the EU ETS).

[131] Eg *PressenElektra* C-379/98 [2001] ECR I-2099; Cases C-204/12 to C-208/12 *Essent Belgium v Vlaamse Reguleringsinstantie voor de Elektriciteits en Gasmarkt (VREG)* (CJEU, 11 Sept 2014); Case C-573/12 *Ålands Vindkraft v Energimyndigheten* (CJEU, 1 July 2014).

[132] Eg Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [2003] OJ L275/32 (as amended).

[133] Eg Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market [2003] OJ L283/33.

schemes that ensure energy efficiency;[134] legislation creating obligations for climate change;[135] and a variety of regimes concerned with adapting to climate change, particularly in the planning context.[136] Whilst these frameworks aim to address climate change as a problem, their operation requires them to deal with the 'hot' situation of climate change. Polycentricity, scientific uncertainty and normative conflict do not disappear with a regulatory 'solution' for climate change but need to be accommodated within a legal culture, including through the implementation and interpretation of these regimes. In other words, legal disruption does not end with the creation of these regimes. These schemes give rise to new legal arrangements and novel legal questions, which will lead to legal uncertainty and thus legal disputes. Much of the legal disruption caused by these regimes is similar to that seen in the last two sections but a study of adjudication in relation to these regimes highlights the way in which legal disruption is not contained to one regulatory area, and how disruption also arises because of the way in which these regimes relate to other areas of law and in the implications of these regimes for private transactions.

Many legal disputes generated by new climate change regimes are challenges to legislative, regulatory and administrative action under any particular scheme. These regulatory schemes, like all administrative law,[137] will create new winners and losers and the latter will have an incentive to challenge regulatory action. Some of these challenges will be of a 'macro' nature, concerning the constitutionality or legality of climate regimes themselves. Thus the EU ETS has given rise to novel questions of EU law about the validity

[134] Eg Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC [2012] OJ L315/1.

[135] Eg Climate Change Act 2008 (UK) and California Global Warming Solutions Act of 2006.

[136] 'Flood Risk and Coastal Change', http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/planning-and-flood-risk/ accessed 18 July 2016.

[137] Louis Jaffe, *Judicial review of Administrative Action* (Little Brown & Co 1965) 323.

of its scope,[138] and about the respective competences of the Commission and Member States.[139] In a different legal context, the Federal Court of Australia considered a number of constitutional challenges to laws banning vegetation clearance in *Spencer v the Commonwealth.*[140] Other cases concern the operation of administrative discretion under a regime in a particular case and help to make sense of the relevant climate change regime on a case-by-case basis. Thus legal disputes may arise over what matters a decision took into account, the procedures they followed,[141] or the purpose and nature of such regimes.[142] There are challenges to whether the assessment of risk was valid, raising questions about the scope of review.[143] Such administrative challenges become particularly legally disruptive when they concern regimes that are in state of legal evolution. It is in the nature of climate change-related regimes to be in a state of flux, adjusting with the changing policy environment, but this gives rise to contested legal issues concerning their operation. Thus operators have challenged changes to green electricity schemes because they undermine their need for a 'secure and stable legal and investment environment'.[144] Another case considered whether a policy change in relation to aviation emissions should be taken into account by a local planning authority.[145] If such a change has been identified, this would then raise the issue of

[138] C-366/10 *Air Transport Association of America* (n 130). See also Case C-425/13 *Commission v Council* ECLI:EU:C:2015:483.

[139] Case T-183/07 *Poland v Commission* ECLI:EU:T:2009:350. See also Josephine van Zeben, *The Allocation of Regulatory Competence in the EU Emissions Trading Scheme* (CUP 2014).

[140] [2015] FCA 754.

[141] See the procedural questions in C-425/13 *Commission v Council* (n 138).

[142] Eg *Secretary of State for Energy and Climate Change v Friends of the Earth* [2012] EWCA Civ 28; *Our Children's Earth Foundation v. California Air Resources Board* 184 Cal Rptr 3d 365 (2015).

[143] *Castletown Estates Ltd & Anor v Welsh Ministers* [2013] EWHC 3293 (Admin) (01 November 2013) and *O'Connor v Secretary of State for Communities and Local Government & Anor* [2014] EWHC 3821 (Admin) (20 November 2014) (whether assessment of a project was in a particular flood zone was valid and/or give rise to a claim for judicial review);

[144] *Solar Century Holdings Ltd v Secretary of State for Energy & Climate Change* [2014] EWHC 3677 (Admin) [2]. This unsuccessful challenge raised claims of legitimate expectations. See also *Breyer Group Plc v Department of Energy and Climate Change* [2014] EWHC 2257 (QB).

[145] *Griffin, R (on the application of) v London City Airport Ltd* [2011] EWHC 53 (Admin) (20 January 2011).

the legal obligation created by such a change.[146] There are also issues relating to lawful compliance with climate change-related policies.[147]

In adjudicating these cases relating to the administrative operation of climate change regimes, judges and other adjudicators are not only making sense of new, often changing regimes, but they are often challenged to reflect on the nature and scope of particular doctrines. As with the cases discussed in Section Three, existing doctrine does not easily apply in relation to climate change regimes. In C-425/13 *Commission v Council*, the Advocate General noted that:

> This is the first time that the Court has been called upon to rule on the scope of the Council's authority to lay down negotiating directives, in particular as regards the inclusion of procedural provisions, and on the role of the special committees designated by the Council in accordance with Article 218(4) TFEU, and it must do so in the context of the almost constant legal wrangle between the Council (and the Member States) and the Commission which has, since the outset, been a feature of the European Union's emergence as a global player.[148]

That question arose because of the perceived need for co-operation between different jurisdictions in relation to GHG emissions. In other words, the law was attempting to create frameworks to address the polycentric nature of climate change, which gave rise to new and disruptive legal questions.

Climate change regimes also create new types of legal obligations and norms. The most dramatic examples of this can be seen with emissions trading schemes (ETSs). These

[146] *London Borough of Hillingdon* (n 130).

[147] *Newton v Great Lakes Council* [2013] NSWLEC 1248 (merits review of development consent where the relevant Development Control Plan stated that '[a] linear sea level rise of 0.91m to the year 2100 is to be taken into account').

[148] Opinion of Advocate General Wathelet, 17 March 2015, ECLI:EU:C:2015:174 [3].

schemes reframe carbon emissions as something that can be divided into identifiable units that are then traded and sold on a 'market'.[149] Thus some litigation arising from the operation of ETSs involves determining the nature of these obligations and how they operate.[150] The hard-edged language of the statutory obligation in section 1 of the UK Climate Change Act is another example of a novel type of legal obligation being created.[151]

Beyond adjudication that seeks to understand new climate change regimes and to accommodate their novel obligations within the existing legal fabric, there is another layer of legal disruption generated by these kinds of regimes, as seen in disputes that raise questions about how they operate alongside, or in relation to, other legal regimes. Climate change regulatory regimes do not exist in a vacuum. In their operation in any legal culture, they are interacting with other legal frameworks and norms, and legal disputes arise about the nature of that interaction. Some issues may be relatively straightforward. For example, one contentious issue has been whether trading data from an ETS registry 'environmental information' for the purposes of the Environmental Information Directive.[152] In *Carbon Sequestration Council v Environmental Protection Agency*,[153] litigants unsuccessfully challenged the Agency's rulemaking that supercritical carbon dioxide injected into wells for purposes of geologic sequestration was 'solid waste' under the Resource Conservation and Recovery Act. By legally recognizing climate change, there are thus implications for a range of other regimes.

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[149] Sanja Bogojevic, 'Ending the Honeymoon: Deconstructing Emissions Trading Discourses' (2009) 21 JEL 443.

[150] C-148/14 *Bundesrepublik Deutschland v Nordzucker AG*, ECLI:EU:C:2015:287.

[151] See the obiter mention of this in *Friends of the Earth, R (on the application of) v Secretary of State for Energy & Climate Change* [2009] EWCA Civ 810 (30 July 2009).

[152] Case C-524/09 *Ville de Lyon v Caisse des dépôts et consignations* [2010] ECR I-14115.

[153] (n 92) Note their challenge failed as they did not have standing.

Other cases concern the types of general obligations that are created by general mitigation and emission reduction targets and which have legal effect in the context of other regimes.[154] There are also cases concerning whether climate change-related strategies are legally relevant to planning decisions.[155] Issues also arise concerning how different climate change obligations interact with each other.[156]

There are other cases that concern how to reconcile the legal logic of climate change regimes with the legal logic of non-environmental law regimes. The most significant examples here are the free movement cases in EU law concerning national schemes that promote the use of 'green electricity' and their lawfulness under Art 34 TFEU. These schemes will invariably breach Article 34 TFEU, and will do so through the application of distinctly applicable measures (that is measures, that apply differently to situations in different Member States). However, in a number of decisions, the CJEU has justified such breaches on the basis of environmental protection – a justification only open to indistinctly applicable measures on conventional EU law doctrine.[157] The reasoning in these cases does not simply involve exceptions to Article 34 TFEU case law – rather they require free movement lawyers to make sense of emerging doctrine, and to adapt their understanding of free movement law in light of it.[158] Thus, for example, these cases might be understood as a form of 'majoritarian' reasoning where the Court is allowing Member States to justify a

[154] *Cascade Bicycle Club v Puget Sound Regional Council* 175 Wash App 494 (Wash App Div 1 2013) (whether a transport plan was consistent with state climate change mitigation and greenhouse gas reduction legislation).

[155] *Kevin Stevens T/A KCS Asset Management v Blaenau Gwent County Borough Council v KS SPV53 Limited* [2015] EWHC 1606 (Admin).

[156] C-366/10 *Air Transport Association of America* (n 130).

[157] (n 131).

[158] Armin Steinbach and Robert Brückmann, 'Renewable Energy and the Free Movement of Goods' (2015) 27 JEL 1.

breach of free movement of goods where they are pursuing a norm that is widely recognized as legitimate in the EU.[159]

Finally, climate change regulatory regimes give rise to legally disruptive disputes between private parties who are transacting with each other in the shadow of climate change regulatory regimes.[160] Many of these disputes are essentially private law disputes caused by the way in which climate change regulatory regimes disrupt existing legal practices. For example, targets created by energy efficiency schemes are not easily incorporated into day-to-day practices in the commercial property sector, which is heavily dependent on pro forma leases.[161] There are also legal disputes emerging over contractual interpretation,[162] and cases involving ETS allowances being gained through fraud.[163] There are also related tax disputes,[164] and cases concerning breach of confidence in relation to the carbon market.[165] These cases flow from the novel types of legal obligations created by these regimes. As Low and Lin have highlighted in relation to one of these ETS cases, there is a need to identify in more detail the legal nature of allowances under the EU ETS.[166] Legal disruption is thus occurring in evermore fine-grained detail as climate change regulatory regimes interact with existing norms, rights and understandings within particular legal cultures.

5. Resolving Climate Change Cases 'Well'

[159] For this argument, see Fisher discussing Maduro's ideas in Elizabeth fisher, *Risk Regulation and Administrative Constitutionalism* (Hart 2007) 216, 239.

[160] On the importance of transactional environmental law Michael Vandenburgh, 'The Emergence of Private Environmental Governance' (2014) 44 Env L Rep 10125.

[161] Susan Bright, 'Carbon Reduction and Commercial Leases in the UK' (2010) 2 Intl J of L and the Built Environment 218.

[162] *New Zealand Carbon Farming Ltd v Mighty River Power Ltd* [2015] NZHC 1274 – note the role of the method for assessing a forest's entitlement to united under an ETS in this case.

[163] *Armstrong DLW GmbH v Winnington Networks Ltd* [2013] Ch 156. Discussed at length by Low & Lin (n 67).

[164] *Carbondesk Group Plc v Revenue and Customs Commissioners* [2015] UKFTT 0367.

[165] *CF Partners (UK) LLP v Barclays Bank plc* [2014] EWHC 3049 (Ch).

[166] Low & Lin (n 67).

You may be reading this and thinking that our argument about legal disruption is something of a non sequitur, or worse a form of scholarly sophistry. Law is always evolving, you are saying to yourself, and there will always be problems and technologies, whether they be railways or the internet, that disrupt the legal order.[167] While we do not think that climate change is the only source of legal disruption, we do however think that it is distinctively disruptive and that it is important to identify and explore the legally disruptive nature of climate change for two reasons.

First, much of the discussion of climate change litigation has often cast it in an 'activist' light and characterised it as a 'pathway' to dealing with climate change.[168] There is value in this characterisation of climate change case law, but it does not expose the ways in which climate change inevitably gives rise to disruptive legal questions for courts and tribunals that need to be resolved, and the existential challenge for legal orders generated by this disruption. Courts must adjudicate when cases come before them and, in doing so, they must integrate climate change into the legal order.[169] In some cases, the process of resolving a case may result in climate change not being legally recognised, but in many cases climate change issues are leading to an adaption of legal orders and legal reasoning.

Second, embedded in this reality is an important normative challenge – the need for courts and tribunals to resolve these disputes 'well' within their respective legal orders. Arguing that disputes need to be resolved 'well' begs many questions and we are deliberately highlighting the normative challenges for adjudication and for legal systems when faced with a disruptive phenomenon like climate change. The concept of resolving cases 'well' will

[167] R Kostal, *Law and English Railway Capitalism 1825-1875* (Clarendon Press 1997) and Jonathan Zittrain, 'The Generative Internet' (2006) 119 Harvard L Rev 1974.

[168] Peel & Osofsky (n 3).

[169] Brian Preston, 'The Contribution of the Courts in Tackling Climate Change' (2016) 28 JEL 11 and Lord Carnwath, 'Climate Change Adjudication after Paris: A Reflection' (2016) 28 JEL 5.

ultimately depend on the constitution and traditions of a particular legal culture and legal order, where such orders and cultures are a complex mass of 'essentially contested' concepts,[170] but the overall normative challenges have universal features. The significance of exploring the normative impact of climate change disputes within legal systems is really the conclusion to our article. Whilst not wanting to curb the vigorous discussion and debate already underway in relation to adjudicative processes and climate change,[171] there are two important issues that we see as useful to explore now that the legal disruption of climate change is an observable phenomenon – the nature of adjudication, and the nature of legal reasoning in stabilising legal orders.

In relation to the first issue, the cases above demonstrate that adjudication is playing a variety of roles in disputes involving climate change, ranging from resolving specific commercial disputes through to determining significant constitutional cases. In thinking about how to resolve these cases 'well', there is a need to recognise that adjudication can play different roles and is often playing these roles simultaneously.

There are two common ways of understanding adjudication – as form of dispute resolution and as a form of expository justice.[172] The former is the most common way for lawyers to think about adjudication, but the latter has dominated much of the literature on climate change litigation. The important point to note is that any climate change case can be understood as being in line with either model (or with both models). Under the dispute resolution model, the primary function of adjudication is the resolution of disputes between parties through 'the peculiar form of participation it affords to the affected party, that of

[170] WB Gaillie, 'Essentially Contested Concepts' (1956) 56 Proceedings of the Aristotelian Society 167.

[171] Eg Philippe Sands, 'Climate Change and the Rule of Law: Adjudicating the Future in International Law' (2016) 28 JEL 19.

[172] Joanna Miles, 'Standing under the Human Rights Act 1998: Theories of Rights Enforcement and the Nature of Public Law Adjudication' (2000) 59 CLJ 133, 153. See also Girardeau Spann, 'Expository Justice' (1983) 131 University of Pennsylvania L Rev 585, 585.

presenting proofs and arguments for a decision in his favour.'[173] On this understanding, adjudication is commonly understood as applying to disputes between a limited number of identifiable parties in relation to specific legal problems, which lead to legal remedies. As we saw above, in some cases involving climate change, particularly in Section Two, the legal disruption caused by climate change does not sit easily with this model of adjudication. Questions of standing and justiciability are particularly challenged by the polycentric and normatively conflicted nature of climate change.

But the legal disruption caused by climate change can also be understood in terms of an expository justice model of adjudication and has been understood in this way by many scholars. On this model, the role of judges is not simply to resolve disputes;[174] they are also to 'tell us how to conform our behaviour to our fundamental values.'[175] It is less important that there are specific victims or claimants who require the resolution of a particular dispute, since adjudication is understood to concern norm setting and compliance, and with providing judgments or precedents for the community at large. Indeed, the community aspect of climate change adjudication explains the intense public (and partly the scholarly) interest in climate change cases, whether or not there is a publicly interested claimant involved. In expressing norms for a community, adjudication may be seen as a response to the failure of other institutions, such as a regulator failing to address climate change.[176] Adjudication can also play a deeper set of roles,[177] including holding valuable symbolic significance for a community, particularly in relation to a topic of social debate and conflict like climate

[173] Fuller (n 11) 3.

[174] Indeed Joanna Miles argues that this function is 'incidental': Miles (n 172) 153.

[175] Spann (n 172) 585.

[176] *Massachusetts* (n 5).

[177] These are explored in more detail in Fisher (n 5).

change. In particular, climate change adjudication 'legitimizes concerns'[178] over climate change by stating not only what the law is, but also what the facts are. The narrative of climate change litigation has been a narrative of making climate change 'real' within communities and case law has played an important role in that process, often irrespective of who ultimately 'wins' the case. As Jasanoff argues, litigation practices are 'deeply institutionalized modes of achieving pragmatic closures around epistemic claims and controversies that science alone could not have settled'.[179] Climate change adjudication is an arena in which an understanding of social and factual issues are co-produced and settled. In many ways, the expository justice model, and the wider symbolic function of adjudication within communities, fits more easily with the legal disruption caused by climate change, since polycentricity and socio-political conflict are less problematic on this understanding of climate change adjudication.

These two different ideas of adjudication show that adjudication is of both individual and community importance and how quite different perspectives might be adopted on cases involving climate change, and in analysing whether those cases have been well resolved. However, whilst these models explain the multi-faceted nature of adjudication and help us to understand the responses of different actors and audiences to climate change cases, one model is not necessarily more correct than the other. The fact that the expository justice model accommodates better the kind of legal disruption generated by climate change (and thus has often been the focus of scholarship) does not mean it is the 'right' model of adjudication in a normative sense. Judicial decision-making in climate change cases cannot be evaluated or justified without a more fundamental appreciation of the role and limits of

[178] Markell and Ruhl (n 2) 20.

[179] Sheila Jasanoff, 'The Practices of Objectivity in Regulatory Science' in Charles Camic, Neil Grocc and Michele Lamont (eds), *Social Knowledge in the Making* (University of Chicago Press 2011) 309. See also Sheila Jasanoff, 'A New Climate For Society' (2010) 27 Theory, Culture and Society 233.

adjudication within discrete legal systems. In other words, any consideration of resolving climate change cases 'well' requires reflection about these different roles of adjudication.

The second significant issue in thinking about how to resolve climate change adjudication 'well' brings us back to the importance of legal reasoning in cases involving climate change and its role in maintaining the stability of legal systems in adjudicative processes. Climate change may present distinctive challenges for courts, but that does not mean the adjudicative function of courts or the development of doctrine should be seen as exceptional and apart from the rest of a legal system.[180] Courts, in recognizing climate change and resolving related disputes, are incorporating climate change into the substructure of the law. As noted at the outset, adjudication and judicial reasoning have a 'homeostatic' quality in which any argument must be integrated into the 'the integrity of the legal edifice'.[181] Deciding climate change cases well requires confronting this basic function of adjudication through legal reasoning. As Lord Carnwath has noted:

> courts are uniquely placed to create the stable and legally enforceable structures necessary to ensure proper planning, supervision and enforcement. The courts cannot dictate policy. That is for government. But the courts can ensure that the policy is rational and coherent, and consistent with the scientific evidence, and that firm policy commitments are honoured.[182]

Adjudication thus stabilises the legal disruption created by climate change by reconciling a particular dispute with well-established legal principles.[183] This process encompasses a

[180] Ruhl (n 68) and Peter Cane, 'Are Environmental Harms Special?' (2001) 13 JEL 3.

[181] Latour (n 16) 243.

[182] Lord Carnwath, 'Environmental Law in a Global Society' [2015] JPEL 269, 278.

[183] A reasoned judgment is an 'icon of the rule of law': Susan Silbey and Ayn Cavicchi, 'The Common Place of Law: Transforming Matters of Concern into the Objects of Everyday Life' in Bruno Latour and Peter Weibel (eds), *Making Things Public: Atmospheres of Democracy* (MIT Press 2005) 556.

variety of approaches to legal reasoning, depending on the legal issue and level of disruption involved. Thus some of the case law concerning climate change is 'business as usual',[184] with courts carrying out their adjudicative duties – of applying the law to the facts, of applying doctrines to specific circumstances – in well-established ways to familiar types of parties in familiar types of disputes. Courts do not metamorphose into another type of institution by considering climate change issues. In other cases involving climate change, courts might make minimal adjustments to accommodate the disruptive features of climate change – involving a tweaking of legal regimes and small developments in legal doctrine. In other cases, the adjudicative process of accommodation is more significant. Thus the merits review decision of *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited*[185] is remarkable for the way in which Preston CJ developed decision-making principles on the basis that a decision needed to be polycentric.[186] Climate change was only tangential to that case,[187] but Preston CJ was recrafting doctrine to accommodate the legal heat of climate change.[188] In other cases, the developments in doctrine are dramatic. This can be seen in relation to the *Urgenda* discussion in Section Three, and Warnock has noted that the decision is

> evidence of the courts 'taking up the slack,' shifting, and changing position as the context demands in order to restore the constitutional equilibrium, with the prospect of withdrawal when the need passes.[189]

[184] Markell & Ruhl (n 2) 76.

[185] (n 30).

[186] Ibid [31]-[43].

[187] Ibid [127]-[128].

[188] Note the implicit acceptance of that recrafting by the NSW Supreme Court of Appeal. See *Warkworth Mining Limited v Bulga Milbrodale Progress Association Inc* [2014] NSWCA 105.

[189] Warnock (n 124).

At the same time, when courts or tribunals are performing this kind of stabilising function in reconciling the existing legal order and the disruption of climate change, there are limits to their role. In particular, the legitimacy of judicial decisions depends on relevant conventions of the constitutional and institutional competence of courts,[190] the 'integrity of the legal edifice' constructed by judicial reasoning in a particular legal system, and the respect for courts within civil society. In short, there is no simple or single answer as to whether a climate change case is well or poorly reasoned. Taking the legal implications of climate change seriously requires a deep and detailed understanding of legal systems and their doctrines, adjudicative processes and cultures. The challenge for courts and tribunals is to develop reasoning in climate change cases that is robust in the face of climate change and which also accommodates legal disputes relating to climate change within the legal order. The challenge for scholars and observers of courts is to understand the complexity of the adjudicative function in these cases, the inevitability of such disputes, and the subtle balance to be struck in adjudicating the future whilst maintaining the integrity of a legal order.

6. Conclusion

The increasing variety of cases concerning climate change demonstrates how climate change is universally disruptive of legal systems and how legal orders will often adapt and adjust in response to the disruption. Adjudicative forums are sites where the disruptive problem of climate change is finding legal form in a range of ways. In thinking about the relationship between climate change and adjudication, the focus cannot be on a specific law, set of rights, or legal regime. Carlarne has noted in relation to the UNFCCC: that 'climate change is an

[190] Jeffrey Jowell, 'Of Vires Or Vacuums: The Constitutional Context of Judicial Review' in Christopher Forsyth (ed), *Judicial Review and the Constitution* (Hart Publishing 2000).

issue of such scale and complexity that it defies resolution through the constrained channels of an international environmental treaty',[191]

The same is true of adjudication. Cases concerning climate change are now part of the reality of legal cultures across the world. These cases are not magic bullets to solve climate change – they are practical and symbolic judgments – and the fundamental legal issue is whether they are 'good' judgments and whether they are 'worthy [of being] recognised'.[192] In other words, lawyers, judges, and legal scholars are faced with existential questions about the nature of law and adjudication in dealing with climate change. In particular, as we argue, they must identify and articulate how to balance inevitable legal disruption and evolution in light of climate change issues with requirements for stability within legal systems.

[191] Cinnamon Carlarne, 'Delinking International Environmental Law and Climate Change' (2014) 4 Michigan J of Env and Admin Law 1, 4.

[192] Jurgen Habermas, *Communication and the Evolution of Society* (Polity 1984) 178.