# CLIMATE LITIGATION AND ATMOSPHERIC ETHICS: A CASE STUDY OF *JULIANA V. UNITED STATES*

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## ABSTRACT

Mark Ortiz: Climate Litigation and Atmospheric Ethics: A Case Study of *Juliana v. United States*
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This thesis offers an account of climate change lawsuits as ethical experiments which endeavor to develop legal and ethical norms and principles suited to a world remolded by cumulative human actions. It offers a theorization of the 'what' and the 'why' of the growing, global wave of climate litigation by situating it within the dynamic landscape of contemporary climate politics. Through a case study of *Juliana v. United States,* a first-of-its-kind constitutional climate lawsuit against the United States federal government, this thesis examines how legal narrative is mobilized to give ethical shape and significance to the problem of climate change and to conceptualize responsibility across vast sweeps of space and time. Interweaving insights from climate ethics, environmental humanities, legal geography and science and technology studies, this research offers a set of meditations on atmospheric ethics

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# CHAPTER 1: INTRODUCTION: CLIMATE LITIGATION AS ETHICAL EXPERIMENTATION

## 1.1 Introduction

The past few years have witnessed a groundswell of climate litigation. Activists around the world are turning to courts and new legal strategies to compel national governments to act on climate change (Boom et al., 2016). At the time of writing, there are active climate lawsuits in New Zealand, Belgium, and several other jurisdictions. Cases have already won favorable rulings in Pakistan, the Netherlands, South Africa, and elsewhere (Parker, 2017).

These climate lawsuits draw on substantive legal frameworks, such as tort and constitutional law, to articulate climate harms in legally legible ways and to assign responsibility to states, corporations and other entities for causing or contributing to climate change. In so doing, climate lawsuits help to develop norms of obligation suited to a warming world in which the fingerprints of human activity are detectable across a range of formerly natural phenomena (Weaver and Kysar, 2017; Chakrabarty, 2009). They are important crucibles in which science, expertise and values intermingle to produce new framings of the climate problem, such as in the language of constitutional rights, that have the potential to substantially influence national and transnational conversations as well as domestic and global regulatory pathways (Peel and Osofsky, 2015).

At one level, the worldwide turn to climate litigation can be traced to a growing sense that the international policy regime, under the auspices of the United Nations Framework

Convention on Climate Change (henceforth: UNFCCC), has made insufficient headway on the climate problem since its inception in 1992 (Boom et al., 2016). With weak signals from the international regime, the majority of national governments in the world have been slow to reduce greenhouse gas emissions, fomenting discontent among their climate concerned constituents. Even actions to be taken in accordance with the Paris Agreement, the latest innovation in climate governance, threaten to exceed the targets it enshrines as the 'safe' upper limits of global warming (Brun, 2016; Sharma, 2017).

Formidable as they are, one of the primary arguments of this thesis is that climate litigation responds not only to the political and legal challenges of climate change, but also to deeper ethical and cultural quandaries it poses. Philosopher Stephen Gardiner (2006) put it well over a decade ago when he described climate change as a "perfect moral storm." He and other philosophers have argued that inspiring an ethical response to climate change in the face of the vast chasms of time and space separating greenhouse gas emissions from their effects, and the costs of mitigation from its benefits, would require rethinking dominant moral paradigms which often give priority to the proximal, present and visible over the spatially and temporally distant and out-of-sight (see also Nixon, 2011). The field of climate ethics insists that moral sensibilities require adjustment to better fit the labyrinthine and expansive webs of causality and consequence becoming commonplace in our "warming world" (Broome, 2012; Gardiner, 2006; Gardiner, 2016; Jamieson, 2014; Jenkins, 2016). Climate change, the reasoning goes, obeys neither the spatial divisions, like national borders, nor temporal separations, like generational boundaries, that constrain our ethical imaginations and structure the political regime formed to manage the crisis (Gardiner, 2006).

Climate change is an atmospheric phenomenon and, in important ways, it eludes our earthbound moral and legal vocabularies, necessitating their re-imagination and revision. In the global atmospheric commons, past and present emissions from around the world mix evenly. Once they rise, they bear no authorial signature, no trace of their provenance. What begin as fossil fuels powering some form of activity within a specific context become emissions without origins, added to an ongoing calculation of our proximity to 'dangerous anthropogenic interference' with the climate system. The keywords according to which moral, legal, and political sense are made of the world do not map seamlessly onto this atmospheric problem because climate change "ties deed and result together by threads that are too numerous, long, tangled, and obscure to fit familiar ideas of victim, harm, and responsibility" (Purdy, 2015: p. 251).

The difficulty of conceptualizing responsibility in the atmospheric commons has long bedeviled and stalemated the UNFCCC climate policy process. International norms, most notably the principle of "common but differentiated responsibilities" which recognizes the historical imbalances of emissions, have been developed to guide the policy process, but these have all but faded into the background of climate negotiations in recent years (Moellendorf, 2014). The Paris Agreement puts forward a 'universal' approach to climatic responsibility in which all countries, sectors and actors are encouraged to take preventative measures to mitigate climate change no matter their relative contribution. While the Agreement's universal outlook might help to enable across-the-board participation in climate action, some scholars have suggested that it disserves those most vulnerable to climate change by failing to differentiate responsibility according to principles of climate justice and with sensitivity to histories of uneven development (Sharma, 2017; Huggel et al., 2016).

In contrast to the Paris Agreement and the broader UN climate regime, which frame climate change almost exclusively as a technical problem through representations such as carbon budgets and worldwide average temperature targets, questions of responsibility, values and ethics lie at the heart of climate litigation (Hulme, 2017). This is not to suggest that climate lawsuits do not feature science prominently. In fact, the opposite is true: most such litigation is avowedly "science-based" (Schiermeier, 2015). However, in order to translate the urgent portrait of the climate crisis painted by science into compelling narratives of wrongdoing and injustice, climate lawsuits construct "moral geographies" of climate change. They integrate scientific information into stories with actors, drama and villainy, that take place in settings experiencing climate change impacts. Storying climate change as these lawsuits do can galvanize publics in ways that the abstruse and placeless mathematics of global climate governance alone cannot. They bring a problem that, at the global scale, seems too gargantuan and apocalyptic to manage down to earth by making particular places "morally meaningful in the drama of climate change" (Smith and Howe, 2015: p. 170). As Weaver and Kysar (2017: p. 8) explain, law "constructs narratives that attach moral significance to otherwise meaningless, stochastic events."

Centering the narrative qualities of law, this thesis offers an account of climate litigation as a form of ethical experimentation. Understanding climate lawsuits as ethical experiments shifts analytical focus away from simple appraisals of their "success" or "failure." Instead, they become "forums where cultural and imaginative innovation happen" through which we gradually "give more definite shape to" novel problems like climate change and begin to determine what they require of us politically, ethically, and legally (Purdy, 2015: p. 252). In other words, whether or not climate lawsuits succeed, they "illuminate many of the legal, ethical, scientific, economic, social and other complexities of the climate change debates" and contribute to the

ongoing process of resetting the parameters of ethics, responsibility, and law in a warming world (Averill, 2008: p. 900).

### 1.2 Methods, Approach, and Plan of the Present Work

Scholarship in climate ethics has done much to illuminate the moral dimensions of the climate problem and its politics through the lens of philosophy. But, to this point, there has been little crosstalk between more traditionally disciplinary work in climate ethics and the vibrant conversations happening in adjacent fields of thought. This thesis will interweave insights from climate ethics with theories and concepts from several bodies of work with similar interests but different approaches including: theorizations of the "post-politics" of climate change; writings at the nexus of geography and law; literature on the interrelationships between science, law and governance; recent work on the cultural politics of climate change; and the environmental humanities.

Synthesizing these complementary strands of literature, this introductory chapter explores how climate policy and ethics have defaulted to the "global" as the proper scale of climate action. The first section illustrates how an idealized moral geography has led the academic field of climate ethics to renounce political engagement and instead embrace an individuated virtue ethic. The next section couples ethnography of the Paris climate conference with recent scholarship on the post-politics of climate change to consider how an abstract, technocratic and global view of the problem in the international policy arena has rendered climate change a technical, market failure rather than a crisis of values. Turning to work at the crossroads of legal studies and geography and social studies of science and technology, chapter one then develops a social theory of "imagination" as a meeting ground between environmental ethics, politics and culture that offers a counterpoint to the expert-centered global politics of climate change. To

conclude, it shows how climate litigation works through imagination to re-politicize climate change by way of legal narratives that link history, scale, scientific projections and responsibility together in moral geographies of a warming world.

The second chapter grounds the theories and concepts discussed in chapter one in a case study of *Juliana v. United States*, an ongoing climate lawsuit in the U.S. Moving between documentary analysis of key legal pleadings and court orders filed between August 2015 and February 2017, popular press coverage of the lawsuit and ethnographic observations of a court hearing conducted in September of 2016, the second chapter will offer a procedural history of *Juliana v. United States* with particular attention to its framings of climate change and theories of responsibility. The middle section will be more descriptive than theoretical, laying the groundwork for the analysis and conclusions to follow in the third chapter.

The final chapter will highlight and theorize several general features and specific moments of *Juliana v. United States*, explicitly connecting the framework propounded in the introduction to the case study described in the second section. Drawing heavily on writings in the environmental humanities and legal geography, chapter three will discuss how *Juliana v. United States* contends with the spatial and temporal underpinnings of US environmental law as it attempts to give legal form to what I term the "planetary harm" of climate change. It will focus on the declaration of one of the plaintiffs in the case to examine how "setting" is configured such that the intricate networks of cause and consequence composing planetary harm are made visible and meaningful. To conclude, chapter three will offer a set of modest meditations on climate rights and atmospheric ethics that will aim to tie together the content of this thesis.

### 1.3 Climate Ethics: Sculpting the Climatic Citizen

The story of climate ethics begins in 1992 with the Rio Earth Summit, where world leaders negotiated the founding document of the international climate policy regime: the UNFCCC. The long-term objective of the treaty is stated succinctly in Article 2: "to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." Although the UNFCCC leaves "dangerous anthropogenic interference" (DAI henceforth) largely undefined, it does stipulate that preventing DAI should be "achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

In addition to establishing the broad contours of the UN climate negotiations process, the UNFCCC also outlines general norms of equity and responsibility which were envisioned as guideposts for future deliberations (Moellendorf, 2014; Oppenheimer and Petsonk, 2005). It is both a policy document and an ethical declaration, founded upon a "moral vision" that "assumed goodwill and a common purpose on all sides" (Jamieson, 2013: pp. 449-454). If the document offers little by way of a policy roadmap, it is because it instead gives expression to the nebulous moral imperative for the world community to take action to avoid dangerous climate change and gives nascent shape to what would, over time, become the key questions of global climate politics. The adoption of the UNFCCC marks the moment in which climate change became a moral issue characterized by uncertainty and open to a range of competing ethical interpretations.

The recognition of climate change as a moral issue indicated by the UNFCCC coincides with the inception of climate ethics as an academic field. Broadly, climate ethics endeavors to direct philosophical attention toward the issue of climate change as well as efforts to mitigate and adapt to it. Climate ethics insists upon the centrality of moral norms and principles to the

climate change conversation, noting how the problem raises fundamental questions about values, social organization and nature-society relations (Jamieson, 1992). Climate ethics treats climate change as a perplexing ethical problem – a "perfect moral storm" – whose spatial extent, temporal duration, and theoretical novelty combine to confound familiar modes of ethical reasoning and political action (Gardiner, 2006). An analytical orientation as well as a normative discourse, climate ethics attempts to excavate the ethical underpinnings of climate policy and action and to develop and refine new moral norms and principles to guide decision-making (Gardiner, 2004).

Climate ethics emerged largely in contradistinction to 'realist' approaches to climate policy which held national economic interest to be the only viable foundation of a functional regime. Questions of ethics and equity, under the realist approach, fell to the wayside, while the economic aspects of the UNFCCC vision became cynosural (Jamieson, 2013). As both understandings have developed, much of their focus has turned to explaining the failure to coordinate international action on climate change despite the increasingly dire warnings of climate scientists. Not surprisingly, climate ethics and the contemporary successors of early realist approaches offer profoundly different explanations of the global political deadlock surrounding climate change. For realists, the miscarriage of climate policy can be traced to the idealism of the UNFCCC which, it has been mentioned, is as much an aspirational moral treatise as a political framework. The morally grandiose character of the UNFCCC, according to realists, was doomed to be undercut by the cold and calculative, economic *realpolitik* seen by realists as the sole basis for international cooperation (Schelling, 1992). In this perspective, climate change takes the form of a classic "collective action problem," a situation in which conflicts exist

between the interests of individual units (nation-states in this case) and collective groupings (global society) which stymie cooperative action (Wapner, 2014).

Like realist orientations, climate ethics frames climate change as a collective action problem. However, in contrast to realist thought, climate ethics approaches identify an underlying "moral corruption" beneath the inability to harmonize national and global priority-setting (Gardiner, 2006). Corruption, contrary to its connotative usage, is not meant by climate ethicists to imply sinister intent so much as a position in relation to a problem in which moral judgement and capacities to act ethically are distorted. Climate change, many ethicists would say, is a "wicked problem" with "no formal solution"; it involves "puzzling information, multiple scales, and stakeholder debates over what the problem means" which together preclude any "definitive formulation" from emerging (Jenkins, 2016: p. 79). According to literature in climate ethics, climate change, the "wicked" conundrum, has bewildered global society into a situation of gross inaction. Even what appear to be solutions, upon more sober assessment, turn out to be pockmarked with moral dangers and often simply lead to the spatial or temporal displacement "buck-passing" (Gardiner, 2006).

Nevertheless, in the absence of any single, definitive expression of the problem, some degree of consensus has emerged among climate ethicists with respect to the roots of the moral corruption that lies behind political inaction on climate change. This consensus primarily concerns the inadequacy of hegemonic modes of (e)valuation and representation to capture climate change related harm, particularly harms that will befall future generations. For example, climate ethicists have argued that narrowly economic cost-benefit calculations have proven ineffective at spurring action on climate change because they have failed to depict the intricate, morally-laden reality of the problem. As Jamieson (2014) explains, "No number seems right

because the costs of climate change damages go beyond economic damages." So, although economic tools and analyses can "tell us how to do things" they cannot tell us "whether we should do them" (Ibid.: p. 143). Climate ethics tells us that economic calculations are of little use when unmoored from thoughtful consideration of values.

The limits of economic rationalities are nowhere more apparent than in the global climate governance regime which is thoroughly Westphalian and presentist (Gardiner and Weisbach, 2016). In climate negotiations, short-term nation-state level interests tend to predominate, leading to the collective action problem that ethicists and realists alike have identified (Wapner, 2014). According to ethicists, climate change involves moral complexities that existing, statist architectures of governance are ill-equipped to handle. Gardiner (2006) christens the scalar mismatch between governance institutions and climate change the "global storm." The ability to locate emissions sources and straightforwardly apportion responsibility for climate change is prevented, he avers, by the dispersion of causes and effects, resulting naturally from the migration of greenhouses gases from their origins to a common atmosphere. Agency is fragmented within extant systems of governance and structures of international decision-making which are incongruous with the shared, atmospheric space in which greenhouse gases accumulate. For Gardiner, the atmospheric nature of climate change renders obsolete the current inter-state orchestration of environmental governance, constituting a spatial disjuncture between regulation and reality. For this reason, he concludes, institutional rearrangement is necessary.

Gardiner's normative claims are buttressed by his understanding of the global scale of climate change in what can be read as a moral geography, or a vision of the proper form of spatial organization built around ethical ideas (Smith, 2000). Spatial difference, borders and state sovereignty, for him, become sources of contradiction and obstacles to global cooperation that

should be obviated. These vestiges of a pre-Anthropocene past are presumed to run retrograde to the globalization of the atmospheric commons inaugurated by fossil fuel combustion. Thus, they do not belong in any sensible regime of climate governance that aims to bring a global, moral community or political humanity into being. It follows from this that the solution for someone like Gardiner is to rework political systems to mirror the borderless reality of atmospheric processes, elevated here to "matters of fact" meant to guide the formation of concern (Latour, 2004). Climate ethics, for Gardiner, must move beyond the space of the nation-state and into the openness of atmospheric expanse, bringing the realm of human political organization with it and into harmony with Nature. The ramification, one that is already being witnessed, is a biopolitical reorganization of human life, one which Braun (2014) rightly identifies as "cybernetic," involving the mediated linkage of individuals with the global atmosphere through technologies like the Prius fuel economy gauge and discursive constructs like the carbon footprint (Nerlich and Koteyko, 2009). Gardiner's moral geography leaves little space for the nation-state, seeking instead to create the logical basis for a direct, ethical relationship between the individual and the global atmosphere.

The moral geography that animates accounts like Gardiner's lends rationality to a post-national populism often advocated in similar tracts. Following Gardiner, for instance, Tremmel and Robinson (2014) depict the artificial nation-state form as the most significant of five hindrances to developing effective climate politics. Nation-states and the messy politics of international codifications and categorizations of their interests (e.g. developed and developing) differentiate the otherwise convergent interests of individuals in securing stability for themselves and future generations. To rectify what they perceive as a heinous miscarriage of justice, they strive in their book to offer an explanation of climate change in terms that are "graspable

instinctually," suggesting the presence in their audience of what amounts to an innate moral compass (Ibid.: p. 22). Tremmel and Robinson, like Gardiner, trumpet this basic moral concern as universal and claim that the antiquated forms of modern politics suppress the moral instincts of the global citizenry. They push instead for a populist space of moral consensus extrinsic to the nation.

The same individualizing and post-national ethical imaginary can be seen at work in recent turns to 'virtue' in climate ethics. In a book widely heralded as one of the most comprehensive treatments of climate ethics to date, Dale Jamieson (2014: p. 186) advocates what he calls an "ethics for the Anthropocene." This revised morality, he writes, would, "rely on nourishing and cultivating particular character traits, dispositions, and emotions: what I shall call 'virtues' (Ibid.). He continues:

> A picture that views individual people in their various roles and relationships as the primary bearers and beneficiaries of duties and obligations is one that comports more naturally with the climate change problem than a picture that views nations as fundamental (Jamieson, 2014: pp. 199-200).

As Jenkins (2016) has observed, shifting the emphasis from nation-state climate action to individual virtue and obligation has the effect of linking individual flourishing to planetary stability. Other scales and sites of meaning are bypassed.

On its face, this might seem like a generative connection that, as Jamieson suggests, comports better with the geophysical dynamics of the climate conundrum than our bordered political reality. But there is a danger in prescribing the cultivation of individual virtue as the solution for a planetary political problem. Critiques of structures and systems have no place in this philosophy of individual abstention. It presumes a homogenous global community and that individual action is the causal locus of global warming. While the nation-state is bypassed, the individual takes on its characteristics. In this account, the ethical subject is understood as "non-

relational": a "self-interested, autonomous, and sovereign individual" whose moral impulses must act as a counterweight to selfish tendencies (Fagan, 2017: p. 227). Political action, conceptualized as individual virtue ethics, runs the risk of making politics little more than an "individual moral journey" or a "search for personal authenticity." This has the effect of widening the "divergence between a public sphere of political performance and the realm of actual governance" (Ghosh, 2016: pp. 127-9).

In sum, the spatial politics and moral geographies propounded by Tremmel, Robinson, and Gardiner, among other climate ethicists, aim to dethrone the nation-state in favor of a climatic virtue ethics founded upon a simplistic sense of the 'people' as "universal victims" (Swyngedouw, 2010: p. 221). This viewpoint, emerging as it does from the presumption that climate ethics comprise a set of abstract principles to which people innately gravitate or respond, has both limited explanatory and galvanizing potential. Moralist readings superimpose their idealized spatial visions onto the messy divisions of the globe, precluding comprehensive geographical analysis and place-based ethical reasoning from the outset. The spatial complications of ethical action are attributed simply to the artificiality of the nation-state form suppressing the good actions of basically moral people, obfuscating otherwise clear moral imperatives.

This critique of literature in climate ethics is not meant to suggest that the political conversation on climate change would not benefit from attention to its moral dimensions. On the contrary, the next section will offer a cautionary glimpse of what happens when process is detached from principle, focusing on the "post-political condition" of the international climate policy regime.

### 1.4 The Paris Agreement and the Post-Politics of Climate Change

> In the text of the Paris Agreement … there is not the slightest acknowledgement that something has gone wrong with our dominant paradigms; it contains no clause or article that could be interpreted as a critique of the practices that are known to have created the situation that the Agreement seeks to address. The current paradigm of perpetual growth is enshrined at the core of the text. (Ghosh, *The Great Derangement*, p. 154).

Reading the foregoing passage in early 2017 prompted me to reflect on my time in Paris roughly a year and a half earlier observing the ballyhooed Paris climate conference (COP 21). What I found myself remembering first were not the formal proceedings, but how the energy of the event coursed through the entire city. For the duration of COP 21, Paris, momentarily the epicenter of global climate governance, brimmed with a hurried excitement. Aspirational and cautionary messages, such as "100% Renewable" and "No Plan B," illuminated the Eiffel Tower in turns as film screenings and celebrity-soaked special events drew crowds across the city. Meanwhile, civil society activists converted hotel lobbies into temporary strongholds where strategy sessions filled the days and extended well into the nights.

The atmosphere was euphoric, and understandably so. In Paris, for the first time, world leaders were expected to negotiate a universal climate treaty, a pact that would commit all signatory nations to limit greenhouse gas emissions and address climate change. Prior to the Paris conference, an all-encompassing treaty of this sort had seemed politically impossible. The Kyoto Protocol, the predecessor to the Paris Agreement, established a policy regime vitiated by low participation. Its structure was heavy-handed and inflexible, exemplified by its infamous targets and timetables (Bäckstrand et al., 2017). After the United States notoriously withdrew from the Protocol, the regime became little more than the hollow shell of a dream deferred (Jacquet and Jamieson, 2016). But COP 21 was intended to ignite a new phase of climate policy and decisively place the world on a course away from the brink of catastrophe.

Despite the momentousness of COP 21, there was something peculiar about the elation that gripped the city and the decorated conference halls. At a certain point, the celebratory mood and aspirational tone of the conference and its surroundings seemed to fully eclipse the vital details of the Agreement. As a result, when all was said and done, what the design features of the Agreement were prepared to deliver was worlds apart from its promises. For example, while it endeavors to limit temperature rise to "well below 2 degrees Celsius," the national pledges set out to achieve this target are projected to push warming nearly a full degree higher than hoped (Brun, 2016). Knowing this, the audience of world leaders nevertheless burst into an "eruption of cheers and ovations" when the Paris Agreement was adopted on December 12, 2015 (Davenport, 2015). The Agreement would be heralded as "landmark," and COP 21 "publically embraced as an historic success" in a narrative of triumph that became the prevailing storyline (Weisser and Müller-Mahn, 2016: p. 1).

But there are other ways of understanding what happened in Paris. As Ghosh (2016: p. 152) quips, the most iconic images to stream out of the conference were of "world leaders and business tycoons embracing each other." The exuberant reception of the Agreement, on this view, was hardly a celebration of moving one step closer to climate justice (a phrase mentioned just once in the text); it bore more resemblance to the jubilation of striking gold. Not only could emissions be decreased and the future saved, the Agreement announced, but economies could continue to expand with little disruption, riding the rising tide of the global "renewable energy boom" (The Editorial Board, 2016). With minimal legal bite - the Agreement indicates that it will not serve as a basis for parties wishing to pursue legal remedies for climate change impacts - the most forceful role of the Paris Agreement is as a symbolic 'market signal,' a soft but friendly nudge of encouragement to states and investors to begin re-routing capital into low-carbon

energy systems in earnest (Little, 2015). On this view, the Paris Agreement loses some of its luster, instead becoming part and parcel to the "capitalist takeover of the future" (Stengers, 2015).

The triumphant narrative of the Paris Agreement that Ghosh critiques serves to illustrate what environmental social scientists have diagnosed as the "post-political" condition of climate policy. Kenis and Mathijs (2014: p. 148) define the post-political condition as a situation in which "predominant representations of society tend to be consensual or technocratic and thus make power, conflict and exclusion invisible." The prevailing account of COP 21 does precisely this, depicting the Paris Agreement as a success story of consensus wherein scientific and technical experts determined what needed to be done and the global community, putting aside differences for a common good, came together to do it. Notably, this story glosses over the heated debates that took place at the conference over, *inter alia,* 'safe' levels of warming, legal liability, and the hot button issue of reparations for "loss and damage" sustained by parties most vulnerable to climate change (Sharma, 2017). Moreover, nowhere does this official account mention that the terms of the Paris Agreement largely reflect the interests of more powerful parties at the table and members of the Davos class (Weisser and Müller-Mahn, 2016). Within the post-political framing of the Paris Agreement, substantive conflicts give way to consensual agreement, even as the appearance of consensus only conceals and cements existing inequalities of wealth, vulnerability, and responsibility (Ciplet, Roberts and Khan, 2015).

The post-political condition of climate politics owes in part to the dominant techno-scientific framing of climate change as a worldwide civilizational crisis. Research in science and technology studies (STS) has shown how the hegemony of global circulation climate models and carbon data depoliticize the climate change policy process (O'Lear, 2015); how scientific

representations of climate change as a global problem have rendered it morally nonsensical at the local scale (Jasanoff, 2010); and how the development of a planetary, meteorological monitoring apparatus during the twentieth century created a shared sense of the whole planet that to this day imbues environmental governance with an uncritical cosmopolitanism (Edwards, 2006). These studies, and many other projects on the social lives of climate science, point to the category of the "global" as a scale effect generated by the emphasis on worldwide patterns, processes, and circulations.

The globalist, techno-scientific interpretation of climate change critiqued by STS literature enables the post-political treatment of climate change as a market problem (Swyngedouw, 2010). The most definitive linkage is evinced by the rise of what Dalby (2013) terms "geo-metrics." In the global space of concern and crisis furnished by climate science, elaborate procedures of "calculation and computation" have been invented to tie environmental processes to financial speculation (Ibid.: p. 44). This is perhaps no more evident than in the rise of payment for ecosystem services (PES) as a climate change mitigation and adaptation strategy. As McAfee (1999: p. 134) writes, market mechanisms like PES reduce "organisms and ecosystems to their allegedly fungible components, and assigns monetary prices, calculated with reference to actual or hypothetical markets, to these components." The abstraction of ecosystems into financial entities enables a multi-order complex of market operations to emerge around them and inscribe capitalist value onto distinct places in a singular language. This manipulation effectively erases the particular features of places as they are converted into fictive tokens of value meant for exchange on global markets and quantified by a more or less uniform set of procedures (Corson and MacDonald, 2012). Climate science, virtue ethics, and the emergence of 'geo-metrics' participate in detaching "global fact from local value" which, for Jasanoff (2010:

p. 236), robs climate change of its due moral urgency by segregating senses of the "epistemic from the normative," "is from ought."

In a line of critique that parallels scholarship on the post-political condition, Pope Francis (2015) claims that the "technocratic paradigm" of climate governance lends itself to instrumentalism, promoting spurious solutions such as carbon markets rather than profound social, political and moral change. He argues that conceptualizing climate change as a technical issue separate from capitalist overproduction and consumption threatens to reproduce the same suite of socioeconomic relations that have generated the climate crisis. Rather than hinging on robust, democratic debates over values, the legitimacy of technocratic or post-political climate governance is tied to the expertise of scientists, economists and others charged with determining the 'right' response to the climate problem within existing economic parameters.

If technocratic climate governance is rooted in a sense of the global as an abstract, homogenous space of market exchange or, for that matter, planetary virtue ethics, it stands to reason that developing a properly political response to climate change will involve promoting place-based moral understandings (Escobar, 2001). What climate ethics and the post-politics of climate change fail to understand is that establishing conceptual and ethical relationships between the individual, other entities and the planet, and between present action and future consequences, is mediated by culture, law, representation, and place. It is not simply a matter of finding an ethical principle suitable for worldwide application, or of setting the correct carbon price, but of enabling a multiplicity of climate cultures and politics to arise and interlink. Recognizing this, the next section will elaborate a social theory of imagination, by way of legal geography and science and technology studies, to demonstrate how new senses of moral responsibility can be enlivened through legal narratives.

### 1.5 Legal Geography, Science and Technology Studies, and the Social Lives of Imagination

Despite the close co-evolution of climate ethics with climate policy discussions, only certain spaces of policy formation have been considered in climate ethics literature. A glaring oversight is the space of domestic law.

Law is constantly evolving along with and in response to innumerable factors: scientific and technological change, globalization, and the politics of the moment, to name a few. In other words, law is "relational," a "product of social and political actions" (Robinson, 2013: p. 375). Law is historically, culturally, and spatially situated, and must be understood in the context of this embeddedness (Whatmore, 2003).

In the case of climate lawsuits, it is the geographical, historical, and cultural variation between the places where they are underway that explains how different types of legal claims, arguments, and articulations of rights are built upon similar or identical scientific information (Jasanoff, 2015). Here, it is useful to recall Jasanoff's (2010: p. 235) observation that "scientific facts arise out of detached observation whereas meaning emerges from embedded experience." It is "meaning" that climate lawsuits confer upon scientific data through emplotting them within legally cognizable narratives of wrongdoing, generic forms that have taken shape oftentimes over centuries of juridical practice. It is important, therefore, to be attentive to climate lawsuits as place-specific assemblages of argumentation, scientific evidence, and moral ideas. Through this legal-geographical lens, it becomes possible to understand climate lawsuits as rich instances of legal and moral elaboration situated within historical, cultural and geographical landscapes.

Not only is law situated within overlapping geographical, historical, and cultural contexts; law also has a role in sculpting the spaces, cultures, and histories through and in which

it operates. It is a "powerful cultural technology of spatial production" (Collis, 2009: p. 48). As Delaney (2004: p. 849) writes:

> Every centimeter of the material world *means*. Much of this meaning is specifically *legal* meaning consisting of the particular and peculiar semantics associated with liberal legal discourse that constitute what have been called legal geographies.

Perhaps the most concrete example of law's role in the production of space is private property. While property denotes an "organized set of relations between people in regards to a valued resource" it is not uncommon for people to think of the "territory as itself the property" (Blomley, 2015: p. 1). For this reason, the phrase atmospheric commons is often understood to denote the physical space of the atmosphere and its particular properties, although it could also be understood to refer to the mutable social arrangements that create the atmosphere as a common-pool resource and carbon sewer. The conceptual propinquity between property as set of legally organized relations and the space itself illustrates the co-production of law and spatial order. "Law draws lines, constructs insides and outsides, assigns legal meanings to lines, and attaches legal consequences to crossing them," Delaney (2014) writes. Space is where law becomes material, where the political and legal arrangements of boundaries and borders substantiate, creating our social realities and sculpting our material environments.

Legal disputes, then, are also struggles over and about space. Within the "performative constraints" of the courtroom writes Howe (2008), "actors compete to project their way of seeing the material world, to translate legal discourse into durable geographic reality." Traces of the legal are "constitutive of the spatialities of injustice –underpinning them, shaping relations of power with respect to them" and "rendering places meaningful in distinctively legal ways" (Delaney, 2016: p. 268). It follows that legal strategies are often used to re-signify places and spaces in accordance with moral principles, new ways of seeing the world, and ideas of justice,

altering how we understand and navigate our environments through elaborating their legal significance.

For the purposes of this thesis, Purdy's (2015) landmark study of US environmental thought offers the most fruitful way of understanding the relationship between law and material environments. In his book, he explains how a multitude of ideas about relationality, ecology, economy, and property are interwoven in a *palimpsest* he calls "environmental imagination." Environmental imagination refers to the constantly evolving cultural and moral ideas that give form and substance to American environmental law and politics. As he explains:

> Ways of valuing and inhabiting the natural world have been woven together from the material stuff of land and resources and from the imaginative devices of religion, aesthetics and rhetoric. Law is the warp and weft that binds the two, shaping the material landscape, guiding human action on it, by translating ideal images of people and nature into concrete regimes of power … (Purdy, 2015: p. 229)

This understanding figures law as part of a larger imagination that mediates the human understanding of and relationship to the environment.

Purdy's notion of environmental imagination links material landscapes, moral ideas, systems of power and social life in what he describes as a circuit. In his formulation, all of these elements interact with and shape one another. Purdy's is an anthropological understanding of environmental imagination in the sense that imagination is understood as a cultural field within which social practices take on moral significance in relation to their material environments. Far from many colloquial definitions of imagination, which conceive of the act of imagining as individual and immaterial, Purdy's conceptualization parallels social understandings of imagination in science and technology studies (STS). In STS, "imagination" can be defined as "an organized field of social practices … and a form of negotiation between sites of agency … and globally defined fields of possibility" (Jasanoff, 2015: p. 10, quoting Appadurai).

In order to describe the relationships between science, technology and normative order, STS scholars have developed the concept of sociotechnical imaginaries. Sociotechnical imaginaries are defined by Jasanoff (2015: p. 6) as:

> collectively held, institutionally stabilized, and publically performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology.

In other words, sociotechnical imaginaries are collective, normative visions of the future that configure the progressive betterment of social life in terms of scientific or technological objectives. They serve as a "prelude to ethical analysis" of the intricate "puzzles at the borderlines of ontological and moral specification" occasioned when science and technology bring new concerns into focus or moral objectives into being (Jasanoff, 2011b: p. 61).

Law is an especially important site through which environmental and sociotechnical imagination take shape, because legal disputes are "in their very nature moments of contestation between disparate understandings of the good" (Jasanoff, 2015: p. 38). Legal contests give expression to moral fissures within societies and draw attention to divergent visions of how social life ought to be organized that are in many cases rooted in competing understandings of the world and relations between and among its inhabitants (see Burnett, 2007). It often falls to courts to adjudicate on these competing understandings and resolve pressing public questions that are simultaneously legal and moral in character, such as who, or what, qualifies for legal standing and ethical consideration (Stone, 1985). To settle such questions, legal argumentation and judicial reasoning apply frameworks articulated over decades, if not centuries, of lawmaking to new situations in order to create narratives that invest sets of facts with coherence and meaning (Weaver and Kysar, 2017).

In this respect, climate litigation offers a possible counterbalance to the expert-centered post-politics of climate change that dominates the international regime. Climate lawmaking and litigation take place in a panoply of jurisdictions with distinct legal traditions and values from which a diverse plurality of responses to climate change can emerge. But it would be inaccurate to think that the imaginative work performed by climate lawsuits is germane only in the jurisdictions in which they take place. Narratives and notions of ethics and responsibility that arise from climate lawsuits are mobile: they can traverse both national and transnational social fields, as is already happening with affirmative rulings in climate lawsuits (Cox, 2016).

Treating climate lawmaking and litigation as generative fora in this way allows the analyst to examine them within the context of larger cultural processes. An analytic attentive to the cultural and geographic milieus in which climate lawsuits play out is indispensable for understanding the spatially varied interactions between law and various types of imagination. Devising an ethical response to as complex a sociotechnical and environmental issue as climate change is no small cultural challenge. But climate lawsuits, by opening the doors to public, cultural, and values-based engagements with the issue of climate change in ways that the international policy regime forecloses, present unique opportunities to reframe the climate problem in more resonant and democratic registers. These framings, in addition to having the potential to materially advance climate policy, can also travel and animate both domestic and transnational social movements as well as positively shift sentiments about the importance of climate action.

This section has attempted to offer a social theory of imagination that bridges material landscapes, legal regimes, and ideas about human relationships to the environment and science. It has tried to illustrate how this understanding of imagination is useful for analyzing climate

lawsuits within their larger cultural and geographic environments. The final section of this chapter will clarify what I have discussed only vaguely thus far under the rubric of moral geography, proposing a properly geographical framework for understanding climate lawsuits as place-based ethical experiments.

### 1.6 Geographies of Climate Litigation and Ethics

What might a geographical approach to the study of climate litigation yield? To this point, my answer to this question has been roundabout and indirect, gradually taking on only a vague profile over the course of this chapter. Here, I would like to address it head-on.

Work in historical geography tells us that climate change is not altogether new. Climate has long 'mattered' to societies and human activity has at least been perceived to influence climatic conditions throughout time (Offen, 2014). Of late, as concerns about global warming have reached a fever pitch, the human-climate relationship has taken a more "intimate" turn with science telling us that aggregated human actions are now upsetting the stability of the global atmosphere and creating the possibilities for novel, and potentially unlivable, climate futures (Hulme, 2008).

The amount of scientific evidence behind this statement is staggering, and there is good cause for worry. But to reason directly to apocalypse would be a reductive understanding of climate change which risks sliding into an incapacitating determinism that elevates telluric processes to "dominant predictor variable(s)" of human activity (Hulme, 2011: p. 247). As Hulme (2009) explains, viewing climate change as a homogenous, scientific totality, ignores the multifarious "encounters" and collisions of the idea of climate change with other cultural forces rooted in distinct places. This, in turn, precludes constructive political engagements. Carbon budgets bound to be overspent, temperature targets destined to be exceeded, and the numerous

other technologies of climate governance, when detached from particular places, tell us only that our sinful ways are leading to imminent catastrophe. They offer no positive vision of what just, democratic ecological futures might look like for particular people in particular locations. They are, as has been suggested, placeless mathematics that are easily subsumed into the apparatus of technocratic climate governance and used to push moral values to the sidelines of discussion.

For Offen (2014), geographical understandings of climate can serve as useful antidotes to the hegemony of technocratic climate determinism and its declensionist overtones. In contrast to the technocratic view of anthropogenic climate change so prevalent at the moment, historical and contemporary geographies of climate change offer grounded ways of thinking which destabilize the dominant politics of future apocalypse. Such readings have the potential to open up the category of climate and recover something of the multivocality that characterized its Greek forebear – *klima*. *Klima* signified not only long-term weather patterns, but also had medical, geographical, agricultural, economic, and other associations (Fleming and Jankovic, 2011). At the contemporary moment, the place-based polysemy of *klima* has been overshadowed by a singular understanding of climate change as a global shift in statistical averages.

According to a growing body of work, generating constructive political and ethical engagements with global warming will hinge on attending to climate change as a "form of life" which becomes meaningful in the context of place-based vernaculars, sensibilities and concerns (Callison, 2014). Callison's understanding of climate change as a "form of life" resembles Smith and Howe's (2015: p. 170) call to build moral geographies that would strive to "make place morally meaningful in the drama of climate change." Moral geographies of this sort would differ markedly from the spatial imaginaries animating work in climate ethics. Recall that philosophies of climate ethics proceed from general assumptions about the interests of an imagined global

community and the nature of the climate problem to offer prescriptions in the form of global institutional rearrangements or the cultivation of personal virtues. There is little sense of scale, place or spatial difference to these proposals. They are examples of what scholar Michal Osterweil (2005) has labeled "universalizing" globalisms, which she contrasts to "place-based" globalisms. By contrast, the types of moral geographies that Smith, Howe and Callison have in mind emerge as particular people in particular places draw on their unique narrative and imaginative vocabularies to give ethical and legal shape to what climate change means for their material environments and social worlds.

It is their ability to construct moving moral geographies that makes climate lawsuits so powerful. In a few crucial ways, climate lawsuits insist on the importance of place to negotiating atmospheric responsibility. By emplotting scientific information into extended claims of, for example, constitutional rights, climate litigation cases draw upon rich repositories of place-specific moral sensitivities and cultural values embedded in national legal traditions. When alleging the infringement of constitutional rights or tort violations, it falls to climate litigants to identify responsible parties and propose remedies. Doing so often requires zooming in on particular places and describing how they are being impacted by global warming through the actions of the accused. These narrations help elucidate connections that might otherwise be unnoticeable and aid in developing a social imagination around the issue of climate change. Climate lawsuits can "give symbolic shape and plot to formless threats whose fatal repercussions are dispersed across space and time," acting as opportunities to experiment with configurations of duty and responsibility fitted to our changing planet (Nixon, 2007).

## CHAPTER 2: "NO ORDINARY LAWSUIT": A PROCEDURAL HISTORY OF *JULIANA V. UNITED STATES*

### 2.1 Introduction: "The Most Important Lawsuit on the Planet"

> This is no ordinary lawsuit … This lawsuit challenges decisions defendants have made across a vast set of topics – decisions like whether and to what extent to regulate CO2 emissions from power plants and vehicles, whether to permit fossil fuel extraction and development to take place on federal lands, how much to charge for use of those lands, whether to give tax breaks to the fossil fuel industry, whether to subsidize or directly fund that industry, whether to fund the construction of fossil fuel infrastructure such as natural gas pipelines at home and abroad, whether to permit the export and import of fossil fuels from and to the United States, and whether to authorize new marine coal terminal projects. Plaintiffs assert defendants' decisions on these topics have substantially caused the planet to warm and the oceans to rise. They draw a direct causal link between defendants' policy choices and floods, food shortages, destruction of property, species extinction, and a host of other harms (Judge Ann Aiken)[1]

So wrote Oregon District Court Judge Ann Aiken in her November 2016 opinion allowing *Juliana v. United States* (henceforth: *Juliana)* to move to trial. She is right, this is no ordinary lawsuit.

On August 12, 2015, 21 young people from across the United States, with the support of the non-profit organizations Our Children's Trust and Earth Guardians, filed a constitutional climate change lawsuit against the federal government. The youth plaintiffs, joined by "future generations" under the legal guardianship of climate scientist Dr. James Hansen, assert that the

[1] Opinion and Order at 3-4, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Nov. 10, 2016) [hereinafter *Juliana* Opinion], https://static1.squarespace.com/static/571d109b04426270152febe0/t/5824e85e6a49638292ddd1c9/1478813795912/Order+MTD.Aiken.pdf

federal government, through its "aggregate actions and omissions" endorsing the combustion of fossil fuels, has allowed atmospheric carbon dioxide concentrations to rise to levels so dangerous as to constitute a violation of their fundamental rights to life, liberty, and property.[2] They argue that the United States has abdicated its sovereign responsibility to steward its public trust resources by continuing to support fossil fuel centered development despite knowing of its deleterious impacts on the climate system.[3] The plaintiffs accuse the federal government of bearing a "higher degree of responsibility than any other individual, entity, or country" for contributing to perilous climate change.[4]

Since its beginning in August of 2015, the case has snowballed, attracting significant public attention. Climate activists have called it "the most important lawsuit on the planet," and it has been covered in a number of major American periodicals (Mark, 2016). The lawsuit's public importance seems only to be have been heightened by the inauguration of a President who has vocally dismissed climate change as a "hoax" and taken steps to expand domestic fossil fuel production (Baker, 2017).

As I hope to show in what follows, *Juliana* is a deeply consequential lawsuit, and not only for its potential legal outcomes. It could, of course, subject government inaction on climate change to strict scrutiny and compel the executive branch to adopt a comprehensive climate action plan (see Wood and Woodward IV, 2016). But also, of equal importance, it could catalyze a broader transformation in the national imagination of climate change, with effects on how the

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[2] First Amended Complaint for Declaratory and Injunctive Relief at 2-3, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Sept. 10, 2015) [hereinafter *Juliana* Complaint], https://static1.squarespace.com/static/571d109b04426270152febe0/t/575add014c2f8523de728730/1465572614596/YouthAmendedComplaintAgainstUS.pdf

[3] *Id.* at 36.

[4] *Id.* at 3.

issue is discussed in American popular culture and public dialogue. The lawsuit is nothing short of a struggle over how some of the nation's deepest legal and moral values should be understood and practiced in the context of climate change, with implications for determining what duties the federal government has to its citizens in a warming world. For this reason, *Juliana* could contribute in profound ways to elaborating an "environmental public language" around the issue of climate change through which citizens would be able to make compelling moral and legal claims of government authorities (Purdy, 2010). I will return to this point in the final section of the chapter.

On offer from the youth plaintiffs and federal defendants are vastly different accounts of moral responsibility, legal culpability, and interpretations of what climate change requires in scientific, legal and ethical terms. The presiding judges are charged with the unenviable task of deciding among divergent visions of the future. On the one hand, there is the possibility of continuing along a "business-as-usual" pathway, allowing the forces of the market and decentralized policy action to effect emissions reductions according to their own tempos which may or may not be sensitive to the rhythms of the planet. On the other hand, there is the option to recognize an "obligation towards future generations and to all Creation" by developing a "legal framework which can set clear boundaries for greenhouse gas reduction" as the Global Catholic Climate Movement and Leadership Council of Women Religious, echoing Pope Francis' (2015) encyclical, implore the court to do in an *amicus* brief.[5]

This chapter chronicles the procedural history of *Juliana* from its beginnings in August of 2015 through to February of 2017. It will begin by taking inventory of the critical pre-history of

[5] *Amici Curiae* (Global Catholic Climate Movement and Leadership Council of Women Religious) Brief in Support of the Plaintiffs at 2, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Jan. 15, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/575ad9a1746fb99233a57abd/1465571746619/16.01.15.FaithAmiciCuriaeBrief.pdf

the litigation, turning to an earlier test case filed by a fledgling Our Children's Trust in 2011 that, in 2014, reached its denouement when the Supreme Court declined to hear it. A critical appraisal of this precursor lawsuit – *Alec L. ex rel. Loorz v. McCarthy* – will provide crucial background for understanding why *Juliana* is structured as it is.[6]

### 2.2 Pre-History and Background: *Alec L. ex rel. Loorz v. McCarthy* (*Alec L.)* and the Public Trust Doctrine

In May of 2011, a group of legal teams brought together by the nascent organization Our Children's Trust, initiated a lawsuit against the US Environmental Protection Agency, Department of the Interior, Department of Agriculture, Department of Commerce, Department of Energy and the Department of Defense. Although initially filed in the Northern District of California, by the end of the year the case had been transferred to the D.C. District Court owing to its national import.

In their complaint, the plaintiffs, a coalition of teenagers and two non-profits (WildEarth Guardians and Kids vs. Global Warming), described a situation of dire urgency, an "atmospheric emergency" in the words of the pleading.[7] They alleged that human activity had steered the global climate into a state warmer than had "likely been experienced on Earth for 800 thousand years."[8] Worse yet, they averred, the climate system was teetering ever closer to a 'tipping point' that, if passed, could result in an irreversibly "changed world that threatens human existence as

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[6] Note that *Alec L. ex rel. Loorz v. McCarthy* is sometimes referred to as *Alec L. v. Jackson.* Case proceedings in and before 2012 go by the latter, whereas proceedings in and after 2013 go by the former. The change of names reflects Gina McCarthy's replacement of Lisa Jackson as EPA administrator in 2013.

[7] First Amended Complaint for Declaratory and Injunctive Relief at 2, Alec L. v. Jackson, No. C11-02203 DMR (N.D. Cal. Jul. 27, 2011) [hereinafter *Alec* complaint], https://static1.squarespace.com/static/571d109b04426270152febe0/t/5785743f6a496312c2598e51/1468363840444/2011-07-27+AMENDED_COMPLAINT.pdf

[8] *Ibid.*

we know it."[9] As phrased by Dr. James Hansen in his *amicus* brief to the court, what the plaintiffs hoped to avoid was a world in which the "physical status quo of a habitable climate system" would be irreparably altered.[10]

The complaint drew a direct causal link between the actions and inactions of the federal defendants and the atmospheric emergency the plaintiffs described. Plaintiffs charged defendants with "causing" and "allowing" the atmosphere to spiral out of equilibrium by failing to "address destruction" of the nation's natural resources.[11] To ameliorate the situation, plaintiffs urged the court to recognize the federal government's sovereign obligation to preserve the atmosphere as a "Public Trust asset."[12] The Public Trust Doctrine (henceforth: PTD) that the complaint invoked here is an ancient legal principle, iterations of which exist in the Constitutions of several countries, including, but not limited to: South Africa, India, and the Philippines. Broadly, the PTD holds that certain natural resources should be held in trust by a sovereign government for the common benefit of present and future citizens. The state, under a trust framework, assumes the role of resource guardian, and is expected to protect trust resources from damage and wasteful exploitation (Sagarin and Turnipseed, 2012). According to Wood and Woodward IV (2016: p. 648), the PTD governs to ensure that "natural resources essential for survival and welfare remain abundant, justly distributed, and bequeathed to future generations."

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[9] *Ibid.*

[10] Brief for *Amicus Curiae* Dr. James Hansen at 5, Alec L. v. Jackson, No. 4:11-cv-02203 EMC (N.D. Cal. Nov. 14, 2011), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5785741a29687ff48a7c1375/1468363803338/Hansen+Amicus+.pdf

[11] *Alec* Complaint, *supra* note 7, at 3.

[12] *Id.* at 37.

In *Illinois Central Railroad Co. v. Illinois*, a seminal Supreme Court decision on the PTD, the Court identified trust resources as a certain category of property "in which the whole people are interested" that state governments are mandated to safeguard for the public good (quoted in Blumm and Schaffer, 2015: p. 411). The *Illinois Central* decision elaborated a conception of the PTD as a fundamental attribute of state sovereignty, a stewardship responsibility owed to the public which could not be abrogated (Wood and Woodward IV, 2016). According to Klass (2006), the *Illinois Central* ruling invoked the PTD as a normative and legal bulwark against ceding public trust assets to private owners for the purposes of short-term economic gain that could endanger public welfare over the *longue duree*.

Historically, the scope of PTD jurisprudence in the United States has been quite narrow, dealing primarily with navigable waters, wildlife, and fisheries (Wood and Woodward IV, 2016). In the United States, the PTD has developed primarily as a matter of state law, seeing only modest success in federal courts (Kline, 2015). That said, the PTD has been established as a relatively durable and dynamic state-level norm. Some state Supreme Courts have even recognized resources outside of the PTD's traditional remit as public trust assets, and public trust principles have been explicitly incorporated into several state statutes and constitutions since the 1970's (Ibid.). However, some legal commentators have interpreted the Supreme Court's rulings on Public Trust matters to preclude the Doctrine's application at the federal level (Blumm and Schaffer, 2015).

*Alec L.* drew on theories of the PTD as a "legal tool" that citizens could use to "fight exploitation of resources that should rightfully be protected common property" with the hope of expanding the Doctrine's scale and scope (Takacs, 2008: p. 715). This vision of the PTD has theoretical roots in the legal scholarship of Joseph Sax (1970) who advocated for the judicial

recognition of legally enforceable public rights to trust resources which would be on par with private property rights. Through its unique use of the PTD, *Alec L.* aimed to compel the US government to recognize and faithfully enact its role as a co-trustee of the global atmosphere by scaling back domestic emissions, ending deforestation in the U.S., and beginning aggressive reforestation and soil restoration programs to sequester carbon dioxide. The complaint included timelines for when emissions should peak and by what percentage they should be reduced annually, advocating a rapid de-carbonization of the U.S. economy that would be consistent with glide paths to return atmospheric carbon dioxide concentrations to 350 ppm by the end of the 21st century.[13]

The federal government was quick to respond. In October of 2011, the defendants motioned for the case to be dismissed. Chief among the "fatal defects" that the defendants identified in the plaintiffs' complaint was that it fundamentally misconstrued "the public trust doctrine's foundations, uses and limits."[14] The defendants' motion to dismiss argued that the greenhouse gas regulatory process established under EPA overruled common law public trust claims. They asserted that allowing such claims to stand could give license to courts to become "de facto super-regulators" of pollution and "arbiters of scientific and technology-related disputes."[15] Defendants insisted that climate change was a 'political question,' involving policy determinations properly left to congress and the executive branch rather than the judiciary (Nelson, 2011).[16]

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[13] *Alec* complaint, *supra* note 7, at 39.

[14] Memorandum in Support of Defendants' Motion to Dismiss at 2, Alec L. v. Jackson, No. 4:11-cv-02203 EMC (N.D. Cal. Oct. 31, 2011).

[15] *Id.* at 20.

[16] *Id.* at 11.

Defendants were joined in their call to dismiss the case by the National Association of Manufacturers (NAM) - an industrial trade association - and several other companies and organizations with greenhouse gas intensive operations (Ellison, 2012). The court granted NAM and its allies intervenor-defendant status in the lawsuit, which permitted them to submit legal pleadings separate from those of the federal defendants.[17] In staking their interest in the lawsuit, intervenor-defendants argued that the remedies requested by the plaintiffs would constitute a "total restructuring of the United States' economy … that would affect virtually every investment decision of every manufacturer in the nation."[18] As a spokesman for NAM wrote in an email to a journalist, intervenors believed the case would have profound ramifications for the competitiveness of U.S. manufacturing and overall economic productivity (Ellison, 2012). In a pleading supporting the motion to dismiss, NAM attorneys used more pointed language, alleging that the plaintiffs' complaint sought to "commandeer and control" economic and foreign policy matters "through judicial fiat."[19]

After months of back and forth, the DC District Court granted defendants' and intervenors' motion to dismiss the case in May of 2012. According to the opinion, the plaintiffs' "one-count complaint" did not allege that "defendants violated any specific federal law or

[17] Nonparties are occasionally allowed to intervene in cases which might have direct bearing on their interests if those interests are not adequately represented by the original parties (plaintiffs and defendants). Generally, however, the case or controversy between the original parties is sufficient to meet jurisdictional requirements for Article III standing such that intervenors typically need not establish standing independently. This is true so long as intervenors provide a different perspective on the matters before the Court without expanding the scope of the controversy beyond the original issues in contention. For a fuller explanation, see (Hall, 2012).

[18] Reply in Support of Proposed Intervenor-Defendant's Motion to Intervene at 1, Alec L. v. Jackson, No. 3:11-cv-02203-EMC (N.D. Cal. Nov. 21, 2011).

[19] Reply in Support of Intervenor's Motion to Dismiss Plaintiffs' First Amended Complaint at 1, Alec L. v. Jackson, No. 3:11-cv-02203-EMC (N.D. Cal. Nov. 22, 2011).

constitutional provision."[20] Relying largely on a 2012 Supreme Court Decision, *PLL Montana, LLC v. Montana,* the DC District Court held that there was no basis for applying the PTD at the federal level and, even if it could be applied, that such federal common law claims might be displaced by existing regulations (a point I will return to later).

Despite the DC District Court's dismissal, *Alec L.* was not over. The next month, the plaintiffs filed a motion asking the DC District Court to reconsider its decision to dismiss.[21] The motion for reconsideration focused primarily on the constitutional dimensions of *Alec L.* which had received far less attention in the original complaint. It argued that citizens have a fundamental right to invoke the federal governments' public trust obligations. Fundamental rights, it explained, are those "implicit in the concept of ordered liberty" which are "rooted in the traditions and collective conscience of the people."[22] Plaintiffs drew on the Preamble of the Constitution and expressions of the PTD in state constitutions to demonstrate the Doctrine's deep roots in the traditions of the nation.[23]

Additionally, the motion for reconsideration claimed that the regulatory inaction of the federal defendants violated the plaintiffs' constitutional rights to life, liberty and property.[24] It found support for this claim from the due process protections flowing from the Fifth and Fourteenth Amendments, arguing that the federal defendants had made a deliberate decision to

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[20] Alec L. v. Jackson, 863 F. Supp. 2d 11 (D. D.C. 2012) [hereinafter *Alec* memorandum opinion].

[21] Memorandum in Support of Plaintiffs' Motion for Reconsideration, Alec L. v. Jackson, No. 1:11-cv-2235 (RLW) (D. D.C. Jun. 28, 2012), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57857211ff7c502ee8535638/1468363281809/Fed.Mot_.ReconsiderBrief.pdf

[22] *Id.* at 18.

[23] *Ibid.*

[24] *Id.* at 19.

shirk their public trust duties.[25] To flesh out affirmative due process duties, the motion reframed the PTD as a 'special relationship' between the government and citizens, one which vests the sovereign with particular obligations of care and protection.[26] Finally, the motion made the case that inaction on climate change amounted to a form of "systematic discrimination" against the rights of youth and "Posterity" in clear violation of constitutional equal protection principles.[27]

Despite the elaborations included in the motion to reconsider, the DC District Court roundly rejected the plea in May of 2013, holding fast to its decision on the case. Undeterred, the plaintiffs took their case to the U.S. Court of Appeals for the D.C. Circuit later that year. Their brief asked for the Court of Appeals to revisit key features of the DC District Court's opinion, particularly whether previous decisions on the PTD had been correctly interpreted to preclude its federal application and the opinion's assertion that the case did not allege any specific federal or constitutional transgressions.[28] Their appeal was supported by an impressive array of a*micus* briefs, filed by climate scientists, law professors, faith groups, Native American advocacy associations, national security experts, government officials, and social justice organizations.

In their response, federal defendants largely reiterated the same arguments for dismissal that persuaded the DC Circuit Court. Oral arguments were originally scheduled for May of 2014, but mere days preceding the date of hearings the Court of Appeals announced that it would no longer need to hear oral arguments. Instead, it would decide based on the written briefs

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[25] *Ibid.*

[26] *Id.* at 20.

[27] *Id.* at 21-22.

[28] Opening Brief for Youth Appellants, Alec L. ex rel. Loorz v. McCarthy, No. 13-5192 (D.C. Cir. Oct. 22, 2013), https://static1.squarespace.com/static/571d109b04426270152febe0/t/578570b89de4bb340b8a4c04/1468362937525/FiledOpeningBrief.pdf

submitted. In spite of the remonstrations of the plaintiffs, the Court of Appeals persisted in this decision, and weighed the written appeals on their merits. In June of 2014, the court delivered a terse, two-page decision affirming the DC District Court's judgement to dismiss.

Nevertheless, the plaintiffs persisted. In October of 2014, they filed a petition for the Supreme Court to hear their case. The Writ exhorted the Court to clarify the scope and ambit of the PTD and to determine whether federal courts have the authority to enforce the Doctrine at a national level. It drew attention to the importance of the case, and described the failure to articulate the PTD at the federal level as a forfeiture of an important judicial check on administrative environmental management in the U.S.[29]

In December, the Supreme Court brought a beleaguered *Alec L.* to an unceremonious end with a notice that it would not hear the case. A whimper rather than a bang, this notice tacitly endorsed the agency-statue approach to environmental governance and business-as-usual climate policy. It was a decision reflective of the irresolute environmental leadership of that political moment: modest progress at a pace palatable to corporate stakeholders, rather than radical and hasty overhaul.

What the defeat did not accomplish, however, was to quash the spirit of the growing movement spearheaded by Our Children's Trust. Through *Alec,* the organization had managed to begin a substantive dialogue between faith leaders, legal scholars, climate scientists, social justice activists, and many others about legal avenues for holding the federal government to account for its carbon promoting actions. This conversation gained new energy and urgency from each legal setback. Far from faltering after the final word from the Supreme Court, the momentum carried on and into an incipient constitutional climate lawsuit prefigured by the

[29] Alec L. v Jackson, 863 F. Supp. 2d 11 (D. D.C 2012), *aff'g* Alec L. *ex rel.* Loorz v. McCarthy, 561 Fed. App'x 7 (D.C. Cir. 2014), *cert. denied,* 135 S. Ct. 774 (2014).

moves to rephrase the public trust claims in constitutional terms evident in the later stages of *Alec L*. This ongoing case – *Juliana v. United States* – builds on the legal and conceptual groundwork lain in *Alec* and the diverse chorus of voices it convoked around urgent climate action. It avoids the pitfalls of *Alec* by lodging its claims not strictly in the hope of an expanded PTD, but also in a significantly elaborated constitutional argument.

### 2.3 *Juliana v. United States*

Just eight months after the quiet terminus of *Alec,* Our Children's Trust returned with a new and extended complaint for injunctive relief. Three-hundred ten points comprise the 100-page complaint, fully twice as long as the *Alec* pleading. The tone is pointed, and the allegations are delivered with a resoluteness that those in *Alec* lacked. The opening statement reads:

> For over fifty years, the United States of America has known that carbon dioxide pollution from burning fossil fuels was causing global warming and dangerous climate change … Defendants also knew the harmful impacts of their actions would significantly endanger plaintiffs[30]

From the outset, it is clear that the case is about endangerment that could have been otherwise had different decisions been made with the same information. *Alec*, by contrast, opened with no mention of government culpability, instead gesturing to the growing scientific consensus on climate crisis against which continued inaction would no longer be excusable.

The complaint names twenty-one youth plaintiffs and thoroughly details the climate change impacts they are already experiencing, ranging from spikes in allergy intensity linked to climate change, to loss of income related to seasonal snowfall decreases.[31] The complaint also alleges that plaintiffs have suffered psychological and emotional harm stemming from seeing

[30] *Juliana* complaint, *supra* note 2, at 1.

[31] *Id.* at 6-35.

climate change alter their home landscapes and fearing what is to come.[32] Connection to place is conceptualized as an integral part of emotional and mental wellbeing in the complaint, which is careful to ground climate science in sites where impacts are visibly underway and link these impacts to new tribulations faced by plaintiffs. Moreover, it projects the intensification of these impacts into the future and discusses the ways in which plaintiffs' lifetimes will be negatively shaped by climate change. Notably, future generations are also named as a plaintiff in the complaint.[33] This class of persons-to-come is included with the stated interests of inheriting well-preserved resources and the full promise of life, liberty and property.[34]

In framing its constitutional claims for relief, the complaint alleges that the federal governments' actions harming the climate system violate due process and equal protection principles as well as plaintiffs' unenumerated rights.[35] Plaintiffs argue that the nation's energy policy discriminates against youth and future generations by prioritizing short-term economic interests at the expense of long-term climatic stability.[36] Key to this assertion is that plaintiffs, by virtue of their age, are barred from voting and other forms of political participation through which they could conceivably influence the pace and direction of national climate action.[37] An *amicus* brief submitted by the League of Women Voters underscores this point:

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[32] *Id.* at 7, 8, 12, 19, 20, 26, 27 and 31.

[33] *Id.* at 34.

[34] *Ibid.*

[35] *Id.* at 84-92.

[36] *Id.* at 88-91.

[37] *Id.* at 89.

> Like disenfranchised plaintiffs in voting rights cases, those who stand to be most severely impacted by climate change – youth and posterity – cannot adequately assert their interests through the system of representative government[38]

The complaint argues that the government owes youth plaintiffs and future generations "extraordinary protection" in upholding their fundamental rights in a situation of outsize consequence to their generation and those to come.[39]

Perhaps the most interesting feature of the complaint is its exhaustive history of government recognition of climate change dating back to the 1960's. The complaint constellates an array of correspondences between government officials, congressional testimonies, legislation, reports, and international treaty commitments into a timeline of federal climate change knowledge and acknowledgement from 1965 to the present day.[40] The timeline illustrates that climate change had been a topic of discussion within the ranks of the federal government for over fifty years. During this time frame, however, domestic fossil fuel production, as well as carbon emissions from fossil fuel combustion, had climbed steadily within the jurisdiction of the federal government.[41]

The complaint chronicles this history assiduously in order to forge an argument that the federal government had been (and remains) complicit in creating the dangers of climate change. To satisfy the legal requirements of proving government culpability for 'danger-creation,' plaintiffs would need to demonstrate that the government's knowing and affirmative acts contributed to the danger in question and that these acts had been undertaken with 'deliberate

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[38] *Amici Curiae* (League of Women Voters of the United States and League of Women Voters of Oregon) Brief in Support of Plaintiffs at 11, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Sept. 12, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/57d70999e3df28c0c8194bda/1473710575471/16.09.12.LWVAmicusBrief.pdf

[39] *Juliana* complaint, *supra* note 2, at 89.

[40] *Id.* at 51-55.

[41] *Id.* at 57-58.

indifference' to their resulting harms.[42] For plaintiffs, the "aggregate actions" of the federal government, including permitting and subsidizing fossil fuel development as well as allowing emissions to escalate even as it recognized a need for abatement, evince an attitude of 'deliberate indifference' with respect to the rights of youth and future generations.[43]

As in *Alec*, federal defendants and intervenor-defendants moved to dismiss the case.[44] Intervenors and defendants moved to dismiss for several reasons, but two stand out as most salient. Intervenors contend in their motion that plaintiffs could point to no sufficiently concrete or particular injuries traceable to the actions of the defendants and thus could not establish standing to sue.[45] With echoes of *Alec*, intervenors also claim that the case concerns political questions delegated to other branches of government. Intervenors insist that the judiciary would need to rely on "ad hoc policy judgements" to adjudicate the case and that courts possess neither the authority nor expertise to weigh the manifold costs and benefits of emissions reductions against economic productivity.[46]

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[42] *Juliana* opinion, *supra* note 1, at 36. As Burge (2009) explains, substantive due process "state-created danger" claims emerged in earnest after the Supreme Court's 1989 decision in *DeShaney v. Winnebago County Department of Social Services*. The fundamental premise of the theory is that state officials who, through their affirmative actions, create or amplify the dangers or harms to individuals resulting from the actions of some third party (in *Juliana*, this would be any entities whose activities involve greenhouse gas emissions or fossil fuels) are liable for injuries befalling those individuals. According to Burge, however, legal criteria for judging state-created danger actions remain somewhat murky.

[43] *Juliana* complaint, *supra* note 2, at 59.

[44] Intervenor-Defendants in the case include three trade associations: the American Fuel and Petrochemical Manufacturers (AFPM), the American Petroleum Institute (API), and the National Association of Manufacturers (NAM). These parties were granted permission to intervene on January 13, 2016.

[45] Memorandum in Support of Intervenor-Defendants' Motion to Dismiss at 16-22, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Nov. 12, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576195a62fe1316f09d2eeba/1466013096665/15.11.12.IntervenorMTDMemo.pdf

[46] *Id.* at 13.

The plaintiff's complaint and the motions to dismiss were reviewed by Magistrate Judge Thomas Coffin of the District Court of Oregon. Judge Coffin summarized his findings and recommended that the case move forward in an order issued on April 8, 2016.[47] The essence of his reasoning is captured by the following excerpt:

> The debate about climate change and its impact has been before various political bodies for some time now. Plaintiffs give this debate justiciability by asserting harms that befall or will befall them personally and to a greater extent than older segments of society. It may be that eventually the alleged harms, assuming the correctness of plaintiffs' analysis of the impacts of global climate change, will befall all of us. But the intractability of the debates before Congress and state legislatures and the alleged valuing of short-term economic interest despite the cost to human life necessitates a need for the courts to evaluate the constitutional parameters of the action or inaction taken by the government.[48]

After Judge Coffin issued his findings, the case was passed to District Court Judge Ann Aiken to decide whether it should proceed to trial. Judge Aiken heard oral arguments in September of 2016. On the day of the hearing, children from local grade schools, their parents, and activists from all along the West Coast packed the Wayne Morse Courthouse in Eugene, Oregon to observe the rhetorical joust. To accommodate the swelling crowd, several courtrooms adjacent to the main forum were opened as overflow rooms where the proceedings could be watched on televisions. Rumors circulated that screening parties were being held up and down the West Coast – the territory of the Ninth Circuit – where people would be tuning in for the play-by-play.

Onlookers in the overflow rooms, where I gazed on, watched what unfolded with rapt attention. As the opening formalities concluded, it quickly transformed into a spellbinding performance. Judge Aiken impatiently interrupted the attorneys for the federal defendants and

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[47] Order and Findings and Recommendation, Juliana v. U.S., No. 6:15-cv-1517-TC (D. Or. Apr. 8, 2016) [hereinafter *Juliana* order], https://static1.squarespace.com/static/571d109b04426270152febe0/t/576195342fe1316f09d2eb8d/1466012983313/16.04.08.OrderDenyingMTD.pdf

[48] *Id.* at 8.

industry intervenors whenever their points became unrecognizable behind rhetorical flourish or ornamental argot (which was often). Marked by confidence at the beginning of the hearing, their expositions soon became timorous as though watching whatever certainty of a "business-as-usual" outcome they had entered the courtroom with waning. Judge Aiken trenchantly expostulated each point they raised in support of the motion to dismiss. As the lead attorney for federal defendants argued that climate change decisions should be left to the Executive Branch, Judge Aiken interjected:

> maybe you are doing the best work you can do under the circumstances but, with *all deliberate speed*, break down silos and do it better, faster, smarter because of the impending damage … doesn't the court have a role as the third branch of government to assist you in doing that by saying that there is the potential for damage and injury and a bigger question and with *all deliberate speed*, it needs to be addressed?[49]

On November 10, 2016, Judge Aiken issued her opinion and order on *Juliana*. In a landmark legal ruling, Judge Aiken greenlighted the case to move to trial. Her thoughtful opinion crystallized what is at stake in the lawsuit. She recognized that "the right to a climate system capable of sustaining human life is fundamental to a free and ordered society."[50] Following the plaintiffs' use of *Obergefell v. Hodges*, the watershed marriage equality case, Judge Aiken's opinion framed climatic stability as an unenumerated right that underpins the exercise of rights to life, liberty and property.[51] But, importantly, her opinion sought to instate limits on legal claims

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[49] Reporter's Transcript of Proceedings at 12-13, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Sept. 13, 2016) [hereinafter *Juliana* oral arguments]. The phrase 'with all deliberate speed' harks back to the Supreme Court's decision in *Brown v. Board of Education*, which ordered that states desegregate public schools 'with all deliberate speed.' As legal scholar Julian Bond (2015: p. 1676) points out, the phrase "with all deliberate speed" is a "masterpiece of ambiguity." As he writes of the aftermath of the *Brown* decision, "For the first ten years after 1954, the emphasis was more on 'deliberate' than on 'speed.' The focus was on dismantling the dual school systems in the South, the products of de jure segregation, and, in southern accents, all deliberate speed meant any conceivable delay."

[50] *Juliana* opinion, *supra* note 1, at 32.

[51] *Ibid.*

stemming from the recognition of this right in order to prevent the "constitutionalization of all environmental claims."[52] As she wrote:

> this Court simply holds that where a complaint alleges governmental action is affirmatively and substantially damaging the climate system in a way that cause human deaths, shorter human lifespans, result in widespread damage to property, threaten human food sources, and dramatically alter the planet's ecosystem, it states a claim for a due process violation.[53]

In Aiken's decision, it was the *magnitude* of damage to the climate system resulting from the defendants' aggregate actions which provided grounds for a substantive due process claim.

With Judge Aiken's go-ahead, the plaintiffs and defendants convened for a case management conference later in November with Judge Coffin presiding (Judge Coffin is responsible for handling pre-trial affairs and Judge Aiken will conduct the trial). Notwithstanding defendants' objections that discovery might take longer than plaintiffs were willing to budget, Judge Coffin was clear that the case would move quickly to trial. The parties agreed to aim for a trial date during the summer or early fall of 2017.

Following the rejection of the motion to dismiss, intervenors and defendants have issued responses to the plaintiffs' complaint. A remarkably substance-less reply, the intervenors' response consists primarily of one phrase repeated *ad nauseam* in address to each of the points raised by the plaintiffs: "Intervenor-Defendants lack sufficient knowledge to admit or deny the factual allegations … and on that basis deny each and every factual allegation therein."[54] Not only does this mantra greet legal accusations, it is also the intervenors' default reply to the scientific evidence

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[52] *Ibid.*

[53] *Id.* at 33.

[54] Intervenor-Defendants' Answer to First Amended Complaint for Declaratory and Injunctive Relief, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Dec. 15, 2016), https://static1.squarespace.com/static/571d109b04426270152febe0/t/585473288419c253fc5220bb/1481929513269/Doc+93+Intervenor+Answer.pdf

plaintiffs expound in their complaint. Measurements of atmospheric carbon dioxide concentrations and statements detailing the scientific consensus about the anthropogenic nature of climate change, among other scientific claims, are not acknowledged as true by the intervenors, representing a unique position in relation to information that a majority of climate scientists would confirm.

Federal defendants' reply, by contrast, affirms the lion's share of the scientific assertions and forecasts that the plaintiffs' complaint describes. Defendants concede that the combustion of fossil fuels and resulting CO2 emissions place "our nation on an increasingly costly, insecure and environmentally dangerous path" and, moreover, admit that allowing "business-as-usual" CO2 emissions will "imperil future generations with dangerous and unacceptable economic, social and environmental risks."[55] Likewise, Defendants' admit that atmospheric CO2 is at levels unprecedented in human history and that stabilizing the climate system calls for dramatic reductions in CO2 emissions (it is important to note that the reply was issued mere days before President Obama left office and reflects the views of his administration).[56]

While federal defendants' response assents to the scientific story plaintiffs outline, it disputes the allegations that the 'United States' knowingly created danger for the plaintiffs through its cumulative actions. Defendants do not dispute that the range of actions of the federal government have contributed to certain harms. Rather, through a clever bout of circumlocution, they construe the 'United States' as too "vague" and "ambiguous" an entity to attribute knowledge.[57] However, defendants admit that certain government officials and federal employees

[55] Federal Defendants' Answer to First Amended Complaint for Declaratory and Injunctive Relief at 35, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Jan. 13, 2017), https://static1.squarespace.com/static/571d109b04426270152febe0/t/587a5336f7e0ab6a701534f6/1484411703596/Doc+98+Feds+Answer.pdf

[56] *Id.* at 4 and 47.

[57] *Id.* at 2.

had been aware of research drawing connections between fossil fuel use, greenhouse gas emissions, and dangerous climate change for over fifty years.[58]

On February 7, 2017, Judge Coffin convened attorneys for the parties in Oregon to discuss trial discovery.[59] In this case management conference, Judge Coffin delineated the stages of the trial and pre-trial preparations. He ordered parties to initiate trial preparations by identifying and conversing with scientific experts while engaging in fact discovery. This order was pursuant to his observation about the scientific nature of the case. As he said:

> this case is primarily driven by the science … this case goes nowhere with just a string of anecdotal … stories about floods, storms, et cetera. It goes somewhere with the assistance of the experts that are going to offer the science regarding what is happening, why it is happening, and let the experts, then, address those issues.[60]

Judge Coffin proposed that the trial be divided into two phases, one concerning the issue of government liability for the harms plaintiffs had alleged and a subsequent stage - contingent upon the outcome of the first – on the issue of fashioning a remedy if rights violations were found. As Judge Coffin described the first phase, it would seek to establish whether climate change is happening; if there is a threshold beyond which it becomes irreversible or results in outsize harms; whether it is human-induced; if the government could be found responsible for causing some measure of climate change; and if plaintiffs' constitutional rights had been violated by government activity. The second phase, by extension, would seek to formulate a remedy program consistent with the findings of the trial.[61]

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[58] *Ibid.*

[59] Reporter's Transcript of Proceedings, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Feb. 7, 2017).

[60] *Id.* at 34.

[61] *Id.* at 45.

At the time of writing, the case was expected to begin trial in the spring of 2018, though this is subject to change.

### 2.4 Conclusion: *Juliana* and Climatic Public Language

At their most effective, groundbreaking legal cases like *Juliana* can generate lexical innovations, compelling framings, and enduring images of the problems that they seek to address. These innovations, and the enduring significance that they take on in judicial recognition, culture, and the work of social movements, together constitute what Purdy (2010) refers to as "public language." For Purdy (2010: p. 1129), "environmental public language" refers to sets of ideas and attitudes about the human relationship to the natural world that are intermeshed with notions of political identity, morality, and civic virtue. The framework of environmental public language recognizes that the value systems of political communities are ever-changing, and that laws and regulations are forged within the dynamic contexts of larger cultural understandings of human-environment relations and scientific expertise. It is by gradually expanding and revising the vocabulary of public language that civilians are able to make novel environmental value claims become intelligible, compelling and potentially transformative over time.

*Juliana* is in many ways just beginning, but its bold efforts to constitutionalize climate rights and articulate the government's obligation to protect its youngest and yet unborn citizens from dangerous climate change promise to broaden the climatic public language in the United States. History is full of instances of the development of such "public language" remolding environmental values and changing the course of lawmaking and jurisprudence, most pertinently in the case of the cultural and intellectual ferment that led to the creation of the major environmental statutes in the United States (Purdy, 2010). Public language can facilitate the formation of broad-based coalitions of concern around topics like climate change. Resistance to

the Keystone XL pipeline, for example, developed through a place-based public language which was able to bind together interests in property rights, indigenous rights, and climate change, among other things (Klein, 2014). As I hope to have demonstrated, there is reason to believe that *Juliana v. United States* will be a milestone in the ongoing articulation of a climatic public language in the United States.

## CHAPTER 3: VALUE(S) ON TRIAL: *JULIANA* AND ATMOSPHERIC ETHICS

### 3.1 Introduction

Outside of the United Nations climate negotiations process, efforts like *Juliana* are moving forward to politicize the climate change conversation anew. Climate litigation, as I argue in the first chapter, is an increasingly important strategy for interrogating the values underpinning our earthbound moral and legal coordinate systems and slowly carving out conceptual and legal space for alternative modes of responsibility to be imagined and elaborated (Boom et al., 2016). Climate change lawsuits can be understood as experiments which aim to revise our legal and ethical vocabularies to better capture the mazelike tangles of responsibility characteristic of climate change.

In this chapter, I further explore how *Juliana v. United States* is doing this imaginative work. As Judge Aiken's opinion observes, the case does not target a set of discrete government actions that the plaintiffs find objectionable. Rather, *Juliana* calls into question the values that guide the United States' energy and environmental policy. It interrogates the spatial and temporal architectonics of US environmental law instantiated through the bureaucratic partitioning and administration of nature (Wood, 2014). In so doing, *Juliana* ventures new claims to 'fundamental' rights and subtly reworks the spatial and temporal scales in which rights are held to operate. Further, *Juliana* makes visible previously inconspicuous lines of responsibility, linking the harms of climate change to the abdication of government responsibility, important elaborative labor which might be transposed across legal jurisdictions (see Cox, 2016).

Building on the procedural history presented in the last chapter, this concluding section will revisit the theories explicated in the literature review and apply them to specific moments in the case as well as its general contours. It will illustrate how *Juliana* brings the future into focus as a "cultural fact," assembled through the interaction and recombination of diverse processes and practices of moral imagination, climate modeling and projection, and legal argumentation (Appadurai, 2013).

### 3.2 Chronotopes of Legally Cognizable Harm

> Perhaps we could imagine space as a simultaneity of stories-so-far (Massey, *For Space,* p. 9)
>
> Time, as it were, thickens, takes on flesh, becomes artistically visible; likewise, space becomes charged and responsive to the movements of time, plot, and history (Valverde, "Time Thickens, Takes on Flesh", quoting Bakhtin)

In its dismissal of *Alec,* the DC District Court observed that the dispute was as much about the "fundamental nature of our government and our constitutional system" as "emissions, the atmosphere, or the climate."[62] Although the opinion does not elaborate beyond this, it is nevertheless a remarkably incisive and provocative statement of what was at issue in *Alec* and what is now at issue in *Juliana*. The multivocal use of the word 'nature' is especially apt, for it insists upon the intertwinement of constitutions and governance structures with their material and imaginative environs.

As with other forms of narrative, legal narrative takes place on, in, and through settings. In law, as in fiction, settings are discrete space-time wholes in which meaningful action unfolds. The full corpus of United States environmental law plays out across a number of different settings, each with distinct spatial, temporal, and environmental attributes – federal lands, coastal

[62] *Alec* memorandum opinion, *supra* note 20, at 10.

zones, and ‘superfund’ sites to name a few. Statutes and bureaucracies are siloed according to the types of settings that they regulate.

Different as they are, these varied settings of environmental law were long thought to share a common backdrop: a stable and predictable atmosphere whose pace of change was too slow to be of concern to lawmakers and regulators. For this reason, U.S. law has developed with little attention to its historically benign atmospheric meta-setting (Flatt, 2017). Similar to the modern novel, wherein setting has receded ever deeper into the background as characters and plots have assumed center-stage, law too now faces a crisis as human activity modulates the operating parameters of its climatic meta-setting and reformats the stable background within which ideas of ethics, responsibility and justice have taken shape (Ghosh, 2016).

Like many other torchbearers within the “social drama” of climate change, the plaintiffs in *Juliana* are confronting the formidable challenge of representationally foregrounding the fact of a changing climate and crafting legal arguments “adequate to our predicament” (Smith and Howe, 2015; Lidström and Garrard, 2014). What they are engaged in is, to borrow from Jasanoff (2011b), a sort of “ontological surgery” wherein the recognition of a changing climate is spliced together from scientific and cultural knowledge practices and serves as prelude and impetus to the re-imagination of ethical responsibility and enumeration of legal rights. A large share of the work of imagination in the case is channeled into re-conceptualizing the atmospheric meta-setting of US environmental law and articulating its intrusion into consciousness and everyday life. Plaintiffs’ aim to assemble compelling “chronotopes” or “moral geographies” of the climate change harm and responsibility they allege to render them cognizable to courts as actionable legal claims (Smith and Howe, 2015).

The term chronotope was coined by Bahktin, a literary critic, as a way of analytically conjoining space and time. In recent years, legal geographers have taken up the chronotope analytic in order to better describe the entwinement of space and time in the domains of law and governance (Valverde, 2014; Valverde, 2015). Valverde's (2015: p. 56) book stands as the most extended, legal-geographic application of the chronotope concept to date. In it, she propounds a new "framework for sociolegal studies" triangulated through attention to spatial and temporal scale and jurisdiction as well as what she terms 'mood.' Mood, in her formulation, refers to the affective and aesthetic dimensions of chronotopes, the ways in which ideas of space, time and scale are tinged with hope, despair, fear, and other affective investments. Mood, she insists, has just as much bearing on the arts and technologies of governance and law as do spatiotemporal jurisdiction and scale.

This framework finds relevant expression in Valverde's discussion of the transformation of U.S. land-use law in the early twentieth century. During the nineteenth century, the common law of nuisance governed many aspects of land-use. Nuisance claims relied upon a particular chronotope: "a spatiotemporality of concrete and relational particularity" in which situated 'harms' (deleterious impacts on 'mood' are often lumped into this category in nuisance claims) provided the impetus for land-use decisions. In the twentieth century, planning law supplanted the nuisance as the primary mode of land use governance. In contrast to the nuisance-based system, planning looked "almost completely to the future." In concert with larger transitions, this shift inaugurated a particular sort of future-thinking, one in which the abstract space-time of modernist imperatives of growth and progress displaced the specific, dialogical content of the nuisance.

We must be careful, however, to heed Valverde's words of caution that chronotopes resist easy classification and typically involve internal inconsistency and plurality. This is certainly true in environmental law, a *palimpsest* of different strands of "environmental imagination" ranging from the utilitarian to the ecological (Purdy, 2015). Although environmental law is a tapestry of chronotopes, in theory and practice it is strongly animated by the space-time of the settler colonial tradition of broad private property rights which sees the productive history of land beginning with its settlement (i.e. conquest), parceling, and commodification (Purdy, 2015). As Rose (1990) has argued, settler narratives of 'states of nature' progressively partitioned into private property and subsequently put to 'productive' use have served as an enduring chronotopic *mythos* of US environmental and property law. The "settler time" in which U.S. juridical reason operates constructs the development of private property as the foundation of civil society and the engine powering the forward march of history and progressive improvement (Rifkin, 2017).

The work of legal scholar Mary Wood (2014) applies a similar analysis to the universe of environmental bureaucracy. According to Wood, the bureaucratic partitioning of nature carried out in the name of administering and enforcing environmental statutes (e.g. Clean Air Act, Clean Water Act) has, in practice, amounted to a legalization of "massive generational theft" (Ibid.: p. 265). As she writes, agency-centered environmental protection is "undermined by the commodity frame of property, which repeatedly sets up a highly charged political context at the point of regulation" with market profit, more often than not, emerging as the key metric by which regulatory decisions are appraised (Ibid.: p. 319). Agencies tasked with managing certain facets of ecosystems often do so disjointedly, with decision-making occurring on the basis of circumscribed and myopic cost-benefit analyses. Mechanically, agency cost-benefit analyses partition time in much the same way as the bureaucratic architecture of environmental governance partitions space.

The future is cleanly cleaved from the present, their relations and continuities severed. The future is then summarily discounted in monetary value (Rowell, 2014; Ackerman and Heinzerling, 2002). Settler space-time, with its parceled plot and diminished mathematical futurism, serves as an operative chronotope in administrative environmental regulation.

Settler space-time has great bearing on the *Juliana* controversy. Part of the reason federal defendants and industry intervenors moved to dismiss the case was on the grounds that plaintiffs could not demonstrate standing or, in other words, that they had suffered 'actual or imminent' injury linked to the actions of the government. The demonstration of standing is a litmus test for determining whether federal courts have jurisdiction to hear a particular case. The standing test received its clearest expression in the 1992 Supreme Court case *Lujan v. Defenders of Wildlife* in which Justice Scalia, writing for the majority, elaborated the definition of 'injury-in-fact' to cover only those disputes wherein the causal chain of the harm at issue was proximal enough in time and space to be considered 'real' or imminent and 'fairly traceable' to defendants (Lin, 2006). The shape of the injury requirement for plaintiffs to demonstrate legal standing is rooted in the model of the property-owning, settler litigant, whose disputes, generally taking place over a delineated landscape, would in many cases fit the template of concrete and particularized harm (Purdy, 2015). Climate change, as many have pointed out, complicates this spatial and temporal picture, as causes and impacts are separated by vast chasms of time and space.

Despite its novelty, recent case law on climate change has tended to defer to existing administrative regulatory authority rather than find cause for transformative judicial intervention. This has had the effect of contorting climate change into the familiar problem form of air pollution and its associated chronotope of harm. The 2007 Supreme Court ruling in *Massachusetts v. EPA* delegated the Environmental Protection Agency authority to regulate greenhouse gas emissions as

air pollutants under the Clean Air Act (Farber, 2014). This decision has haunted subsequent climate lawsuits that have attempted to bring other bodies of law to bear on the climate change question to little avail. In its 2011 decision in *AEP v. Connecticut,* the Supreme Court found that federal common law claims had been displaced by GHG emissions regulations established under the Clean Air Act. In other words, federal common law claims could not proceed (Gallisdorfer, 2013). Similarly, in 2012 the Ninth Circuit Court of Appeals ruled in *Native Village of Kivalina vs. ExxonMobil Corp.* that concerns raised in the case had already been addressed under the Clean Air Act (Montague, 2012). These two major decisions established a precedent that EPA's regulatory authority under the Clean Air Act overrides calls for judicial intervention grounded in federal common law.

In sum, what the plaintiffs in *Juliana* are up against is a judicial system which has, to this point, ceded its say on the issue of climate change to an administrative apparatus trapped in settler decision-making spacetime, its regulatory action constrained by the imagined (and actual) settler subject, narrow and nostalgic narratives of privatized and propertied productivity, and an inability to comprehend chronotopes of harm atmospherically rather than aerially. But, *Juliana* is unsettling this sclerotic legal edifice through its projection and narration of climate changing places and the favorable rulings it has already won. In a world, as Ghosh (2016: p. 32) writes, "animated by cumulative human actions," the plaintiffs press for legal principles sensitive to those slow-moving, spread-out harms that seem to envelop us atmospherically, intimately linking the body and the world: from aggravated seasonal allergies tied to aberrantly high pollen counts, to the increasing frequency and severity of (un)natural disasters, to the psychological tolls of fantasizing about futures foreclosed, unable to be discounted further.

### 3.3 "Our Town was Devastated": Narrating Planetary Harm

> How can we convert into image and narrative the disasters that are slow moving and long in the making, disasters that are anonymous and that star nobody, disasters that are attritional and of indifferent interest to the sensation-driven technologies of our image-world? (Nixon, *Slow Violence and the Environmentalism of the Poor*, p. 3)
>
> Climate uncertainties may not always be like measurable risks (Chakrabarty, "Climate and Capital: On Conjoined Histories," p. 7)

In the days preceding the airing of oral arguments before Judge Ann Aiken, Plaintiff Jayden F., a 13-year-old resident of Rayne, Louisiana, submitted a declaration opposing the federal government and fossil fuel industries' motion to dismiss the *Juliana* complaint.[63] Jayden's testimony describes a harrowing scene: early in the morning she awoke to find her room full of floodwater. "When I stepped out of my bed," she remembers, "I stepped in water that came up to my ankles. I stepped right in the middle of climate change."[64]

The storm surge Jayden recounts occurred in mid-August 2016. According to *The Washington Post*, the torrential rains dropped nearly three times as much water on south Louisiana as Hurricane Katrina had, an unusual feat for an unnamed downpour (Samenow, 2016). Set apart by rarity, the floods received no paucity of media attention. Coverage in the *New York Times*, *The Washington Post*, and *USA Today* highlighted the aberrance of the tempest. Words of surprise like "catastrophic," "devastating," and "remarkable" dotted the pages of major periodicals alongside more mathematical language like "statistically unlikely" (Robertson and Blinder, 2016; Samenow, 2016). As Jayden claims in her account of what transpired, the flooding was deemed a "1,000-year event": flooding of this magnitude, in other words, would be

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[63] Declaration of Jayden F. in Support of Plaintiffs' Opposition to Defendants' Motion to Dismiss, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Sept. 7, 2016) [hereinafter *Juliana* declaration of Jayden], https://static1.squarespace.com/static/571d109b04426270152febe0/t/57d0fac03e00be689aac4a09/1473313478990/JaydenDeclaration.pdf

[64] *Id.* at 3.

expected under standard calculations of probability to occur once every 1,000 years in the affected area (Vaidyanathan, 2016).[65]

Weeks after the devastation, the National Oceanic and Atmospheric Administration (NOAA) released a study declaring that anthropogenic climate change had raised the statistical likelihood of heavy rainfalls in Louisiana like the instance Jayden describes in her testimony (van der Wiel et al., 2016). Events that would once be expected to occur on a millennial timescale would, with high confidence, be expected to take place more frequently and with greater impact due to climate change. This 'probabilistic event attribution' study limned a portrait of the "climate context" of the region to determine what, if any, role anthropogenic warming would play in shaping the likelihood and influencing the return time of extreme weather events similar to the August flooding (Ibid.). Rather than "attempting to dissect the event itself," studies of this type emphasize "attributing changes in the risk of an event occurring to external drivers of climate" (natural and anthropogenic): put differently, attribution studies are concerned not with describing particular events but with divining their causes and detecting anthropogenic signatures by comparing observational data with model simulations (Allen et al., 2007: p. 1387). While it is, in principle, impossible to impute any single weather event to anthropogenic forcing, probabilistic event attribution permits for the quantification of anthropogenic contribution to a general class of weather events with analogous features. This allows researchers to compute how frequency and intensity change under different warming scenarios and in relation to known human-induced effects like sea surface temperature rise (Trenberth et al., 2015).

[65] *Id.* at 6.

What is interesting about Jayden's statement and its use of event attribution findings is that the reference to the flooding event is ultimately synecdoche: the weather event appears as a discrete instance substituting for the larger totality of anthropogenic climate change. The 'harm' that Jayden is tracing back to the defendants and intervenors encompasses the flooding event, but is not reducible to it. Put another way, defendants and intervenors are not being tried for the storm surge, but rather for the human-induced shift in global climate behavior that is recalibrating the rarity and magnitude of such 'superstorms.' The claim of injury, in other words, functions on two distinct but inextricable scales in Jayden's testimony: the first is that of the immediate damages wrought by the extreme storm and the second is the change in climatic operating parameters altering the frequency and intensity of analogous occurrences in the future tense.

This temporal duality points to a difficulty in locating harm and responsibility in a "warming world" (Broome, 2012). As Chakrabarty (2014: p. 3) has observed, thinking about climate change opens certain scalar "fault lines." He writes:

> Significant gaps … open up in the existing literature on the climate problem, between cognition and action, between what we scientifically know about it – the vastness of its non- or inhuman scale, for instance – and how we think about it when we treat it as a problem to be handled by the human means at our disposal.

It is this scalar disjuncture which explains why climate scientists have resorted to the language of 'risk' in attribution studies (Allen et al., 2007; Huggel et al., 2013; Otto et al., 2016). Risk, Beck (2009: p. 5) explains, "amalgamates knowledge with non-knowing within the semantic horizon of probability" in order to render uncertain outcomes and processes amenable to human governance. Probabilistic calculations of risk mediate between the event-itself and the mathematical possibility of its (re)occurrence, between the particularity of a unique happening and the purported universality of ironclad computations.

'Risk' in Beck's sense – a complicated, mathematical consciousness of the widespread ills of industrial modernization – gives expression to situations of mass harm that permeate the entire social field, albeit differentially. The collective injuries that characterize risk societies have proven difficult for courts to adjudicate through recourse to the legal and conceptual armamentaria at their disposal. "With the increase in 'unseen and unwanted side effects," Beck writes, "it is becoming impossible to ascribe harms suffered by many people … to an author in conformity with valid legal norms and to assign responsibility" (Ibid.: pp. 29-30). The pernicious result is that "the more people who are poisoned, the less poisoning takes place," or, at least, it becomes difficult to isolate the poisoner from the morass of other forces at play (Ibid.; p. 30).

Defendants and intervenors in the *Juliana* case have capitalized on this apparent ambiguity in crafting their legal defenses. During Judge Aiken's hearing of oral arguments, the primary lawyer representing the fossil fuel industry intervenors complicated the direct causal linkage drawn by Jayden and the plaintiffs. Speaking of carbon emissions, he argued:

> They cause unknown changes in the environment, unknown climatological effects, which cause specific effects on the ground … there is no way, because of the diffusive nature of that process, to say whether if the United States' emissions were curbed to a particular degree one risk would have occurred or would not have occurred.[66]

Where Jayden and the plaintiffs, in the words of Judge Aiken, "draw a direct causal link between the defendants' policy choices and floods," the industry intervenors' rebuttal leverages the chemical behavior of atmospheric carbon into an exculpating anonymity.

But here the synechdochal character of Jayden's story becomes especially important. The narrative is not strictly about a changing climate and, indeed, neither is the case. Jayden's testimony alludes to a number of interlocking histories and attritional modes of violence that

[66] *Juliana* oral arguments, *supra* note 49, at 37.

converge to produce both her experience of the flood and its impact on Rayne (Nixon, 2011). Jayden refers to the gradual cracking of her home's foundation as an outcome of subsidence (land loss) exacerbated by historical and contemporary hydrocarbon production in the region (Mallman and Zoback, 2007). She also describes an outbreak of chemical burns following the flooding, attributing it to oil and gas spills most proximately caused by flood damage but made possible by the vise grip of the industry on the Gulf.[67]

Jayden's story foregrounds the vulnerability of Rayne, linking it intimately to histories and contemporary operations of oil and gas extraction and refining in the Gulf region. Risk and vulnerability, in Jayden's account, are not strictly mathematical constructs; they are insistently social and historical as well as uncompromisingly physical, experiential and sensory. Her way of telling the entangled stories of hydrocarbon extraction and climate change grounds them in the particularities of the Gulf region and highlights the "collision of human and inhuman histories" on a climate-changing landscape (Yusoff, 2016).

The intense and temporally plural physicality of Jayden's testimony challenges a key feature of what Mitchell (2013: p. 235) has called "carbon democracy." For Mitchell, the ascent of the fossil fuel economy "based upon oil, made possible a form of politics that was de-materialized and de-natured." Within carbon democracy, the economy, he asserts, represents a "not-quite natural, not-quite-social space" situated in the interstitial zone opened up between "nature on one side and human society and culture on the other" (Ibid.: p. 234). The incomplete merger of nature and society represented by the organizing concept 'economy' reached its acme in the "age of oil," when the copious availability of low-cost energy permitted economists to suspend a previously pronounced concern with resource finitude. Economic analysis,

[67] *Juliana* declaration of Jayden, *supra* note 63, at 7.

underwritten by and constitutive of carbon democracy, presumes the inexhaustibility of resources, representing "material life instead as a system of monetary circulation – a circulation that could expand indefinitely without any problem of physical limits" (Ibid.: p. 234; see also Moore, 2015).

Mitchell's thoughts on de-physicalization find concrete expression in the history of hydrocarbon governance in the Gulf's offshore oil complex. The administration of offshore drilling in the Gulf is defined by the "neoliberalization of risk" characterized by cost-cutting measures, lenient oversight, and a collapse of government regulatory authority in the region (Watts, 2014). That the Department of Interior held a leasing event to auction oil and gas drilling blocks in the Gulf of Mexico around the time of the floods is a tragically ironic case in point.[68] We can add to this that the figure of the settler inhabits the language used to describe offshore drilling, with even government agency reports figuring the Gulf as an endless "frontier" (see *Deepwater Gulf of Mexico 2004).* The frontier storyline holds out faith that the auspicious mixture of settler ingenuity and natural bounty – redolent of Locke's original formulation of property – will triumph over natural limitations, a core tenet of carbon democracy (Rose, 2010).

Against this, Jayden's testimony develops a "critical regionalism" of the Gulf (LeManager, 2014). She situates her experience of the flood at the nexus of a set of global political, economic, and ecological processes that intersect in Rayne. As she hints, these connections are sustained by the United States' "aggregate actions" in support of fossil fuel consumption and production. This critical regionalist mode allows her to place elements of global oil culture into conversation with the ways in which its supporting economic and extractive infrastructures, as well as byproducts, create the conditions of possibility for her

[68] *Id.* at 8.

family's experience of the flood. Emissions, in Jayden's account, do not become traceless in atmospheric expanse; rather, global atmospheric carbon concentrations become both groundwork and upward extension of her region, permeating its geology, its economic positioning, the cells of its inhabitants, and even percolating through the cracks of her home's foundation.

To make sense of phenomena like climate change, which are massively distributed in time and space yet simultaneously immanent and intimate, Morton (2013) offers the concept of "hyperobjects." Hyperobjects, he explains, collapse distance, exposing it as illusory. Whether or not they are named, realized, or recognized, hyperobjects nonetheless thicken human experience. Just as air is fleetingly material, "blowing through scales and borders," hyperobjects substantiate at the edge of experience, eluding complete understanding (Choy, 2011). In a world of hyperobjects, the experiential spaces of bodies become meeting grounds of large and small scale processes, but each encounter with hyperobjects is partial, asymptotic to their totalities.

Of course, this is precisely the difficulty of litigating and legislating the "planetary." Here I rely on a distinction made by Chakrabarty (2014) - following Spivak (2012) – between the "global" and the "planetary." The "global" of globalization, Chakrabary (2014) explains, has human activity as its centerpiece and *sine qua non*. By contrast, although planetary processes may well be influenced or set in motion by human behavior, their full extent and range of causality and consequence go beyond the human estate, at times exceeding "earth-bound imagination" altogether (Chakrabarty, 2014: p. 22; see also Connolly, 2017). The predictive mathematics of risk, as Chakrabarty points out, might not always capture all there is to the "planetary," whose labile tempos, rhythms, and potentialities are scarcely understood. Past becomes an untrustworthy guide to both present and future as the movements of planetary time confound steadiness, tending instead to be lurching, irregular, and temperamental.

Jayden's story instructively illustrates one way of giving narrative and legal coherence to the planetary harms of climate change. It grounds vulnerability at the intersection of the subterranean geology of hydrocarbon extraction and the atmospheric geophysics of climate change, intimating that the de-materialized economic logics of carbon democracy bear no resemblance to reality in the Gulf. The science of detection and attribution is wielded carefully, used to complement a richly experiential and historical account of aberrant flooding and forensically uncover the fingerprints of the fossil fuel industry and lax government protocols in the region on a web of harm "long in the making" (Nixon, 2011).

### 3.4 Atmospheric Stabilization, Climate Rights and the Future as a Cultural Fact

> The arrival of novel entities or practices often requires a fine-tuned specification of existing principles to deal with new contingencies. But law is always already present as a conceptual and cultural resource, governing responsible human behavior and conditioning the terms in which people imagine the normative organization of their worlds. (Jasanoff, "Introduction: Rewriting Life, Reframing Rights," p. 9)

The *Juliana* complaint calls on the courts to enjoin defendants to design and implement a plan to "stabilize the climate system."[69] The plaintiffs' concern, as expressed in climate scientist James Hansen's declaration of support, is that each moment of inaction threatens to further "destabilize" the atmosphere, already in a state of "emergency" and drifting ever further from its Holocene conditions.[70]

The discourse of climate stabilization is a linchpin of contemporary climate policy, offering "discursive stability" and a common language in global climate negotiations. Typically, climate stabilization is taken to refer to establishing an upper limit on global temperature rise or

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[69] *Juliana* complaint, *supra* note 2, at 94.

[70] Exhibit A: Declaration of Dr. James E. Hansen in Support of Plaintiffs' Complaint for Declaratory and Injunctive Relief, Juliana v. United States, No. 6:15-cv-1517-TC (D. Or. Aug. 12, 2015), https://static1.squarespace.com/static/571d109b04426270152febe0/t/576195822fe1316f09d2ed89/1466013077359/15.08.12.HansenExpertDecSupportingYouth.pdf

atmospheric carbon concentrations, a threshold that, if surpassed, would constitute "dangerous anthropogenic interference" with the climate system as the UNFCCC outlines. Framing the climate change problem as one of destabilization, however, has its drawbacks, implicitly privileging certain policy responses and concerns over others. Climate stabilization focuses on mitigation over and above adaptation and loss and damage, and the majority of attention is directed toward long-term solutions rather than short or medium-term resilience measures and energy transitions (Boykoff et al., 2010).

Climate stabilization is a long-term goal requiring many decades of de-carbonization and, in some scenarios, carbon drawdown involving afforestation or technological geoengineering. Some scholars have critiqued the stabilization prescription as being part and parcel to the sort of technocratic climate governance discussed earlier. Boykoff et al. (2010), for example, argue that climate stabilization is tied "predominantly to scientific targets and notions of stability" and could foreclose more democratic discussions of potential solutions at various timescales. Moreover, it is unclear how current and "locked-in" future climate change would be handled in a purportedly "stabilized" climate system, and whether damages incurred as a result of human actions to "destabilize" and subsequently repair the atmosphere would simply be erased from our moral and legal ledgers.

Climate stabilization is a somewhat paradoxical concept. Advocates of stabilization generally discuss climate change as a global emergency that demands immediate intervention and swift remediation. Climate stabilization, however urgently mandated by judicial decree or international agreement, would involve a careful, protracted and uncertain process of trying to recalibrate the global climate system. It would likely be decades before the concrete

manifestations of climate change which the plaintiffs identify in their lives would begin to measurably respond to a decrease in emissions and atmospheric carbon concentrations.

Stabilization is also a potentially a-spatial way of framing the climate problem. If climate change mitigation becomes the overarching principle in projects of spatial governance, and spaces are re-read according to their carbon sequestration capacities or emissions (i.e. as "sources" and "sinks"), this could, at its worst, portend massive land grabs, a sort of anticipatory dispossession to salvage future accumulation opportunities. In this way, the avoidance of "dangerous anthropogenic interference" with the climate system could run the risk of licensing egregious human rights violations and compromising the livelihoods of those most vulnerable to climate change. Dalby (2013) has wisely counseled against putting too much faith in such climate 'geometrics' which are easily absorbed into neoliberal cost-benefit calculi and enrolled in their service.

In view of these pitfalls, it becomes important to inquire into what it accomplishes for the plaintiffs to call for atmospheric stabilization. Judge Aiken's opinion offers some clues here. Recall that in her landmark ruling she recognized "the right to a climate system capable of sustaining human life" as "fundamental to a free and ordered society."[71] Here, it is worth remembering, she followed the Supreme Court's ruling in *Obergefell v. Hodges* which found marriage (including same-sex marriage) to be a fundamental right. In theory, fundamental rights - those un-enumerated liberties which are foundational to the exercise of articulated constitutional rights - evolve as "new insight reveals discord between the Constitution's central protections and a received legal stricture" (language borrowed from the *Obergefell v. Hodges* majority opinion). This understanding of the enumeration of rights insinuates that it occurs as

[71] *Juliana* opinion, *supra* note 1, at 32.

social reality changes or becomes known differently through social change or scientific and technological discovery. Implicit in this commonsense framework is a hint of determinism, a sense that law is doomed to lag behind the determinative pace of technological advancement and social progress.

In practice, as STS scholars have demonstrated, the interplay between rights, science and technology is more intricate than this deterministic model suggests. Certainly, rights are re-articulated in light of and with reference to scientific discoveries and technological innovations. But discourses of rights and traditions of constitutional interpretation also serve as important resources for societies in making sense of the ethical questions that arise when emergent scientific or technological theories and findings trouble familiar ontologies, conceptual categories, perceived stabilities, and normative orientations (Jasanoff, 2011a). When contestations take place over these fundaments of social order, it often falls to courts to adjudicate. Rights, according to this view, are in constant flux and negotiation, continuously reconstituted as societies come to terms with novel entities or moral problems and create or rearrange institutions accordingly. It follows that rights claims are not strictly the province of jurisprudence, but span the entire gamut of the social field. As Jasanoff (Ibid.: p. 15) puts it, "a right in practice emerges not only at the moment when a court declares it, but also when people (and institutions) assume that they or others own the right and can assert it through their actions." Judge Aiken's opinion, then, can be understood as the beginning of something akin to a process of construction whereby the building blocks of the constitutional right to a stable climate system are beginning to be assembled.

Stabilization is one among any number of possible orienting concepts for beginning to build constitutional climate rights, but for the moment it is the prevailing candidate in the United

States. Despite the tensions internal to the discourse as it plays out in the global arena, atmospheric stability as a U.S. constitutional right might come to take on a much different significance than it has in the international policy process. Framing atmospheric stability as a right rather than as a strictly techno-scientific target emphasizes its normative and ethical valences and could potentially democratize what has heretofore been a primarily technical discussion.

For a number of young people, climate change is of immense concern, so much so that many report psychological stress from imagining and experiencing climate change and its atmospheres of emergency. Yet, in places like the United States, the youth of the climate change generation have virtually no access to the established channels of political decision-making through which to transmit their desires into political action. It is another one of the representational crises that Ghosh (2016) houses under his diagnosis of the "Great Derangement": those who will call the future home have little to no formal say in sculpting it. Just as Gardiner (2017) warns, it would seem that much of the world, and especially the United States, has normalized intergenerational buck-passing with respect to the issue of climate change, a tragic situation he calls the "tyranny of the contemporary."

A constitutional climate right could offer a way to remedy this. Such a right would, by necessity, both establish "rights-holders" and "duty-bearers," clarifying norms of responsibility (Brandstedt and Bergman, 2013). But it would also have to rework how the relationships between past, present and future are understood, reflecting in its temporalities of ethical and legal obligation the ways in which history and the future come together in the contemporary moment in the context of climate change. Such a right could draw attention to the future as a "cultural fact," forged, debated, decided and experienced in the present. As Appadurai (2013: p. 292)

describes this conceptual move, understanding the future as a "cultural fact" places emphasis on how it is substantiated in the "ethics of everyday life" and the quotidian cultural practices of claims-making, hope, and aspiration that animate many social and environmental movements. Such a recognition reclaims the future from the declensionist and defeatist determinism that inhabits narratives of environmental apocalypse, instead reframing the future as nascent within the generative work of imagination taking place in the present (Anderson, 2010).

### 3.5 Conclusion: Toward Atmospheric Ethics

> Another world is not only possible, she is on her way. On a quiet day, I can here her breathing. (Arundhati Roy, *War Talk)*

Whether or not *Juliana* sees its day in the Supreme Court, it, and cases like it, are and will continue to be important contributors to shaping legal and ethical thought on the issue of climate change. Through climate lawsuits like *Juliana*, it becomes possible to narrate climate change in more familiar, culturally-specific ways and to develop novel 'civic epistemologies' of climate change which begin to intersect in the public imagination with protected rights, liberties, and values (Mahony & Hulme, 2016). *Juliana* challenges the conventional wisdom both of the technocratic climate governance that dominates the UN regime and profit-driven environmental bureaucracy in the United States. It exposes the narrowness of the parameters of what is conceivable and exerts imaginative force to widen them. Whether or not the case succeeds, the story of which it is a part will go on as young people around the world resist the "capitalist takeover of the future" and build visions of a better tomorrow (Stengers, 2015).

I have attempted to illustrate in the preceding pages at least a few ways in which the lawsuit subjects core spatial and temporal assumptions foundational to U.S. environmental law to critical scrutiny. Further, I have tried to demonstrate how the lawsuit builds "moral geographies" of climate change by giving narrative form to planetary harm, provoking novel judicial responses

along the way. Key to this analysis has been serious consideration of the narrative dimensions of law, the future as it is given substance and meaning in the present, and the role of imagination in mediating our relationships to our worlds. I have drawn heavily on the theoretical devices of literary analysis to interpret the case and to show how law has followed much of liberal thought in picturing the world as one of discontinuous space-time parcels sharing a benign atmospheric setting. This led to an analysis of how the plaintiffs in *Juliana* draw attention to the awakening of this setting with its more-than-human temporalities and planetary elementalities, and the sorts of claims and connections this recognition enlivens for them. The final analytical section discussed how constitutional climate rights might take on place-specific lives of different types than the global discourse of climatic stability, and offered a hopeful account of how this recognition could generate new senses of intertemporal obligation.

This thesis has endeavored to conceptualize the interactions between law and the social lives of science and technology as important crucibles of climate ethics that can move the field beyond its entrapment in a naïve spatial imaginary. Previous literature in climate ethics, as I argue in the introductory section, has thus far failed to understand ethics as a "cultural fact," to its own theoretical and practical detriment. Moving forward, it will be important for climate ethics to further elaborate the linkages between science and technology, law, and ethical and normative thought as they materialize in particular social and cultural contexts to give meaning to climate change. Equally important will be increased attention to the "epistemic geographies of climate change," or the itineraries of climate change knowledge as it migrates across space and animates new sets of claims, rights, inequities and possibilities (Mahony and Hulme, 2016).

In our world, amidst melting glaciers, rising seas, biodepletion, tempests that defy imagination, and the innumerable other reminders of the fragility of things, it can often feel as

though the march toward a fiery end is inexorable. At times, time itself seems to accelerate even as it freezes, suspended in the boundless moment we call emergency, the indeterminate teeter between continuing ahead unfazed, triaging as we go, or changing course and taking the road that diverges into yet unknown places. It is here, I believe, that an atmospheric ethics begins, when crisis forces a recognition and a reckoning with the fact that we inhabit a world that does not bend to human will, a world in which we are connected in ways we have scarcely begun to uncover. Some of our imaginative, moral and legal orienting devices will readily acclimate to the new road and guide us more faithfully than ever before. Others, indubitably, will not fare as well, and we will have much to learn by attuning ourselves deeply to our surroundings, drawing inspiration and spinning myths and stories that engender more myths and stories. The meanings that we make, together, will make all the difference.

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