

COURTING DISASTER: CLIMATE CHANGE AND THE ADJUDICATION OF CATASTROPHE

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Do we court disaster by stretching the bounds of judicial authority to address problems of massive scale and complexity? Or does disaster lie in refusing to engage the jurisgenerative potential of courts in a domain of such vast significance? This Article examines global climate change adjudication to shed light on these questions, focusing particularly on cases that seek to invoke the norm articulation and enforcement functions of courts. The attempt to configure climate-related harms within such substantive frameworks as tort and constitutional law is fraught with analytical and practical difficulties. Yet the exercise, we argue, is essential. Against the backdrop of a potentially existential threat, judges redeem the very possibility of law when they forthrightly confront the merits of climate lawsuits. Conversely, when they use weak preliminary and procedural maneuvers to avoid such confrontation, judges reinforce a sense of law's disappearance into the maw of normative rupture.

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I. ROUTINE CATASTROPHE AND LEGAL ORDER

*“This is no ordinary lawsuit.”*¹

Climate change challenges the capacity of law. This is true, first of all, as a historical matter. Most notably, despite decades of warnings from the scientific community, the United States Congress has never passed a law specifically to control greenhouse gas emissions.² President Obama resorted to administrative action in an effort to impose some constraints on greenhouse gas emissions. But the centerpiece of that effort, the Clean Power Plan, is stayed pending judicial review and will almost certainly be dismantled by the new administration.³ Meanwhile, at the international level, nations have struggled to turn the promises of the United Nations Framework Convention on Climate Change into the kind of collective commitment and regulatory structure necessary to avoid dangerous levels of climate change.⁴ The President has given conflicting signals on actually withdrawing from the Paris Agreement or the underlying Framework Convention, but his overall approach toward energy and environmental protection have clearly rattled the global climate regime. Thus, the future of international climate change diplomacy and concomitant efforts to subject greenhouse gas emissions to a regime of legal limitations remains far from certain.

This Article does not focus on these political failures, though their consequences will be dire indeed. We are concerned, rather, with the more profound ways in which climate change destabilizes the concept of law. Put simply, our normative order looks increasingly fragile in “an era of unlimited harm.”⁵ Climate change will increase the risk of not only relatively “normal” disasters, but also of truly catastrophic ones. Indeed, climate change may

1 *Juliana v. United States*, 217 F. Supp. 3d 1224, 1234 (D. Or. 2016).

2 Congress has passed two statutes to fund federal research on climate change science. See National Climate Program Act, Pub. L. No. 95-367, 92 Stat. 601 (1978) (codified at 15 U.S.C. §§ 2901–2908 (2012)); Global Change Research Act of 1990, Pub. L. No. 101-606, 104 Stat. 3096 (codified at 15 U.S.C. §§ 2921–2961 (2012)).

3 See *West Virginia v. EPA*, 136 S. Ct. 1000 (2016) (mem.); see also Lisa Heinzerling, *The Supreme Court’s Clean-Power Power Grab*, 28 GEO. ENVTL. L. REV. 425, 425 (2016); Ann Carlson, *The Decision to Halt the Implementation of the Clean Power Plan Is Outrageous (And Inconsistent with the Law)*, LEGAL PLANET (Feb. 9, 2016), <http://legal-planet.org/2016/02/09/the-decision-to-halt-the-implementation-of-the-clean-power-plan-is-outrageous/>. Court watchers expect a decision from the circuit court in 2017. See Amanda Reilly, *Obama’s Climate Rule Has Its Long Day in Court*, GREENWIRE (Sept. 27, 2016), <http://www.eenews.net/greenwire/stories/1060043514>.

4 See UNITED NATIONS ENV’T PROGRAMME, THE EMISSIONS GAP REPORT 2015 (2015).

5 Benjamin Ewing & Douglas A. Kysar, *Prods and Pleas: Limited Government in an Era of Unlimited Harm*, 121 YALE L.J. 350, 350 (2011).

routinize catastrophe itself.⁶ This Article explores the challenges and paradoxes of routine catastrophe and legal order, with particular attention to the role of tort law (and, importantly, tort-like constitutional obligations of government actors) as a forum for the airing of grievances unaddressed by other legal and social mechanisms. We begin in this Introduction by defining the specific normative challenge posed by catastrophe and by identifying climate change as a particularly vexing threat to social meaning and justice.

A. *Catastrophe as Normative Overturning*

The rise of disaster law as a distinctive field of study has highlighted the difficulty of precisely defining “disaster.”⁷ Dan Farber notes the “common conception” of “events that are sudden, significant, and natural.”⁸ But he goes on to elaborate the indeterminacy of these criteria on closer inspection. Sociologists have emphasized the special power of disaster to tear the social fabric, disrupting normal patterns of communal life.⁹ Richard Posner, in his distinctive and provocative treatment of catastrophe, focused on those events marked by “utter overthrow or ruin” that “threaten the survival of the human race.”¹⁰ Such empirical approaches attempt to describe disaster as a particular set of observable circumstances.

An alternate approach can be illustrated through a well-known historical case. On February 26, 1972, a pile of coal slag impounding black wastewater collapsed in a hollow in West Virginia. The Buffalo Creek Mining Company had been dumping coal ash and refuse in the upper reaches of the Middle Fork of Buffalo Creek, creating a dam that held back a lake of grimy water left over from coal washing.¹¹ John Kebblish—second-in-command at Pittston Coal, the parent company of Buffalo Creek—knew that steady rains threatened to overtop the dam.¹² Kebblish later testified that he had urged the company to build an emergency spillway, but he ordered no evacuation.

6 See generally Sonia I. Seneviratne et al., *Changes in Climate Extremes and Their Impacts on the Natural Physical Environment*, in MANAGING THE RISKS OF EXTREME EVENTS AND DISASTERS TO ADVANCE CLIMATE CHANGE ADAPTATION: SPECIAL REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 109 (Christopher B. Field et al. eds., 2012), https://www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf.

7 Perhaps with very good reason: As Ryan Keller notes, any attempt to precisely define and “systematize” a legal concept of disaster might have the unintended consequence of dampening affective reactions to suffering that help motivate prosocial responsive behavior. See Ryan S. Keller, *Keeping Disaster Human: Empathy, Systematization, and the Law*, 17 MINN. J.L. SCI. & TECH. 1 (2016).

8 Daniel Farber, *Symposium Introduction: Navigating the Intersection of Environmental Law and Disaster Law*, 2011 BYU L. REV. 1783, 1787.

9 DANIEL A. FARBER ET AL., *DISASTER LAW AND POLICY* 3 (2d ed. 2009).

10 RICHARD A. POSNER, *CATASTROPHE: RISK AND RESPONSE* 6 (2004).

11 Robert L. Rabin, *Dealing with Disasters: Some Thoughts on the Adequacy of the Legal System*, 30 STAN. L. REV. 281, 284 (1978).

12 GERALD M. STERN, *THE BUFFALO CREEK DISASTER: THE STORY OF THE SURVIVORS’ UNPRECEDENTED LAWSUIT* 147 (1976).

Here are the facts. When the dam collapsed, it released over 130 million gallons of wastewater and refuse, sending a 30-foot wall of water down on the coal towns below. The thick slurry of foul water and waste raced through the hollow, ripping out homes and bridges. In a matter of hours, 125 people were killed and over 4000 left homeless. One survivor described the scene:

I cannot explain that water as being water. It looked like a black ocean where the ground had opened up and it was coming in big waves and it was coming in a rolling position. If you had thrown a milk carton out in the river—that's the way the homes went out, like they were nothing. The water seemed like the demon itself. It came, destroyed, and left.¹³

Whole villages were wiped out, replaced that summer by federal government trailers. The trailers were welcome relief, but they could not restore the valley's social integrity: "The old communities . . . were utterly destroyed and never rebuilt; residents began to live a more barren, less community-centered life."¹⁴ As one victim put it, "we feel like we're in a strange land even though it's just a few miles up Buffalo Creek from where we were."¹⁵

The experience of the villagers at Buffalo Creek suggests a different theory of catastrophe. Catastrophe is not some set of physical circumstances, but rather disruption of normative order.¹⁶ The concepts of *catastrophe* and *revolution* are linked in intellectual history: both portend either "an ultimate end or a radically new beginning."¹⁷ Robert Cover observed that law constitutes and situates itself within a *nomos*—"a world of right and wrong, of lawful and unlawful, of valid and void."¹⁸ Catastrophe blows up the *nomos*. "Catastrophes," Linda Ross Meyer explains, "overturn our very faith in justice, plow up the ground itself. Catastrophes look like cosmic betrayals, not calculated risks. Catastrophes, whether local or international, are moments when we confront the limits of our normative world."¹⁹

Catastrophic events, it seems, threaten to hurl us back into the state of nature. The "state of nature" is a foundational concept in political theory

13 KAI T. ERIKSON, *EVERYTHING IN ITS PATH: DESTRUCTION OF COMMUNITY IN THE BUFFALO CREEK FLOOD* 30 (1976).

14 Jack B. Weinstein, *Ethical Dilemmas in Mass Tort Litigation*, 88 NW. U. L. REV. 469, 488 (1994).

15 STERN, *supra* note 12, at 53. For an extraordinary multimedia retrospective on a coal ash disaster that had similarly devastating effects on a town in Britain, see Ceri Jackson, *Aberfan: The Mistake that Cost a Village Its Children*, BBC (Oct. 21, 2016), <http://www.bbc.co.uk/news/resources/idx-150d11df-c541-44a9-9332-560a19828c47>.

16 Some would go further to argue that the distinctive impact of catastrophe lies not merely in disrupting normative order, but in "overturning the very belief in *normative order*." Lawrence Douglas et al., *A Jurisprudence of Catastrophe: An Introduction*, in *LAW AND CATASTROPHE* 1, 2 (Austin Sarat et al. eds., 2007).

17 Alyssa Battistoni, *Kata and/or Streiphen?: Climate Change and the Politics of Catastrophe*, in *CATASTROPHES: A HISTORY AND THEORY OF AN OPERATIVE CONCEPT* 156, 166 (Nitzan Lebovic & Andreas Killen eds., 2014).

18 Robert M. Cover, *Foreword: Nomos and Narrative*, 97 HARV. L. REV. 4, 4 (1983).

19 Linda Ross Meyer, *Catastrophe: Plowing Up the Ground of Reason*, in *LAW AND CATASTROPHE*, *supra* note 16, at 20.

which we do not aim to treat here. In the familiar debate, a Hobbesian “war of all against all”²⁰ contrasts with John Locke’s vision of harmony governed by reason.²¹ What is striking for our purposes is that this debate recurs in the aftermath of contemporary catastrophes. In the wake of Hurricane Katrina, for instance, the popular press and even public officials described New Orleans as a war zone, engulfed by “widespread chaos, anarchy, and violent crime directed at both rescuers and other survivors.”²² Various commentators have pushed back against these Hobbesian accounts, arguing that solidarity, not strife, characterized post-Katrina New Orleans.²³ We accept the more optimistic rendering but the germane point is that both accounts implicitly accept Meyer’s conception of catastrophe as a moment of normative overturning.

Note, though, that even under the pessimist’s view the overturning does not precipitate the *original* state of nature. We cannot return to the prepolitical condition imagined by Locke and, to a lesser extent, Hobbes.²⁴ Instead, disaster creates a “second state of nature”: normal legal order and governmental function are suspended, but only temporarily.²⁵ We expect the incumbent political apparatus to respond and reimpose “order.” At first, this response might take the form of dramatic assertions of executive power. After Katrina, elected officials, citing “mass chaos,” declared their intention to “restore law and order.”²⁶ Police and National Guard troops imposed a state of de facto martial law.²⁷ In these initial stages, catastrophe may resemble Carl Schmitt’s state of exception.²⁸ Schmitt’s writings have come to stand

20 THOMAS HOBBS, *ON THE CITIZEN* ch. I, ¶ 13, at 30 (Richard Tuck ed., Michael Silverthorne trans., Cambridge Univ. Press, 1998) (1642) (emphasis omitted).

21 See JOHN LOCKE, *SECOND TREATISE OF GOVERNMENT* §§ 6–7 (Richard H. Cox ed., Harlan Davidson, 1982) (1689).

22 Lisa Grow Sun & Ronnell Andersen Jones, *Disaggregating Disasters*, 60 UCLA L. REV. 884, 916 (2013).

23 See, e.g., REBECCA SOLNIT, *A PARADISE BUILT IN HELL: THE EXTRAORDINARY COMMUNITIES THAT ARISE IN DISASTER* 235 (2009) (“New Orleans had long been a high-crime city, but the mythic city of monsters the media and authorities invented in the wake of Katrina never existed, except in their imagination.”); Lisa Grow Sun, *Disaster Mythology and the Law*, 96 CORNELL L. REV. 1131, 1137 (2011) (“[I]n the aftermath of natural disasters, most people engage in prosocial, helping behaviors; antisocial behavior is the exception, rather than the rule.”).

24 See Douglas et al., *supra* note 16, at 4 (arguing that Hobbes, unlike Locke, saw the state of nature as an “analytic” rather than a “historical” condition: “It is the state that societies always threaten to revert back to, given the right set of conditions”).

25 See NAOMI ZACK, *ETHICS FOR DISASTER* 74–78 (2009).

26 John Esterbrook, *New Orleans Fights to Stop Looting*, CBS NEWS (Aug. 31, 2005), <http://www.cbsnews.com/news/new-orleans-fights-to-stop-looting>.

27 See Brandon L. Garrett & Tania Tetlow, *Criminal Justice Collapse: The Constitution After Hurricane Katrina*, 56 DUKE L.J. 127, 143 (2006) (“After the floodwaters receded, police officers, federal agents, and troops patrolled the city and settled into a posture of undeclared martial law.”).

28 See generally CARL SCHMITT, *POLITICAL THEOLOGY: FOUR CHAPTERS ON THE CONCEPT OF SOVEREIGNTY* (George Schwab trans., MIT Press, 1985) (1922).

for the proposition that the exception discredits any attempt to subject sovereign prerogative to the rule of law.²⁹ Following Schmitt, much scholarly discussion of states of emergencies has focused on executive power and its proper constraint.

These questions are not the primary focus of this Article. Assuming that a bare level of physical security can be restored, a broader array of legal actors must confront lasting damage to normative order. As one of Schmitt's contemporary interpreters has observed, even great ruptures do not fully uproot entrenched norms: "The suspension of the norm does not mean its abolition, and the zone of anomie that it establishes is not (or at least claims not to be) unrelated to the juridical order."³⁰ Catastrophes, rather, create situations of misalignment, where a void opens between normative structure and cognizable fact.

Judges, more so than police, can reassert jurisdiction to close this gap. The political theorist Bonnie Honig explains how Schmitt's preoccupation with the sovereign exception obscures this important task. "[T]he current focus on the question of what we are legitimately allowed to do in response to emergency," she argues, "tends to focus attention on the moment of emergency and not on the afterlife of survival."³¹ When catastrophe strikes, and the *nomos* is rent asunder, we must restore not only bare order but also normative integrity: "The goal is to salvage from the wreckage of the situation enough narrative unity for the self to go on."³² Since judges speak in terms of reason and not only of power, they have a unique role to play in this reconstruction.

What forms should their role take? Most concretely, courts provide a mechanism by which the victims of catastrophe may employ state power against people and institutions responsible for rupture. Courts can order monetary and injunctive relief, or at the very least declare rights and facilitate out-of-court settlements. But law pushes back against catastrophe in other less tangible ways as well. Law is expressive: it constructs narratives that attach moral significance to otherwise meaningless, stochastic events. After Hurricane Katrina, the law turned a man breaking a window into a looter, and an entire city into a ward of the federal government. As Cover argued: "There is a difference between sleeping late on Sunday and refusing the sacraments, between having a snack and desecrating the fast of Yom Kippur, between banking a check and refusing to pay your income tax."³³ Legal narrative, in other words, imbues bare facts with social and cultural significance.

29 For a summary of Schmitt's views—and their possible caricature in legal academic discourse—see Adrian Vermeule, *Our Schmittian Administrative Law*, 122 HARV. L. REV. 1095, 1098–1101 (2009).

30 GIORGIO AGAMBEN, *STATE OF EXCEPTION* § 1.8, at 23 (Kevin Attell trans., 2005).

31 BONNIE HONIG, *EMERGENCY POLITICS: PARADOX, LAW, DEMOCRACY* 9 (2009).

32 *Id.* at 5.

33 Cover, *supra* note 18, at 8 (footnotes omitted).

As we will discuss below, litigation—and tort litigation in particular—plays a distinct role in developing and sustaining such narratives.³⁴

Meyer characterizes these responses—risk management, narrative reframing, and others—as a collective *denial* of the power of catastrophe: “Law is constantly colonizing catastrophe, reframing it as injustice, expanding the bounds and jurisdiction of law, and consequently expanding the zone of human control and responsibility.”³⁵ For Meyer, denial does not connote *surrender*. The denialist judge does seek to redress the harms of catastrophe, but she downplays its aberrant quality: “We deny that the event is a challenge to our normative structures, and we reframe it as injustice, not catastrophe.”³⁶ Tort scholars might think of the first famous Second Circuit opinion (*Kinsman I*) addressing the aftermath of a calamitous flood along the Buffalo River in 1959.³⁷ Although the consequences were extraordinary and the range of contributing factors—from acts of God to careless seamanship to drunken dereliction of duty—vast, the court nevertheless worked mightily to “domesticate” the case and apportion responsibility among identified parties as if the dispute were an ordinary multiparty tort case.³⁸

Meyer adopts an ambivalent stance toward denial. Even though we might prefer to see harm redressed, the exercise of brute power to “colonize catastrophe” effaces the event’s generative potential. This ambivalence toward judicial action was also at the center of Cover’s work. “[T]here is a radical dichotomy,” he argued, “between the social organization of law as power and the organization of law as meaning.”³⁹ At the moment of decision, the judge approves an official norm and thus suppresses other, disfavored narratives. As a result, “[i]nterpretation always takes place in the shadow of coercion,”⁴⁰ or, more dramatically, “[l]egal interpretation takes place in a field of pain and death.”⁴¹

Yet inaction can inflict a symmetric violence. Meyer articulates an alternative response to catastrophe: nihilism. Rather than expand the bounds of law to domesticate disaster, “[t]he nihilist acknowledges the normative challenge that the catastrophe represents and stays there. The normative ground is gone, anomie reigns,” and “[a]ll that remains are the subjective claims of

34 See *infra* Sections II.A, III.B.

35 Meyer, *supra* note 19, at 21.

36 *Id.*

37 *In re Kinsman Transit Co.*, 338 F.2d 708 (2d Cir. 1964).

38 Most notably, the court’s critical doctrinal conclusion is supported not by an affirmative argument, but by the purported absence of a counterargument. See *id.* at 725 (“We see no reason why an actor engaging in conduct which entails a large risk of small damage and a small risk of other and greater damage, of the same general sort, from the same forces, and to the same class of persons, should be relieved of responsibility for the latter simply because the chance of its occurrence, if viewed alone, may not have been large enough to require the exercise of care.”).

39 Cover, *supra* note 18, at 18.

40 *Id.* at 40.

41 Robert M. Cover, *Violence and the Word*, 95 YALE L.J. 1601, 1601 (1986).

individual voices.”⁴² The nihilist does not try to reconstruct the normative order unsettled by catastrophe. For the nihilist, the redress of harms will depend on power, not principle. Again, tort scholars might think of the “unusual concatenation of events on the Buffalo River during the night of January 21, 1959,” and the unsatisfactory way in which a second class of claimants were waved away as having “too tenuous and remote” of a connection to the defendants’ negligence to recover (*Kinsman II*).⁴³ Below, in Part II, we will show that nihilism, though it may sound foreign and dystopian, accurately describes a standard response of tort law to catastrophe.

We can apply Meyer’s framework to the example of the Buffalo Creek Disaster. For the victims of the flood, the usual forms of communal meaning ceased to cohere. They suffered a “blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of communality.”⁴⁴ In Meyer’s terms, they confronted the overturning of their normative universe. And for most of them, tort law never provided an adequate response. Pittston Coal immediately and loudly maintained that the disaster had been an “act of God,” to which no liability could attach.⁴⁵ Pittston, in other words, espoused the nihilist view of catastrophe: it self-interestedly asserted that this disaster’s meaning exceeded the power of law.

And indeed, Pittston’s insurers successfully settled with most of the injured before the lawyers even arrived, perhaps aided by their loud protestations (or threats) of innocence.⁴⁶ Gerald Stern, a white-shoe attorney called in by the Environmental Defense Fund, ended up recruiting only 625 of the 4000 survivors as plaintiffs. Moreover, the majority of these plaintiffs had not sustained physical injury, or even significant property damage.⁴⁷ Instead, their principal injuries were emotional. They suffered from continual anxiety and guilt, what we might today describe as post-traumatic stress disorder. One remark of the plaintiff psychiatrist is particularly apt:

In many disasters survivors are able to find some comfort, or at least resignation, in the deep conviction that what happened was a matter of God’s will or of some larger power that no mortal could influence. But this disaster was man-made, and such survivors can find no reason or justification for it. Their suffering seems unresolvable.⁴⁸

The Buffalo Creek Disaster was an injustice, not a misfortune. It demanded a legal response to reorder a shattered *nomos*.

Unfortunately, tort law was ill-equipped to mount such a response. Common-law courts have generally looked on claims of psychological harm with skepticism, adopting “a variety of liability-limiting approaches” to short-

42 Meyer, *supra* note 19, at 22.

43 *In re Kinsman Transit Co.*, 388 F.2d 821, 822, 825 (2d Cir. 1968).

44 ERIKSON, *supra* note 13, at 154; *see also* STERN, *supra* note 12, at 235.

45 STERN, *supra* note 12, at 11.

46 *See id.* at 22.

47 Many of the plaintiffs were children who did not own property. *Id.* at 66.

48 *Id.* at 114.

circuit the normal application of “liability based on foreseeability.”⁴⁹ Acting without much favorable precedent to guide him, Stern claimed \$50,000 in emotional damages for each of his named plaintiffs. In total, the original complaint alleged \$52 million in damages against the coal operator. After more than two years of pretrial discovery and procedural jockeying, the defendants settled for \$13.5 million, or about \$13,000 per plaintiff.⁵⁰ That sum—though not trivial—surely does not comprehend the full significance of the disaster, which wiped out entire communities forever. The settlement provided some redress, but it did not create precedent to upend tort law’s literalist and naïve understanding of foreseeability or its implicit hierarchy of interests which deprivileges emotional, relational, and communal security. In Meyer’s terms, the settlement represented a denialist response to catastrophe.

The example of the Buffalo Creek Disaster demonstrates that denial and nihilism share a basic commitment to the normative status quo. The plaintiff’s attorney understandably prefers the court to deny catastrophe’s power—rather than just surrender to it—but in neither case does the court truly interrogate prevailing norms. The denialist judge responds reflexively to disaster, attempting to assimilate it within ordinary legal frames.⁵¹ The nihilist judge, on the other hand, vacates the field in a single case seemingly to protect the system as a whole. In the constitutional context, one commentator sympathetically argues, “recognizing a separate reality of extralegal activity in the face of emergency may help in maintaining the integrity of the ordinary legal system.”⁵² President Lincoln, defending his unilateral suspension of the writ of habeas corpus, famously asked, “are all the laws, *but one*, to go unexecuted, and the government itself go to pieces, lest that one be violated?”⁵³ On this view, nihilism can also be seen as a fundamentally conservative stance toward catastrophe.

Still, how long can such a conservative approach hold up under a barrage of catastrophic harms? Eventually, legal doctrine and normative structure must evolve to restore order in a world of catastrophic overturning. A major purpose of this Article will be to argue that courts must accept their essential role in that evolution. But first, we need to understand just how much is at stake in that endeavor. And so we turn to climate change.

49 JAMES A. HENDERSON, JR. ET AL., *THE TORTS PROCESS* 317 (8th ed. 2012). *See generally* RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM ch. 8 Scope Note (AM. LAW INST. 2012) (“Historically, courts were quite restrictive and cautious about permitting recovery for pure emotional harm.”).

50 STERN, *supra* note 12, at 301.

51 *See supra* notes 36–41 and accompanying text.

52 Oren Gross, *Chaos and Rules: Should Responses to Violent Crises Always Be Constitutional?*, 112 YALE L.J. 1011, 1132 (2003).

53 President Abraham Lincoln, Message to Congress in Special Session (July 4, 1861), in BRUCE A. RAGSDALE, *EX PARTE MERRYMAN AND DEBATES ON CIVIL LIBERTIES DURING THE CIVIL WAR* 38 (2007), <https://www.fjc.gov/sites/default/files/trials/merryman.pdf>.

B. *Climate Chaos*

It is now beyond serious dispute that anthropogenic climate change threatens humanity and other life forms with massive harm. The peril of climate change has been described as “one of the central public policy issues of our time,”⁵⁴ as “one of the key challenges of our lifetimes and future generations,”⁵⁵ and even as “the gravest crisis in human history.”⁵⁶ Other commentators, of a more millenarian tendency, write “a requiem for a species”⁵⁷ and warn of the “last chance to save humanity.”⁵⁸ Somewhere in the middle of this alarmed spectrum, Richard Lazarus characterizes climate change as a “super wicked problem” that “defies resolution because of the enormous interdependencies, uncertainties, circularities, and conflicting stakeholders implicated by any effort to develop a solution.”⁵⁹

Lazarus’s description sounds in the theory of complex systems, an area of study that applies mathematical insights to ecological, social, and other dynamical processes.⁶⁰ Complex systems consist of many interconnected parts whose interactions, in the aggregate, do not conform to standard assumptions of linear behavior. Importantly, “simple, deterministic rules” might govern each individual causal moment.⁶¹ But the system as a whole nevertheless exhibits “surprise phenomena produced by chaos, emergence, and catastrophe.”⁶² Complexity undermines a central tenet of reductionist science, namely, that studying constituent parts will reveal general properties.⁶³ No matter how powerful our computers, no matter how precise our instruments, our understanding will remain partial.⁶⁴

Many scholars have observed the troubling implications of chaos and complexity theory for environmental law and policymaking.⁶⁵ For linear sys-

54 David Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 FLA. L. REV. 15, 17 (2012).

55 President Barack Obama, Remarks by the President in Announcing the Clean Power Plan (Aug. 3, 2015), <http://go.wh.gov/4KvDkq>.

56 Bill McKibben, *Introduction*, in THE GLOBAL WARMING READER: A CENTURY OF WRITING ABOUT CLIMATE CHANGE 10 (Bill McKibben ed., 2011).

57 See CLIVE HAMILTON, REQUIEM FOR A SPECIES: WHY WE RESIST THE TRUTH ABOUT CLIMATE CHANGE (2010).

58 JAMES HANSEN, STORMS OF MY GRANDCHILDREN: THE TRUTH ABOUT THE COMING CLIMATE CATASTROPHE AND OUR LAST CHANCE TO SAVE HUMANITY, at iv (2009).

59 Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159 (2009).

60 See generally J.M. Ottino, *Complex Systems*, 49 AIChE J. 292 (2003) (providing an overview of early developments in the field and discussing their relevance to several problems in chemical engineering).

61 J.B. Ruhl, *Complexity Theory as a Paradigm for the Dynamical Law-and-Society System: A Wake-Up Call for Legal Reductionism and the Modern Administrative State*, 45 DUKE L.J. 849, 860 (1996).

62 *Id.*

63 See Ottino, *supra* note 60, at 293.

64 See generally 1 Corinthians 13:8–10.

65 See, e.g., Daniel A. Farber, *Probabilities Behaving Badly: Complexity Theory and Environmental Uncertainty*, 37 U.C. DAVIS L. REV. 145, 147 (2003); Ruhl, *supra* note 61, at 855.

tems, where margins of error remain stable over time, we can control for gaps in our knowledge. Using standard statistical techniques, we can “transform situations of ignorance and uncertainty into situations of risk.”⁶⁶ This ability to predict—at least approximately—the future is essential to risk-utility approaches in both regulation and common law adjudication. Yet for complex adaptive systems, risk-utility analyses of the usual sort may be seen as fundamentally ill-suited for the nature of the decision making problems at hand:

Because complex adaptive systems contain ineliminable uncertainties that cannot be presumed to be of minor importance, such systems by their nature are likely to present ill-posed problems, that is, problems whose imperviousness to resolution is driven not by deficiencies in our epistemic position, but rather by features inherent to the problems themselves.⁶⁷

The Buffalo Creek Disaster is illustrative. Robert Rabin observes that, before the disaster, administrative officials had “completely ignored the possibility of such massive harm.”⁶⁸ They had examined previous collapses resulting in relatively minor property damage and had assumed a world of stability, linearity, predictability. They ignored the disjunction between our learning and our experience. The standard tools of risk assessment, devised originally for tightly controlled human environments like laboratories and factories, apply imperfectly in other settings. Most of our lives are not spent in casinos.

Not only the climate system, but also the social systems acting upon it are dynamic and reactive. Most troubling is the possibility of “tipping points” in these systems. We now face real but uncertain likelihoods of “abrupt climate change,” in which “the climate system is forced to cross some threshold, triggering a transition to a new state at a rate . . . faster than the cause.”⁶⁹ Scientists have identified a number of mechanisms by which global warming could lead to these sudden, nonlinear shifts in the Earth system.⁷⁰ Among the most alarming contenders are the collapse of the Greenland and West Antarctica ice sheets, the halt of the Gulf Stream due to changes in ocean salinity, and the massive dieback of tropical rainforests due to shifting rainfall patterns.⁷¹ Shortly after the U.S. presidential election of 2016, a report in *Nature* documented the results of a multicountry experimental assessment of the possibility for soils to become net releasers of greenhouse gases. As temperatures warm, soils increasingly release greenhouse gases that might otherwise remain stably secured underground. The study found that soil

66 DOUGLAS A. KYSAR, REGULATING FROM NOWHERE: ENVIRONMENTAL LAW AND THE SEARCH FOR OBJECTIVITY 72 (2010).

67 *Id.* at 74.

68 Rabin, *supra* note 11, at 287.

69 COMM. ON ABRUPT CLIMATE CHANGE, ABRUPT CLIMATE CHANGE: INEVITABLE SURPRISES 14 (2002).

70 For a summary of possible scenarios, see Timothy M. Lenton et al., *Tipping Elements in the Earth's Climate System*, 105 PROC. NAT'L ACAD. SCI. 1786, 1786 (2008).

71 *Id.*

decomposition appears poised by midcentury to add a source of greenhouse gas emissions equivalent in scope to the entire U.S. economy.⁷² In other words, just as the global political community feared it had lost the United States from international climate cooperation, scientists identified a second U.S.-sized threat lurking beneath the ground with only the laws of physics to govern its demands.

These catastrophic climate-change scenarios have become the stuff of frequent academic speculation and even Hollywood dramatization. We will not delve into further detail here, except to identify a few ways in which these scenarios shed light on catastrophe more generally. First, they are irreversible on any conceivable human timescale. Complex systems often possess multiple equilibria, such that a sufficiently large perturbation can cause a durable shift in the system's state.⁷³ This phenomenon provides an especially powerful example of path-dependency: today's political failures may foreclose possible natural worlds. Second, catastrophes frequently involve positive feedback loops. One oft-cited example is the melting of Arctic sea ice, which exposes the comparatively darker and heat-absorbing ocean water, accelerating in turn the pace of global warming. Many scientists believe that this system exhibits "strong nonlinearity" and "may already have passed a tipping point."⁷⁴ The winter of 2016, in which Arctic sea ice decline and abnormally warm temperatures reached levels that caused palpable shock among scientists,⁷⁵ has been taken by some experts to represent the first clear signs of earth system processes beginning to tip.

Finally, as noted above, we have no present means of assigning usable probabilities to the occurrence of such events. Granted, climate experts have sought to provide some guidance. A metastudy canvassed the opinions of leading climatologists and concluded that, even under conservative assumptions, there is at least a sixteen percent chance of one or more "triggering" events occurring before the end of this century under a two to four degrees Celsius warming scenario.⁷⁶ This estimation is not alarmism. We know from paleo-climate studies that nonlinear shifts have happened before under conditions like those we have created.⁷⁷ But scientific inquiry runs up against epistemic barriers when confronting super wicked problems. Increased knowledge of complex dynamics may paradoxically increase the margins of

72 See T.W. Crowther et al., *Quantifying Global Soil Carbon Losses in Response to Warming*, 540 NATURE 104, 107 (2016).

73 COMM. ON ABRUPT CLIMATE CHANGE, *supra* note 69, at 94.

74 Lenton, *supra* note 70, at 1788.

75 Chris Mooney, *2016's Super Warm Arctic Winter 'Extremely Unlikely' Without Climate Change, Scientists Say*, WASH. POST (Dec. 28, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/12/28/2016s-super-warm-arctic-winter-extremely-unlikely-without-climate-change-scientists-say/?utm_term=.497ca7decdbd2.

76 Elmar Kriegler et al., *Imprecise Probability Assessment of Tipping Points in the Climate System*, 106 PROC. NAT'L ACAD. SCI. 5041, 5041 (2009).

77 See Lenton, *supra* note 70, at 1787.

uncertainty,⁷⁸ an intellectual insight that provides profoundly frustrating guidance for policymakers.

In light of the foregoing, the precise likelihood of any particular climate catastrophe remains “difficult, if not impossible, to estimate.”⁷⁹ A fundamental lesson of chaos and complexity theory is that uncertainty does not imply low probability despite our cognitive tendency to associate the two. Instead, many dynamical systems are best modeled by “fat tail” probability distributions, where the most likely outcome is mild but in which catastrophic outcomes remain disturbingly possible.⁸⁰ Our ongoing experiment with global climate change draws us farther and farther into a realm of foreseeable unforeseeability, of routine but unpredictable catastrophe. This scientific fact has ethical consequences: since “[c]atastrophe is what we didn’t expect and couldn’t predict,” we learn to “see ourselves as unable to control the world.”⁸¹ The turn to nihilism then seems almost compelled.

C. *Time Is Late and the Water Rises*

Tipping points give urgency to the project of this Article, but the disruptive power of chaos, complexity, and climate change is also evident in less extreme circumstances. In much of the remainder of this Article, we will focus on floods, as flooding has provoked much of the actual climate change litigation to date. Rising seas and more powerful storms threaten communities around the world. As will be discussed in the remainder of this Introduction, potential harms range from the repeat of past disasters—such as Hurricane Katrina or the 2010 Pakistan Floods—to dramatic but unrealized perils—such as the failure of the Mississippi Old River Control Structure or the inundation of the Sacramento Bay Delta.

The devastation of Hurricane Katrina awoke the American public to the hazards of climate change disasters.⁸² The sheer scale of the tragedy—around 1500 victims and over \$22 billion in property damage⁸³—brought renewed attention to the issues of disaster response and climate change. And climate change did aggravate the damage caused by Katrina, although more

78 Eric Rignot, *Changes in the Greenland Ice Sheet and Implications for Global Sea Level Rise*, in *SUDDEN AND DISRUPTIVE CLIMATE CHANGE: EXPLORING THE REAL RISKS AND HOW WE CAN AVOID THEM* 63, 73 (Michael C. MacCracken et al. eds., 2008) (“In the last ten years, the margins of uncertainty in predicting ice sheet evolution have grown larger rather than smaller.”).

79 KYSAR, *supra* note 66, at 94.

80 Farber, *supra* note 65, at 155.

81 Meyer, *supra* note 19, at 22.

82 In 2007, almost three-quarters of Americans believed that “there will be more and stronger hurricanes in a warming world.” Cornelia Dean, *Will Warming Lead to a Rise in Hurricanes?*, N.Y. TIMES (May 29, 2007), <http://www.nytimes.com/2007/05/29/science/earth/29hurr.html>.

83 Daniel A. Farber, *Tort Law in the Era of Climate Change, Katrina, and 9/11: Exploring Liability for Extraordinary Risks*, 43 VAL. U. L. REV. 1075, 1075 (2009).

likely by sea level rise than by increased storm power.⁸⁴ But the true lesson of Katrina is that catastrophe results from a complex, dynamic interaction of natural and constructed causes.

It is now a truism that Katrina was, in a deep sense, a “man-made disaster.”⁸⁵ The Army Corps of Engineers was negligent in its construction and maintenance of the levee system.⁸⁶ Moreover, human engineering of the Mississippi River delta system has contributed to coastal erosion and wetland destruction on an unprecedented scale. Before human intervention, the Mississippi wandered back and forth across the northern Gulf Coast, depositing sediment across a vast delta of marshes, floodplain forests, and barrier islands. Today’s river, channeled and funneled by dikes, levees, and canals, deposits most of its two-hundred-million annual tons of sediment into the deep ocean.⁸⁷ As a result, the Louisiana coast every year loses “an area of wetlands close to the size of Manhattan.”⁸⁸

The expansion of the delta over the past 7000 years depended on a low rate of sea level rise, which allowed sediment deposition to outpace coastal erosion.⁸⁹ Anthropogenic climate change runs this process in reverse: rising sea levels shift delta deposition landward. Erosion, combined with accelerated subsidence due to fossil fuel extraction, rapidly eats away at the shoreline.⁹⁰ In the middle of this vast geologic process sits a city, the Big Easy, protected by some thin concrete walls. We recite these facts not to absolve the Army Corps of Engineers of its negligent acts, but rather to demonstrate that “[i]n a world of complexity and interconnection, any single event will be traceable to innumerable but-for causes that led to the event’s occurrence.”⁹¹ Climate change undermines not only our physical infrastructure but also our ability to configure causal relationships in our minds.

84 See Ning Lin et al., *Physically Based Assessment of Hurricane Surge Threat Under Climate Change*, 2 NATURE CLIMATE CHANGE 462, 462 (2012).

85 John McQuaid et al., *Evidence Points to Man-made Disaster*, TIMES-PICAYUNE, Dec. 8, 2005, at A1.

86 For a detailed description of the failure of the 17th Street Canal levee, see Farber, *supra* note 83, at 1088 n.36.

87 JOHN MCPHEE, *THE CONTROL OF NATURE* 5 (1990).

88 Carolyn Kousky & Richard Zeckhauser, *JARring Actions that Fuel the Floods*, in ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA 60 (Ronald J. Daniels et al. eds., 2006).

89 Virginia Burkett, *The Northern Gulf of Mexico Coast: Human Development Patterns, Declining Ecosystems and Escalating Vulnerability to Storms and Sea Level Rise*, in SUDDEN AND DISRUPTIVE CLIMATE CHANGE, *supra* note 78, at 102.

90 *Id.* at 109; see also Chelsea Harvey, *Scientists Say the Rapid Sinking of Louisiana’s Coast Already Counts as a ‘Worst Case Scenario’*, WASH. POST (June 15, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/06/15/scientists-say-the-rapid-sinking-of-louisianas-coast-already-counts-as-a-worst-case-scenario/?utm_term=.893588aafea0 (describing results of new methods of geological research that measured Louisiana coastal subsidence).

91 Douglas A. Kysar & Thomas O. McGarity, *Did NEPA Drown New Orleans? The Levees, the Blame Game, and the Hazards of Hindsight*, 56 DUKE L.J. 179, 209 (2006).

The greatest threat to the cities of southern Louisiana is not a hurricane, but the same natural process that made Louisiana's lands in the first place. 145 miles northwest of New Orleans, near Simmesport, the Mississippi splits in two. About thirty percent of the river's flow thunders down through a series of dams and locks into the Atchafalaya River below.⁹² From there, the Atchafalaya flows to Morgan City on the Gulf of Mexico by a course 150 miles shorter than the ponderous path of the Mississippi.⁹³ The Army Corps of Engineers recognized in the early twentieth century that only drastic action could prevent the capture of the Mississippi by Atchafalaya, which would drown Morgan City and leave the industrial centers to the south dry. In an awesome act of either courage or hubris, the Corps constructed a huge complex, now known as the Old River Control Structure, to hold back America's largest river and prevent it from shifting course to join the Atchafalaya.⁹⁴

The Corps, in other words, is striving to hold in stasis a complex and dynamic system. That effort will ultimately fail, but we cannot predict when with any certainty. There have already been close calls. A 1973 flood almost destroyed Old River Control by scouring out its foundations. The Corps was forced to open the Morganza Spillway, flooding large swaths of low country to ease the pressure downstream. A 2011 flood set a new record for the flood stage at Old River Control—over five feet higher than the 1973 crest—and again compelled the Corps to open the spillway.⁹⁵ The latent instability of the system increases each year, as the Atchafalaya continues to erode its own bed even as the Mississippi slowly rises with new sediment deposition.⁹⁶

The economic and human consequences of Old River Control's failure would be massive. Although we are unaware of any systematic effort to estimate the costs, the course shift would inundate thousands of homes and leave stranded one of the largest industrial agglomerations in North America. Preventing this catastrophe will require "increasingly heroic efforts" just to provide "a given level of protection."⁹⁷ John McPhee quotes a geologist who states ominously, "[n]ineteen-seventy-three was a forty-year flood. The big one lies out there somewhere"⁹⁸ We cannot be sure when that "big one" will arrive—but we know that it grows more likely as the

92 Kenneth R. Foster & Robert Giegengack, *Planning for a City on the Brink*, in *ON RISK AND DISASTER: LESSONS FROM HURRICANE KATRINA*, *supra* note 88, at 45.

93 *Id.*

94 In Canada's Yukon, a successful process of "river piracy"—in which one river diverts and captures another river's flow—was observed in a geological instant when rapidly melting and thinning glaciers enabled river flows to switch from a northward to a southward direction over the course of just a few days. See Daniel H. Shugar et al., *River Piracy and Drainage Basin Reorganization Led by Climate-Driven Glacier Retreat*, 10 *NATURE GEOSCIENCE* 370 (2017).

95 See Jeff Masters, *America's Achilles' Heel: The Mississippi River's Old River Control Structure*, *WUNDERBLOG* (May 13, 2011, 5:20 PM), <https://www.wunderground.com/blog/JeffMasters/americas-achilles-heel-the-mississippi-rivers-old-river-control-st.html>.

96 Foster & Giegengack, *supra* note 92.

97 *Id.* at 49.

98 MCPHEE, *supra* note 87, at 54.

world grows hotter.⁹⁹ It will be only marginally more powerful than the floods of 1973 or 2011, but it will produce nonlinear, catastrophic consequences. Atchafalaya forces us to question yet again “whether the classical scientific assumption of normal distributions and predictable, linear biophysical behavior is appropriate in a world of complexity and climate change.”¹⁰⁰

The Mississippi River is by no means unique. Rising seas and strengthening storms threaten all of the world’s great river deltas and the civilizations they support. Here in the United States, another potential catastrophe looms over the Sacramento-San Joaquin Delta. In California’s Central Valley, each year’s snowmelt would once bring annual flooding to the Sacramento Delta, creating a vast, seasonal inland sea. Early settlers, and later the Army Corps of Engineers, responded as one would expect: they built a complex system of levees to create a “carefully drained and cultivated garden, carrying on its face a populous network of protected farms and towns.”¹⁰¹ The situation in California is, if anything, less stable than that in Louisiana. In addition to the inexorable sea level rise and the increasing frequency of extreme floods,¹⁰² the Sacramento’s levees lie on a seismic fault. A major earthquake could cause simultaneous failures of multiple levee systems.¹⁰³ And the damage would extend well beyond the local communities: the cities of southern California rely on water exports from the Delta to meet their everyday needs.

The same issues of complexity and catastrophe haunt Pakistan and the Netherlands. In addition to their great historical and cultural significance, the Indus Valley and the Rhine-Meuse Delta have been at the center of major climate change litigation in recent years. We take up those lawsuits in Part III. For now, it suffices to set the stage for future discussion. In July and August of 2010, a series of torrential storms caused the worst flooding of the Indus Valley in at least a century. The scale of the damage was staggering: 1700 lives lost, 20 million people left homeless, and at least \$40 billion in economic costs, or nearly a quarter of Pakistan’s gross domestic product at the time.¹⁰⁴ As with Hurricane Katrina in the United States, this catastrophe provoked a national debate in Pakistan about the threat of climate change. The government responded in 2012 with a National Climate Change Policy,

99 See, e.g., P.C.D. Milly et al., *Increasing Risk of Great Floods in a Changing Climate*, 415 NATURE 514 (2002) (“[T]he frequency of great floods increased substantially during the twentieth century.”). Predictions of the precise consequences for the Mississippi River basin are uncertain, however. See J. Rolf Olsen, *Climate Change and Floodplain Management in the United States*, 76 CLIMATIC CHANGE 407, 413 (2006).

100 Kysar & McGarity, *supra* note 91, at 221.

101 ROBERT KELLEY, *BATTLING THE INLAND SEA: AMERICAN POLITICAL CULTURE, PUBLIC POLICY, AND THE SACRAMENTO VALLEY, 1850–1986*, at xvi (1989).

102 See Tapash Dash et al., *Potential Increase in Floods in California’s Sierra Nevada Under Future Climate Projections*, 109 CLIMATIC CHANGE S71 (2011).

103 See JAY LUND ET AL., *COMPARING FUTURES FOR THE SACRAMENTO-SAN JOAQUIN DELTA*, at iv–v (2008).

104 William K.M. Lau & Kyu-Myong Kim, *The 2010 Pakistan Flood and Russian Heat Wave: Teleconnection of Hydrometeorological Extremes*, 13 J. HYDROMETEOROLOGY 392, 392 (2012).

which explicitly warns of “[c]limate [c]hange disasters striking Pakistan with unthinkable ferocity and unimaginable frequency.”¹⁰⁵

Our final example comes from the Netherlands, perhaps the world leader in flood control and prevention. The Dutch government draws frequent praise for its commitment to flood management,¹⁰⁶ born of necessity in a nation where a quarter of the land lies below sea level.¹⁰⁷ And indeed, the Dutch do set a high standard, designing their flood-control systems “to limit the occurrence of floods to 1 in 10,000 years.”¹⁰⁸ This system, dubbed the “Deltaplan,” was constructed in the decades following a catastrophic flood in 1953 from the North Sea in which two thousand people died and eight percent of the country was submerged.¹⁰⁹ No major flooding event has occurred since that time, but the Dutch situation remains perilous. The Maeslantkering, a massive storm surge barrier built to protect the port of Rotterdam, was designed to withstand a sea-level rise of fifty centimeters. Current estimates of sea-level rise, though vexed by uncertainty, are not comforting: scientists predict a *minimum* range of 1.7 to 2.4 feet by the end of the century.¹¹⁰ Who among the nations can hold back the rising tide?

As the preceding discussion has shown, climate change threatens to routinize catastrophe. Global warming may push past one or more planetary tipping points, fundamentally altering civilizations as we know them. Even if we stave off such horrors, the same potential for nonlinear emergence threat-

105 MINISTRY OF CLIMATE CHANGE, NATIONAL CLIMATE CHANGE POLICY, at ii (2012), <http://center-hre.org/wp-content/uploads/2014/05/Pakistan-Naitonal-Climate-Change-Policy.pdf>. The science appears to support the government’s conclusions that global warming played some role. The rains of July 2010 represented an anomalous shift of the South Asian monsoon northward. See R.A. Houze, Jr. et al., *Anomalous Atmospheric Events Leading to the Summer 2010 Floods in Pakistan*, 92 BULL. AM. METEOROLOGICAL SOC’Y 291, 291 (2011). Moreover, that shift was linked to an unusual alteration of the jet stream over northern Eurasia, which simultaneously precipitated a severe heat wave in Russia. See Lau & Kim, *supra* note 104. The jet stream disturbance, in turn, was facilitated by “very high sea surface temperatures” made more likely by “global warming from human influences.” Kevin E. Trenberth & John T. Fasullo, *Climate Extremes and Climate Change: The Russian Heat Wave and Other Climate Extremes of 2010*, 117 J. GEOPHYSICAL RESEARCH D17103 (2012).

106 See, e.g., Andrew Higgins, *Lessons for U.S. from a Flood-Prone Land*, N.Y. TIMES (Nov. 14, 2012), <http://www.nytimes.com/2012/11/15/world/europe/netherlands-sets-model-of-flood-prevention.html>.

107 See Quirin Schiermeier, *Few Fishy Facts Found in Climate Report*, 466 NATURE 170, 170 (2010).

108 Foster & Giegengack, *supra* note 92, at 48.

109 Melanie Schultz van Haegen & Koos Wieriks, *The Deltaplan Revisited: Changing Perspectives in the Netherlands’ Flood Risk Reduction Philosophy*, 17 WATER POL’Y 41, 44 (2015).

110 Chris Mooney, *Scientists Keep Upping Their Projections for How Much the Oceans Will Rise This Century*, WASH. POST (April 26, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/scientists-keep-increasing-their-projections-for-how-much-the-oceans-will-rise-this-century/?utm_term=.8d97d874c30f (reporting on projections by the Arctic Monitoring and Assessment Program of sea level rise this century depending on emissions pathways and noting that the participating scientists refused to offer maximum estimates because they “keep uncovering new insights that force them to increase their sea level estimates further”).

ens river deltas across the world with catastrophic harms. These catastrophes, in turn, destabilize the normative order established by law. As noted above, Meyer identifies two paradigmatic responses of law to catastrophe: denial or nihilism. To deny catastrophe's power—and to avoid a descent into nihilism—law must reframe even these biblical floods as human injustices. In the following sections, we consider the ability of tort law to accomplish that reframing.

II. DENIAL AND NIHILISM IN TORT LAW

In the Anglo-American legal tradition, tort helps to define law's normative reach. In allowing recovery for some injuries and denying it for others, tort divides right from wrong and misfortune from injustice. Tort does not speak with exclusive authority on these questions, of course. Nevertheless, we argue that tort plays a distinctive role in law's normative project. Tort establishes standards of behavior—duties—in a way that makes tort law generalist, majoritarian, and persistent. It is *generalist* in the sense that it is comprehensive: the court must always choose whether to accept or reject a plaintiff's plea for relief. As such, tort serves as a residual locus of normative potential. Even wrongs not yet socially perceived as such may be brought to a court's attention and the complaining party will be entitled to a response. The pronouncements of tort law are *majoritarian* because tort understands itself to enforce collective standards of conduct, even if courts are not directly responsive to electoral results. Finally, the norms of tort are *persistent* in the sense that they are more resistant to sudden upheaval than many norms established by other legal means. These three characteristics, at least in theory, enable tort to confront catastrophe. Tort could respond to any harm, no matter how extreme, with the voice of the community's collective and stable, yet also responsive, authority.

As Meyer suggests, then, tort could organize and sustain law's denial of catastrophe, bringing more and more disasters within the bounds of law without honestly confronting the scope and significance of the normative ruptures before it. Indeed, Meyer holds up tort as a paradigmatic example of how law denies the power of catastrophe, reframing even the "unpredictable or unexpected" as ordinary injustice that does not call into question the larger structure of the *nomos*.¹¹¹ And Meyer believes that tort is constantly widening its definition of wrongful conduct to subsume more and more of experience within its purview: "[L]iability turns on foreseeability, a term that tends to expand naturally with experience."¹¹² Advocates for "tort reform" might agree with Meyer on this point.¹¹³ But this Part will argue that tort more often resorts to Meyer's second response to catastrophe: nihilism.

111 Meyer, *supra* note 19, at 21.

112 *Id.*

113 See, e.g., PETER HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* (1988); Marc Galanter, *An Oil Strike in Hell: Contemporary Legends About the Civil Justice System*, 40 ARIZ. L. REV. 717, 726 nn.36–41 (1998).

When presented with claims of massive harm, common-law courts often find their way to a judgment for defendants. In recent years, a variety of self-limiting procedural and jurisdictional doctrines have arisen to effectuate this approach. Even when a court reaches the merits of a disaster lawsuit, it will often read doctrines narrowly—or ignore them entirely—in order to avoid an enormous recovery for the plaintiff. This reticence predates the recent wave of common-law climate change litigation, but climate change plaintiffs have met with similar frustration in the courts. Catastrophic harms, it seems, typically must lie where they fall.

This nihilistic response will become increasingly untenable as the effects of climate change proliferate and intensify. Before we explore how courts might mount a more vigorous response, however, we will lay out the current landscape. In this Part we describe tort's role in establishing communal norms and explain the ways in which tort has often abdicated that role with regard to extreme harms.

A. *Judging as Usual*

The negligence standard is a communal norm. A person behaves negligently when he or she fails to exercise reasonable care under the circumstances. In the canonical formulation, from the *Restatement (Second) of Torts*, one must act as would “a reasonable man under like circumstances.”¹¹⁴ The “reasonable man” test has been subject to much criticism, of course. Critical theorists have argued that, both on its face and in its application, the test fails to accommodate the perspectives of women, racial minorities, and other disempowered groups.¹¹⁵ The *Restatement (Third)* attempts to overcome the feminist critique, at least, by rephrasing the test in gender-neutral terms.¹¹⁶ But such changes cannot dispel the fundamental tension between a uniform standard and a heterogeneous society. No actual person perfectly fits the constructed “reasonable person.” The courts use this legal fiction to iron out individual idiosyncrasies and impose a shared expectation of appropriate behavior. As Justice Holmes observed, this project is the project of law itself: “[W]hen men live in society, a certain average of conduct, a sacrifice of individual peculiarities going beyond a certain point, is necessary to the general welfare.”¹¹⁷

Importantly, the fact that tort imposes a general norm of behavior precedes any theory of the content of that norm. To oversimplify, tort theory divides broadly into instrumentalist approaches and corrective justice

114 RESTATEMENT (SECOND) OF TORTS § 283 (AM. LAW INST. 1965).

115 See, e.g., Leslie Bender & Perette Lawrence, *Is Tort Law Male?: Foreseeability Analysis and Property Managers' Liability for Third Party Rapes of Residents*, 69 CHI.-KENT L. REV. 313, 313 (1993); Dolores A. Donovan & Stephanie M. Wildman, *Is the Reasonable Man Obsolete?: A Critical Perspective on Self-Defense and Provocation*, 14 LOY. L.A. L. REV. 435, 437 (1981).

116 See RESTATEMENT (THIRD) OF TORTS: PHYS. & EMOT. HARM § 3 (AM. LAW INST. 2010) (“A person acts negligently if the person does not exercise reasonable care under all the circumstances.”).

117 OLIVER WENDELL HOLMES, *THE COMMON LAW* 108 (1881).

approaches. Corrective justice theorists, for their part, explicitly recognize the normative aspect of tort law: “[T]he aim is to govern behavior and regulate affairs by specifying norms.”¹¹⁸ Tort liability flows from “the natural duty people have ‘not to harm or injure others,’ and the natural right people have not to be harmed or injured.”¹¹⁹

This moralistic view is traditionally contrasted with instrumentalist rationales for tort liability. In Guido Calabresi’s famous account, “the principal function of accident law is to reduce the sum of the costs of accidents and the costs of avoiding accidents.”¹²⁰ Although instrumentalists speak in more sanitized language, they espouse a norm no less comprehensive than that of the corrective justice theorists. The “Hand formula,” at least in theory, describes a method of risk-utility analysis by which an informed judge could decide the scope of duty in every case that comes before him or her.¹²¹ In this sense, wealth maximization and optimal deterrence also aspire to general normative authority.

These examples suggest a broader claim: tort law enunciates general normative commands. These commands ultimately emerge from the nature of adjudication itself. As Cover observed, “[a]djudication in the common law mold entails two simultaneously performed functions: dispute resolution and norm articulation.”¹²² Judges must decide every case, but they must also give reasons for their decisions. The duty of care springs from this particular union: the “requirement of articulation, together with even a weak consistency requirement, over time, will necessarily entail the articulation of general norms.”¹²³

This theoretical argument finds support in the explicit statements of common-law courts. Despite the usual prohibition on advisory opinions, judges often openly announce general principles.¹²⁴ To take just a few examples, consider the following statements, all from tort cases within the past decade: “the Court seeks . . . to maximize consistency and continuity in

118 Jules L. Coleman, *Doing Away with Tort Law*, 41 LOY. L.A. L. REV. 1149, 1168 (2008).

119 William H. Rodgers, Jr., *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. CAL. L. REV. 1, 5 (1980) (footnote omitted) (quoting JOHN RAWLS, A THEORY OF JUSTICE 114 (1971)).

120 GUIDO CALABRESI, THE COSTS OF ACCIDENTS 26 (1970). For an illuminating instrumentalist tort discussion in the context of disaster, see Michael G. Faure, *In the Aftermath of Disaster: Liability and Compensation Mechanisms as Tools to Reduce Disaster Risks*, 52 STAN. J. INT’L L. 95 (2016).

121 See *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947) (“[I]f the probability be called P; the injury, L; and the burden, B; liability depends upon whether B is less than L multiplied by P: i.e., whether B [less than] PL.”).

122 Robert M. Cover, *The Uses of Jurisdictional Redundancy: Interest, Ideology, and Innovation*, 22 WM. & MARY L. REV. 639, 643 (1981).

123 *Id.*; see also Frederick Schauer, *Giving Reasons*, 47 STAN. L. REV. 633, 635 (1995) (“The act of *giving* a reason, therefore, is an exercise in generalization. The lawyer or judge who gives a reason steps behind and beyond the case at hand to something more encompassing.”).

124 For more on this tension, see *id.* at 654–56.

the law while establishing clear guidance for future litigants”;¹²⁵ “the fundamental goals of the common law [are] fairness to the parties, and stable and predictable rules of law to guide future cases”;¹²⁶ “in our negligence law, the duty determination is better suited for large categories of cases rather than specific circumstances.”¹²⁷ A majoritarian legislature exercises raw political will, arbitrary though putatively democratic. A court articulates general principles, reasoned and allegedly consistent. This special capability enables tort to respond in distinctive ways to the threat catastrophe poses to law.

Furthermore, the democratic privilege of the legislature is not so profound as it might initially seem. Though less directly representative, courts deploying tort law nevertheless express majoritarian commitments. The reasonable person standard disregards individual preferences and imposes a communal norm. Justice Holmes argued that judges must, to some extent, look to public morality to determine the content of that norm: “[T]he general foundation of legal liability in blameworthiness, as determined by the existing average standards of the community, should always be kept in mind, for the purpose of keeping such concrete rules . . . conformable to daily life.”¹²⁸ Through accretional lawmaking, checked by a legislature when necessary, tort law remains in conformity with prevailing standards of conduct in society.¹²⁹

The majoritarian character of tort stands in marked contrast to the essentially libertarian values of property and, to a lesser extent, contract. Property rights and contractual rights—with the significant exception of mandatory rules—are distributed by private negotiation. As a result, David Super argues, property can serve as a “bulwark[] against the majoritarian state’s encroachment on individual liberties.”¹³⁰ Super has a much gloomier view of “regulation, tort, and even contract,” each of which is “explicitly or implicitly majoritarian, reflecting the dominant view of the public good.”¹³¹ We share Super’s conclusion, though not necessarily his pessimism. On the contrary, the anarchy precipitated by catastrophe demands a communal response. In the absence of such collective pronouncements, a cacophony of individual voices would create what Meyer imagines as a nihilist dystopia, where “[e]very subjective complaint is as good as another” and “[j]ustice cannot be picked out from jealousy.”¹³² Tort law can reorder catastrophe by articulating norms that are both generalist and majoritarian. Importantly,

125 *Schwartz v. Abex Corp.*, 106 F. Supp. 3d 626, 652 (E.D. Pa. 2015).

126 *Thompson v. Hi Tech Motor Sports, Inc.*, 945 A.2d 368, 378 (Vt. 2008).

127 *Shelton v. Ky. Easter Seals Soc’y, Inc.*, 413 S.W.3d 901, 908 (Ky. 2013).

128 HOLMES, *supra* note 117, at 125.

129 See GUIDO CALABRESI, *A COMMON LAW FOR THE AGE OF STATUTES* 13 (Harvard Univ. Press, 2009).

130 David A. Super, *A New New Property*, 113 COLUM. L. REV. 1773, 1777 (2013).

131 *Id.* Peter Huber makes the same point in more polemical fashion: “The old contract-centered law placed enormous confidence in individuals to manage the risks of their personal environments. The new, tort-dominated jurisprudence prefers universal rules with no opt-out provisions.” HUBER, *supra* note 113, at 8.

132 Meyer, *supra* note 19, at 22.

tort law does so using the logics of responsibility and justice, rather than power and efficiency.

An important alternative account of tort law focuses not on communal norms but rather on individual rights. For civil recourse theorists, the duty of care on its own does not set tort law apart. John Goldberg and Benjamin Zipursky argue, instead, that tort law is distinctive because it is privately enforceable: “For a wrong to be a tort it must in principle generate for its victim a *private right of action*: a right to seek recourse through official channels against the wrongdoer.”¹³³ Although the public provides the forum, the victim drives the action: “The victim, not a government official, decides whether to press her claim or not, and the victim, in principle, also decides whether to accept a resolution of the claim short of judgment.”¹³⁴ Civil recourse theorists envision tort as essentially libertarian, not majoritarian. This vision seems to stand in tension with our expressed view of tort as a system of communal norm articulation.

The tension turns out to be illusory. Over time, a series of individual actions constitute a conversation between courts, government actors, and private victims and tortfeasors. That conversation fills in the vague doctrines of tort law so that the norms articulated have a majoritarian character, even if each lawsuit is private. “Tort law still applies community or collective norms,” even though those norms “are spelled out through an iterative process of individualized litigation, not through an intentional decision of some public entity.”¹³⁵ Justice Cardozo gave a similar account of emergent norms, although he focuses primarily on the judicial role: “[A]s a system of case law develops, the sordid controversies of litigants are the stuff out of which great and shining truths will ultimately be shaped. The accidental and the transitory will yield the essential and the permanent.”¹³⁶

Cardozo’s narrative suggests a final characteristic of the norms of tort law: they are persistent. Common-law doctrine evolves only incrementally, through the diffusion and acceptance of novel judicial interpretations. Calabresi argues that any effective legal system must “balance[] the need for continuity and change.”¹³⁷ In the specific context of tort law, the standard of reasonable care must both entrench stable norms and adapt to new circumstances that challenge those norms.¹³⁸

In the canonical story, which Calabresi himself admits to be “idealized,” the United States developed a “unique solution to meeting the two require-

133 John C.P. Goldberg & Benjamin C. Zipursky, *Torts as Wrongs*, 88 TEX. L. REV. 917, 918 (2010).

134 John C.P. Goldberg & Benjamin C. Zipursky, *Civil Recourse Defended: A Reply to Posner, Calabresi, Rustad, Chamallas, and Robinette*, 88 IND. L.J. 569, 572 (2013).

135 Christopher H. Schroeder, *Lost in the Translation: What Environmental Regulation Does that Tort Cannot Duplicate*, 41 WASHBURN L.J. 583, 585 (2002).

136 BENJAMIN N. CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* 35 (1921).

137 CALABRESI, *supra* note 129, at 3.

138 See Douglas A. Kysar, *What Climate Change Can Do About Tort Law*, 41 ENVTL. L. 1, 48 (2011) (“Duty within the common law of tort must be attentive to changing circumstances while remaining stable enough to honor private expectations.”).

ments.”¹³⁹ Common-law courts possess the authority to disregard precedent—to change the law—but judicial craft limits the scope and pace of such change.¹⁴⁰ Moreover, no single judge can work a sweeping transformation. A doctrinal innovation in tort law must proliferate through dozens of jurisdictions for it to become fully entrenched. This process of diffusion advances slowly and haphazardly. In a recent empirical study of the process, Kyle Graham found that “common-law innovations almost never spread at a rate of more than three jurisdictions per year, with some flagging near the point of full diffusion.”¹⁴¹ The law of torts does not turn on a dime.

Granted, legislatures often intervene in the common law. Rapid statutory reforms can undermine the resilience of the norms established by tort. But, for our project, we must contrast statutory overrides that augment law’s response to catastrophe with those that diminish it. In the latter category, we might place the Protection of Lawful Commerce in Arms Act, which substantially insulated firearms manufacturers and dealers from tort liability for gun violence.¹⁴² Congress passed the Act in response to a series of public nuisance lawsuits brought by municipalities and states.¹⁴³ Although none of the lawsuits had fully succeeded in court, some defendants did reform their business practices as part of settlement agreements.¹⁴⁴ At the behest of the gun lobby, Congress intervened to curtail most tort actions against weapons manufacturers and retailers. One of the few exceptions to immunity allowed under the Act, for negligent entrustment of firearms, is being tested in a lawsuit brought by relatives of victims of the mass shooting at Sandy Hook Elementary School.¹⁴⁵

139 CALABRESI, *supra* note 129, at 3–4 & n.10.

140 See *id.* at 4 (“[T]he requirements of the legal process, of ‘principled’ decision making, tended to limit the scope of judicial authority.”).

141 Kyle Graham, *The Diffusion of Doctrinal Innovations in Tort Law*, 99 MARQ. L. REV. 75, 150 (2015).

142 See Protection of Lawful Commerce in Arms Act, Pub. L. No. 109-92, 119 Stat. 2095 (2005) (codified at 15 U.S.C. §§ 7901–7903 (2012)) (immunizing gun manufacturers and sellers and their trade associations from liability for most civil actions that are based on harm caused by the “criminal or unlawful misuse” of firearms).

143 See Alexandra B. Klass, *Tort Experiments in the Laboratories of Democracy*, 50 WM. & MARY L. REV. 1501, 1540 (2009).

144 *Id.* at 1541 & n.183.

145 The trial court dismissed the lawsuit on immunity grounds, and the plaintiffs’ appeal is now pending at the Connecticut Supreme Court. See *Soto v. Bushmaster Firearms Int’l, LLC*, No. FBTCV156048103S, 2016 WL 8115354 (Conn. Super. Ct. Oct. 14, 2016), *appeal docketed* No. S.C. 19832 (Conn. Dec. 1, 2016). Family members of three men killed in another mass shooting, at the Pulse nightclub in Miami, are testing another sweeping congressional immunity provision by suing Facebook, Twitter, and Google for their roles in allowing hate groups to spread propaganda and foster extremism online. See Gal Tziperman Lotan, *Families of Three Pulse Victims Sue Facebook, Twitter, and Google*, ORLANDO SENTINEL (December 20, 2016), <http://www.orlandosentinel.com/news/pulse-orlando-nightclub-shooting/os-pulse-social-media-lawsuit-20161220-story.html>. In their defense, the Internet companies will cite a key provision of the federal Communications Decency Act, Section 230, which provides that “[n]o provider or user of an interactive

In contrast to such immunity bills, many statutes seek to acknowledge wrongs and create rights of action where none had been recognized at common law. As a historical matter, the “‘statutorification’ of American law” over the past 150 years has been driven by “technological and sociopolitical changes that made slow, accretional, lawmaking unsatisfactory.”¹⁴⁶ The proliferation of workers compensation statutes during the late nineteenth century provides a paradigmatic example. The crisis of factory accidents presented both a practical and a normative challenge to tort law: “[S]hocking rates of injury and death among industrial workers were difficult to square with prevailing tort doctrines and the free labor ideology that supported them.”¹⁴⁷ When common-law judges failed to adapt quickly enough, legislatures supplanted them (along with a host of worker cooperatives, employer-provided plans, and other private forms of compensation that had been springing up in the absence of tort law).¹⁴⁸

In the case of factory accidents, tort law failed because it could not impose an attractive normative order on an increasingly complex modern society. Failure of judicial ambition may invite legislative intervention in the common law just as readily as imagined crises of liability.¹⁴⁹ Tort may establish more durable norms, then, when it confronts catastrophe head-on. At its best, tort can respond with principled urgency to unforeseen challenges. It does so “not only by pricing and prohibiting conduct, but by helping to foster, sustain, and articulate norms.”¹⁵⁰ When they are well stewarded, these norms—generalist, majoritarian, and persistent—can give structure, weight, and coherence to tort law’s narrative of catastrophe. Such stewardship, though, requires willingness by judges to utilize tort law’s normative capacity at a time when its practical force seems overwhelmed by catastrophic events.

B. *Failures of Power*

July 13, 1977, was a typically hot and humid summer day for New Yorkers, with the temperature rising to 93 degrees Fahrenheit in Central Park by 5:00 p.m.¹⁵¹ The sultry afternoon gave way to a stormy evening. At about 8:37 p.m., a lightning bolt struck an electrical transmission tower between the Millwood and Buchanan substations in New Castle, Westchester

computer service shall be treated as the publisher or speaker of any information provided by another information content provider.” 47 U.S.C. § 230(c)(1) (2012). Plaintiffs allege that the defendants should be treated as publishers given the way in which their algorithms analyze, match, and channel user-generated content.

146 CALABRESI, *supra* note 129, at 1, 73.

147 Kysar, *supra* note 138, at 48 (citing JOHN FABIAN WITT, *THE ACCIDENTAL REPUBLIC* 7–8 (2004)).

148 See generally WITT, *supra* note 147.

149 See CALABRESI, *supra* note 129, at 74–76.

150 John C.P. Goldberg & Benjamin C. Zipursky, *Accidents of the Great Society*, 64 MD. L. REV. 364, 386 (2005).

151 *Record of Climatological Observations: New York Central Park Observatory, July 1977*, NOAA (Apr. 6, 2016), <https://www.ncei.noaa.gov/orders/cdo/1054257.pdf>.

County.¹⁵² The circuit automatically shut down to dissipate the surge of electrical charge. Unbeknownst to the engineers at Consolidated Edison (“Con Edison”), however, a damaged relay prevented the line from reopening, thus choking off one of the largest conduits to New York City.¹⁵³

The faulty relay set off a series of unfortunate events. Technical mishaps prevented Con Edison from quickly ramping up generation within the five boroughs.¹⁵⁴ Due to a sequence of miscommunications, the systems operator did not learn of the Millwood-Buchanan shutdown until at least 9:08 p.m.¹⁵⁵ At 9:23 p.m., the operator attempted to “shed load” manually—shutting down parts of the grid to prevent total failure—but he botched the complicated procedure.¹⁵⁶ At 9:29 p.m., New York’s last connection to the outside world was tripped. Suddenly, demand exceeded supply by 1700 megawatts. At 9:36 p.m., the city went dark.¹⁵⁷

Although the blackout lasted only two days, it inflicted massive damages.¹⁵⁸ Since most New Yorkers commute to work via public transit, thousands of storefronts shuttered. Civil disorder erupted in multiple neighborhoods. The fire department and police responded to over 1000 alarms and made nearly 3000 arrests in 27 hours.¹⁵⁹ Economic costs amounted to at least \$350 million, almost half of which was attributed to looting and arson.¹⁶⁰ And, in his apartment building in Queens, seventy-seven-year-old Julius Strauss ran out of water, which was supplied by an electric pump.¹⁶¹ On the afternoon of July 14, he attempted to descend the unlit stairwell to fetch water from the basement. In the darkness, he fell and sustained severe injuries.¹⁶² Strauss brought suit against his landlord and Con Edison for gross negligence.

Although a straightforward personal injury suit on its face, Strauss’s lawsuit raised profound questions about the stability of legal order. Since earlier litigation had established Con Edison’s negligence,¹⁶³ the court in *Strauss* had only to decide the extent of the utility’s resultant liability. In a remarkably candid opinion, the New York Court of Appeals dismissed the complaint “[o]n public policy grounds.”¹⁶⁴ The court ostensibly centered its legal analysis on the question of duty, but this analysis did not truly control: “[I]t is . . .

152 G.L. Wilson & P. Zarakas, *Anatomy of a Blackout*, 15 IEEE SPECTRUM 39, 39 (1978).

153 *Id.* at 41.

154 *Id.* at 42.

155 *Id.* at 43.

156 *Id.* at 44.

157 *Id.* at 45–46.

158 For a helpful summary, see JANE L. CORWIN & WILLIAM T. MILES, *SYS. CONTROL, INC., IMPACT ASSESSMENT OF THE 1977 NEW YORK CITY BLACKOUT* (1978).

159 *Id.* at 14.

160 *Id.* at 5.

161 *Strauss v. Belle Realty Co.*, 482 N.E.2d 34, 35 (N.Y. 1985).

162 *Strauss v. Belle Realty Co.*, 469 N.Y.S.2d 948, 949 (App. Div. 1983).

163 *See Food Pageant, Inc. v. Consol. Edison Co.*, 429 N.E.2d 738 (N.Y. 1981); *see also Koch v. Consol. Edison Co. of N.Y.*, 468 N.E.2d 1 (N.Y. 1984).

164 *Strauss*, 482 N.E.2d at 35.

the responsibility of courts, in fixing the orbit of duty, 'to limit the legal consequences of wrongs to a controllable degree.' . . . '[N]ot only logic and science, but policy play an important role.'¹⁶⁵ In its overt realism, the *Strauss* majority echoed Judge Andrews's dissent in *Palsgraf*: "[B]ecause of convenience, of public policy, of a rough sense of justice, the law arbitrarily declines to trace a series of events beyond a certain point."¹⁶⁶

Granted, the court in *Strauss* paid lip service to a traditional notion of privity in contract. Since *Strauss* fell in a common area, the landlord was technically the aggrieved customer.¹⁶⁷ Such formalistic distinctions had long since fallen by the wayside in 1985.¹⁶⁸ Con Edison almost certainly owed *Strauss* a duty of reasonable care. In fact, as the New York Court of Appeals readily admitted, "an obligation rooted in contract may engender a duty owed to those not in privity."¹⁶⁹ But catastrophic harms change the rules of the game. In the face of "liability which could obviously be enormous," the court made a decision not "strictly governed by tort or contract law principles."¹⁷⁰

The decision in *Strauss* epitomizes what Meyer would call a nihilistic reading of catastrophe. Disaster strikes and overwhelms the legal order. Tort law might begin to recolonize lost territory, subsuming chaos under normative principles such as "gross negligence" or "recklessness." But tort law might also pull up short when a plaintiff's prayer for relief appears to demand too much justice: "[P]ublic policy may at times result in the exclusion of some who might otherwise have recovered for losses or injuries if traditional tort principles had been applied."¹⁷¹

What exactly did the judges of the Court of Appeals fear? A dissenter pointed out that Con Edison could easily distribute any costs among its consumers in the form of higher rates.¹⁷² The majority alludes only vaguely to "the societal consequences of rampant liability."¹⁷³ Perhaps the judges feared popular backlash: they doubted their majoritarian authority to redress such massive harms. Or perhaps they feared that subsuming disaster under

165 *Id.* at 36 (citations omitted) (first quoting *Tobin v. Grossman*, 249 N.E.2d 419, 424 (N.Y. 1969); and then quoting *De Angelis v. Lutheran Med. Ctr.*, 449 N.E.2d 406, 407 (N.Y. 1983)).

166 *Palsgraf v. Long Island R.R. Co.*, 162 N.E. 99, 103 (N.Y. 1928) (Andrews, J., dissenting).

167 *Strauss*, 482 N.E.2d at 36 ("The essential question here is whether Con Edison owed a duty to plaintiff . . . with whom there was no contractual relationship for lighting in the building's common areas.").

168 See John C.P. Goldberg & Benjamin C. Zipursky, *The Restatement (Third) and the Place of Duty in Negligence Law*, 54 VAND. L. REV. 657, 719 (2001) ("[B]y 1985, privity was quite appropriately undermined as a basis for no-duty arguments in the primary sense, at least for physical injury caused by a defendant's negligence.").

169 *Strauss*, 482 N.E.2d at 36.

170 *Id.* (citations omitted).

171 *Id.*

172 *Id.* at 39 (Meyer, J., dissenting).

173 *Id.* at 38 (majority opinion).

preexisting legal rules would threaten the persistence of tort's command in the "ordinary" case.¹⁷⁴ Whatever the explanation, the Court of Appeals lacked confidence in tort law's generalist ability to domesticate disorder.

The tort reform movement imagines common-law courts as overambitious and out of control. "Every day," one commentator claims, "brings new reports of the ingenuity of American lawyers and the willingness of American courts to entertain virtually any grievance."¹⁷⁵ Critics point to anecdotes in which allegedly minimal harms lead to extravagant verdicts for plaintiffs. Classic "tort tales" include a woman who spilled coffee on herself and sued McDonald's, a man who had a heart attack while mowing his lawn and sued Sears, and a professional psychic who sued her doctor after a CAT scan destroyed her abilities.¹⁷⁶ A liability crisis threatens to furlough the worker, immiserate the consumer, and depress the American "spirit of innovation and enterprise."¹⁷⁷

The example of *Strauss* suggests a countervailing account: the torts process tends to undercompensate massive harms. Confronted by catastrophe, tort jurists beat a hasty retreat, apparently convinced that faithful adherence to principle will lead only to ruin. Such nihilism does not discriminate: even the mighty Con Edison found itself a victim of tort's normative retreat in the wake of the 9/11 disaster. Seeking to recover for damages to its electricity substation which was damaged after the 7 World Trade Center building (7WTC) collapsed, Con Edison alleged that the structure had been negligently designed because applicable safety codes dictated that such buildings should be able to withstand uncontrolled burning without collapse.¹⁷⁸ The appellate panel, however, fixated on the fact that the particular fires at issue on 9/11 had been caused by an unprecedented terrorist attack on the neighboring Twin Towers. Indeed, the court likened the events to "a fire triggered by a nuclear attack on lower Manhattan," clearly implying that ordinary rules of negligence liability would be suspended in such an event.¹⁷⁹ Technically, the court deemed Con Edison's claim deficient for failing "to raise a genuine issue of fact as to whether defendants' negligence was the cause-in-fact of Con Ed's injury."¹⁸⁰ But that reasoning is unpersuasive, as Judge Wesley's short dissent amply demonstrates. What truly drove the majority's decision was a sense that tort law was simply usurped by "the unprecedented etiology

174 This argument typifies the nihilist response to catastrophe. See *supra* notes 52–53 and accompanying text.

175 Theodore B. Olson, *The Social Consequences of Punitive Damages*, in *PERNICIOUS IDEAS AND COSTLY CONSEQUENCES: THE INTELLECTUAL ROOTS OF THE TORT CRISIS* 55, 55 (Nat'l Legal Ctr. for the Pub. Interest ed., 1990).

176 None of these caricatures holds up under closer inspection. See WILLIAM HALTOM & MICHAEL MCCANN, *DISTORTING THE LAW: POLITICS, MEDIA, AND THE LITIGATION CRISIS* 64–68 (2014).

177 HUBER, *supra* note 113, at 14.

178 *Aegis Ins. Servs., Inc. v. 7 World Trade Co.*, 737 F.3d 166, 169 (2d Cir. 2013).

179 *Id.* at 179–80.

180 *Id.* at 179.

and severity of the cataclysm that engulfed lower Manhattan on September 11, 2001.”¹⁸¹

C. *Climate of Fear*

Prior to a nascent wave of suits brought in the wake of the Trump presidential election victory,¹⁸² four major climate change tort lawsuits had been brought in American federal courts.¹⁸³ Since we are especially concerned with disastrous floods, we also note two cases that arose out of the devastation wrought by Hurricane Katrina.¹⁸⁴ Each case was ultimately dismissed on grounds of justiciability, so no court has ever reached the merits of a climate change tort claim in the United States. Others have ably analyzed the merits of these lawsuits. We will focus instead on the methods and motivations of the courts that dismissed them. We will focus, that is, on what Cover called

181 *Id.* at 180.

182 Recent lawsuits in California have asked courts again to confront the questions of climate responsibility raised by prior climate complaints. The counties of Marin and San Mateo and the city of Imperial Beach sued thirty-seven fossil fuel majors in state court on July 17, 2017. *See* Press Release, California Communities Confronting Rising Sea Levels Fight Back (July 17, 2017), <https://www.sheredding.com/wp-content/uploads/2017/07/Media-SLR-release-FINAL-PDF-071717.pdf>. Subsequently, the cities of San Francisco and Oakland filed a similar complaint against a smaller number of defendants. *See* Chris Megerian, *Bay Area Cities Sue Major Oil Companies over Climate Change*, L.A. TIMES (Sept. 20, 2107), <http://www.latimes.com/politics/essential/la-pol-ca-essential-politics-updates-climate-1505933864-htmstory.html>. For several reasons, these various plaintiffs may succeed where others have failed. The complaints present detailed evidence of an alleged conspiracy to cover up the risks of fossil fuel combustion, evidence that was not available to earlier litigants. In addition, the plaintiffs pled only state law claims in an attempt to avoid displacement by the Clean Air Act. *See* Douglas Kysar, *Fossil Fuel Industry's 'Tobacco Moment' Has Arrived*, LAW 360 (July 28, 2017), <http://www.law360.com/environmental/articles/948361/fossil-fuel-industry-s-tobacco-moment-has-arrived>. This strategy will be tested in the coming months. The defendants in the first set of California suits removed the cases to federal court and the plaintiffs' motions to remand are now pending in the Northern District of California. *See* Motion to Remand, Cty. of San Mateo v. Chevron Corp., No. 3:17-cv-4929 (N.D. Cal. Sept. 25, 2017), ECF No. 144; Motion to Remand, City of Imperial Beach v. Chevron Corp., No. 3:17-cv-4934 (N.D. Cal. Sept. 25, 2017), ECF No. 140; Motion to Remand, Cty. of Marin v. Chevron Corp., No. 3:17-cv-4935 (N.D. Cal. Sept. 25, 2017), ECF No. 144.

183 *See generally* *Native Vill. of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863 (N.D. Cal. 2009), *aff'd*, 696 F.3d 849 (9th Cir. 2012); *California v. Gen. Motors Corp.*, No. C06-05755, 2007 WL 2726871 (N.D. Cal. Sept. 17, 2007); *Comer v. Murphy Oil USA*, No. 1:05-CV-436, 2007 WL 6942285 (S.D. Miss. Aug. 30, 2007), *rev'd*, 585 F.3d 855 (5th Cir. 2009), *vacated and reh'g en banc granted*, 598 F.3d 208 (5th Cir. 2010), *appeal dismissed*, 607 F.3d 1049 (5th Cir. 2010) (en banc) (declining to reinstate the panel opinion); *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005), *vacated*, 582 F.3d 309 (2d Cir. 2009), *rev'd sub nom.* *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410 (2011).

184 *See generally* *In re Katrina Canal Breaches Consol. Litig.*, 647 F. Supp. 2d 644 (E.D. La. 2009), *aff'd in part, rev'd in part sub nom.* *In re Katrina Canal Breaches Litig.*, 696 F.3d 436 (5th Cir. 2012); *Barasich v. Columbia Gulf Transmission Co.*, 467 F. Supp. 2d 676 (E.D. La. 2006).

“the hermeneutic of jurisdiction,” the interpretive methods courts use to limit law’s response to violence and catastrophe.¹⁸⁵ Although the precise legal grounds for rejecting climate change claims have varied, the sheer size of climate change disasters always weighs heavily on judges’ minds. Whether through deference, displacement, or deliberate sabotage, anxious courts have found ways to ignore the climate change plaintiff.

Comer provides an especially egregious example of judicial subterfuge and self-limitation. Ned Comer and his coplaintiffs were landowners on the Mississippi coastline. They sued two dozen fossil fuel corporations for compensatory and punitive damages, alleging that the defendants’ emissions of greenhouse gases had “caused a rise in sea levels and added to the ferocity of Hurricane Katrina, which combined to destroy the plaintiffs’ private property.”¹⁸⁶ Although the plaintiffs invoked diversity jurisdiction to reach federal court, all of their claims sounded in Mississippi common law: public and private nuisance, fraud, and civil conspiracy, among others.¹⁸⁷

The district court dismissed all claims for lack of standing without a written opinion.¹⁸⁸ A panel of the Fifth Circuit reversed, finding that the plaintiffs could show standing for private and public nuisance, though not for civil conspiracy.¹⁸⁹ The panel also refused to reject the complaint as a nonjusticiable political question, quoting with approval Chief Justice Marshall’s famous words in *Cohens v. Virginia*: “We have no more right to decline the exercise of jurisdiction which is given, than to usurp that which is not given. The one or the other would be treason to the constitution.”¹⁹⁰ The defendants petitioned for rehearing en banc. The irregularity of what followed merits a full recounting.

Seven of the judges of the Fifth Circuit quickly recused themselves, leaving only nine judges to rule on the petition for rehearing, the bare minimum required to make quorum.¹⁹¹ By a vote of six to three, the remaining judges voted to grant rehearing on February 26, 2010.¹⁹² In accordance with the Fifth Circuit’s local rules, the decision of the panel was automatically vacated.¹⁹³ Only two months later, Judge Jennifer Elrod, one of the nine remaining judges, recused herself from the case due to mysterious “new circumstances.”¹⁹⁴ Having lost its quorum, the eight-member court concluded that “it was powerless to take any action other than to dismiss the appeal,”

185 Cover, *supra* note 18, at 56.

186 Comer, 585 F.3d at 859.

187 See *id.* at 859–60.

188 Comer, 2007 WL 6942285, at *1.

189 Comer, 585 F.3d at 865–68.

190 *Id.* at 872 (quoting *Cohens v. Virginia*, 19 U.S. (6 Wheat.) 264, 404 (1821)).

191 Patrick A. Woods, *Reversal by Recusal? Comer v. Murphy Oil U.S.A., Inc. and the Need for Mandatory Judicial Recusal Statements*, 13 U.N.H. L. REV. 177, 181 (2015).

192 Comer v. Murphy Oil USA, Inc., 607 F.3d 1049, 1055 (5th Cir. 2010) (en banc) (Davis, J., dissenting).

193 Woods, *supra* note 191, at 181–82.

194 Letter to the Parties, Comer v. Murphy Oil USA, Inc., 607 F.3d 1049 (5th Cir. 2010) (No. 07-60756), ECF No. 00511097646.

leaving the adverse district court decision as the final ruling on the merits.¹⁹⁵ The three panel judges, who had voted against en banc review, dissented vigorously.¹⁹⁶

Since judges are not obliged to explain their recusal decisions, we may never know why *Comer* met this ignominious end. The peculiar procedural path raised suspicions of a deliberate dodge¹⁹⁷ or even political corruption.¹⁹⁸ But we need not endorse such speculation. For our purposes, *Comer* exemplifies in stark fashion the nihilistic reading of catastrophe. The Fifth Circuit stepped well outside the bounds not just of tort law but of transsubstantive civil procedure in order to avoid the merits of the complaint. Though the chasm between legal principle and authoritative action yawns particularly wide in *Comer*, we will see that such evasiveness has characterized most judicial responses to climate change torts.

Perhaps the most influential climate change tort case to date is *American Electric Power*. In that case, eight states and the City of New York sued five large private utilities, along with the Tennessee Valley Authority, alleging state and federal common law nuisances.¹⁹⁹ *American Electric Power* has garnered much attention for the ultimate holding of the Supreme Court, which ruled unanimously that the Clean Air Act displaces any federal common law tort claims and, indeed, that the Act would displace federal tort claims even if the Environmental Protection Agency declined to wield its regulatory authority to address greenhouse gas emissions (let alone the specific harms alleged by plaintiffs).²⁰⁰

195 Woods, *supra* note 191, at 183–84.

196 See *Comer*, 607 F.3d at 1056 (Dennis, J., dissenting) (describing the majority opinion as “shockingly unwarranted” and “manifestly contrary to law and Supreme Court precedents”).

197 See, e.g., Jonathan R. Nash, *5th Circuit’s Shameful Disappearing Act*, NAT’L L.J. (July 12, 2010), <http://www.nationallawjournal.com/id=1202463364698>; Steven M. Taber, *Fifth Circuit Punts on Comer v. Murphy Oil Appeal—Dismisses Appeal on Procedural Grounds, Not Merits*, ENVTL. L. & CLIMATE CHANGE L. BLOG (June 4, 2010), <https://taberlaw.wordpress.com/2010/06/04/fifth-circuit-punts-on-comer-v-murphy-oil-appeal-dismisses-appeal-on-procedural-grounds-not-merits/>.

198 In particular, various commentators pointed to the judges’ financial interests in the oil industry. See, e.g., Nan Aron, *The Corporate Courts: Fifth Circuit Judges Are Marinating in Oil*, HUFFINGTON POST (July 7, 2010, 5:37 PM), http://www.huffingtonpost.com/nan-aron/the-corporate-courts-fift_b_638591.html; Cara Horowitz, *Comer Craziness: Appellate Nuisance Victory Overturned, Despite Lack of Quorum (!)*, LEGAL PLANET (May 28, 2010), <http://legal-planet.org/2010/05/28/comer-craziness-appellate-nuisance-victory-overturned-despite-lack-of-quorum>; *Judicial Gusher: The Fifth Circuit’s Ties to Oil*, ALLIANCE FOR JUST. (Apr. 2014), http://www.afj.org/wp-content/uploads/2014/04/fifth_circuit_judges_report.pdf.

199 *Connecticut v. Am. Elec. Power Co.*, *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265, 267 (S.D.N.Y. 2005), *vacated*, 582 F.3d 309 (2d Cir. 2009), *rev’d sub nom.* *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410 (2011).

200 See *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 425 (2011) (“The Act itself thus provides a means to seek limits on emissions of carbon dioxide from domestic powerplants—the same relief the plaintiffs seek by invoking federal common law. We see no room for a parallel track.”). The Court’s reference to “parallel track[s]” represents a con-

Sweeping as that holding may be, the opinion of the district court better illustrates the jurisdictional anxieties provoked by climate change litigation. The district court did not even consider the displacement issue; instead, it threw out the case as presenting a nonjusticiable political question. Formally, the district judge grounded the analysis in a six-part test articulated by *Vieth v. Jubelirer*, concluding that merits adjudication would be an “impossibility” without making “an initial policy determination of a kind clearly for non-judicial discretion.”²⁰¹ But a stray remark in this section of the opinion betrays the concern that drove the district court’s reasoning: “The scope and magnitude of the relief Plaintiffs seek reveals the transcendently legislative nature of this litigation.”²⁰² From a purely legal standpoint, of course, speculation about the form and extent of remedy at this stage is largely irrelevant. But the threat of injunctive relief often casts a pall over environmental tort claims.²⁰³ Just as in *Strauss*, the district court in *American Electric Power* seems to have been awed and cowed by the lawsuit’s *bigness*.

A panel of the Second Circuit reversed, again citing *Cohens* for the judge’s duty to decide: “The fact that a case may present complex issues is not a reason for federal courts to shy away from adjudication; when a court is possessed of jurisdiction, it generally must exercise it.”²⁰⁴ In light of this debate below, the Supreme Court’s ultimate holding seems partly a reflection of that Court’s aversion to tort law, and partly a belief about comparative institutional competence and deference to agency expertise.²⁰⁵ Nevertheless, the Supreme Court’s ruling had the same practical effect as any other dismissal on justiciability grounds. The plaintiffs were left stranded, without even a substantive response to their normative claims.

In 2007, while *American Electric Power* was still pending in the Second Circuit, the State of California brought a separate action against various automakers for monetary damages stemming from the defendants’ contribu-

flation of tort law with regulation, failing to acknowledge tort’s norm-articulation and compensatory functions, let alone the manner in which tort law can serve as an important source of regulatory redundancy and inter-branch signaling in light of predictable government failure. See *infra* text accompanying notes 219–20.

201 *Am. Elec. Power*, 406 F. Supp. 2d at 272 (quoting *Vieth v. Jubelirer*, 541 U.S. 267, 278 (2004) (plurality opinion)).

202 *Id.*

203 See Kysar, *supra* note 138, at 26–27.

204 *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 329 (2d Cir. 2009) (citing *Cohens v. Virginia*, 19 U.S. (6 Wheat.) 264, 404 (1821)), *rev’d sub nom. Am. Elec. Power*, 564 U.S. 410. For all his ambivalence about judicial action, Cover probably would have endorsed this embrace of judicial responsibility. “The courts,” he wrote, “cannot avoid responsibility for applying or refusing to apply power to fulfill a redemptionist vision.” Cover, *supra* note 18, at 60.

205 See Klass, *supra* note 143, at 1565 (arguing that the Supreme Court views tort as a mere “arm of the public regulatory state”). The liberal Justices may also have been motivated by a desire to consolidate the holding of *Massachusetts v. EPA*, 549 U.S. 497 (2007), which established that the Environmental Protection Agency (EPA) could regulate greenhouse gases under the Clean Air Act.

tions to global warming.²⁰⁶ Citing the district court's ruling in *American Electric Power*, the district judge in California's suit likewise dismissed the claims as posing nonjusticiable political questions.²⁰⁷ And again, the sheer size and complexity of the harms haunted the court. As compared to other trans-boundary nuisance lawsuits, the court argued, "[p]laintiff's global warming nuisance tort claim seeks to impose damages on a much larger and unprecedented scale."²⁰⁸ After all, "there are multiple worldwide sources of atmospheric warming across myriad industries and multiple countries."²⁰⁹ California ultimately decided not to pursue an appeal, citing political progress on federal fuel efficiency standards.²¹⁰ The district court opinion thus stands as another chapter in tort's retreat before climate change.

A separate category of climate litigants does not plead climate-change causes of action but nevertheless seeks redress of climate-related harms. This description sweeps broadly, and we will make no effort at a comprehensive survey here.²¹¹ Instead, we focus on two particular cases that arose from flood damages after Hurricanes Katrina and Rita. In *Barasich*, a putative class of residents of southern Louisiana sought damages for personal injury and property loss exacerbated by oil drilling and pipeline construction.²¹² The complaint alleged that the defendant corporations had destroyed millions of acres of marshland through their dredging and drilling operations, thus decimating a crucial protective barrier against storm surge.²¹³ The plaintiffs in *Barasich* had no need to link the hurricanes' ferocity to climate change itself; rather, they relied on the direct conduct of the defendants and on Louisiana's capacious negligence standard: "Every act whatever of man that causes damage to another obliges him by whose fault it happened to repair it."²¹⁴

Despite these favorable signs, the district judge granted the defendants' motion to dismiss. Notably, the court rejected the notion that the case presented a nonjusticiable political question, explicitly refuting the defendants' analogy to *American Electric Power*.²¹⁵ Nevertheless, the court held that the plaintiffs failed to state a claim of either trespass or negligence under

206 See *California v. Gen. Motors Corp.*, No. C06-05755, 2007 WL 2726871, at *2 (N.D. Cal. Sept. 17, 2007).

207 *Id.* at *8 ("Just as in *AEP*, the adjudication of Plaintiff's claim would require . . . the type of initial policy determination to be made by the political branches, and not this Court." (citation omitted)).

208 *Id.* at *15.

209 *Id.*

210 See Unopposed Motion to Dismiss Appeal at 2–3, *California v. Gen. Motors Corp.*, 2009 WL 1915707, at *2–3 (9th Cir. June 19, 2009) (No. 07-16908).

211 For a systematic analysis of the various forms of climate change litigation, see David Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 FLA. L. REV. 15 (2012).

212 See *Barasich v. Columbia Gulf Transmission Co.*, 467 F. Supp. 2d 676, 678 (E.D. La. 2006).

213 See *id.* at 679.

214 LA. CIV. CODE ANN. art. 2315 (2010).

215 *Barasich*, 467 F. Supp. 2d at 685–86.

Louisiana law.²¹⁶ The court proffered multiple reasons for its decision, but its concerns centered on issues of proximity and causation. First, it narrowly construed the principle that trespass liability lies among “neighbor[s].”²¹⁷ Then, in fixing the orbit of duty for purposes of negligence, the court emphasized that the defendants “were physically and proximately remote from plaintiffs or their property.”²¹⁸ Finally, the court expressed doubt about actual causation where a large class of defendants had jointly caused the plaintiffs’ harms.²¹⁹

Although these findings went to the merits of the lawsuit in a technical sense, the court in *Barasich* was motivated by concerns of scope and size similar to those we saw in *Strauss* and *American Electric Power*. In a revealing conclusion, the court accepted the plaintiffs’ basic premise but recoiled from the suit’s spatial and temporal complexity: “By all accounts, coastal erosion is a serious problem in south Louisiana. . . . [P]erhaps a more focused, less ambitious lawsuit between parties who are proximate in time and space, with a less attenuated connection between the defendant’s conduct and the plaintiff’s loss, would be the way to test their theory.”²²⁰ The lawsuit failed not because it contravened traditional tort principles but because it took those principles to their logical (and ethical) conclusion. The plaintiffs reached a point where “the weight of the case moved it from the domain of tort to politics, from adjudication to regulation,” where the scale of harm overwhelmed the perceived capabilities of the common law.²²¹

Another sprawling class of post-Katrina litigation centered on the now notorious Mississippi River-Gulf Outlet canal, commonly known as MR-GO. A wide array of plaintiffs sued the Army Corps of Engineers for negligently constructing and maintaining the navigation canal, which “greatly aggravated the storm’s effects on the city and its environs.”²²² As one might expect, the case turned not on a full assessment of the Corps’s acts and failures but on the narrower question of sovereign immunity. The Flood Control Act of 1928 had immunized the federal government from liability for most flood damages in order to promote levee construction.²²³ Despite initial success in federal district court, the lawsuits foundered in the Fifth Circuit. That court held that, although the Flood Control Act did not bar recovery, the Corps was separately immunized by the discretionary-function exception to the Federal Tort Claims Act.²²⁴

216 *Id.* at 695.

217 *Id.* at 690.

218 *Id.* at 693.

219 *See id.* at 694.

220 *Id.* at 695.

221 Kysar, *supra* note 138, at 53.

222 *In re Katrina Canal Breaches Litig.*, 696 F.3d 436, 441 (5th Cir. 2012).

223 *See* 33 U.S.C. § 702c (2012); *see also* A. Dan Tarlock, *United States Flood Control Policy: The Incomplete Transition from the Illusion of Total Protection to Risk Management*, 23 DUKE ENVTL. L. & POL’Y F. 151, 160 & n.50 (2012) (explaining how sovereign immunity fostered “structural defense through dams and levees”).

224 *Katrina Canal Breaches Litig.*, 696 F.3d at 448–52; *see also* 28 U.S.C. § 2680(a) (2012).

The final disposition of the MR-GO litigation is inarticulate, resting on an arbitrary classification of actions as discretionary or nondiscretionary. Its full meaning becomes clearer when juxtaposed with the Corps's crucial role in the hydrogeology of modern Louisiana. As Dan Tarlock and others have recounted, the current system of massive, federally funded fortifications began as a congressional response to the devastating floods of April 1927.²²⁵ Indeed, as noted above, the Mississippi would no longer even flow through New Orleans but for the Corps's Herculean efforts to control the course of a river that once migrated across hundreds of miles like a gushing, unattended hose.²²⁶ Meanwhile, having bolted the Mississippi in place, the Corps built New Orleans's defenses to protect against a "standard project hurricane" that severely understated the actual risk facing the city.²²⁷ Yet, from the perspective of tort law and the sovereign's overriding power to deny its own agency and responsibility, this history created no binding duty. In a remarkable conclusion to its opinion, the district court in the MR-GO litigation described a "heart-wrenching" story of "egregious myopia" and "bureaucratic inefficiency" that ended in the plaintiffs' harms.²²⁸ Nevertheless, the judge lamented, "[i]t is not within this Court's power to address the wrongs committed."²²⁹

The limitations of tort litigation have thwarted even the most sympathetic of climate change plaintiffs. The most poignant defeat came in the case of *Native Village of Kivalina*. In that case, an Alaskan Inupiat village of about 400 residents sued twenty-four large energy corporations, seeking relocation costs for their village which is threatened by rising seas, reduced sea ice, and permafrost thawing.²³⁰ Of all the first wave American climate tort suits, *Kivalina* was the best pled. In addition to sympathetic plaintiffs, the case rested on a traditional cause of action—the exclusive use and enjoyment of property—and sought only modest damages, at least as compared to the defendants' profits.²³¹ Nevertheless, the district court dismissed the federal common law nuisance claims on justiciability grounds. Specifically, the court found that the plaintiffs lacked Article III standing, focusing on the extended causal link between the defendants' conduct and the plaintiffs' injuries.²³² To apply such public law notions of standing to a private law tort case is strange. The elements of standing doctrine—*injury-in-fact*, causation, redres-

225 See Tarlock, *supra* note 223, at 159–60.

226 See *supra* text accompanying notes 92–100.

227 For a detailed discussion of the flaws in the standard project hurricane, see KYSAR, *supra* note 66, at 75–88.

228 *In re Katrina Canal Breaches Consol. Litig.*, 533 F. Supp. 2d 615, 643 (E.D. La. 2008).

229 *Id.*

230 Complaint ¶¶ 1–4, *Native Vill. of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863 (N.D. Cal. 2009) (No. cv-08-1138) [hereinafter *Kivalina* Complaint].

231 The villagers sought the cost of relocation, which the Army Corps of Engineers estimated at \$95–400 million. *Id.* ¶ 1. For further discussion of the strengths of the *Kivalina* complaint, see Kysar, *supra* note 138, at 27–29.

232 See *Kivalina*, 663 F. Supp. 2d at 880–81.

sability—were in fact inspired by the very elements of tort law that ensure a plaintiff's grievance bears an adequately particularized relationship to a defendant's wrongdoing. Thus, rather than conduct a Potemkin version of the case through cramped standing analysis, the *Kivalina* court should have directly addressed the merits of the plaintiffs' claim.

Perhaps the *Kivalina* complaint is more notable for a claim that the district court specifically declined to address: state law civil conspiracy. The plaintiffs in *Kivalina* argued that the defendants had engaged in a "campaign to deceive the public about the science of global warming," aggravating the nuisance suffered by the village.²³³ The fossil fuel industry, the complaint alleged, had deliberately propped up front groups to spread misinformation and distort public opinion on the issue of climate change, thereby preventing legislative and regulatory responses.²³⁴ In effect, the plaintiffs asked the court to find that the political branches had been duped, that the defendants' actions had compromised democracy itself. Unsurprisingly, the court did not reach this question. With almost audible relief, the district court declined to extend supplemental jurisdiction to the state law claims.²³⁵ On appeal, subsequent to the Supreme Court's decision in *American Electric Power*, the Ninth Circuit dismissed the remaining claims as displaced by federal statute.²³⁶

Thus the Inupiat villagers, like many climate change plaintiffs before them, were left to cope as best they could, outside the reach of tort law's norm-generating and compensatory functions. Denying its own expansive power, the common law once again cowered before catastrophe. To be clear, we labor under no illusions about climate change plaintiffs' chances of success should they ever reach the merits of a tort claim.²³⁷ But, merely by refusing to decide and offer principled reasons on the merits of these cases, courts surrender crucial normative territory in law's confrontation with catastrophe.

III. SEEKING HIGHER GROUND

Thus far we have mostly discussed what lies beyond law: the plaintiff ignored, the rule suspended, the *nomos* overthrown. In Part I, we defined catastrophe as the disruption of an established normative order. Climate change threatens to routinize catastrophe and bring about either a "permanent revolution" or a "permanent state of exception," an unending series of breaks with past legal forms.²³⁸ Extreme as this portrayal may sound, we saw in Part II that judges have gone to extraordinary lengths to avoid jurisdiction over climate change suits. Although tort law could accommodate catastrophe, many courts have preferred to respond with nihilism.

233 *Kivalina* Complaint, *supra* note 230, ¶¶ 272–73.

234 *Id.* ¶¶ 189–248.

235 *Kivalina*, 663 F. Supp. 2d at 882–83.

236 *Native Vill. of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 858 (9th Cir. 2012).

237 *See Kysar*, *supra* note 138, at 9–10.

238 Battistoni, *supra* note 17, at 179–80.

A handful of recent cases have interrupted this trend. Judges in the Netherlands²³⁹ and Pakistan²⁴⁰ delivered the first significant victories to climate change plaintiffs. The Netherlands decision invoked tort-like principles of duty and negligence on the part of the national government, while the Pakistan case turned on questions of constitutional and administrative law. In the United States, meanwhile, an activist group called Our Children's Trust has begun filing lawsuits in multiple jurisdictions in an effort to expand the public trust doctrine to encompass atmospheric greenhouse gas emissions. To date, the group has achieved two notable victories. In Washington State, a trial judge ordered the state Department of Ecology to promulgate a new greenhouse gas emissions rule by the end of 2016.²⁴¹ In Oregon, a federal district judge has denied the government's motion to dismiss in a lawsuit alleging that federal inaction on climate change violates the plaintiffs' Fifth Amendment rights.²⁴² A trial—the “trial of the century”²⁴³—could take place in 2018.

The ultimate consequence of these litigation victories remains highly uncertain. Three of the cases have not yet reached final disposition, and their full effect will depend on political as well as judicial action. Nevertheless, they demonstrate the more dynamic, adaptive, and restless forms of jurisdictional assertion required in an age of unlimited harm. In these cases, judges knew well that they declined to avail themselves of myriad maneuvers that would have, at least superficially, justified avoiding the claims. Instead, they chose to confront the merits head on in an effort to reclaim threatened normative ground—in an “outlandish attempt[] to do more with a court [than] perhaps we would think might plausibly be done.”²⁴⁴ *Strauss*, *Comer*, and *Kivalina* are tales from lands lost to sea, where law has been abandoned. *Urgenda*, *Leghari*, and *Juliana*, in contrast, are tales from higher ground. They recount jurisdictional struggles that define the boundary between legal order and catastrophic overturning.

239 See Rb. Den Haag 24 juni 2015, ECLI:NL:RBDHA:2015:7196 (Urgenda Foundation/Netherlands) (Neth.) [hereinafter *Urgenda* Decision], <http://deeplink.rechtspraak.nl/uitspraak?id=ECLI:NL:RBDHA:2015:7196>.

240 Leghari v. Fed'n of Pakistan, (2015) W.P. No. 25501 (HC Lahore) (Pak.) [hereinafter *Leghari* Decision], https://elaw.org/system/files/pk.leghari.090415_0.pdf.

241 See Order on Petitioners' Motion for Relief Under CR 60(b) at 3, *Foster v. Wash. State Dep't of Ecology*, 362 P.3d 959 (Wash. 2015) (en banc) [hereinafter *Foster* Order], http://static1.squarespace.com/static/571d109b04426270152febe0/t/57607f4901dbaec634f08166/1465941834691/16.05.16.Order_.pdf.

242 *Juliana v. United States*, 217 F. Supp. 3d 1224, 1261–63 (D. Or. 2016).

243 Chelsea Harvey, *Trump Could Face the 'Biggest Trial of the Century'—Over Climate Change*, WASH. POST (Dec. 1, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/12/01/trump-could-face-the-biggest-trial-of-the-century-over-climate-change/?utm_term=.11dd428779d0.

244 Robert M. Cover, *The Folktales of Justice: Tales of Jurisdiction*, 14 CAP. U. L. REV. 179, 191 (1985).

A. *Doctrinal Evolution in Urgenda*

If a trend eventually does emerge of judicial leadership in the articulation of climate change norms, the trend's source will be traced to a three-judge panel of the Hague District Court which, in 2015, offered a wellspring of inspiration. The Urgenda Foundation, a not-for-profit organization that undertakes research and advocacy related to climate change, sued the Dutch government on behalf of itself and 886 individuals.²⁴⁵ The summons, filed on November 20, 2013, challenged the "unjustifiable negligence of the Dutch State in not adopting the necessary and proportionate level of ambition in its climate policy."²⁴⁶ Urgenda demanded a declaration that "the Dutch State is acting unlawfully towards plaintiffs" and an order that the Netherlands reduce its greenhouse gas emissions by at least twenty-five percent by 2020 as compared to 1990 levels.²⁴⁷

In its lengthy opinion, the court summarized volumes of climate change science and recounted the uneven history of international climate negotiations. Relying on findings of the Intergovernmental Panel on Climate Change (IPCC), the court announced that carbon dioxide concentrations must stabilize below 450 parts per million "to prevent dangerous climate change."²⁴⁸ The court concluded that "the State . . . has acted negligently and therefore unlawfully towards Urgenda by starting from a reduction target for 2020 of less than 25% compared to the year 1990."²⁴⁹ It ordered the government "to limit the joint volume of Dutch annual greenhouse gas emissions, or have them limited."²⁵⁰

The opinion largely eschewed high rhetoric. Marshaling a plethora of scientific and legal authorities, the court sought to project continuity, not creativity. Nevertheless, catastrophe lurked in the background. The complaint warned that action was "necessary and urgent to prevent dangerous climate change that will have catastrophic consequences for the lives of millions of people."²⁵¹ The court's decision adopted a similar tone when describing scientific findings: "Well before the 1990s, there was a growing realisation among scientists that human caused (anthropogenic) greenhouse gas emissions possibly led to a global temperature rise, and that this could have catastrophic consequences for man and the environment."²⁵² In the face of these "catastrophic consequences," the Dutch judges rejected the

245 Arthur Nelsen, *Dutch Government Ordered to Cut Carbon Emissions in Landmark Ruling*, GUARDIAN (June 24, 2015), <https://www.theguardian.com/environment/2015/jun/24/dutch-government-ordered-cut-carbon-emissions-landmark-ruling>.

246 Summons ¶ 32, HR 20 november 2013 (Urgenda Foundation/Netherlands) [hereinafter *Urgenda* Summons], <http://www.urgenda.nl/documents/FINAL-DRAFT-Translation-Summons-in-case-Urgenda-v-Dutch-State-v.25.06.10.pdf>.

247 *Id.* at 121.

248 *Urgenda* Decision, *supra* note 239, ¶ 4.31.

249 *Id.* ¶ 4.93.

250 *Id.* ¶ 5.1.

251 *Urgenda* Summons, *supra* note 246, ¶ 420.

252 *Urgenda* Decision, *supra* note 239, ¶ 4.11.

nihilism that has typified the response of American courts. Instead, they appeared closer to Meyer's judges who deny catastrophe, "reframing it as injustice, expanding the bounds and jurisdiction of law."²⁵³

The decision has elicited praise and enthusiasm from environmental lawyers and activists alike.²⁵⁴ For the most part, we share that enthusiasm. The Dutch court undertook the sort of bold action appropriate to an era of climate change. Moreover, significant portions of the opinion provide an analysis of negligence liability legible to any student of the American torts process. Urgenda's summons made claims of both transboundary nuisance and unlawful endangerment.²⁵⁵ Under Dutch common law, "endangerment" is a close analogue of negligence in the American context. The leading case, titled *Kelderwijk* or *Cellar Hatch*, describes a risk-utility framework remarkably similar to the Hand formula.²⁵⁶ Public nuisance, meanwhile, has much the same flavor as in the United States: the *Kalimijnen* or *Potash Mines* case involved upstream industrial pollution on the Rhine River.²⁵⁷ The *Urgenda* court combined its analysis of the two claims.²⁵⁸ The resulting opinion proceeds in textbook fashion through the classic elements of a tort claim: duty, breach, causation, and harm.

In earlier work, one of us has discussed the inadequacies of traditional tort doctrine to accommodate the climate change plaintiff: "At each stage of the traditional tort analysis—duty, breach, causation, and harm—the climate change plaintiff finds herself bumping up against doctrines that are premised on a classical liberal worldview in which threats such as global climate change simply do not register."²⁵⁹ In the paradigmatic tort claim, a single defendant has injured a single plaintiff. Because the injury was immediately foreseeable, the defendant breached a clear duty. Finally, the defendant's actions were both a necessary and a sufficient cause of the observable physical harm to the plaintiff. Climate change—a vast global problem described by probabilistic scientific models—strains against these requirements at every turn.

253 Meyer, *supra* note 19, at 21.

254 See, e.g., Quirin Schiermeier, *Landmark Court Ruling Tells Dutch Government To Do More on Climate Change*, NATURE (June 24, 2015), <http://www.nature.com/news/landmark-court-ruling-tells-dutch-government-to-do-more-on-climate-change-1.17841>; Ari Shapiro, *The Dutch Ruling on Climate Change that Could Have a Global Impact*, NPR (June 25, 2015), <http://www.npr.org/2015/06/25/417349227/the-dutch-ruling-on-climate-change-that-could-have-a-global-impact>.

255 See *Urgenda* Summons, *supra* note 246, ¶¶ 261, 265.

256 See generally Gerrit Van Maanen et al., *The Dutch 'Cellar Hatch' Judgment as a Landmark Case for Tort Law in Europe: A Brief Comparison with English, French and German Law with a Law and Economics Flavour*, 5 EUR. REV. PRIV. L. 871 (2008).

257 See Suryapratim Roy & Edwin Woerdman, *Situating Urgenda v the Netherlands Within Comparative Climate Change Litigation*, 34 J. ENERGY & NAT. RESOURCES L. 165, 171 (2016).

258 *Urgenda* Decision, *supra* note 239, ¶ 4.51.

259 Kysar, *supra* note 138, at 9–10.

The earlier work also posits that the massive harms inflicted by climate change could still result in “significant secondary effects for the common law.”²⁶⁰ If courts begin to adjudicate the merits of climate change lawsuits, they might find that “the effort to fit the mother of all collective action problems into the traditional paradigm of tort reveals much about how that paradigm more generally needs to shift.”²⁶¹ One story of tort law in the twentieth century is a gradual evolution toward systemic thinking: broad, communitarian duties of care; statistical understandings of risk rather than direct notions of causation; apportionment of damages across multiple defendants and plaintiffs; recognition of anticipated but unrealized harms. A successful climate change lawsuit in the United States would require all of these trends to culminate within a single case—a tall order indeed. But the actual adjudication of climate change lawsuits could move courts toward these doctrines in “more garden variety environmental and toxic tort suits.”²⁶² The *Urgenda* decision offers an opportunity to contemplate these doctrinal predictions in the dramatic context of articulating a nation’s constitutional tort-like duties of care to its own present and future populations.

1. Duty and Breach

The central challenge for a court that seeks to define a duty of care for the climate lies in the remote and attenuated effects of greenhouse gas emissions: “[C]limate change is so radically diffuse in origin that it is difficult to identify any actors who stand out as peculiarly responsible for it.”²⁶³ Since the activities of no one person, entity, or even nation can influence global change, the argument goes, no one can be held responsible for the combined effect: “[I]t is not negligent to fail to contribute to a public good if not enough others are doing similarly, so that the public good would not be created even if one did contribute.”²⁶⁴

This argument, which we dub the “consequentialist alibi,” starts to disintegrate under catastrophe’s centrifugal pull. The moral intuition of the “consequentialist alibi” relies on a conventional, linear understanding of risk: if I generated only one-trillionth of the world’s carbon emissions, I bear only one-trillionth of the responsibility for climate change. But the threat of “tipping points” and sudden, nonlinear consequences creates at least an imaginable possibility that “[a single individual’s] contribution was *the one* that pushed the planet over the edge.”²⁶⁵ Since the probability of such an event is unknowable, and its consequences irreversible,²⁶⁶ no approach other than

260 *Id.* at 47.

261 *Id.* at 44.

262 *Id.* at 71.

263 *Id.* at 18.

264 Eric A. Posner & Cass R. Sunstein, *Global Warming and Social Justice*, REGULATION, Spring 2008, at 19, <https://object.cato.org/sites/cato.org/files/serials/files/regulation/2008/2/v31n1-3.pdf>.

265 Kysar, *supra* note 138, at 51.

266 *See supra* notes 73–78 and accompanying text.

precaution seems to respect the rights and interest of future generations. Complex systems, in other words, defy the “presentist and individualistic orientation of classical liberalism.”²⁶⁷ They demand moral attention to issues that the proponents of risk-utility analysis would discount: precaution, distribution, and intergenerational justice.²⁶⁸

The *Urgenda* decision gave all three their due. The opinion states unequivocally that “the most serious consequences of climate change have to be prevented.”²⁶⁹ In determining the scope of the duty of care, the judges affirmed that “the policy should not only start from what is most beneficial to the current generation at this moment, but also what this means for future generations.”²⁷⁰ In addition, the court called for “the prevention or limitation of the negative consequences of climate change, regardless of a certain level of scientific uncertainty.”²⁷¹ These premises inflected the court’s risk-utility analysis. The Dutch court did enumerate the *Carroll Towing* factors: “the chance that hazardous climate change will occur” (P), “the nature and extent of the damage ensuing from climate change” (L), and “the onerousness of taking precautionary measures” (B).²⁷² But, in analyzing potential losses, the court did not engage with the various studies that have attempted to assign a specific value to the economic costs of climate change.²⁷³ The opinion instead described the “serious consequences” of climate change in qualitative terms and concluded that “mitigation of greenhouse gas emissions in the short and long term is the only effective way to avert the danger of climate change.”²⁷⁴

267 Kysar, *supra* note 138, at 52.

268 Cf. Jonathan B. Wiener, *Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems*, 13 DUKE J. COMP. & INT’L L. 207, 213 (2003) (describing—but criticizing—the “conventional wisdom” that European regulators tend generally to favor precautionary approaches). Even Richard Posner and Cass Sunstein, in their respective treatments of catastrophe, seek to carve out exceptions from standard cost-benefit analysis for uncertain risks of catastrophic harms. See POSNER, *supra* note 10, at 148 (defending a “modest version of the precautionary principle”); CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE 114–15 (2005) (defining the “Anti-Catastrophe Principle”). Their response, though, is to mechanically incorporate risk aversion premiums and other numerical adjustments that allow cost-benefit analysis to otherwise operate as usual. See, e.g., Cass R. Sunstein, *Valuing Life: A Plea for Disaggregation*, 54 DUKE L.J. 385, 433 (2004) (proposing the use of an “extermination premium” to weigh more heavily outcomes in which an entire population dies, as opposed to simply summing the value of all the individual lives comprising a population).

269 *Urgenda* Decision, *supra* note 239, ¶ 4.71.

270 *Id.* ¶ 4.57.

271 *Id.* ¶ 4.58.

272 *Id.* ¶ 4.63(i), (iii), (v).

273 For an overview and critique of these studies, see Jonathan S. Masur & Eric A. Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CALIF. L. REV. 1557, 1577–96 (2011). In particular, Masur and Posner argue that several of the most prominent economic analyses “may be underestimating the probability of catastrophic events by significant margins.” *Id.* at 1580–81 & n.102.

274 *Urgenda* Decision, *supra* note 239, ¶ 4.71.

The Dutch court seemed to rely on international law as part of its negligence analysis: “[O]bjectives and principles, such as those laid down in the UN Climate Change Convention and the [Treaty on the Functioning of the European Union], should also be considered in determining the scope for policymaking and duty of care.”²⁷⁵ The opinion stressed that “the State has known since 1992, and certainly since 2007, about global warming and the associated risks,” citing the dates of the U.N. Framework Convention and the Bali Conference.²⁷⁶ These references, which recur in other passages of the opinion, suggest that the judges tacitly inflected their negligence analysis with international-law norms and understandings.²⁷⁷

Within the confines of tort law, however, the international agreements provide evidence that the harms of climate change are foreseeable. Foreseeability plays a central role in defining the duty of care, although that role remains contested. In the canonical tale, the dueling opinions in *Palsgraf v. Long Island Railroad Co.*²⁷⁸ represent two contrasting viewpoints on an inescapably vague aspect of tort. Judge Cardozo favors a formalist relational duty, defined by the “eye of ordinary vigilance,”²⁷⁹ while Judge Andrews defends a broad, communal duty, limited by practical considerations of proximate cause.²⁸⁰ Both approaches tend to converge on a common core question, however: “[B]y the exercise of prudent foresight; could the result be foreseen?”²⁸¹

As a result, the era of chaos, catastrophe, and climate change puts both approaches under strain: “[T]wenty-first century problems are likely to be ones characterized by predictable unforeseeability.”²⁸² If greater understanding does not yield increased predictive power, how can a standard of care tied to foreseeability protect the public from harm? In the products liability context, a handful of courts have held manufacturers liable whether or not they could have known of a defect at the time of manufacture.²⁸³ This “constructive knowledge” approach does away with a strict foreseeability requirement and imposes “more dynamic duties of humility, caution, and investigation.”²⁸⁴ The *Urgenda* court, for all its discussion of international climate change commitments, hinted that it favored this broad duty. In distinguishing the earlier *Cellar Hatch* ruling, which adopted a more conventional duty analysis, the court stated: “This case is different in that the central

275 *Id.* ¶ 4.55.

276 *Id.* ¶ 4.65.

277 See *infra* notes 310–11 and accompanying text; see also Tracy Bach, *Human Rights in a Climate Changed World: The Impact of Cop21, Nationally Determined Contributions, and National Courts*, 40 VT. L. REV. 561, 583 (2016) (“When ruling for *Urgenda*, the trial court relied on the intersection of international human rights and domestic tort law.”).

278 162 N.E. 99 (N.Y. 1928).

279 *Id.* at 99.

280 *Id.* at 101–105 (Andrews, J., dissenting).

281 *Id.* at 104.

282 Kysar, *supra* note 138, at 56–57.

283 David G. Owen, *Bending Nature, Bending Law*, 62 FLA. L. REV. 569, 601 n.174 (2010).

284 Kysar, *supra* note 138, at 58.

focus is on dealing with a hazardous global development, of which it is uncertain when, where and to what extent exactly this hazard will materialise.”²⁸⁵ In the face of such uncertainty, the Dutch court chose not to constrain duty, but radically to expand it.

But it does not suffice to demonstrate that a duty exists. A climate change plaintiff must also show that the defendant, by its action or inaction, has breached that duty. Here again, the court must choose between a corrective, relational analysis and more open-ended balancing test: “Nuisance law generally . . . has long oscillated between a ‘trespass’ mode of analysis and a ‘cost-benefit’ mode of analysis.”²⁸⁶ Climate change plaintiffs stand a better chance if they can convince the court to “focus on the severity of the alleged harm, rather than on a welfarist assessment of whether the defendant’s activity is socially desirable on net.”²⁸⁷ This distinction, which classically delineates the boundary between trespass and nuisance,²⁸⁸ parallels in some respects the boundary between strict liability and negligence. The negligence standard assigns liability only if the individual defendant’s actions were unreasonable. Strict liability preempts this judgment with a general finding as to the “abnormally dangerous” nature of the activity.²⁸⁹

For a student of law and economics, strict liability is justified where an activity’s externalized costs exceed its externalized benefits.²⁹⁰ But American courts have traditionally assumed that industrial activities realize net external benefits and have accordingly rejected broad imposition of strict liability.²⁹¹ Likewise, in trespass and nuisance litigation, courts have found ways to avoid granting injunctive relief against industries of great economic importance. Even where a court adopts a strict version of nuisance liability, it can import social welfare analysis at the remedy stage and decline to issue an injunction.²⁹²

The *Urgenda* decision departed from these patterns. First, the Dutch court stated that “there is no serious obstacle from a cost consideration point

285 *Urgenda* Decision, *supra* note 239, ¶ 4.54.

286 Thomas W. Merrill, *Global Warming as a Public Nuisance*, 30 COLUM. J. ENVTL. L. 293, 329 (2005).

287 Kysar, *supra* note 138, at 25.

288 See Thomas W. Merrill, *Trespass, Nuisance, and the Costs of Determining Property Rights*, 14 J. LEGAL STUD. 13, 13 (1985).

289 See RESTATEMENT (SECOND) OF TORTS § 519 (AM. LAW INST. 1977).

290 See Keith N. Hylton, *The Economic Theory of Nuisance Law and Implications for Environmental Regulation*, 58 CASE W. RES. L. REV. 673, 683 (2008).

291 Cf. HOLMES, *supra* note 117, at 95 (“A man need not, it is true, do this or that act,—the term *act* implies a choice,—but he must act somehow. Furthermore, *the public generally profits by individual activity*. As action cannot be avoided, and tends to the public good, there is obviously no policy in throwing the hazard of what is at once desirable and inevitable upon the actor.” (emphasis added)).

292 See, e.g., *Davis v. Georgia-Pacific Corp.*, 445 P.2d 481, 483 (Or. 1968) (holding that “the social value of defendant’s conduct, its efforts to prevent the harm and other circumstances that tend to justify an intrusion cannot be considered” when assessing trespass liability, but that such considerations do apply when assessing whether injunctive relief should be afforded).

of view to adhere to a stricter reduction target,” thus dispensing with the presumption of net economic benefits.²⁹³ Any policy that would fail to limit carbon dioxide concentrations to below 450 parts per million breached the duty of care.²⁹⁴ Accordingly, “the Netherlands must take reduction measures in support of this scenario.”²⁹⁵ The court’s analysis focused entirely on the hazards of climate change, not the culpability of the Dutch government’s conduct. The threat of extreme events drove the Dutch court to question standard assumptions about reasonable conduct in industrialized societies. “Judicial interest in strict liability,” one of us has argued, “may revive as the accumulated negative externalities of greenhouse gas emissions come to loom far larger than the felt positive externalities of economic activity.”²⁹⁶ Perhaps the *Urgenda* decision reflects early judicial awakening to this new order.

2. Causation and Harm

The focus on the global dimensions of climate change—its breathtaking scale and severity—may undermine the plaintiff’s case at the causation stage. Complexity and numerosity, already troublesome for establishing duty, return with even greater force when the plaintiff attempts to single out individual defendants’ contributions to global warming. The orthodox principle of “but-for causation” requires that the defendant’s activity was a necessary condition of the plaintiff’s harm.²⁹⁷ But although the science of climate change is well understood, the sheer complexity of the climate system frustrates most attempts to link particular harms to greenhouse gas emissions.²⁹⁸ Moreover, the great number of emitters again allows defendants to offer a rather powerful version of the “consequentialist alibi” introduced above. The Dutch government, for instance, argued that because Dutch emissions amounted to only 0.5% of the global total, the court could not redress any harm *Urgenda* might be suffering: “[A]llowing *Urgenda*’s claim . . . would not be effective on a global scale, as such a target would result in a very minor, if not negligible, reduction of global greenhouse gas emissions.”²⁹⁹

293 *Urgenda* Decision, *supra* note 239, ¶ 4.70.

294 *Id.* ¶ 4.83

295 *Id.*

296 Kysar, *supra* note 138, at 59.

297 See RESTATEMENT (SECOND) OF TORTS § 432(1) (AM. LAW INST. 1965).

298 See Seneviratne et al., *supra* note 6, at 127 (“[I]t is challenging to associate a single extreme event with a specific cause such as increasing greenhouse gases because a wide range of extreme events could occur even in an unchanging climate, and because extreme events are usually caused by a combination of factors.”). That said, some events can fairly be described as “signature impacts of climate change” amenable to causal attribution. Kysar, *supra* note 138, at 32. For instance, human influences made the 2003 European heat wave more than twice as likely, Seneviratne et al., *supra* note 6, at 127, and scientists have forecasted continued permafrost melting with “high confidence,” *id.* at 189–90.

299 *Urgenda* Decision, *supra* note 239, ¶ 4.78.

The consequentialist alibi may be correct in a technical sense. But it takes as its premise a world of cynical, narrowly rational actors: “Unable at the global level to coordinate behavior through law or shared social norms, [actors] instead expect the worst from others and thereby bring out the worst in themselves.”³⁰⁰ The *Urgenda* decision turned this logic on its head. Rejecting the pessimism of a game theoretic “commons tragedy” vision of the world, the judges viewed the global challenge as an opportunity for mutual consideration and coordination: “It is an established fact that climate change is a global problem and therefore requires global accountability.”³⁰¹ The opinion continued:

The fact that the amount of the Dutch emissions is small compared to other countries does not affect the obligation to take precautionary measures in view of the State’s obligation to exercise care. After all, it has been established that any anthropogenic greenhouse gas emission, no matter how minor, contributes to an increase of CO₂ levels in the atmosphere and therefore to hazardous climate change. Emission reduction therefore concerns both a joint and individual responsibility of the signatories to the UN Climate Change Convention.³⁰²

The *Urgenda* decision held the Dutch government accountable, through negligence doctrine, for its announced positions on climate change. As the lead attorney explained, “it was a conscious decision to bring tort law to bear against a national government rather than against the fossil fuel sector. In contrast to companies, national governments have made quite explicit statements . . . regarding the danger of climate change and what should be done about it.”³⁰³ In giving effect to those statements and in rejecting the consequentialist alibi, the Dutch court articulated a more hopeful moral vision, one in which “an upward spiral from acts of leadership and self-sacrifice . . . brings out the best in all.”³⁰⁴

This moral vision suggests a more sophisticated understanding of causal linkage. Classical tort law clings to direct, mechanical notions that do not accurately describe the reality of complex, interwoven causal relationships. Scientists have long since abandoned the Newtonian ideal in favor of probabilistic models of causation.³⁰⁵ The legal echo takes the form of innovations in causation doctrine: joint and several liability for asbestos exposure,³⁰⁶ mar-

300 Kysar, *supra* note 138, at 51.

301 *Urgenda* Decision, *supra* note 239, ¶ 4.79.

302 *Id.*

303 Roger Cox, *A Climate Change Litigation Precedent: Urgenda Foundation v. The State of the Netherlands*, CIGI Papers No. 79 (Nov. 2015), at 2.

304 Kysar, *supra* note 138, at 51.

305 A thorough description of this philosophical transition lies outside the scope of this project. For a summary, see Troyen A. Brennan, *Causal Chains and Statistical Links: The Role of Scientific Uncertainty in Hazardous-Substance Litigation*, 73 CORNELL L. REV. 469, 478–83 (1988).

306 See, e.g., *Norfolk & W. Ry. Co. v. Ayers*, 538 U.S. 135, 162–65 (2003) (rejecting defendant’s argument that damages must be apportioned with other past employers); *Borel v. Fibreboard Paper Prods. Corp.*, 493 F.2d 1076, 1094 (5th Cir. 1973) (holding that,

ket-share liability,³⁰⁷ and loss-of-chance recovery for patients whose diseases were likely terminal notwithstanding a doctor's mistakes.³⁰⁸ Although these doctrines remain at the margins of tort practice, a warming world may prompt courts to look at them in a more favorable light. The scientific consensus on climate change is overwhelming, and it favors the plaintiffs, at least with respect to matters of general causation.³⁰⁹ Engagement with that consensus might again bend judicial attitudes toward more scientifically nuanced and doctrinally innovative approaches to the assignment of responsibility within a world of complexity and uncertainty.³¹⁰

The *Urgenda* court did engage with the science, discussing at length the factual findings of the IPCC.³¹¹ But the court was relieved of the need to articulate detailed normative implications of the science, given that plaintiffs sought only to hold the Dutch government to its own previously stated commitments.³¹² The particular grounds of decision matter because legal authority, unlike scientific theory, defines normative commitments.³¹³ A finding of legal causation reflects not an empirical fact but rather a commu-

if each defendant was "the cause in fact of some injury," they may be held jointly and severally liable).

307 The leading case is *Sindell v. Abbott Labs.*, 607 P.2d 924 (Cal. 1980). Market share liability has largely not caught on outside the DES context. See, e.g., *Doe v. Cutter Biological*, 852 F. Supp. 909, 913, 924–25 (D. Idaho 1994) (declining to adopt market share or any other alternative causation doctrine to aid plaintiff hemophiliacs who had contracted HIV from infusion of tainted Factor VIII clotting agent), *appeal dismissed*, 89 F.3d 844 (9th Cir. 1996) (dismissed upon death of plaintiff). For rare exceptions, see *In re Methyl Tertiary Butyl Ether ("MTBE") Prods. Liab. Litig.*, 175 F. Supp. 2d 593 (S.D.N.Y. 2001); *State v. Exxon Mobil Corp.*, 126 A.3d 266 (N.H. 2015); and *Suffolk Cty. Water Auth. v. Dow Chem. Co.*, 987 N.Y.S.2d 819 (Sup. Ct. 2014).

308 See, e.g., *Matsuyama v. Birnbaum*, 890 N.E.2d 819, 828–29 & n.23 (Mass. 2008) (observing that "[t]he highest courts of at least twenty States and the District of Columbia have adopted the loss of chance doctrine" and joining them).

309 See John Cook et al., *Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature*, 8 ENVTL. RES. LETTERS 024024 (2013) ("[T]he number of papers rejecting the consensus on AGW is a vanishingly small proportion of the published research.").

310 See Kysar, *supra* note 138, at 65 (hypothesizing a "cultural shift among judges in their attitudes toward scientific evidence").

311 *Urgenda* Decision, *supra* note 239, ¶¶ 2.8–2.21.

312 As part of the 2010 Cancun Agreements, the Dutch government had accepted in principle that emissions reductions of twenty-five to forty percent by 2020 would be required to limit greenhouse gas concentrations to acceptable levels. *Id.* ¶ 4.24. Compare the litigation dilemma facing plaintiffs in the *Juliana* litigation, who have premised their complaint on the notion that a specific scientifically determined concentration level of carbon dioxide in the atmosphere (350 parts per million) must be maintained in order to avoid violation of their fundamental rights. *Juliana v. United States*, 217 F. Supp. 3d 1224, 1263 (D. Or. 2016). Naturally, the federal government in its answer has denied that scientific consensus on such a "safe limit" exists.

313 Brennan, *supra* note 305, at 471 ("The function of causation in law is not simply to imitate current scientific knowledge; rather, the law uses causal concepts not only to link events, but also to provide moral prescriptions.").

nity's judgment that moral responsibility can attach to the censured conduct. Consider the fact that some of the harms wrought by climate change will not fully materialize for several decades at the earliest.³¹⁴ Traditionally, tort law does not allow recovery for the mere threat of future harm.³¹⁵ Likewise, in order to establish Article III standing, a plaintiff must demonstrate an injury that is "actual or imminent, not 'conjectural' or 'hypothetical.'"³¹⁶ The Second Circuit, ruling for the plaintiffs in *American Electric Power*, avoided this difficulty by finding that the defendants' current greenhouse gas emissions created a certainty of future harm: "There is no probability involved."³¹⁷ But this solution creates secondary problems at the merits stage with respect to causation. Climate change plaintiffs need courts to give more credence, not less, to probabilistic causal linkages between distant actors.

The claims of climate change plaintiffs challenge the assumptions that undergird traditional understandings of liability and causal attribution. Common-law courts are beckoned to learn to "think ecologically":

Distances that seemed remote become more intimate, as the natural pathways that connect them are brought into view. Accordingly, it becomes less comfortable to maintain the traditional assumptions that "natural" and "distant" interests are less important than those that are "manmade" and "immediate."³¹⁸

Thinking ecologically, courts would pay more attention to the reality of complex and catastrophic risks. Where those risks are severe, though uncertain or temporally distant, a judge would not reject the plaintiff's claim of injury for those reasons alone. The *Urgenda* decision adopted such a position quite explicitly:

[I]t is established that if the global emissions, partly caused by the Netherlands, do not decrease substantially, hazardous climate change will probably occur. In the opinion of the court, the possibility of damages for those whose interests *Urgenda* represents, including current and future generations of Dutch nationals, is so great and concrete that given its duty of care, the State must make an adequate contribution, greater than its current contribution, to prevent hazardous climate change.³¹⁹

314 For a summary of various long-term trends in water security due to climate change, see Blanca E. Jiménez Cisneros et al., *Freshwater Resources*, in CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY. PART A: GLOBAL AND SECTORAL ASPECTS. CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 229, 249 tbl.3-2 (Christopher B. Field et al. eds., 2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap3_FINAL.pdf.

315 See, e.g., *Aas v. Superior Court*, 12 P.3d 1125, 1138 (Cal. 2000) ("The breach of a duty causing only speculative harm or the threat of future harm does not normally suffice to create a cause of action.").

316 *Whitmore v. Arkansas*, 495 U.S. 149, 155 (1990) (quoting *City of Los Angeles v. Lyons*, 461 U.S. 95, 101–02 (1983)).

317 *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 344 (2d Cir. 2009).

318 Kysar, *supra* note 138, at 69.

319 *Urgenda Decision*, *supra* note 239, ¶ 4.89.

The mere “possibility of damages” was “so great and concrete” that it rose to the level of a cognizable wrong. With the limited exception of medical monitoring costs,³²⁰ American courts do not so boldly expand the reach of legal redress for claims sounding in tort.

* * *

At every stage of its analysis, the *Urgenda* court overcame doctrinal barriers to a finding of climate change negligence against the most powerful defendant in its jurisdiction: the sovereign itself. Only through such an attitude of restless vigilance can tort law bring catastrophic harms within law’s normative project. The plaintiffs knew that Dutch statutory and regulatory law did not provide “sufficient protection against the risks of dangerous climate change.”³²¹ But the common law—and the bodies of constitutional and international law that partake of tort-like reasoning against government actors—can counteract the intransigence of power while at the same time establishing persistent norms of its own creation.³²²

The Dutch court did not, however, reach out by fiat to supplant democratic processes. Judicial decisionmaking shapes and reflects popular understandings of reasonable care in an ongoing process of conversation with the other branches of government.³²³ In this context, it is notable that the first victory for climate change tort plaintiffs should come in a nation with a far less militaristic relationship to its natural environment. On the lower Mississippi River, U.S. flood control strategy from the beginning has centered on a policy of containment, with the walls growing ever higher as the land subsides and the ocean rises.³²⁴ The Dutch, on the other hand, have transitioned to a policy of “controlled flooding.” Low-lying polders must in some

320 Medical monitoring refers to “diagnostic and other pre-therapeutic measures designed to determine whether an individual exposed to the risk of contracting a disease or other unhealthy condition has in fact done so.” Kenneth S. Abraham, *Liability for Medical Monitoring and the Problem of Limits*, 88 VA. L. REV. 1975, 1976 (2002). In other words, liability attaches not for the “enhanced risk” itself, but rather for the “medical surveillance expenses” the enhanced risk necessitates. *Ayers v. Twp. of Jackson*, 525 A.2d 287, 308 (N.J. 1987).

321 Cox, *supra* note 303, at 3.

322 See *supra* text accompanying notes 129–41.

323 See *Urgenda* Decision, *supra* note 239, ¶ 4.95 (“The court states first and foremost that Dutch law does not have a full separation of state powers, in this case, between the executive and judiciary. The distribution of powers between these powers (and the legislature) is rather intended to establish a balance between these state powers. . . . It is an essential feature of the rule of law that the actions of (independent, democratic, legitimised and controlled) political bodies, such as the government and parliament can—and sometimes must—be assessed by an independent court.”).

324 See Oliver Houck, *Can We Save New Orleans?*, 19 TUL. ENVTL. L.J. 1, 42 (2006) (“In this view, the natural environment may not be the enemy but it is at least an impediment. We wall it off, and then feed it through the bars of diversion structures like some beast in a zoo.”).

cases serve as reservoirs, to be flooded if necessary to protect denser communities.³²⁵

Of course, the *Urgenda* decision did not discuss matters of flood control policy and environmental ethics. But the reciprocal relationship between communal and legal norms should remind us that tort doctrines embody various and even conflicting standards of conduct in society. The common law judge is neither a consequentialist, nor a deontologist, nor a civil recourse theorist. She is a pluralist, reexpressing and reconstituting multiple strains of moral and legal discourse. The *Urgenda* judges drew on a wide range of texts, including a Dutch constitutional provision, the “no harm” principle of international law, the U.N. Climate Change Convention, and various European Union treaties, all in addition to Dutch common law.³²⁶ Tort law does not, as Meyer charged, reflexively impose liability for any conceivable injury. But it can, at its best, respond creatively and dynamically to a world of chaotic and unpredictable harms.

B. Political Conversation and Legal Narrative

The *Urgenda* decision has already begun inspiring similar attempts by climate change plaintiffs to negotiate the torts process.³²⁷ In addition, at least three more lawsuits—making claims of constitutional and administrative violations—have brought about judicial responses to climate change harms that exemplify the central claims of this Article. A Pakistani student prevailed in his effort to force the government to implement its stated climate change policy.³²⁸ And two groups of American plaintiffs have achieved initial success in expanding the public trust doctrine to encompass a stable climate.³²⁹

Unlike the *Urgenda* decision, these cases reveal little about how tort doctrine itself could evolve in response to climate change and catastrophe. In a more general sense, however, the plaintiffs’ victories embody the ways in which litigation can spur urgent and creative responses to complexity and catastrophe. First, courts can demand action from other branches of government either through injunctive relief or simple exhortation. For an example of the latter, consider Justice Ginsburg’s dissent from the decision in *Ledbetter*

325 See Michael Kimmelman, *Going with the Flow*, N.Y. TIMES (Feb. 13, 2013), <http://www.nytimes.com/2013/02/17/arts/design/flood-control-in-the-netherlands-now-allows-sea-water-in.html>.

326 See *Urgenda* Decision, *supra* note 239, ¶¶ 4.52, 4.76.

327 Another tort lawsuit is pending in the Belgian court system. See Jennifer M. Klein, *Lawsuit Seeks to Force Belgian Government to Take Action Against Climate Change*, CLIMATE L. BLOG (June 8, 2015), <http://blogs.law.columbia.edu/climatechange/2015/06/08/lawsuit-seeks-to-force-belgian-government-to-take-action-against-climate-change/>.

328 *Leghari* Decision, *supra* note 240, at 2.

329 See Findings & Recommendations at 1276, *Juliana v. United States*, 217 F. Supp. 3d 1224 (D. Or. 2016) (No. 6:15-cv-1517) [hereinafter *Juliana* Findings & Recommendations]; *Foster* Order, *supra* note 241.

*v. Goodyear Tire & Rubber Co.*³³⁰ The five-Justice majority had adopted a narrow reading of Title VII of the Civil Rights Act in order to bar the plaintiff's pay discrimination claims. Justice Ginsburg, dissenting from the bench, called on Congress to "act to correct this Court's parsimonious reading of Title VII."³³¹ The legislature responded with the Lilly Ledbetter Fair Pay Act of 2009,³³² which codified the interpretation urged by Justice Ginsburg.³³³ As one of us has argued with Benjamin Ewing, such "prods and pleas" represent the "flip-side of checks and balances."³³⁴ In a constitutional scheme of divided but overlapping authority, the judiciary can serve not only to temper excess but also to break up gridlock.³³⁵

1. Prods and Pleas in *Leghari v. Federation of Pakistan*

The decision in *Leghari* provides an especially bold example of judicial prodding and pleading. Although the opinion from the Lahore High Court used the language of fundamental rights, the order itself aimed to facilitate more effective cooperation among various government officials. Pakistan's Ministry of Climate Change had promulgated a National Climate Change Policy in September 2012 in order to "provide[] a comprehensive framework" for "Action Plans" to adapt to the effects of climate change.³³⁶ The Policy laid out an ambitious series of goals,³³⁷ but the frailty of the Climate Change Ministry hampered its effectiveness.³³⁸ Ashgar Leghari, a law student whose family owns a farm in southern Punjab, sued the central government claiming that the agencies' intransigence infringed upon his fundamental rights.³³⁹

Judge Syed Mansoor Ali Shah convened representatives from over twenty government bodies to announce his decision. His opinion issued a self-described "clarion call" to defend the "fundamental rights of the citizens

330 550 U.S. 618 (2007), *superseded by statute*, Lilly Ledbetter Fair Pay Act of 2009, Pub. L. No. 111-2, 123 Stat. 5.

331 *Id.* at 661 (Ginsburg, J., dissenting).

332 Pub. L. No. 111-2, 123 Stat. 5.

333 For a full account of the influence of Justice Ginsburg's dissent, see Lani Guinier, *Beyond Legislatures: Social Movements, Social Change, and the Possibilities of Demosprudence—Courting the People: Demosprudence and the Law/Politics Divide*, 89 B.U. L. REV. 539 (2009).

334 Ewing & Kysar, *supra* note 5, at 361.

335 *See id.* at 411–12.

336 MINISTRY OF CLIMATE CHANGE, GOV'T OF PAK., NATIONAL CLIMATE CHANGE POLICY, at vi (2012), <http://center-hre.org/wp-content/uploads/2014/05/Pakistan-Naitonal-Climate-Change-Policy.pdf>.

337 *Id.* at 1.

338 *See, e.g.*, Zofeen T. Ebrahim, *Pakistan's New Climate Change Ministry Merely "Cosmetic,"* PAKISSAN (Feb. 2015), <http://www.pakissan.com/english/issues/pakistan.new.climate.change.ministry.merely.cosmetic.shtml>.

339 Anam Gill, *Farmer Sues Pakistan's Government to Demand Action on Climate Change*, REUTERS (Nov. 15, 2015), <http://www.reuters.com/article/pakistan-climatechange-law-suit/farmer-sues-pakistans-government-to-demand-action-on-climate-change-idUSL8N1383YJ20151113>.

of Pakistan” and “in particular, the vulnerable and weak segments of the society who are unable to approach this Court.”³⁴⁰ Judge Shah invoked several constitutional provisions and declared that they “include[d] within their ambit” a number of environmental commitments: sustainable development, the precautionary principle, intergenerational equity, and the public trust doctrine.³⁴¹ The order established a Climate Change Commission, to be staffed by government officials and a handful of private individuals, which would “assist this Court to monitor the progress of the Framework.”³⁴²

The unilateral creation of a new administrative body seems to be an extreme remedy by American standards. But Judge Shah could not will a powerful agency into being. As the opinion itself acknowledged, successful adaptation would depend on the cooperation of existing authorities.³⁴³ Thus, the order of the Lahore High Court played substantially the same role as Justice Ginsburg’s dissent in *Ledbetter*. The court’s words lacked the force of law, in a practical sense. Their power—if they had power at all—was to bring renewed attention to a neglected issue: to plead “for other branches or levels of government to deploy power when the speaker cannot.”³⁴⁴ As the head of the Pakistani World Wildlife Fund observed, “[t]he judge is pushing the government departments to take action . . . [t]he commission is a ray of hope for us.”³⁴⁵

2. The Environmental Apocalyptic in *Foster* and *Juliana*

Meanwhile, four years after the defeat in *Kivalina*, climate change plaintiffs have won two unexpected victories in American courts. In *Foster v. Washington Department of Ecology*, eight schoolchildren from Washington sued the state government after its environmental agency denied their petition for a rulemaking on greenhouse gas emissions. In one sense, the case was a typical administrative action: the petitioners demanded relief under the Washington Administrative Procedure Act asserting that the agency’s denial was arbitrary, capricious, and in violation of statutory and constitutional law.³⁴⁶

340 *Leghari* Decision, *supra* note 240, ¶ 6.

341 *Id.* ¶ 7.

342 *Id.* ¶ 8(iii); *see also* *Leghari v. Fed’n of Pakistan*, (2015) W.P. No. 25501 (HC Lahore) (Pak.), <http://edigest.elaw.org/sites/default/files/pk.leghari.091415.pdf> (supplemental order listing the officers of the commission).

343 *Leghari* Decision, *supra* note 240, ¶ 4.

344 *Ewing & Kysar*, *supra* note 5, at 366. Consistent with this role, the most recent “order” in the *Leghari* case consists of a series of recommendations by the Climate Change Commission to sharpen adaptation efforts. *See* Climate Change Order-19, *Leghari v. Fed’n of Pakistan*, (2015) W.P. No. 25501 (HC Lahore) (Pak.), <http://sys.lhc.gov.pk/green-BenchOrders/RegularityAuthorities-EPA-25501-15-10-03-2017.pdf>.

345 Gill, *supra* note 339 (quoting Hameed Naqi, Director General of WWP-Pakistan). For further discussion of the *Leghari* litigation and Judge Shah’s ongoing supervision of the commission, *see* David Estrin, *Limiting Dangerous Climate Change: The Critical Role of Citizen Suits and Domestic Courts—Despite the Paris Agreement*, CIGI Papers No. 101 (May 2016).

346 Petitioners’ Opening Brief at 11, *Foster v. Wash. Dep’t of Ecology* (Wash. Super. Ct. Mar. 16, 2015) (No. 14-2-25295-1) [hereinafter *Foster* Petitioners’ Brief], <https://static>

But the substance of their argument was far from routine. The children asserted their “inherent and fundamental rights to a healthful and pleasant environment.”³⁴⁷ These natural rights, though not explicit in the text of the Washington Constitution, were preserved and protected by Washington’s analogue to the Ninth Amendment: “The enumeration in this Constitution of certain rights shall not be construed to deny others retained by the people.”³⁴⁸ The plaintiffs buttressed their assertion of a fundamental right with an appeal to the public trust doctrine.³⁴⁹ On November 19, 2015, the judge in *Foster* delivered what might have been a perfunctory ruling: because the Department of Ecology had initiated a rulemaking in August, the petition for review was denied as moot. But the opinion did not stop there. Judge Hill emphasized, all in dicta, that “global warming causes an unprecedented risk to the earth,”³⁵⁰ that the state constitution bestows environmental rights,³⁵¹ and that the public trust doctrine extends to the atmosphere.³⁵² Six months later, unsatisfied by the agency’s progress, the court ordered the Department of Ecology to finalize the climate change rule by the end of 2016.³⁵³

The Department of Ecology complied with the court’s order, issuing the final Clean Air Rule on September 15, 2016.³⁵⁴ Nevertheless, the government appealed Judge Hill’s ruling to escape continued monitoring by the trial court. In an unpublished opinion, the Court of Appeals granted that request, reversing the decision to order extraordinary relief on the ground of various legal infirmities.³⁵⁵ But the appellate court declined the government’s invitation to opine on the merits of the earlier November 2015 ruling.³⁵⁶ Thus, at least formally, the dramatic legal conclusions regarding the scope of environmental rights remain in effect. As a practical matter, the lawsuit achieved its central goal, and the debate has now moved into wider public forums.³⁵⁷

l.squarespace.com/static/571d109b04426270152febe0/t/576080e81bbec08251f2841c/1465942249247/ATL.Opening+Brief.Final_.3.16.14.pdf.

347 *Id.* at 17.

348 WASH. CONST. art. I, § 30.

349 *Foster* Petitioners’ Brief, *supra* note 346, at 19.

350 *Foster v. Wash. Dep’t of Ecology*, No. 14-2-25295-1, 2015 WL 7721362, at *2 (Wash. Super. Ct. Nov. 19, 2015).

351 *Id.* at *3.

352 *Id.* at *4.

353 See Order on Petitioners’ Motion for Relief Under CR 60(b), *Foster v. Wash. Dep’t of Ecology*, No. 14-2-25295-1 (Wash. Super. Ct. Apr. 29, 2016), http://static1.squarespace.com/static/571d109b04426270152febe0/t/57607f4901dbacc634f08166/1465941834691/16.05.16.Order_.pdf.

354 16 Wash. Reg. 19-047 (Sept. 15, 2016) (codified at WASH. ADMIN. CODE §§ 173-441, 173-442 (2017)).

355 *Foster ex rel. Foster v. Wash. Dep’t of Ecology*, No. 75374-6-I, 2017 WL 3868481 (Wash. Ct. App. Sept. 5, 2017).

356 *Id.* at *3.

357 As with many environmental rulemakings, both activists and industry have condemned the Clean Air Rule on opposing grounds. Compare Press Release, W. Envtl. Law Ctr., Inslee Administration Defies Court Order, Betrays Children (June 1, 2016), <http://>

Our Children's Trust convened a separate group of plaintiffs to bring a lawsuit in federal court. On August 12, 2015, nineteen-year-old Kelsey Juliana and twenty other young people from across the country filed a complaint against the United States government and a number of federal departments and officials.³⁵⁸ *Juliana v. United States* expands on the arguments put forward in *Foster* and attempts, in one fell swoop, to constitutionalize climate change policy.

The plaintiffs in *Juliana* present four grounds for relief. The Ninth Amendment and public trust claims are analogous to those in *Foster*, although the public trust doctrine imposes fewer obligations on the federal government than the states.³⁵⁹ The bulk of the complaint in *Juliana* focuses instead on arguments under the Fifth and Fourteenth Amendments. Citing *Obergefell v. Hodges*,³⁶⁰ the plaintiffs assert that substantive due process should be further expanded to include the right to a stable climate: "Defendants have violated and are violating Plaintiffs' fundamental constitutional rights to life, liberty, and property by substantially causing or contributing to a dangerous concentration of CO₂ in the atmosphere."³⁶¹ The complaint then moves to an equal protection argument, emphasizing the "dual principles" embedded in the Fifth and Fourteenth Amendments.³⁶² The plaintiffs argue that strict scrutiny should apply to measures that burden future generations: "Future generations do not have present political power or influence, have immutable characteristics, and are also an insular minority."³⁶³

www.commondreams.org/newswire/2016/06/01/inslee-administration-defies-court-order-betrays-children, with Tom Banse, *Industry Lawsuits Mount Against Washington State's New Carbon Cap*, NW. PUB. RADIO (Sept. 30, 2016), <http://nwpr.org/post/industry-lawsuits-mount-against-washington-states-new-carbon-cap>.

358 The plaintiffs filed an amended complaint on September 10, 2015, and future citations are to that document. See First Amended Complaint, *Juliana v. United States*, No. 6:15-cv-01517 (D. Or. Sept. 10, 2015) [hereinafter *Juliana Amended Complaint*].

359 See Richard M. Frank, *The Public Trust Doctrine: Assessing Its Recent Past & Charting Its Future*, 45 U.C. DAVIS L. REV. 665, 680–81 (2012) ("[L]ittle progress has occurred over the past 30 years in making federal resources and officers subject to the same, public-trust-based obligations that apply to state and local governments in most American jurisdictions.").

360 135 S. Ct. 2584 (2015).

361 *Juliana Amended Complaint*, *supra* note 358, at 94; see also *id.* at 84–88.

362 *Id.* at 89; cf. Laurence H. Tribe, *Lawrence v. Texas: The "Fundamental Right" That Dare Not Speak Its Name*, 117 HARV. L. REV. 1893, 1898 (2004) ("[D]ue process and equal protection, far from having separate missions and entailing different inquiries, are profoundly interlocked in a legal double helix.").

363 *Juliana Amended Complaint*, *supra* note 358, at 89; cf. *Frontiero v. Richardson*, 411 U.S. 677, 686 (1973) (plurality opinion) (applying heightened scrutiny to sex-based discrimination because "sex, like race and national origin, is an immutable characteristic determined solely by the accident of birth"); *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 28 (1973) (describing "relegat[ion] to such a position of political powerlessness as to command extraordinary protection" as one of the "traditional indicia of suspectness"); *United States v. Carolene Prods. Co.*, 304 U.S. 144, 153 n.4 (1938) ("[P]rejudice against discrete and insular minorities may be a special condition, which tends seriously to curtail the operation of those political processes ordinarily to be relied upon to protect

Up until this point, the rights-based argument for environmental protection has been confined largely to law review articles.³⁶⁴ *Juliana v. United States* sought to provoke the first direct response from a federal judge. And the scale of relief requested is provocative indeed: “Order Defendants to prepare and implement an enforceable national remedial plan to phase out fossil fuel emissions and draw down excess atmospheric CO₂ so as to stabilize the climate system” and “[r]etain jurisdiction over this action to monitor and enforce Defendants’ compliance with the national remedial plan and all associated orders of this Court.”³⁶⁵ The government’s motion to dismiss focused heavily on the requested remedy, starting with its very first sentence: “To provide the relief requested by Plaintiffs in this case, the Court would be required to make and enforce national policy concerning energy production and consumption, transportation, science and technology, commerce, and any other social or economic activity that contributes to carbon dioxide (‘CO₂’) emissions.”³⁶⁶

Perhaps the most surprising aspect of the *Juliana* case is that the plaintiffs have not yet lost. They achieved an early victory: on November 10, 2016—perhaps not coincidentally, one day after the election of President Trump who had campaigned against taking climate change seriously as a policy matter—Judge Aiken denied the defendants’ motions to dismiss, adopting the findings and recommendation of Magistrate Judge Coffin.³⁶⁷ Thus, at least one U.S. federal judge has—squarely and unblinkingly—recognized the possibility of an environmental due process claim:

[W]here a complaint alleges governmental action is affirmatively and substantially damaging the climate system in a way that will cause human deaths, shorten 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.³⁶⁸

Judge Aiken’s order cannot be appealed as of right to the Ninth Circuit,³⁶⁹ and the children’s lawyer has stated that they are “ready to bring the

minorities, and which may call for a correspondingly more searching judicial inquiry.”). It is somewhat inapposite to describe future generations as a “minority” because—one hopes—they will eventually outnumber present generations. Nevertheless, they are situated functionally like “insular minorities” due to the temporal dominance of present generations over their future environment and life circumstances.

364 See, e.g., Bruce Ledewitz, *Establishing a Federal Constitutional Right to a Healthy Environment in Us and in Our Posterity*, 68 Miss. L.J. 565 (1998).

365 *Juliana* Amended Complaint, *supra* note 358, at 94.

366 Federal Defendants’ Memorandum of Points and Authorities in Support of Their Motion to Dismiss at 1, *Juliana v. United States*, No. 6:15-cv-01517 (D. Or. Nov. 17, 2015).

367 *Juliana v. United States*, 217 F. Supp. 3d 1224, 1234 (D. Or. 2016). Two separate motions to dismiss were filed in the case, one by the government and another by a group of interveners representing the fossil fuel industry. *Id.* at 1233–34.

368 *Id.* at 1250.

369 See 15A CHARLES ALAN WRIGHT ET AL., *FEDERAL PRACTICE & PROCEDURE* § 3914.6 (2d ed. 2016) (“Orders refusing to dismiss an action almost always are not final.”).

case to trial.”³⁷⁰ Nevertheless, the defendants asked the court to certify an interlocutory appeal of the order, a request that Judge Aiken denied on June 8, 2017.³⁷¹ Undeterred, the next day the government filed a petition for a writ of mandamus at the Ninth Circuit, arguing that an extraordinary writ was needed “to confine the district court to the lawful exercise of its jurisdiction.”³⁷² Perhaps the Ninth Circuit will grant the request, although appellate courts are normally skeptical of such petitions.³⁷³ For now, the preliminary order stands, nailed to the courthouse door, an open indictment of a political failure to protect future generations.

We could frame the initial rulings in *Foster* and *Juliana* as prods and pleas as well. In *Foster*, Judge Hill began with nonbinding exhortation—a plea—and then escalated to a court-ordered rulemaking—a prod.³⁷⁴ In *Juliana*, Judge Aiken acted in the knowledge that few immediate consequences would flow from her order. Perhaps the opinion is best understood, then, as primarily “calling attention to a problem of social need and asking for its resolution.”³⁷⁵ But, of course, Judge Aiken also acted with the knowledge that—so long as her jurisdiction is preserved—judicial action can go beyond merely promoting interbranch dialogue and influencing political agenda setting. By accepting the facial legitimacy of plaintiffs’ claims on substantive

370 John D. Sutter, *Kids Are Taking the Feds—and Possibly Trump—to Court over Climate Change*, CNN (Nov. 10, 2016), <http://www.cnn.com/2016/11/10/opinions/sutter-trump-climate-kids/index.html>.

371 Order Denying Certification for Interlocutory Appeal, *Juliana v. United States*, No. 6:15-cv-01517, 2017 WL 2483705 (D. Or. June 8, 2017).

372 Petition for a Writ of Mandamus to the United States District Court for the District of Oregon at 31, *United States v. U.S. Dist. Ct. for the Dist. of Or.*, No. 17-71692 (9th Cir. June 9, 2017), ECF No. 10467675.

373 See *Allied Chem. Corp. v. Daiiflon, Inc.*, 449 U.S. 33, 34 (1980) (per curiam) (“[T]he remedy of mandamus is a drastic one, to be invoked only in extraordinary situations.”). The Ninth Circuit has temporarily stayed proceedings in the district court and requested briefing from parties, amici, and the district court itself. See Order, *United States v. U.S. Dist. Ct. for the Dist. of Or.*, No. 17-71692 (9th Cir. July 28, 2017), ECF No. 10525423. In an unusually personal and compelling response, Judge Aiken and Magistrate Judge Coffin jointly offered insight on “how we are managing this unusual case,” concluding with the following remarkable request for trust and respect in the traditional role of judges to adjudicate even the most vexing and controversial disputes:

Collectively, we have more than fifty years of experience on the bench. We have managed countless complex lawsuits and have recognized from the beginning that this action raises special and significant concerns regarding the appropriate role of the courts in protecting constitutional rights. We are managing this case mindful of those concerns. In our view, permitting this case to proceed through the usual process of trial and appeal will present the Ninth Circuit with a superior record to review, facilitating better decisionmaking on these novel and vitally important issues.

Response of District Court to Writ of Mandamus, *United States v. U.S. Dist. Ct. for the Dist. of Or.*, No. 17-71692 (9th Cir. Aug. 25, 2017), ECF No. 10558462.

374 See Ewing & Kysar, *supra* note 5, at 361 (describing prods as “action-forcing” and pleas as “action-inviting”).

375 *Id.*

due process grounds, Judge Aiken opened the possibility that she will deploy the kind of injunctive and supervisory powers that courts have used in desegregation and institutional reform contexts.

Such powers notwithstanding, the challenge for the plaintiffs in *Juliana* is to achieve normative reconstruction knowing that the court, in all likelihood, will not end up deploying its coercive power. Absent the threat of injunctive relief, can a tribunal nevertheless shape the lifeworld of meaning? A purely instrumental view of legal process does not respond to this question as we have posed it. In particular, the managerial, welfarist perspective—a dominant strain of contemporary environmental thought³⁷⁶—does not recognize the narrative function of legal dialogue. In contrast, Michael Burger has argued forcefully that environmental law is best understood as “a battle among well-defined, well-known and competing stories.”³⁷⁷ Drawing on the work of law and literature scholars, Burger describes how lawyers, judges, and litigants enact “expressive, literary performances” that shape law into “a producer of meanings and an avenue for self-expression.”³⁷⁸

Legal actors employ narrative for two basic purposes. First, narratives determine which facts will receive judicial notice: “[M]uch of human reality and its ‘facts’ are not merely recounted by narrative but *constituted* by it.”³⁷⁹ The weak version of this claim is that, in an adversarial system, both sides “spin” the available evidence to buttress their argument. More fundamentally, in a complex system, the choice of value criteria will determine what gets observed to begin with.³⁸⁰ The second role of narrative, which flows from the first, is to explain and order normative disruptions: “Narratives . . . are deeply concerned with legitimacy: they are about threats to normatively valued states of affairs and what it takes to overcome those threats.”³⁸¹ When a “[s]cript[]” embodying “normal expectations and normal practice” is broken, we form cultural narratives to “domesticat[e] the breakings.”³⁸² Cover described legal discourse along similar lines, as a “system of tension or a bridge linking a concept of a reality to an imagined alternative,” both represented “through the devices of narrative.”³⁸³

376 See Jedediah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy*, 119 YALE L.J. 1122, 1128 (2010) (criticizing a “dominant attitude in which the only realistic, hence responsible, approach to climate change and other environmental problems is one of instrumentally rational resource management constrained by interest-based politics”).

377 Michael Burger, *Environmental Law/Environmental Literature*, 40 ECOLOGY L.Q. 1, 12 (2013).

378 *Id.* at 13–14.

379 ANTHONY G. AMSTERDAM & JEROME BRUNER, *MINDING THE LAW* 111 (2000).

380 Cf. Sanjay G. Reddy & Benjamin Plener, *The Choice of Index Number: Part I, Valuation and Evaluation* (Inst. for Soc. & Econ. Research & Policy, Working Paper No. 06-02, 2006) (demonstrating that, in seeking to measure the aggregate wealth of an economy, “normative judgments are inescapable”).

381 AMSTERDAM & BRUNER, *supra* note 379, at 121.

382 *Id.* at 121–22.

383 Cover, *supra* note 18, at 9.

Narrative, in other words, is perfectly situated to accomplish Meyer's "reframing" of catastrophe. The adjudicatory process can develop and legitimate narrative even when it ends in defeat. Laura King explains that, for the injured plaintiff, tort law offers a variety of legal claims through which inarticulate pain can be "channeled into the ritual and creative moves and countermoves made by the opposing lawyers."³⁸⁴ Litigation, in other words, can be therapeutic:

[A]ll the formal trappings that may attend a lawsuit—service of the complaint, briefing, oral argument, courtrooms with their stated and unstated rules of conduct and dress, written opinions—transform something that was once personal, perhaps even unseen, into a visible, formalized activity upon which a community turns its sober attention.³⁸⁵

An economic analysis views tort law as little more than a compensation system with high transaction costs. Within that narrow framework, climate change litigation has been a failure. But, viewed through the lens of legal narrative, "the creation of a new legal claim has power wholly apart from the power of a litigation victory (or litigation loss) or a court decision."³⁸⁶ Even in defeat, the climate change plaintiff may inspire new understandings of our confrontation with catastrophe.

Burger and King analyzed the role of narrative in the climate change nuisance cases: *Comer*, *Kivalina*, and *American Electric Power*. But the "ecocritical vocabulary"³⁸⁷ they developed also helps parse the audacious litigation strategy of Our Children's Trust. For Burger, climate change litigation reenacts a parable he names the "environmental apocalyptic."³⁸⁸ Although many prophecies of ecological collapse have gone unfulfilled, apocalypse remains "the single most powerful master metaphor that the contemporary environmental imagination has at its disposal."³⁸⁹ This Article joins—or at least conveys—a strain of that tradition.³⁹⁰ The environmental apocalyptic adopts the literary form of the jeremiad, a mournful critique of society's profligacy.³⁹¹ Since the days of Jonathan Edwards, the jeremiad has comprised four rhetorical moves:

- (1) a chosen people has failed to keep covenant with key values or principles, (2) the people will suffer calamity as a result of this misbehavior, (3) such calamity will be avoided by a return to specified righteous action, and

384 Laura King, *Narrative, Nuisance, and Environmental Law*, 29 J. ENVTL. L. & LITIG. 331, 344 (2014).

385 *Id.*

386 *Id.* at 333 (footnote omitted).

387 Burger, *supra* note 377, at 13.

388 *Id.* at 20.

389 LAWRENCE BUELL, *THE ENVIRONMENTAL IMAGINATION: THOREAU, NATURE WRITING, AND THE FORMATION OF AMERICAN CULTURE* 285 (1995).

390 *See supra* text accompanying notes 54–59.

391 *See generally* Scott Slovic, *Epistemology and Politics in American Nature Writing: Embedded Rhetoric and Discrete Rhetoric*, in *GREEN CULTURE: ENVIRONMENTAL RHETORIC IN CONTEMPORARY AMERICA* (Carl G. Herndl & Stuart C. Brown eds., 1996).

(4) through proper action the chosen people shall recapture their favored status and avoid ruin.³⁹²

This simple but powerful parable has shaped the leading texts of American environmentalism, from *Man and Nature* to *Silent Spring* to *An Inconvenient Truth*.

The constitutional arguments of Our Children's Trust participate in the tradition of environmental jeremiad. This narrative structures the plaintiff's complaint and the judge's order in *Juliana*.³⁹³ As with any due process lawsuit, the broken covenant is the Constitution. The complaint in *Juliana* rejects a narrowly legalistic view of constitutional commitment, arguing that due process rights "reflect the basic societal contract of the Constitution to protect citizens and posterity from government infringement upon basic freedoms and basic (or natural) rights."³⁹⁴ Placing special emphasis on the mention of "Posterity" in the preamble, the plaintiffs argue that our national covenant imposes affirmative obligations toward future generations.³⁹⁵ These obligations operate as second-order constraints to counteract political distortions that "favor influential and entrenched short-term fossil fuel energy interests to the long-term detriment of Plaintiff."³⁹⁶

The complaint also looks to the environmental revolution of the early 1970s as a source of fundamental principles. It cites Title I of the National Environmental Policy Act (NEPA), which proclaims that "it is the continuing responsibility of the Federal Government to use all practicable means . . . to the end that the Nation may . . . fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."³⁹⁷ The district court's order responded in kind, adopting the marriage-equality analogy advanced by the plaintiffs:

I have no doubt that the right to a climate system capable of sustaining human life is fundamental to a free and ordered society. Just as marriage is the "foundation of the family," a stable climate system is quite literally the foundation "of society, without which there would be neither civilization nor progress."³⁹⁸

Thus the founding covenant incorporates an environmental ethic.

392 Michael Salvador & Todd Norton, *The Flood Myth in the Age of Global Climate Change*, 5 ENVTL. COMM. 45, 47 (2011).

393 *Juliana* is the preferred text because, unlike *Foster*, it is not refracted through the lens of state administrative law.

394 *Juliana* Amended Complaint, *supra* note 358, at 84.

395 *Id.*

396 *Id.* at 90. Although the phrase "second-order constraints" is due to Frederick Schauer, the *Juliana* plaintiffs go far beyond his "modest constitution." See Frederick Schauer, *Judicial Supremacy and the Modest Constitution*, 92 CALIF. L. REV. 1045, 1051 (2004).

397 National Environmental Policy Act of 1969, Pub. L. No. 91-190, § 101(b), 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. § 4331(b) (2012)); see *Juliana* Amended Complaint, *supra* note 358, at 81.

398 *Juliana v. United States*, 217 F. Supp. 3d 1224, 1250 (D. Or. 2016) (quoting *Maynard v. Hill*, 125 U.S. 190, 211 (1888)).

In the environmental jeremiad, a departure from these fundamental principles—humility, stewardship, and responsibility toward future generations—risks catastrophic collapse. The *Juliana* complaint gave an unsparing assessment: “Recent scientific reports . . . warn of the disintegration of both the West Antarctic ice sheet and the East Antarctic ice sheet, causing multi-meter sea-level rise. Such [events] will devastate coastal regions, including much of the eastern seaboard. . . . [T]rillions of dollars in property damage will result.”³⁹⁹ The ecological parable relies on the principle of interconnectedness to render seemingly remote threats imminent and urgent.⁴⁰⁰ Pointing out that “CO₂ emitted by humans persists in the atmosphere for as long as a millennium or more,” the complaint emphasized the need to “restore energy balance and avoid crossing tipping points that set in motion disastrous impacts to human civilization and nature.”⁴⁰¹

This metaphor of a “web of life” may be fundamental to ecological narrative, but it sits uneasily with stringent standing requirements developed by the Supreme Court.⁴⁰² The magistrate’s recommendation countered the redressability problem with a hopeful vision of global interdependence and cooperation: “[R]egulation by this country, in combination with regulation already being undertaken by other countries, may very well have sufficient impact to redress the alleged harms.”⁴⁰³ In support of this statement, Magistrate Judge Coffin cited an analogous passage from the Dutch court’s opinion in *Urgenda*.⁴⁰⁴

After covenant and betrayal comes redemption. A jeremiad, after all, is exhortatory, and “the environmental apocalyptic leaves open the possibility that human intervention can still avoid the looming catastrophe.”⁴⁰⁵ This final chapter opens with a pastoral: The narrator “appeals to nostalgia by invoking a sense of a world that is soon to be lost.”⁴⁰⁶ For the plaintiffs in *Juliana*, the Lost Eden is a stable preindustrial climate, a “very narrow set of climatic conditions” “on which people depend.”⁴⁰⁷ Paradise is slipping away,

399 *Juliana* Amended Complaint, *supra* note 358, at 68–69.

400 See BUELL, *supra* note 389, at 302 (describing “the dramatization of networked relationships” as a “structure[] of environmental perception” that underlies the “eco-catastrophical metaphor”).

401 *Juliana* Amended Complaint, *supra* note 358, at 67.

402 See Andrew Long, *Standing & Consensus: Globalism in Massachusetts v. EPA*, 23 J. ENVTL. L. & LITIG. 73, 74–75 (2008) (“The very recognition of climate change as creating cognizable harms requires an acceptance of the interconnectedness of a global environmental system.”); Jedediah Purdy, *American Natures: The Shape of Conflict in Environmental Law*, 36 HARV. ENVTL. L. REV. 169, 222 (2012) (“The heart of ecological interdependence, and the premise of the laws it shaped, was that such interests are not less real for being more complex and remote. The implicit view of standing doctrine so far is that the constitutional concept of justiciability does, in fact, regard them as less real, and remains attached exclusively to the paradigmatic interests of older conceptions of nature.”).

403 *Juliana* Findings & Recommendation, *supra* note 329, at 1269.

404 *Id.*

405 Burger, *supra* note 377, at 20.

406 *Id.*

407 *Juliana* Amended Complaint, *supra* note 358, at 68.

as dramatized by receding rivers of ice: “In 2010, Glacier National Park in Montana had only twenty-five glaciers larger than twenty-five acres, as opposed to 150 such glaciers in 1850.”⁴⁰⁸ But a return to first principles may yet stave off disaster: “Defendants must act rapidly and effectively to phase out CO₂ emissions so as to restore Earth’s energy balance.”⁴⁰⁹

Typically, justiciability doctrines erect barriers to the court playing a constructive role in that restoration. In a detailed political-question analysis, however, Judge Aiken defended the court’s authority to engage: “At its heart, this lawsuit asks this Court to determine whether defendants have violated plaintiffs’ constitutional rights. That question is squarely within the purview of the judiciary.”⁴¹⁰ But the order did not resolve the ultimate unknown of whether judicial action could successfully ward off climate catastrophe. Can the United States through its own actions and in coordination with other nations still mitigate the climate crisis? Or, have we passed a “point of no return”?⁴¹¹ As a legal matter, these factual questions go to the redressability prong of Article III standing. But they take on deeper significance as part of the environmental apocalyptic—they are the call to action, the admonition to restore broken promises. Given the profound inertia of the climate system, the present moment is indeed much later than we think.⁴¹² But the ethics of adjudication should conform to a different temporality, one in which it is never so late as to make striving toward justice futile.

* * *

In earlier work, one of us has argued that “merits adjudication of tort suits promotes consideration of the underlying visions of right, responsibility, and social order that are adopted (or implied) by judicial decisions.”⁴¹³ Although tort enjoys a preferred position in some respects, given its explicit focus on collective norm articulation, these stories from Pakistan, Washington, and Oregon demonstrate that administrative and constitutional adjudication may serve similar ends: to rouse other branches of government to action and to dignify the narratives of individual litigants. Of course, public law has no monopoly on these functions either. The environmental apoca-

408 *Id.* at 72.

409 *Id.* at 80.

410 *Juliana v. United States*, 217 F. Supp. 3d 1224, 1241 (D. Or. 2016). Following Judge Aiken’s order, the United States filed an answer to the *Juliana* complaint in which it asserted twelve separate affirmative defenses, each of which in essence boils down to a contention that judges should not play a role in determining substantive obligations of the government vis-a-vis climate change.

411 *Id.* at 1247.

412 For one recent supporting example, see Chelsea Harvey, *Methane May Not Last Long in the Atmosphere—but It Drives Sea Level Rise for Centuries*, WASH. POST (Jan. 9, 2017), <https://www.washingtonpost.com/news/energy-environment/wp/2017/01/09/methane-may-not-last-long-in-the-atmosphere-but-it-drives-rising-seas-for-hundreds-of-years>.

413 Ewing & Kysar, *supra* note 5, at 356; *see also supra* Section II.A.

lyptic ran through the *Urgenda* decision⁴¹⁴ as well as the Second Circuit's ruling in *American Electric Power*.⁴¹⁵ Indeed, creative litigation strategies often blur traditional doctrinal silos. The public trust doctrine is a hybrid creature that lives somewhere near the border of property and constitutional law.⁴¹⁶ Yet the *Juliana* plaintiffs also speak in the register of tort, invoking a "duty of care" on the part of the trustee governments.⁴¹⁷

This breakdown of arbitrary divisions within the black letter law furnishes yet another proof of this Article's central premise that catastrophic harms disrupt legal formalisms. At the moment when natural complexity overwhelms existing doctrine, legal actors face a choice. Gerald Stern, attorney for the victims at Buffalo Creek, made new claims on the law, seeking recovery for unrecognized "psychic impairment."⁴¹⁸ But Judge Kaye, speaking for the New York Court of Appeals, backed away from "traditional tort principles" to avert Con Edison's "crushing exposure to liability."⁴¹⁹ In Meyer's terms, climate change plaintiffs have obliged courts to choose between denial and nihilism. Most judges have preferred the latter. But, in a handful of cases, judges have begun to expand the boundaries of their jurisdiction and to forge a new jurisprudence of catastrophe.

CONCLUSION: THE GRACE OF RESPONSIBILITY

The error of the nihilist judge is to refuse responsibility over the extraordinary and the indeterminate. By various means, candidly or covertly, nihilist judges abdicate their duty to decide because of the complex or dramatic nature of a harm and the remedy it seems to necessitate.⁴²⁰ For instance, judges seem to believe that, short of ordering a wholesale restructuring of the global economy, their only option in climate change litigation is

414 The Dutch court paid ample attention to the potentially apocalyptic consequences of climate change: "[T]he warming of the oceans is expected to result in increased hurricane activity, expansion of desert areas and the extinction of many animal species because of the heat, the latter causing a decline in biodiversity. . . . [W]ithout intervention, the aforementioned processes will become unstoppable." *Urgenda* Decision, *supra* note 239, ¶ 4.16. The decision likewise dramatized global interconnectedness in order to overcome the government's arguments on causation. *See id.* ¶¶ 4.55, 4.79, 4.81.

415 *See* Burger, *supra* note 377, at 40–53.

416 Compare Lloyd R. Cohen, *The Public Trust Doctrine: An Economic Perspective*, 29 CAL. W. L. REV. 239, 274 (1992) ("[T]he public trust doctrine is at bottom a species of property law, albeit one with overlays of administrative, trust, and constitutional law."), with Charles F. Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on the Source and Scope of the Traditional Doctrine*, 19 ENVTL. L. 425, 464 (1989) ("The standards for the trust, then, are best understood as having very broad parameters set as a matter of federal mandate, either by way of congressional preemption or constitutional law; the constitutional rationale is more consonant with the whole body of law.").

417 *See Juliana* Amended Complaint, *supra* note 358, at 5, 36, 87, 93.

418 STERN, *supra* note 12, at 61.

419 *Strauss v. Belle Realty Co.*, 482 N.E.2d 34, 36 (N.Y. 1985).

420 *See supra* notes 200–04 and accompanying text.

to avoid exercising jurisdiction in the first place.⁴²¹ Again, stuck in a binary choice between denial and nihilism, most courts opt for the latter.

But Meyer puts forward a third possibility, one that we have not yet discussed. The third posture toward catastrophe seeks neither to domesticate it immediately nor to surrender to it entirely. Instead, the third posture asks what catastrophe can teach us about the original source of ethical obligation. The moment when “we experience our finitude” before the awesomeness of catastrophe opens up “the possibility of experiencing grace”:

The world is a given, beyond control. And so are we. We see that we did not make ourselves. For the first time, we have a perspective from which we can notice that our own urge to make sense of everything is itself a given, a grace, an unreasonable demand for reason. From the place where reason fails, we can see reason itself as our calling, a call from outside reason.⁴²²

Grace instructs us that catastrophic overturning is the beginning, not the end, of duty. In the “normal” case, when factual circumstances conform to legal rules, correct action follows as a matter of mechanical certainty. In contrast, when catastrophe “plow[s] up the ground itself,”⁴²³ we are thrust without warning into a position of unasked-for responsibility: “[I]t is only when the usual social system of rewards for virtue is swept away that one can see an act done purely from duty.”⁴²⁴

On this point, Meyer draws inspiration from the work of such continental philosophers as Jacques Derrida and Emmanuel Levinas. Both argued that responsibility arises not as obedience to unambiguous rules, but rather as action in the face of radical uncertainty. Derrida described these undetermined moments as law’s “aporia,” and placed them at the foundation of his ethical vision: “[A]poretic experiences are the experiences, as improbable as they are necessary, of justice, that is to say of moments in which the decision between just and unjust is never insured by a rule.”⁴²⁵ For the utilitarian, in contrast, ethical obligation flows from empirical observations: “Everything depends on what the facts turn out to be.”⁴²⁶ Levinas reversed this sequence, arguing that we are saddled with unsought ethical obligations that precede all knowledge or understanding, indeed all consciousness and subjectivity.⁴²⁷ Catastrophe strips away received normative commands and returns us to

421 See *Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265, 274 (S.D.N.Y. 2005) (“Because resolution of the issues presented here requires identification and balancing of economic, environmental, foreign policy, and national security interests, ‘an initial policy determination of a kind clearly for non-judicial discretion’ is required.” (quoting *Vieth v. Jubelirer*, 541 U.S. 267, 278 (2004) (plurality opinion))).

422 Meyer, *supra* note 19, at 22.

423 *Id.* at 20.

424 *Id.* at 23.

425 Jacques Derrida, *Force of Law: The “Mystical Foundation of Authority,”* 11 CARDOZO L. REV. 919, 947 (Mary Quaintance trans., 1990).

426 Cass R. Sunstein & Adrian Vermeule, *Is Capital Punishment Morally Required? Acts, Omissions, and Life-Life Tradeoffs*, 58 STAN. L. REV. 703, 734 (2005).

427 See EMMANUEL LEVINAS, *TOTALITY AND INFINITY: AN ESSAY ON EXTERIORITY* 42–48 (Alphonso Lingis trans., 1969).

Levinas's original, presubjective state of obligation. There we act for the first time in full responsibility for our actions. Meyer attributes this meaning to catastrophe, but understands it as tragic in itself: "There is a fundamental injustice in all of this: We didn't choose ourselves, yet we are obligated. We are in our very essence something of a catastrophe—ungrounded, under the yoke of painful obligations we could not expect or imagine."⁴²⁸

At this point, the patience of a judge—and perhaps our reader—may have reached a breaking point. What good are these philosophical musings? An original, infinite, and unreasoned ethical obligation may seem of little practical value to a court that must deal with the plaintiffs before it who demand redress for threats of catastrophic harm. After all, the case must be decided one way or another. Judges cannot remain suspended in aporetic reverie, however intellectually enticing. But that is precisely the lesson of the third face of catastrophe: the duty to act in the face of uncertainty is the purest expression of obligation. "[A]dmitting the inevitability of meaning's excess over understanding is the very beginning of responsibility; it is the surrender that enables analysis to yield to decision, decision to action, and action to consequence."⁴²⁹

This Article has discussed a run of cases in which courts did not take that obligation seriously: *Strauss*, *Comer*, *Barasich*, *American Electric Power*, *Kivalina*, and the rest. By hook⁴³⁰ or by crook,⁴³¹ judges have found ways to decline jurisdiction over extraordinary claims for relief. But the routinization of the hermeneutic of jurisdiction does not render it legitimate. Again, we accept that the plaintiffs in these cases may well have failed on the merits.⁴³² But merits adjudication must nevertheless remain available as a public forum for the common development and articulation of citizens' rights and duties in our democratic polity.⁴³³ At times of crisis, when our normative universe tends toward collapse, this demand on the courts becomes ever more insistent. Courts will inevitably fail to mount a complete response to catastrophe, but they must try. And they may find, as in *Urgenda* or *Juliana*, that the trying itself reshapes the normative landscape.

428 Meyer, *supra* note 19, at 23.

429 KYSAR, *supra* note 66, at 195.

430 See *supra* text accompanying notes 231–33 (describing the use of Article III standing to dismiss the claims in *Kivalina*).

431 See *supra* text accompanying notes 191–98 (describing the use of procedural subterfuge to dismiss the claims in *Comer*).

432 Tort doctrine poses many obstacles to the climate change plaintiff. See Kysar, *supra* note 138; *supra* Section III.A.

433 Cf. JUDITH RESNIK & DENNIS CURTIS, REPRESENTING JUSTICE: INVENTION, CONTROVERSY, AND RIGHTS IN CITY-STATES AND DEMOCRATIC COURTROOMS 301–04 (2011) ("[P]ublic processes of courts contribute to the functioning of democracies and give meaning to democratic aspirations that locate sovereignty in the people, constrain government actors, develop processes for norm elaboration, and insist on the equality of treatment under law.").