

ARTICLES

The Climate for Human Rights

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Climate change is the defining challenge of the 21st century. The United States government is currently ignoring the problem, but wishful thinking alone will not keep global mean temperature rise below 2°C. This Article proposes a way forward. It advises environmental decision-makers to use human rights norms to guide them as they make decisions under United States law. By reframing their discretion through a human rights lens, decision-makers can use their existing authority to respond to the super-wicked problem of climate change.

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I. INTRODUCTION

*“[N]o matter how well-informed you are, you are surely not alarmed enough.”*¹

Human impacts on the globe have become so omnipresent that the term “Anthropocene” is no longer an esoteric debate among scientists.² The proposition that we have entered a new geologic era—one dominated by human activities, rather than geological forces—has become conventional wisdom.³ The many unsustainable practices⁴ that make up the Anthropocene threaten our ability to “preserve a planet similar to that on which civilization developed and to which life on earth is adapted.”⁵ Nowhere is the Anthropocene more

¹ David Wallace-Wells, *The Uninhabitable Earth*, N.Y. MAG. (July 9, 2017, 9:00 PM), <http://nymag.com/daily/intelligencer/2017/07/climate-change-earth-too-hot-for-humans.html>.

² See Jan Zalasiewicz et al., *The New World of the Anthropocene*, 44 ENVTL. SCI. TECH. 2228, 2228 (2010); Paul J. Crutzen, *Geology of Mankind*, 415 NATURE 23, 23 (2002).

³ Zalasiewicz et al., *supra* note 2, at 2228.

⁴ E.g., Elizabeth Kolbert, *Enter the Anthropocene—Age of Man*, NAT’L GEO. (Mar. 2011), <http://ngm.nationalgeographic.com/2011/03/age-of-man/kolbert-text>. We are in the midst of the 6th mass extinction. Damian Carrington, *Earth’s Sixth Mass Extinction Event Under Way, Scientists Warn*, GUARDIAN (July 10, 2017, 3:00 PM), <https://www.theguardian.com/environment/2017/jul/10/earths-sixth-mass-extinction-event-already-underway-scientists-warn>. Toxic chemicals are accumulating throughout the global environment. See generally FRANCIS O. ADEOLA, INDUSTRIAL DISASTERS, TOXIC WASTE, AND COMMUNITY IMPACT: HEALTH EFFECTS AND ENVIRONMENTAL JUSTICE STRUGGLES AROUND THE GLOBE (2012); Kristen S. Schafer & Susan E. Kegley, *Persistent Toxic Chemicals in the US Food Supply*, 56 J. EPIDEMIOLOG. COMMUNITY HEALTH 813, 813–15 (2002); Yukie Mato et al., *Plastic Resin Pellets as a Transport Medium for Toxic Chemicals in the Marine Environment*, 35 ENVTL. SCI. TECH. 318, 318 (2001). At the same time, human global population is rising exponentially. Dep’t of Economic and Social Affairs: Population Division, *World Population Prospects: Key Findings and Advance Tables*, at 1 tbl.1, U.N. Doc. ESA/P/WP/248 (2017), https://esa.un.org/unpd/wpp/Publications/Files/WPP2017_KeyFindings.pdf.

⁵ James Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217, 217 (2008).

visible than when considering the rapid pace of human-induced climate change.⁶ In September 2016, the Scripps Institute announced that global atmospheric carbon dioxide levels crossed the 400 ppm line permanently (or at least for “the indefinite future”).⁷ Indeed, we have known for nearly two decades that “it is not a question of whether the Earth’s climate will change, but rather when, where, and by how much.”⁸

Life in a 400 ppm world will be very different from how humans have experienced the Earth throughout our 200,000 year history.⁹ We are already seeing glimmers of what that new world will be like. During a recent heatwave, Arizona residents took to social media with photos of eggs, cookies, and meat cooking in the sun;¹⁰ and

⁶ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: SYNTHESIS REPORT 5 (Rajendra K. Pachauri et al. eds., 2015) [hereinafter IPCC].

⁷ Rob Monroe, *Notes on Reaching the Annual Low Point*, SCRIPPS INSTITUTION OF OCEANOGRAPHY: THE KEELING CURVE (Sept. 23, 2016), <https://scripps.ucsd.edu/programs/keelingcurve/2016/09/23/note-on-reaching-the-annual-low-point/>; Brian Kahn, *Earth’s CO₂ Passes the 400 PPM Threshold—Maybe Permanently*, SCI. AMERICAN (Sept. 27, 2016), <https://www.scientificamerican.com/article/earth-s-co2-passes-the-400-ppm-threshold-maybe-permanently/> (explaining that, for the first time, September 2016 carbon dioxide levels remained above 400 parts per million). Four hundred ppm is a symbolic milestone, representing decades of locked-in warming, no matter what happens to reduce carbon emissions in the present or future. Michael Slezak, *World’s Carbon Dioxide Concentration Teetering on the Point of No Return*, GUARDIAN (May 11, 2016, 4:11 PM), <https://theguardian.com/environment/2016/may/11/worlds-carbon-dioxide-concentration-teetering-on-the-point-of-no-return>.

⁸ Robert T. Watson, Chairman, Int’l Panel on Climate Change, Report to the Fifth Conference of the Parties of the United Nations Framework Convention on Climate Change (Nov. 2, 1999) (transcript available at <https://www.ipcc.ch/graphics/speeches/robert-watson-november-1999.pdf>).

⁹ Most paleoanthropologists date the emergence of *Homo sapiens* to roughly 200,000 years ago under the “out-of-Africa” theory. JOHN L. BRADSHAW, HUMAN EVOLUTION: A NEUROPSYCHOLOGICAL PERSPECTIVE 185 (2003). Behaviorally modern humans, however, have a shorter history—roughly 60,000 years. Paul Mellars, *Why Did Modern Human Populations Disperse from Africa ca. 60,000 Years Ago? A New Model*, 103 PROC. NAT’L ACAD. SCI. 9381, 9381 (2006).

¹⁰ Chaffin Mitchell, *It’s So Hot in Arizona that Street Signs and Mailboxes Are Melting*, ACCU WEATHER (June 26, 2017 2:00 PM), <https://www.accuweather.com/en/weather-news/its-so-hot-in-arizona-that-street-signs-and-mailboxes-are-melting/70002032>.

planes were grounded because it was “too hot to fly.”¹¹ Around the world, glaciers are retreating at a rate “without precedent,”¹² and the Antarctic ice shelves are disintegrating.¹³ In coastal zones, “sunny day flooding” is on the rise,¹⁴ and many coastal cities will be inundated within the next twenty years.¹⁵ Biodiversity is teetering on the

¹¹ Matt Falcus, *Chaos in Arizona: What Happens When It's Too Hot to Fly?*, MULTI BRIEFS (June 27, 2017), <http://exclusive.multibriefs.com/content/chaos-in-arizona-what-happens-when-its-too-hot-to-fly/transportation-technology-automotive>; Amy B. Wang, *It's So Hot in Phoenix that Airplanes Can't Fly*, WASH. POST (June 21, 2017), https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/06/20/its-so-hot-in-phoenix-that-airplanes-cant-fly/?utm_term=.654236489206 (reporting that many regional jets can only operate out of Phoenix when the temperature is 118° F and below). For a detailed explanation of how excessive heat affects air travel, see Zach Wichter, *Too Hot to Fly? Climate Change May Take a Toll on Air Travel*, N.Y. TIMES (June 20, 2017), <https://www.nytimes.com/2017/06/20/business/flying-climate-change.html>. Climate change could affect a significant percentage of flights by mid-century. See Ethan D. Coffel et al., *The Impacts of Rising Temperatures on Aircraft Takeoff Performance*, 144 CLIMATIC CHANGE 381, 384–85 (2017), <https://link.springer.com/content/pdf/10.1007%2Fs10584-017-2018-9.pdf>.

¹² WORLD GLACIER MONITORING SERV., GLOBAL GLACIER CHANGE BULLETIN: NO. 1 (2012–2013) 8 (Michael Zemp et al. eds., 2015); accord Margaret Kriz Hobson, *Alaska's Glaciers Are Retreating*, SCI. AM. (Sept. 30, 2016), <https://www.scientificamerican.com/article/alaska-s-glaciers-are-retreating/>.

¹³ See Jugal K. Patel & Justin Gillis, *An Iceberg the Size of Delaware Just Broke Away from Antarctic*, N.Y. TIMES, <https://www.nytimes.com/interactive/2017/06/09/climate/antarctica-rift-update.html> (last updated July 12, 2017); Justin Gillis, *Antarctic Dispatches: Miles of Ice Collapsing into the Sea*, N.Y. TIMES (May 18, 2017), <https://www.nytimes.com/interactive/2017/05/18/climate/antarctica-ice-melt-climate-change.html>. For decades, scientists have been warning of the catastrophic sea level rise associated with climate-change induced Antarctic melting. See, e.g., J. H. Mercer, *West Antarctic Ice Sheets and CO₂ Greenhouse Effect: A Threat of Disaster*, 271 NATURE 321, 321 (1978).

¹⁴ Justin Gillis, *Flooding of Coast, Caused by Global Warming, Has Already Begun*, N.Y. TIMES (Sept. 3, 2016), <https://www.nytimes.com/2016/09/04/science/flooding-of-coast-caused-by-global-warming-has-already-begun.html>. “Sunny day flooding” refers to tidal flooding due to rising sea levels. See Jonathan Corum, *A Sharp Increase in ‘Sunny Day’ Flooding*, N.Y. TIMES (Sept. 3, 2016), <https://www.nytimes.com/interactive/2016/09/04/science/global-warming-increases-nuisance-flooding.html>.

¹⁵ ERIKA SPANGER-SIEGFRIED ET AL., UNION OF CONCERNED SCIENTISTS, WHEN RISING SEAS HIT HOME: HARD CHOICES AHEAD FOR HUNDREDS OF US COASTAL COMMUNITIES 2, 16–19 (2017).

precipice of mass extinctions.¹⁶ Fifteen of the sixteen warmest years on record have occurred since 2001.¹⁷ The last time the world experienced a month with below average temperatures was February 1985.¹⁸

Scientists have conclusively documented the anthropogenic origins of climate change.¹⁹ Indeed, the Intergovernmental Panel on Climate Change (IPCC) characterized the scientific evidence as “unequivocal.”²⁰ It seems like the message is finally getting through. Global CO₂ emissions recently stabilized after years of growth,²¹ and in the 2015 Paris Agreement, the largest carbon emitters, including the United States, China, India, and the European Union, all collectively endorsed the goal of keeping warming as close to 1.5°C as possible.²² Advances in sustainable energy make a technology-driven de-carbonization of the world economy increasingly possible.²³ A low carbon future is potentially within our grasp.²⁴ Yet, we

¹⁶ See Chris D. Thomas et al., *Extinction Risk from Climate Change*, 427 NATURE 145, 145 (2004) (predicting that under mid-range climate-warming scenarios, 15–37% of species will be committed to extinction by 2050).

¹⁷ NASA, *NOAA Analyses Reveal Record-Shattering Global Warm Temperatures in 2015*, NASA (Jan. 20, 2016), <https://www.giss.nasa.gov/research/news/20160120/>.

¹⁸ NASA, *GLOBAL Land-Ocean Temperature Index in 0.01 Degrees Celcius*, https://data.giss.nasa.gov/gistemp/tabledata_v3/GLB.Ts+dSST.txt (last visited Jan. 6, 2018) (1880-present). Anyone under the age of 32 (as of this writing) has never lived through a single month with below average global temperatures.

¹⁹ IPCC, *supra* note 6, at 4–5.

²⁰ *Id.* at 2.

²¹ Pilita Clark, *Sharp Drop in US Emissions Keeps Global Levels Flat*, FIN. TIMES (Mar. 17, 2017), <https://www.ft.com/content/540ebb0c-0a60-11e7-ac5a-903b21361b43>; IEA, *RECENT TRENDS IN OECD: ENERGY AND CO₂ EMISSIONS 6* (2016), http://www.iea.org/media/statistics/Recent_Trends_in_the_OECD.pdf.

²² *Paris Agreement - Status of Ratification*, UNITED NATIONS CLIMATE CHANGE, http://unfccc.int/paris_agreement/items/9444.php (last visited Jan. 7, 2018); United Nations Framework Convention on Climate Change, *Adoption of the Paris Agreement*, art. 2, U.N. Doc FCCC/CP/2015/L.9/Rev.1, annex (Dec. 12, 2015) [hereinafter *Adoption of the Paris Agreement*].

²³ Johan Rockström et al., *A Roadmap for Rapid Decarbonization*, 355 SCI. 1269, 1269, 1271 (2017).

²⁴ *Id.*

are rapidly approaching a tipping point for major, irreversible climate changes.²⁵ The time for urgent action is now.²⁶

So, naturally, the new President of the United States decided to withdraw from the 2015 Paris Climate Agreement²⁷ and to vocally promote the use of coal and other fossil fuels.²⁸ Climate deniers²⁹ and oil executives³⁰ head key federal agencies in the Trump Administration, making it unlikely that there will be climate progress on

²⁵ CHLOE REVILL ET AL., 2020: THE CLIMATE TURNING POINT 7 (2017), www.mission2020.global/2020%20The%20Climate%20Turning%20Point.pdf.

²⁶ *Id.* (identifying six critical milestones to reach by 2020, including: zero emissions transport, renewable electricity generation, large-scale land restoration, infrastructure decarbonization, and massive investment in climate action).

²⁷ Michael D. Shear, *Trump Will Withdraw U.S. from Paris Climate Agreement*, N.Y. TIMES (June 1, 2017), <https://www.nytimes.com/2017/06/01/climate/trump-paris-climate-agreement.html>. <https://www.nytimes.com/2017/06/01/climate/trump-paris-climate-agreement.html>.

²⁸ See Eric Lipton & Barry Meier, *Under Trump, Coal Mining Gets New Life on U.S. Lands*, N.Y. TIMES (Aug. 6, 2017), <https://www.nytimes.com/2017/08/06/us/politics/under-trump-coal-mining-gets-new-life-on-us-lands.html>; Alister Doyle, *Trump's Coal Plan Sends U.S. Energy "Back to the Past"*, REUTERS (June 16, 2017, 11:00 AM), <http://www.reuters.com/article/us-climatechange-vatican-idUSKBN197216>. During the 2016 campaign, Trump repeatedly touted his willingness to promote coal mining, and in one of his first speeches after the election, promised to “cancel job-killing restrictions on the production of American energy, including shale energy and clean coal, creating many millions of high-paying jobs.” Chris Mooney & Steven Mufson, *Trump Wants to Lift Restrictions on 'Clean Coal.' Whatever That Is.*, WASH. POST (Nov. 22, 2016) https://www.washingtonpost.com/news/energy-environment/wp/2016/11/22/trump-wants-to-lift-restrictions-on-clean-coal-whatever-that-is/?utm_term=.6730a8f41da1.

²⁹ Trump's EPA is run by Scott Pruitt, who is on record stating that carbon dioxide does not cause global warming. Tom DiChristopher, *EPA Chief Scott Pruitt Says Carbon Dioxide is Not a Primary Contributor to Global Warming*, CNBC: POL., <https://www.cnbc.com/2017/03/09/epa-chief-scott-pruitt.html> (last updated Mar. 10, 2017, 10:08 AM). Sadly, Pruitt is far from the only member of the Trump Administration with extreme views on climate change. For a full roster of the climate views of cabinet members, see Mazin Sidahmed, *Climate Change Denial in the Trump Cabinet: Where Do His Nominees Stand?*, GUARDIAN (Dec. 15, 2016, 12:55 PM), <https://www.theguardian.com/environment/2016/dec/15/trump-cabinet-climate-change-deniers>.

³⁰ Secretary of State Rex Tillerson was CEO of ExxonMobil until December 2016. In that role, he was accused of misleading shareholders about the costs of climate change. Memorandum of Law in Opposition to Exxon's Motion to Quash and in Support of the Office of the Attorney General's Cross-Motion to Compel

the federal level. Despite the United States' intransigence, the rest of the world continues moving forward. The G-19 (the G-20 minus the United States)³¹ very publicly recommitted itself to the Paris Agreement.³² Domestically, states, cities, and private actors have begun stepping forward to advance carbon reduction initiatives, even without national leadership.³³

Unfortunately, our existing legal frameworks make it difficult for even climate-conscious decision-makers to "see" climate change

at 6–7, *People of the State of N.Y. v. PricewaterhouseCoopers, LLP*, 52 N.Y.S.3d 626 (2017) (No. 17-168).

³¹ Sara Stefanini, *G-19 Pledge to Stick to Paris Climate Agreement*, POLITICO, <http://www.politico.eu/article/g19-pledge-to-stick-to-paris-climate-agreement/> (last updated July 8, 2017, 6:11 AM).

³² G20 Leaders' Declaration, *Shaping an Interconnected World*, G20 Germany 2017: Hamburg 10 (July 7–8, 2017), <https://www.g20.org/gipfeldokumente/G20-leaders-declaration.pdf> (announcing that "[w]e take note of the decision of the United States of America to withdraw from the Paris Agreement The leaders of the other G20 members state that the Paris Agreement is irreversible.").

³³ Hiroku Tabuchi & Lisa Friedman, *U.S. Cities, States and Businesses Pledge to Measure Emissions*, N.Y. TIMES (July 11, 2017), <https://www.nytimes.com/2017/07/11/climate/cities-states-businesses-emissions-climate-pact.html>. The "We are Still" in declaration has already gathered carbon reduction commitments from 227 cities and counties, nine states, and thousands of businesses, investors, and educational institutions. "WE ARE STILL IN" DECLARATION, <https://www.wearestillin.com/we-are-still-declaration> (last visited Jan. 6, 2018). My institution, the City University of New York (CUNY), is one of the signatories. *Id.* America's Pledge is an umbrella organization led by California Governor, Jerry Brown, and former New York City Mayor, Michael R. Bloomberg. For more information, see *Letter of Michael R. Bloomberg to United Nations Secretary-general António Guterres & Executive Secretary of the UN Framework Convention on Climate Change Patricia Espinosa*, AMERICA'S PLEDGE, <https://www.americaspledgeonclimate.com/about/> (last visited Jan. 5, 2018). At the 23rd Conference of the Parties to the Framework Convention on Climate Change, held in late 2017, America's Pledge submitted a report detailing the scope and scale of ongoing climate action in the United States that is occurring despite the Trump Administration's withdrawal from the Paris Agreement. *See generally* AMERICA'S PLEDGE, PHASE 1 REPORT: STATES, CITIES, AND BUSINESSES IN THE UNITED STATES ARE STEPPING UP ON CLIMATE CHANGE (2017), <https://www.bbhub.io/dotorg/sites/28/2017/11/AmericasPledgePhaseOneReportWeb.pdf>.

when approving projects, or making critical infrastructure, agricultural, and land use decisions.³⁴ For example, the National Environmental Policy Act³⁵ requires federal agencies to consider “cumulative impacts,”³⁶ including “indirect” environmental impacts that are “reasonably foreseeable.”³⁷ Yet, the Federal Energy Regulatory Commission does not consider the climate impacts of exported natural gas when approving new natural gas exporting facilities because a separate agency, the Department of Energy, actually issues the export approvals for the natural gas.³⁸ The structure of the law, in this case the division of responsibilities between two interrelated federal agencies, renders invisible what should be clear—the inherent relationship between a facility designed to increase carbon-intensive fuel exports and the to-be-expected increases in natural gas production in order to supply that export facility with the natural gas it will export. This is just one small example³⁹ of how environmental decision-making remains stuck in old, illogical cubbyholes, and the fragmented legal frameworks that support them, even as we transgress multiple planetary boundaries.⁴⁰ This Article suggests how hu-

³⁴ For a description of how variables become simplified and abstracted, and therefore “legible” to the state, see JAMES C. SCOTT, *SEEING LIKE A STATE: HOW CERTAIN SCHEMES TO IMPROVE THE HUMAN CONDITION HAVE FAILED* 25–39 (1998).

³⁵ National Environmental Policy Act of 1969, 42 U.S.C. § 4321 et seq. (2012).

³⁶ 40 C.F.R. § 1508.7 (2011).

³⁷ 40 C.F.R. § 1508.8(b) (2011).

³⁸ See *EarthReports, Inc., v. FERC*, 828 F.3d 949, 952 (D.C. Cir. 2016); see also *Sierra Club v. FERC (Freeport)*, 827 F.3d 36, 47 (D.C. Cir. 2016); *Sierra Club v. FERC (Sabine Pass)*, 827 F.3d 59, 62–63 (D.C. Cir. 2016).

³⁹ See, e.g., *Alaska Oil & Gas Ass’n v. Nat’l Marine Fisheries Serv.*, No. 4:14-cv-00029-RRB, 2016 U.S. Dist. LEXIS 34848, at *46–*47 (D. Alaska Mar. 17, 2016).

⁴⁰ The concept of planetary boundaries emerged from interdisciplinary research at the Stockholm Resilience Center. See Johan Rockström et al., *Planetary Boundaries: Exploring the Safe Operating Space for Humanity*, 14 *ECOLOGY & SOC’Y* 32, 37–38 fig.4 (2009), <http://www.ecologyandsociety.org/vol14/iss2/art32/> [hereinafter *Planetary Boundaries*] (identifying nine planetary boundaries: biodiversity loss, climate change, chemical pollution, stratospheric ozone, atmospheric aerosol loading, ocean acidification, global phosphorus and nitrogen cycles, freshwater use, and land use change). In 2015, this same team of researchers reported that nearly half of those boundaries had been crossed. Will Steffen et al.,

man rights norms might help re-frame legal decision-making to better integrate climate change and the entwined destiny of human beings and Planet Earth.

II. WICKED PROBLEMS, SUPER-WICKED PROBLEMS, AND CLIMATE CHANGE

At the 1992 Rio Convention, the global community committed itself to “stabiliz[ing] [] greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”⁴¹ Yet, a quarter of a century later, we are nowhere near achieving that goal. Climate change is a classic example of what has come to be known as a “wicked” problem.⁴² The term, coined by design theorist Horst Rittel, distinguishes a certain kind of problem from the “tame” or “benign” problems typically found in engineering or science.⁴³ “Tame problems” have “relatively well-defined and stable problem statement[s], as well as] a definite stopping point” at which the problem has been answered.⁴⁴ Solutions can then be tested against an objective standard and accepted or rejected accordingly. That is not to say that tame problems are simple; they can be extremely complex and challenging.⁴⁵ But tame problems are amenable to the ordinary tools of analysis and verification.⁴⁶

Planetary Boundaries: Guiding Human Development on a Changing Planet, 347 SCI. 736, 736 (2015).

⁴¹ United Nations Framework Convention on Climate Change, art. II, *adopted* May 9, 1992, 1771 U.N.T.S. 107 (entered into force Mar. 21, 1994) [hereafter UNFCCC].

⁴² See generally Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159–87 (2009).

⁴³ Horst W. J. Rittel & Melvin M. Webber, *Dilemmas in a General Theory of Planning*, 4 POL’Y SCI. 155, 160–61 (1973) (explaining that “wicked” in this context does not mean “ethically deplorable” but “tricky” or “vicious (like a circle).”).

⁴⁴ Tom Ritchey, *Wicked Problems: Modelling Social Messes with Morphological Analysis*, 2 ACTA MORPHOLOGICA GENERALIS 1, 2 (2013).

⁴⁵ See Joseph C. Bentley, *From Wicked to Tame and Vice Versa*, CHALLENGE TAMING WICKED PROBS. (June 2, 2017), <http://tamingwickedproblems.com/from-wicked-to-tame-and-vice-versa/>.

⁴⁶ See *id.*; Ritchey, *supra* note 44, at 2.

For wicked problems, by contrast, there is rarely agreement about how the problem should be stated, let alone how it should be resolved.⁴⁷ Instead, wicked problems involve indeterminate problem-definitions, a plurality of perspectives held by multiple stakeholders, and a range of possible solutions, which rely on elusive political judgments about how to best characterize the problem.⁴⁸ Indeed, it has been said that “every wicked problem can be considered to be a symptom of another problem.”⁴⁹

Climate change exhibits all of the attributes of a wicked problem. First, our understanding of how human activities impact the global climate system is constantly evolving, and new information is continually forcing revisions to the definition of the problem itself.⁵⁰ Second, the climate problem is multi-causal: it not only involves the current activities of billions of people across the globe as they engage in multiple forms of contributory conduct, but also the historical conduct of a much smaller subsection of that population stretching back for well over a century.⁵¹ Third, climate change involves complex and unpredictable interactions between geophysical, political, social and economic systems, and involves those systems on global, regional, national, and local levels.⁵² Finally, climate change has more than one possible solution, with the appropriateness of any given solution hinging largely on the perspective of the

⁴⁷ See Ritchey, *supra* note 44, at 2.

⁴⁸ See Rittel & Webber, *supra* note 43, at 160–63.

⁴⁹ *Id.* at 165; *Wicked Problems: Problems Worth Solving*, AUSTIN CENTER FOR DESIGN, https://www.wickedproblems.com/1_wicked_problems.php (last visited Jan. 5, 2018).

⁵⁰ But not that the problem exists. In 1999, the head of the IPCC was already cautioning “it is not a question of whether the Earth’s climate will change, but rather when, where and by how much.” Watson, *supra* note 8.

⁵¹ Calculating shares of responsibility is an uncertain process, but there is no question that the OECD are responsible for the lions share whether measured per capita or overall. See H. Damon Matthews et al., *National Contributions to Observed Global Warming*, 9 ENVTL. RES. LETTERS 1, 5, 5 tbl.2 (2014), <http://iop-science.iop.org/article/10.1088/1748-9326/9/1/014010/meta> (noting that the United States alone accounts for roughly 15%, the top seven countries 63%, and the top twenty countries 82% of observed warming); Michal den Ezen et al., *Analyzing Countries’ Contribution to Climate Change: Scientific and Policy-Related Choices*, 8 ENVTL. SCI. & POL. 614, 614, 633 tbl.4, 634–35 (2005).

⁵² See, e.g., Anthony J. McMichael, *Globalization, Climate Change, and Human Health*, 368 N. ENG. J. MED. 1336, 1337–38 (2013).

decision-maker. For example, debates over *adaptation* to climate change versus *mitigation* of climate change are expressed through tussles over whether we should prioritize reducing carbon emissions,⁵³ promoting and protecting carbon sinks,⁵⁴ managing retreating from vulnerable lands,⁵⁵ or developing geoengineering technologies.⁵⁶ These debates reveal more about the preferences and values of those advocating for each approach than about the inherent superiority of one tactic or another. These debates highlight how the repercussions that flow from adopting any particular solution tend to create other problems,⁵⁷ often other wicked problems, forcing a continual re-evaluation of the parameters to be used in decision-making about climate change.⁵⁸ In short, wicked problems challenge the

⁵³ See, e.g., *Global Warming Solutions: Reduce Emissions*, UNION OF CONCERNED SCIENTISTS, <http://www.ucsusa.org/our-work/global-warming/solutions/global-warming-solutions-reduce-emissions> (last visited Jan. 7, 2018). New York City, for example, has committed to reducing its greenhouse gas emissions by 80% by 2050. *New York City's Roadmap to 80 x 50*, NYC SUSTAINABILITY, http://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/New%20York%20City's%20Roadmap%20to%2080%20x%2050_20160926_FOR%20WEB.pdf (last visited Jan. 6, 2018).

⁵⁴ See generally Amelia Ravin & Teresa Raine, *Best Practices for Including Carbon Sinks in Greenhouse Gas Inventories*, ENVTL PROTECTION AGENCY, <https://www3.epa.gov/ttnchie1/conference/ei16/session3/ravin.pdf> (last visited Jan. 5, 2018); Roger A. Sedjo & Michael Toman, *Can Carbon Sinks Be Operational? RFF Workshop Summary 1–2* (Resources for the Future, Discussion Paper No. 01-26) <http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-DP-01-26.pdf>.

⁵⁵ See Miyuki Hino et al., *Managed Retreat as a Response to Natural Hazard Risk*, 7 NATURE CLIMATE CHANGE 364, 364 (2017).

⁵⁶ See generally NAT'L RESEARCH COUNCIL OF THE NAT'L ACADEMIES, CLIMATE INTERVENTION: CARBON DIOXIDE REMOVAL AND RELIABLE SEQUESTRATION (2015); NAT'L RESEARCH COUNCIL OF THE NAT'L ACADEMIES, CLIMATE INTERVENTION: REFLECTING SUNLIGHT TO COOL EARTH (2015). *But see* Clive Hamilton, *Geoengineering is Not a Solution to Climate Change*, SCI. AM. (Mar. 10, 2015), <https://www.scientificamerican.com/article/geoengineering-is-not-a-solution-to-climate-change/>.

⁵⁷ See e.g., Megan Darby, *Activists Row Over Bioenergy Role in Meeting 1.5C Climate Target*, CLIMATE HOME NEWS (May 20, 2016, 9:40 AM), <http://www.climatechangenews.com/2016/05/20/activists-row-over-bioenergy-role-in-meeting-1-5c-climate-target/>.

⁵⁸ Rittel & Webber, *supra* note 43, at 159.

core institutions of a society. They are never really solved; “at best they are re-solved—over and over again.”⁵⁹

However, as Yale Forestry Professor Ben Cashore pointed out, climate change is more than a wicked problem; it is what he calls “super-wicked.”⁶⁰ Cashore identifies a set of additional confounding factors that distinguish super-wicked problems from wicked ones. First, for super-wicked problems, time is running out.⁶¹ Second, those who cause the problem are also those seeking to provide a solution.⁶² Third, the central authority needed to address a super-wicked problem is weak or non-existent.⁶³ And finally, discounting techniques discourage even inexpensive present-day investments to avoid long-term impacts, thereby pushing responses far into the future.⁶⁴ Sadly, climate change meets all these criteria.

A. *Time is Running Out*

The window for action to avert a climate catastrophe is closing rapidly.⁶⁵ Many consider the Paris Agreement goal of keeping warming below 1.5°C to be already out of reach.⁶⁶ In adopting 1.5°C as its goal, the Paris Agreement took a step beyond what had been

⁵⁹ *Id.* at 159–60.

⁶⁰ Kelly Levin et al., *Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change*, 45 POL’Y SCI. 123, 124 (2012) [hereinafter *Overcoming the Tragedy of Super Wicked Problems*]; K. Levin et al., *Playing it Forward: Path Dependency, Progressive Incrementalism, and the “Super Wicked” Problem of Climate Change*, 6 IOP CONF. SERIES 1, 1–2 (2009), <http://iopscience.iop.org/article/10.1088/1755-1307/6/50/502002/pdf>.

⁶¹ *Overcoming the Tragedy of Super Wicked Problems*, *supra* note 60, at 127.

⁶² *Id.*

⁶³ *Id.* at 127–28.

⁶⁴ *Id.* at 128–29.

⁶⁵ *Time Window for Action to Limit Climate Change is Closing Rapidly*, SCI. DAILY: SCI. NEWS (Sept. 1, 2016), <https://www.sciencedaily.com/releases/2016/09/160901125440.htm> (reporting on an address by Professor Niklas Höhne, Special Professor of Mitigation of Greenhouse Gases at Wageningen University).

⁶⁶ See Joeri Rogelj et al., *Paris Agreement Climate Proposals Need a Boost to Keep Warming Well Below 2°C*, 534 NATURE 631, 631 (2016); Megan Darby, *Scientists: Window for Avoiding 1.5C Global Warming ‘Closed’*, CLIMATE HOME NEWS (June 29, 2016, 6:00 PM), <http://www.climatechangenews.com/2016/06/29/scientists-window-for-avoiding-1-5c-global-warming-closed/>.

the most frequently mentioned climate goal—keeping warming below 2°C.⁶⁷ Two degrees Celsius had been widely adopted as a climate goal, not because it made sense from a perspective of keeping climate change within manageable bounds, but because it seemed achievable. A more honest assessment views this target for “success” as in fact the threshold for catastrophe.⁶⁸ And yet, we will be lucky if we can achieve 2°C.⁶⁹ The IPCC’s business-as-usual-trajectory projects 2.6°C to 4.8°C by 2100,⁷⁰ which would spell disaster.

B. *Global Political Paralysis*

We have decades of data, providing ever-increasing levels of certainty about the scope and scale of the climate disaster, yet so few of the necessary choices have been made. The reason for this paralysis stems from Cashore’s second and third super-wicked factors⁷¹—the lack of governmental structure and the conundrum that those who are creating the problem must solve it.

Even the Paris Agreement, the focus of so much political debate, does little to solve these core problems. The Paris Agreement is, after all, composed entirely of voluntarily-adopted “nationally determined contributions.”⁷² Each country decided for itself how ambitious it would be.⁷³ As a result, those “nationally determined contributions” have more to do with short-term pragmatic domestic concern than with the actual reductions necessary to avert a climate catastrophe.⁷⁴ For example, the United States’ nationally determined

⁶⁷ See Rogelj et al., *supra* note 66, at 631.

⁶⁸ Stefan Rahmstorf & Anders Levermann, *Preface* to 2020: THE CLIMATE TURNING POINT, *supra* note 25, at 3.

⁶⁹ Richard A. Betts et al., *When Could Global Warming Reach 4°C?*, 369 PHIL. TRANSACTIONS ROYAL SOC’Y A 67, 67–70 (2010) (noting that the center of the range of projections from the IPCC’s Fourth Assessment Report hovered around 4°C.).

⁷⁰ Some researchers project even higher temperature rises of 4.78°C to 7.36°C. Tobias Friedrich et al., *Nonlinear Climate Sensitivity and Its Implications for Future Greenhouse Warming*, SCI. ADVANCES, Nov. 9, 2016, at 1, 3, 9.

⁷¹ See *Overcoming the Tragedy of Super Wicked Problems*, *supra* note 60, at 127–28.

⁷² *Adoption of the Paris Agreement*, *supra* note 22, at art. 4.

⁷³ *Id.* at art. 4.

⁷⁴ *Id.*; see also Rogelj et al., *supra* note 66, at 631. See generally Iñigo González-Ricoy & Axel Gosseries, *Designing Institutions for Future Generations: An Introduction*, in INSTITUTIONS FOR FUTURE GENERATIONS 3, 4 (Iñigo González-

contribution was to reduce greenhouse gas emissions by 26% to 28% below 2005 levels by 2025.⁷⁵ The Presidential Climate Action Project identified as necessary a much more ambitious target—reducing United States’ emissions by 80% by 2050.⁷⁶ While the United States’ Paris commitment could have been a first step toward reaching that more ambitious target, independent analysis of the United States’ submissions concluded that the country’s likelihood of reaching that goal under existing law was small.⁷⁷ And that was before the 2016 election placed a climate-denier at the helm.

Even if the United States, and the other 146 states that submitted nationally determined contributions, succeeded in meeting those targets, best estimates are that the resulting emissions would put us on target for 2.6 to 3.1°C of warming.⁷⁸ Moreover, since each country self-assesses its own success in meeting its nationally-determined contributions under the Paris Agreement,⁷⁹ there is no enforcement mechanism, aside from the requirement of transparency.⁸⁰ The Paris Agreement may have been a good start, but it is at most only a beginning. And now, of course, the future of the Paris Agreement is unclear.

C. *Irrational Discounting*

By adopting the United Nations Framework Convention on Climate Change (UNFCCC), the international community set its sights

Ricoy & Axel Gosseries eds., 2017) (ebook); William D. Nordhaus, *The Political Business Cycle*, 42 REV. ECON. STUD. 169, 181–89 (1975).

⁷⁵ The White House Office of the Press Secretary, *FACT SHEET: U.S. Reports Its 2025 Emissions Target to the UNFCCC*, WHITE HOUSE: PRESIDENT BARACK OBAMA (Mar. 31, 2015), <https://obamawhitehouse.archives.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc>.

⁷⁶ SUSAN JOY HASSOL, PRESIDENTIAL CLIMATE ACTION PROJECT, *QUESTIONS AND ANSWERS: EMISSIONS NEEDED TO STABILIZE CLIMATE 4* (2007), <https://www.climatecommunication.org/wp-content/uploads/2011/08/presidentialaction.pdf>.

⁷⁷ See Jeffrey B. Greenblatt & Max Wei, *Assessment of the Climate Commitments and Additional Mitigation Policies of the United States*, 6 NATURE CLIMATE CHANGE 1090, 1090–91 (2016).

⁷⁸ Rogelj et al., *supra* note 66, at 631, 635; *Climate Scoreboard: UN Climate Pledge Analysis*, CLIMATE INTERACTIVE, <https://www.climateinteractive.org/programs/scoreboard/> (last visited Jan. 5, 2018) (projecting 3.3°C warming by 2100).

⁷⁹ *Adoption of the Paris Agreement*, *supra* note 22, at art. 4, art. 13.

⁸⁰ *Id.* at art. 13.

on preventing “dangerous anthropogenic” climate change.⁸¹ In Article 3(3), the UNFCCC directed the Parties to “take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects.”⁸² It then tried to bridge the gap between pure cost-justified regulation and pure precaution by adding that

[w]here there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.⁸³

Irrational discounting, Cashore’s fourth super-wicked factor, has hollowed out this language.⁸⁴

Discounting is a core concept in benefit-cost analysis.⁸⁵ Ever since President Reagan issued Executive Order 12,291,⁸⁶ benefit-cost analysis has been gaining ascendancy in administrative decision-making and today it is the predominant administrative decision-making tool in the United States.⁸⁷ In theory, benefit-cost analysis gives decision-makers a consistent metric for making choices.⁸⁸

⁸¹ UNFCCC, *supra* note 41, at art. II.

⁸² *Id.* at art. III(3).

⁸³ *Id.*

⁸⁴ See *Overcoming the Tragedy of Super Wicked Problems*, *supra* note 60, at 128–29. For a good explanation of hyperbolic discounting, see Partha Dasgupta, *Discounting Climate Change* 18–19 (SANDEE, Working Paper No. 33-08).

⁸⁵ See William Nordhaus, *A Review of the Stern Review and the Economics of Climate Change*, 45 J. ECON. LITERATURE 686, 689 (2007).

⁸⁶ Section 2(b) of this Executive Order provides: “[r]egulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society.” Exec. Order No. 12,291, 46 Fed. Reg. 13193, § 2(b) (Feb. 19, 1981).

⁸⁷ The current version of this requirement, in Section 1(b)(6) of Executive Order 12,866 first issued by President Clinton, shifted the baseline a bit by instructing that “[e]ach agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” Exec. Order No. 12,866, 58 Fed. Reg. 51735, § 1(b)(6) (Oct. 4, 1993).

⁸⁸ See, e.g., *Cost-Benefit Analysis*, MINDTOOLS, https://www.mindtools.com/pages/article/newTED_08.htm (last visited Jan. 7, 2018).

By converting all costs and benefits of a proposed action into monetary values, regulators purport to assess the economic efficiency of the action.⁸⁹ However, in the context of climate change, the metric offered by benefit-cost analysis is woefully inadequate. First, attempts to measure the costs of climate change generally only capture a small portion of the impacts⁹⁰—those costs that directly impact economic production, or create non-market impacts that can be expressed in monetary terms. But, this is a vastly incomplete representation of the “costs” flowing from climate change.⁹¹

Decision-makers can assign a value to human lives lost (always a controversial, value-laden task), but what about the disruption to communities?⁹² How exactly does one put a value on Tuvalu?⁹³ Moreover, the impacts of climate change are so wide-ranging and so potentially catastrophic that it borders on the absurd to reduce them to some number presuming to approximate market value. What cost should be assigned to the spread of disease associated with climate change? Lost wages, medical costs, and price-per-capita for mortality capture only the narrowest slice of what that will really cost a society. Nor can sea-level rise, hurricane intensification,⁹⁴ ocean

⁸⁹ Cf. WILLIAM NORDHAUS, A QUESTION OF BALANCE: WEIGHING THE OPTIONS ON GLOBAL WARMING POLICIES 59 (2008).

⁹⁰ See Nordhaus, *supra* note 85, at 692.

⁹¹ See *id.*

⁹² See generally Richard L. Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 COLUM. L. REV. 941 (1999).

⁹³ Indeed, the very notion of a price begs another question—should that price be the amount we would be willing to pay to maintain Tuvalu, or the compensation we would demand for its elimination? (And of course, the notion of which “we” would make that choice is highly problematic.) The wide discrepancy between the values that people are willing to pay to achieve or prevent an outcome as opposed to what level of compensation they would demand to accept that same outcome highlights the core indeterminacy at the heart of this kind of an analysis. See generally Jack L. Knetsch & J. A. Sinden, *Willingness to Pay and Compensation Demanded: Experimental Evidence of an Unexpected Disparity in Measure of Value*, 99 Q.J. ECON. 507 (1984) (noting the wide discrepancy between compensation demanded and willingness to pay); Richard Thaler, *Towards a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 39–40 (1980). Yet, too often the very act of assigning dollar figures obscures this core indeterminacy with a patina of certainty and objectivity.

⁹⁴ Hurricane Katrina in August 2005, for example, caused over \$100 billion in damage, in addition to loss of over 1,800 lives. *Hurricane Katrina Statistics*

acidification, and loss of biodiversity, which are among the most damaging aspects of climate change, be translated into a conventional marketplace analysis.

These profound caveats and uncertainties have not prevented economists from attempting to identify the social cost of carbon—a figure translating the future consequences flowing from climate change into present monetary values.⁹⁵ There are three different, widely-used models for estimating the monetized damages from climate change.⁹⁶ The models begin to diverge at 1.5°C change to global mean temperature, and the gaps between the models increase dramatically as changes to global mean temperature become more catastrophic.⁹⁷ The divergence between these models adds yet another layer of uncertainty.

Fast Facts, CNN, <http://www.cnn.com/2013/08/23/us/hurricane-katrina-statistics-fast-facts/index.html> (last updated Aug. 28, 2017, 6:10 PM). Hurricane Sandy, in 2012, caused about \$50 billion in damages, disrupting power to nearly 5 million customers and leaving lasting effects on an extensive area of shoreline in New York and New Jersey. Mary Williams Walsh & Nelson D. Schwartz, *Estimate of Economic Losses Now Up to \$50 Billion*, N.Y. TIMES (Nov. 1, 2012), <http://www.nytimes.com/2012/11/02/business/estimate-of-economic-losses-now-up-to-50-billion.html>; *Hurricane Sandy's Cost May Hit \$50 Billion; Rebuilding to Ease Blow*, POLITICO (Oct. 30, 2012, 2:06 PM), <https://www.politico.com/story/2012/10/hurricane-sandys-cost-may-hit-50-billion-rebuilding-to-ease-blow-083062>. If climate change causes hurricanes to be more frequent, benefit-cost analysis would have to dramatically increase the costs of destruction.

⁹⁵ The United States government decided that value was \$37 per ton of carbon emitted in 2015. Howard Shelanski, *Refining Estimates of the Social Cost of Carbon*, WHITE HOUSE: PRESIDENT BARACK OBAMA: BLOG (Nov. 1, 2013, 4:02 PM), <https://obamawhitehouse.archives.gov/blog/2013/11/01/refining-estimates-social-cost-carbon>. However, depending on the discount rate, the span of possible values ranged from \$12 to \$123, an increase from three years earlier when the estimate range had been between \$7 and \$81. INTERAGENCY GRP. ON SOC. COST OF GREENHOUSE GASES, U.S. GOV'T, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866, at 5 fig.ES-1 (2013).

⁹⁶ Richard L. Revesz et al., *Global Warming: Improve Economic Models of Climate Change*, 508 NATURE 173, 173 (2014), <http://www.nature.com/news/global-warmingimprove-economic-models-of-climate-change-1.14991>.

⁹⁷ *Id.* at 173–74.

Second, climate change “stretch[es] social and natural relations of cause, effect and responsibility” in new ways.⁹⁸ Most of the benefits of climate regulation accrue in the future, often the distant future, and contributory actions date back to the 18th Century. The costs, by contrast, are incurred today, and in the near-future. Policy-makers conducting a benefit-cost analysis thus rely on discounting to convert the dollar value of those future benefits into their present value.⁹⁹ The implicit value judgments associated with discounting¹⁰⁰ add yet another layer of uncertainty to this calculation.¹⁰¹ Simply by using different discount rates for those future dollars, policy-makers can reach widely divergent conclusions justifying diametrically opposed regulatory choices. A high discount rate means that those future benefits have little present value,¹⁰² and expending resources

⁹⁸ Harriet Bulkeley, *Governing Climate Change: The Politics of Risk Society?*, 26 TRANSACTIONS INST. BRITISH GEOGRAPHERS 430, 432 (2001). *See also*, Matthew Gandy, *Rethinking the Ecological Leviathan: Environmental Regulation in the Age of Risk*, 9 Global Environmental Change 59, 59-60 (1999) (making the point that conventional risk assessment is ill-suited for new, more systemic risks like climate change.) For one thing, there is no way to narrow the class of stakeholders for decisions that will affect everyone on the globe and all future generations.

⁹⁹ This approach is rooted in financial markets. *See Nordhaus, supra* note 85, at 689. It rests on the assumption that all human behavior can be appropriately modeled as selections among preferences that can be reduced to dollar values for purpose of comparison. *See, e.g., Cost-Benefit Analysis, supra* note 88; *cf. Nordhaus, supra* note 89, at 59. While this approach has clear utility under certain circumstances, the absurdity of reducing the “preference” for having a climate that supports human life should be apparent on its face.

¹⁰⁰ *See Douglas A. Kysar, Commentary, Politics by Other Meanings: A Comment on “Retaking Rationality Two Years Later”*, 48 HOUS. L. REV. 43, 68 (2011) (pointing out that benefit-cost analyses “inevitably [] contain moments deep within their technical details in which the analyst masks a critical value choice through a methodological maneuver.”); Jonathan S. Masur & Eric A. Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CAL. L. REV. 1557, 1560–62, 1568, 1596–1599 (2011).

¹⁰¹ Conducting this analysis requires bridging three levels of uncertainty: the profoundly practical uncertainty about the specific impacts of climate change; the existential uncertainty about how to value those impacts in dollar terms; and the value-laden uncertainty about how to compare costs and benefits that accrue at different times. It is easy to see how the assumptions used to bridge these compounding uncertainties can become outcome determinative.

¹⁰² *See, e.g.,* 160 CONG. REC. S3355–56 (daily ed. June 3, 2014) (statement of Sen. Cornyn) (“[T]he debate . . . is not about the science of climate change; it is a

today to accrue climate benefits in the future will appear unjustifiable.¹⁰³ By contrast, employing a lower discount rate leads to a conclusion that “prompt and strong action” to prevent climate change is “clearly warranted.”¹⁰⁴ The discount rate becomes outcome determinative. The central difference turns on how much to value the future—and future generations.¹⁰⁵

Recognizing that climate change is a super-wicked problem with these four attributes is a first step toward developing responses. The essence of a super-wicked problem is that it defies ordinary solutions rooted in the ordinary institutions of society.¹⁰⁶ Climate change certainly qualifies. And, as if that were not enough of a challenge, there is an additional complicating factor: the overwhelming majority of the conduct that has gotten us to this point has been entirely

debate about whether massive regulations should be forced to pass a simple cost-benefit analysis.”); 160 CONG. REC. H1654 (daily ed. Feb. 5, 2014) (statement of Rep. Latta) (“[T]he EPA has put forward broad-reaching regulatory proposals that are either unachievable or lack sufficient cost-benefit justifications.”).

¹⁰³ See NORDHAUS, *supra* note 89, at 10–11, 59–62; Nordhaus, *supra* note 85, at 689; see also TED GAYER & W. KIP VISCUSI, DETERMINING THE PROPER SCOPE OF CLIMATE CHANGE BENEFITS 15–17 (2014), https://www.brookings.edu/wp-content/uploads/2016/06/04_determining_proper_scope_climate_change_benefits.pdf (objecting to considering global rather than national benefits in conducting a benefit-cost analysis of the Clean Power Plan, proposed by the Obama Administration to reduce carbon emissions from power plants under the Clean Air Act).

¹⁰⁴ NICHOLAS STERN, THE STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE 671 (2007). The *Stern Review* estimated that the costs and risks associated with *not* taking action to combat climate change “will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more.” *Id.* at xv. Presenting the *Stern Review*, then-British Prime Minister Tony Blair asserted “[w]ithout radical international measures to reduce carbon emissions within the next 10–15 years, there is compelling evidence to suggest we might lose the chance to control temperature rises.” Nigel Williams, *Costing Climate Change*, 16 CURRENT BIOLOGY R971, R971–72 (2006).

¹⁰⁵ Cf. David Weisbach & Cass R. Sunstein, *Climate Change and Discounting the Future: A Guide for the Perplexed*, 27 YALE L. & POL’Y REV. 433, 436 (2009) (pointing out that “[t]he destruction of Florida through sea level rise in 200 years . . . matters very little in a cost-benefit analysis that relies on discounting.”).

¹⁰⁶ See generally *Overcoming the Tragedy of Super Wicked Problems*, *supra* note 60.

legal.¹⁰⁷ Thus, responding to a super-wicked problem like climate change requires rethinking the social institution of law—specifically the balance that law strikes between individual and group rights, between current and future interests, and between economic and environmental priorities. That is where human rights come in.

III. HUMAN RIGHTS AND CLIMATE CHANGE

If ordinary people are asked to fill in the blank in this sentence: “Climate change is the greatest _____ challenge that human society faces in the 21st Century,” they might offer a range of different responses. Maybe the answer would be that climate change is the greatest *technical* challenge human society faces. Or, maybe that climate change poses the greatest *social* challenge, the greatest *political* challenge, or the greatest *economic* challenge. All of those answers may be true. But, climate change is also the greatest *human rights* challenge of the twenty-first century because a safe, clean, healthy, and sustainable environment is integral to the full enjoyment of human rights,¹⁰⁸ and climate change “has clear and immediate implications for the full enjoyment of human rights.”¹⁰⁹

Climate change has impacted or will impact a wide range of human rights by undercutting the rights to life, health, food, and water. For citizens of small island states, climate change will affect the right to self-determination and the right to culture. The preamble to the Paris Agreement recognized this relationship:

Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous

¹⁰⁷ For a discussion on this point, see generally Rebecca Bratspies, *Claimed Not Granted: Finding a Human Right to a Healthy Environment*, 26 *TRANSNAT’L L. & CONTEMP. PROBS.* 263 (2017).

¹⁰⁸ See generally John Knox (Special Rapporteur on Human Rights and the Environment), *Rep. on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*, U.N. Doc. A/HRC/34/49 (Jan. 19, 2017).

¹⁰⁹ Male’ Declaration on the Human Dimension of Global Climate Change 2 (Nov. 14, 2007), http://www.ciel.org/Publications/Male_Declaration_Nov07.pdf.

peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity . . . ¹¹⁰

This language, which marked the first time that an international climate treaty mentioned human rights, was the culmination of a multi-year advocacy project to “include” human rights in the climate agreement.¹¹¹ The Paris Agreement thus took a much heralded step beyond the Cancun Agreement, which had called on Parties to “fully respect human rights” in all climate change matters.¹¹² The Paris Agreement also built on the Human Rights Council’s conclusions that “climate change poses an immediate and far-reaching threat to people and communities around the world”¹¹³ and that climate change has implications for the full enjoyment of human rights.¹¹⁴ But, it is not just that climate change poses a threat to human rights. Because climate change is a super-wicked problem, human rights

¹¹⁰ *Adoption of the Paris Agreement, supra* note 22, at 21.

¹¹¹ *See, e.g.*, U.N. Human Rights Office of the High Commissioner, A New Climate Agreement Must Include Human Rights Protections for All: An Open Letter from Special Procedures Mandate-holders of the Human Rights Council to the State Parties to the U.N. Framework Convention on Climate Change on the Occasion of the Meeting of the Ad Hoc Working Group on the Durban Platform for Enhanced Action in Bonn (Oct. 17, 2014), http://www.ohchr.org/Documents/HRBodies/SP/SP_To_UNFCCC.pdf.

¹¹² U.N. Framework Convention on Climate Change, *Report of the Conference of the Parties on Its Sixteenth Session, Held in Cancun from 29 Nov. to 10 Dec. 2010*, U.N. Doc. FCCC/CP/2010/7/Add.1 (Mar. 15, 2011). I have written elsewhere about the absurdity in thinking that this legal wrangling actually determines the content of human rights. Bratspies, *supra* note 107, 272–73.

¹¹³ Human Rights Council Res. 7/23, at 1 (Mar. 28, 2008).

¹¹⁴ *Gabčíkovo-Nagymaros Project (Hung. v. Slov.)*, Judgment, 1997 I.C.J. Rep. 7, 89–92, 95–96, 99, 114, 117 (Sept. 25) (separate opinion by Weeramantry, J.) (asserting that “protection of the environment is . . . a *sine qua non* for numerous human rights such as the right to health and the right to life itself.”). In its primer on Human Rights and the Environment, The Center for International Environmental Law helpfully provides a chart connecting various climate impacts with their human rights correlates. CTR. FOR INT’L ENVTL. LAW, CLIMATE CHANGE & HUMAN RIGHTS: A PRIMER 6 (2011), http://www.ciel.org/Publications/CC_HRE_23May11.pdf.

can also be part of the solution—offering a theoretical framework to move law and policy forward in responding to climate change.¹¹⁵

IV. WHY HUMAN RIGHTS?

In the twenty-first century, human rights are almost reflexively considered to be *jus cogens*.¹¹⁶ They “enjoy a prima facie, presumptive inviolability, and will often ‘trump’¹¹⁷ other public goods.”¹¹⁸ Human rights, after all, exist and bind states, regardless of state law to the contrary. Their entire purpose is to define a core of rights that are not dependent on favorable state laws.¹¹⁹ Moreover, while human rights flow to individuals¹²⁰ (and sometimes groups), the state obligations involved are both horizontal and vertical, meaning that

¹¹⁵ See Human Rights Council Res. 10/4, at 2 (Mar. 25, 2009) (“[H]uman rights obligations and commitments have the potential to inform and strengthen international and national policymaking in the area of climate change . . .”).

¹¹⁶ See Andrea Bianchi, *Human Rights and the Magic of Jus Cogens*, 19 EUR. J. INT’L L. 491, 498 (2008) (noting that courts evaluating anti-terrorism Security Council resolutions have considered human rights to be preemptory norms against which the Security Council resolutions must be evaluated).

¹¹⁷ No pun intended.

¹¹⁸ LOUIS HENKIN, *THE AGE OF RIGHTS* 4 (1990). The International Court of Justice has not embraced this view, at least with regard to the principle that the court’s jurisdiction rests on consent. See *Armed Activities on the Territory of the Congo (Dem. Rep. Congo v. Rwanda)*, Judgment, 2006 I.C.J. Rep. 6, 60, ¶ 3 (separate opinion by *ad hoc* Dugard, J.).

¹¹⁹ The International Convention on Civil and Political Rights identifies rights for which states cannot make reservations. See OFFICE OF THE HIGH COMMISSIONER FOR HUMAN RIGHTS, *CORE HUMAN RIGHTS IN THE TWO COVENANTS* (2013), <http://nhri.ohchr.org/EN/IHRS/TreatyBodies/Page%20Documents/Core%20Human%20Rights.pdf>. Countless scholars have described various human rights as non-derogable. See, e.g., RACHEL BALL, *HUMAN RIGHTS LAW CENTRE, ABSOLUTE AND NON-DEROGABLE RIGHTS IN INTERNATIONAL LAW* 1–2 (2011). Even the Restatement (Third) of the Foreign Relations Law of the United States identifies quite a few human rights norms as having attained preemptory status. RESTATEMENT (THIRD) OF FOREIGN RELATIONS LAW: CUSTOMARY INTERNATIONAL LAW OF HUMAN RIGHTS § 702 (AM. LAW INST. 1987).

¹²⁰ G.A. Res. 217 (III) A, Universal Declaration of Human Rights, Preamble (Dec. 10, 1948) (“inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world . . .”).

states owe these *erga omnes* duties not only to persons within their control, but also to other states.¹²¹

As such, human rights offer a means for navigating the nether-regions of law—those areas where labels like “legal” and “illegal” fail to capture the full ramifications of social choices. With regards to climate change, a human rights framing can be a way to break out of the path dependencies created by routine regulatory decisions that “lock in” carbon emissions.¹²² Indeed, what gives human rights their power in this context is this ability to cut through business-as-usual decision-making under existing domestic law. The *jus cogens* and *erga omnes* nature of human rights creates this power—providing both the lever and the metaphorical “place to stand” that Archimedes sought in order to move the world.¹²³ It is because of this ability to infuse ordinary, routine decision-making with new values that human rights have been called “law’s best response to profound, unthinkable, far-reaching moral transgression.”¹²⁴ This characterization has particular resonance in the climate context because the planetary boundary we humans are most rapidly transgressing is the climate boundary.¹²⁵

By helping frame responses targeting the super-wicked aspects of climate change identified above, human rights can provide that world-moving “place to stand.” First, the urgency of human rights allows legal systems to respond in a rapid timeframe,¹²⁶ creating the capability of responding to the “time is running out” aspect of the climate crisis. Second, because of the urgency and universality associated with human rights, recognizing climate change as a human

¹²¹ See, e.g., *Barcelona Traction, Light and Power Company, Ltd. (Belg. v. Spain)*, Judgment, 1970 I.C.J. Rep 3, ¶ 33 (Feb. 5).

¹²² See generally *Overcoming the Tragedy of Super Wicked Problems*, *supra* note 60, at 134–35; Gregory C. Unruh, *Understanding Carbon Lock-In*, 28 ENERGY POL’Y 817 (2000).

¹²³ See 1 PLUTARCH, THE LIVES OF THE NOBLE GRECIANS AND ROMANS 418 (Arthur Hugh Clough ed., John Dryden trans. 1992); Gary Berkowitz, trans., *Tzetzes, Chiliades II*, THEOI TEXTS LIBRARY, <http://www.theoi.com/Text/TzetzesChiliades2.html#3> (last visited Jan. 6, 2018).

¹²⁴ Amy Sinden, *Climate Change and Human Rights*, 27 J. LAND RESOURCES & ENVTL. L. 255, 257 (2007).

¹²⁵ See generally *Planetary Boundaries*, *supra* note 40, at 32–33, 38–41.

¹²⁶ See *Responding to Pressing Human Rights Issues*, U.N. HUMAN RIGHTS OFFICE HIGH COMMISSIONER (Sept. 1, 2009), <http://www.ohchr.org/EN/NewsEvents/Pages/Respondingtopressinghrissues.aspx>.

rights problem can reduce the clamor from competing economic and social interests, allowing policymakers to focus on responding to climate threats. Moreover, because human rights squarely reject the notion that national boundaries have salience with respect to questions of justice,¹²⁷ a human rights framing responds both to the lack of governing political authority aspect of the climate crisis and to the discounting problems highlighted above.

Among the key advantages to invoking human rights in the context of climate change is that a human rights framing may make the problems more tractable (or if you prefer, less wicked). First, articulating the problems of climate change in the language of human rights allows policymakers to break out of the legal and technical lock-ins created by past decisions. In other words, human rights can create the space necessary for legal decision-makers to reinterpret domestic law to meet climate challenges. Second, to the extent that human rights are justiciable in international tribunals, new legal arenas allow citizens to assert their rights in a fashion that can reframe the problem of climate change, and to raise arguments and considerations not possible in the domestic context.¹²⁸ Human rights can thus spur action from those at opposite ends of the climate change conundrum; policy-makers have space to rethink their mission and an empowered citizenry has a venue to raise new questions. These two advantages can feed into each other, creating a new relationship between regulators and the citizenry they serve that in turn makes possible a rethinking of social order more generally.

A. *Breaking Domestic Boundaries*

This first advantage of human rights framing is its potentially-transformative impact on those charged with making key regulatory decisions with climate impacts. When decision-makers view themselves as human rights actors, their self-conception of their duties

¹²⁷ See e.g., Debra Satz, *Equality of What Among Whom? Thoughts on Cosmopolitanism, Statism, and Nationalism*, 41 *NOMOS* 67, 74 (1999) (espousing this vision of human rights).

¹²⁸ See Jeannine Cahill-Jackson, Note, *Mossville Environmental Action Now v. United States: Is a Solution of Environmental Injustice Unfolding?*, 6 *PACE INT'L L. REV. ONLINE COMPANION* 173, 174 (2012).

and obligations necessarily shifts.¹²⁹ For example, as noted above, in approving natural gas and oil pipelines, the Federal Energy Regulatory Commission (FERC) has routinely refused to consider climate change impacts from the natural gas transported by the pipeline, on the rationale that “there is no standard methodology for quantifying the downstream environmental effects of greenhouse gas emissions that result from a pipeline project.”¹³⁰ The FERC maintained this position even when contracts for the sale of that gas are already in place¹³¹ and emissions can be predicted with great specificity.

By statute, the FERC is tasked with making decisions in the public’s interest.¹³² In interpreting this public interest mandate, the agency has “wide discretion to balance competing equities.”¹³³ Were the FERC to view itself as a human rights decision-maker, using that discretion would entail acknowledging the inextricably entwined relationship between energy production, carbon emissions, climate change, and the enjoyment of human rights.

Recognizing these connections would, in turn, mean that during the pipeline approval process, FERC would take seriously NEPA’s direction that all federal agencies shall “recognize the worldwide

¹²⁹ I have elsewhere written about how this might work. *See generally* Rebecca M. Bratspies, *Human Rights and Environmental Regulation*, 19 N.Y.U. ENVTL. L.J. 225 (2012).

¹³⁰ Brief for the Respondent at 22, *Freeport*, 827 F.3d 36 (D.C. Cir. 2016) (Nos. 16-1329).

¹³¹ Opening Brief for the Petitioner at 36–37, *Freeport*, 827 F.3d 36 (D.C. Cir. 2016) (No. 16-1329); Ellen M. Gilmer, *FERC’s Environmental Justice, Climate Review Scrutinized*, E&E NEWS (Apr. 19, 2017), <https://www.eenews.net/stories/1060053253>.

¹³² *See e.g.*, 16 U.S.C. § 824(a) (2005) (“[i]t is declared that the business of transmitting and selling electric energy for ultimate distribution to the public is affected with a public interest, and that Federal regulation . . . is necessary in the public interest”); *id.* at § 824(b) (“[t]he Commission may grant any application for an order under this section . . . upon such terms and conditions as it finds necessary or appropriate to secure the maintenance of adequate service and the coordination in the public interest of facilities subject to the jurisdiction of the Commission.”); *id.* at § 824o(d)(2) (“[t]he Commission may approve, by rule or order, a proposed reliability standard or modification to a reliability standard if it determines that the standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest.”).

¹³³ *Columbia Gas Transmission Co. v. FERC*, 750 F.2d 105, 112 (D.C. Cir. 1984).

and long-range character of environmental problems”¹³⁴ Moreover, such an approach would breathe new life into the regulatory obligation that the FERC consider cumulative impacts¹³⁵ of any proposed pipeline projects¹³⁶ by directing agency attention to the cumulative impacts of carbon emissions from pipeline related activities on the human rights *inter alia* to life, water, and family. Thus, such an approach would help the FERC appreciate that its regulatory mandate is potentially much broader than its current interpretations allow. Against the backdrop of the relationship between human rights and climate change, the agency’s consideration of a pipeline’s impact “when added to [] past, present, and reasonably foreseeable future actions”¹³⁷ would necessarily include consideration of the emissions associated with increased extraction of the natural gas that the pipeline is designed to transport and the transportation of that gas, as well as the consumption of that gas with its attendant carbon emissions.

A human rights-oriented decision-making process would also create a space to consider the environmental justice issues associated with siting and building pipelines—a social issue within the purview of the agency. As an independent federal agency, the FERC is not bound by Executive Order 12,898,¹³⁸ which directs regulatory agencies to consider environmental justice and ensure that their environmental activities do not exclude or discriminate against persons or populations “because of their race, color, or national origin.”¹³⁹

¹³⁴ National Environmental Policy Act, 42 U.S.C. § 4332(1)(F) (2012).

¹³⁵ The Council on Environmental Quality has defined cumulative impacts as “the impact on the environment which results from the incremental impact of the action [being studied] when added to other past, present, and reasonably foreseeable future actions Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7 (2012).

¹³⁶ *See, e.g.*, 1 OFFICE OF ENERGY PROJECTS, FED. ENERGY REG. COMM’N, GUIDANCE MANUAL FOR ENVIRONMENTAL REPORT PREPARATION 4-3 (2017) (identifying this inquiry as a “key principle” of the environmental assessment process).

¹³⁷ 40 C.F.R. § 1508.7.

¹³⁸ City of Tacoma, Wash., 89 F.E.R.C. 61,275, 61,800 n. 8 (1999), 1999 FERC LEXIS 2617 (noting that the executive order applies, by its terms, only to executive agencies, and excludes independent agencies like the FERC).

¹³⁹ Exec. Order No. 12,898, 59 Fed. Reg. 7629, § 2–2 (Feb. 11, 1994).

Currently, the FERC has blinded itself to environmental justice concerns associated with pipeline siting.¹⁴⁰ For example, the FERC recently defended its refusal to consider disproportionate impacts of a proposed pipeline, even after acknowledging that nearly 84% of the proposed pipeline would be located near environmental justice communities.¹⁴¹ To justify this refusal, the FERC relied on census tract data, even though census tracts are often too large to paint an accurate portrait of which communities live in actual proximity to the pipeline.¹⁴² The dangers of relying on census tract data in this context are well known. Indeed, the EPA's Environmental Justice Guidance specifically cautions that census tract information needs to be buttressed with more granular information because "pockets of minority or low-income communities, including those that may be experiencing disproportionately high and adverse effects, may be missed in a traditional census tract-based analysis."¹⁴³

Were the agency to view itself as a human rights decision-maker, the FERC would view protecting minority and indigenous populations as integral to its functioning. Such an approach would reorient and broaden the agency's consideration of pipeline impacts on those communities. Rather than directing that the socioeconomic impacts of a facility be considered "using administrative boundaries [(i.e. census data)],"¹⁴⁴ an approach that unquestionably misses

¹⁴⁰ By contrast, the Department of Energy has identified environmental justice as a priority. See U.S. DEP'T OF ENERGY, DOE/LM-1460, ENVIRONMENTAL JUSTICE STRATEGY 5 (2008) (identifying as a goal the "[e]nhanc[ement] [of] procedures to detect and mitigate potential disproportionately high and adverse human health or environmental effects of the Department's programs, policies, and activities and to promote nondiscrimination among various population segments.").

¹⁴¹ Brief for Respondent, *supra* note 130, at 51.

¹⁴² *Id.*; ENVTL. PROT. AGENCY, FINAL GUIDANCE FOR INCORPORATING ENVIRONMENTAL JUSTICE CONCERNS INTO EPA'S NEPA COMPLIANCE ANALYSIS § 2.1.1 (Apr. 1998).

¹⁴³ ENVTL. PROT. AGENCY, *supra* note 142, at § 2.1.1 (pointing out "the possibility of distortion of population breakdowns" and urging that "[i]n addition to identifying the proportion of the population of individual census tracts that are composed of minority individuals, analysts should attempt to identify whether high concentration 'pockets' of minority populations are evidenced in specific geographic areas.").

¹⁴⁴ OFFICE OF ENERGY PROJECTS, *supra* note 136, at 4-9.

many environmental justice concerns,¹⁴⁵ the agency would find ways to obtain a more fine-grained description of the specific community impacted. Such an approach would illuminate rather than obscure the impacts on minority and indigenous communities. For example, regarding the controversial Keystone and Dakota Access Pipelines, the FERC would have viewed itself as bound by the UN Declaration of the Rights of Indigenous Peoples¹⁴⁶ to ensure prior informed consent before crossing sacred Sioux ancestral lands.¹⁴⁷ And, a regulator acting as a human rights decision-maker would use the authority to regulate in the public's interest to take the steps necessary to ameliorate undue burdens on those communities.

Finally, adopting a human rights approach would transform how the agency approached public participation in its decision-making. Among the advantages of a human rights approach to participation in environmental decision-making are increases in transparency,¹⁴⁸ proactive efforts to facilitate participation by the poorest and most marginalized groups, democratized agenda-setting and priority-setting, and the potential that decision-making will create new understandings of community, and identify new possibilities for social justice.

For example, the right of access to information and the right of access to courts to remedy violations of human rights have become well-established as components of the right of participation in international law. Viewing agency obligations through a human rights lens would incorporate international-law thinking on these topics into statutes like the Administrative Procedures Act,¹⁴⁹ the Freedom

¹⁴⁵ See Bunyan Bryant & Paul Mohai, *Introduction* to RACE AND THE INCIDENCE OF ENVIRONMENTAL HAZARDS: A TIME FOR DISCOURSE 1, 3–5 (Bunyan Bryant & Paul Mohai eds., 1992).

¹⁴⁶ See generally G.A. Res. 61/295, annex, United Nations Declaration on the Rights of Indigenous Peoples (Sept. 13, 2007).

¹⁴⁷ See *id.* at art. 19.

¹⁴⁸ For example, by making information about and proposed actions accessible (including minority languages and formats for persons with disabilities).

¹⁴⁹ 5 U.S.C. § 553(c) (2012) (“After notice required by this section, the agency shall give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation.”) (emphasis added).

of Information Act,¹⁵⁰ the National Environmental Policy Act,¹⁵¹ and the Energy Policy Act¹⁵² to name only a few. These statutes require that agencies ensure reasonable and adequate opportunities for public engagement with environmental decision-making. Were the agencies staffed with administrators who viewed themselves as human rights decision-makers, their sense of what constitutes “reasonable” and “adequate” opportunities to participate would be much more capacious.

B. Reframing the Problem

The second advantage of human rights framing is that it offers an alternative forum—thereby creating a space for examining questions that are obscured by the structures of domestic law.¹⁵³

As Gerald Torres points out, using international tribunals to challenge national legal processes can facilitate a normative critique of how power is exercised domestically.¹⁵⁴ The very act of translating a domestic legal decision into international law often reframes the issues in a fashion that highlights previously hidden aspects of the problem at issue;¹⁵⁵ or, to use the language of anthropology, it makes the question legible to the State.¹⁵⁶ Once these questions have become legible, new forms of advocacy become possible.¹⁵⁷ From its very inception, the international community recognized this transformative potential as part of the “progressive[] . . . realization of [] rights.”¹⁵⁸ The Committee on Economic, Social and Cultural Rights explained:

¹⁵⁰ Agencies shall ensure the public has *adequate access* to government information. 5 U.S.C. § 552 (2012).

¹⁵¹ Agencies shall ensure that environmental information is *made available to the public* before decisions. 42 U.S.C. § 4321(b) (2012).

¹⁵² Agency shall afford interested persons a *reasonable opportunity* to present their views. 42 U.S.C. § 16421a(b)(4) (2012).

¹⁵³ See Gerald Torres, *Translating Climate Change*, 13 N.Z.J. PUB. AND INT’L L. 137, 146–47 (2015).

¹⁵⁴ See *id.*

¹⁵⁵ See *id.* at 145–47.

¹⁵⁶ Cf. SCOTT, *supra* note 34, at 25–39 (discussing the unification and simplification of local, rural forms of measurement so that such usage would be legible to the state).

¹⁵⁷ See Torres, *supra* note 153, at 146–47.

¹⁵⁸ E.g., International Covenant on Economic, Social and Cultural Rights, art. 2, Dec. 16, 1966, 993 U.N.T.S. 3.

the fact that realization over time, or in other words progressively, is foreseen under the Covenant should not be misinterpreted as depriving the obligation of all meaningful content [Progressive realization] imposes an obligation to move as expeditiously and effectively as possible towards that goal.¹⁵⁹

The plight of Mossville, Louisiana is an example on point. The citizens of Mossville have spent decades seeking relief from the disproportionate pollution loads their town has been burdened with, which amounts to racial discrimination.¹⁶⁰ The facts are compelling. Mossville is located in Calcasieu Parish, which is roughly 1,094 square miles and home to approximately 74,000 households.¹⁶¹ Mossville is a tiny dot in the Parish—encompassing just five square miles and 342 households.¹⁶² Yet, tiny Mossville is home to fourteen industrial facilities that release millions of pounds of toxic chemicals each year.¹⁶³ Mossville’s residents are predominantly African-American, and the town has been in existence since the late 1700s.¹⁶⁴

¹⁵⁹ International Human Rights Instruments, Compilation of General Comments and General Recommendations Adopted by Human Rights Treaty Bodies, U.N. Doc. HRI/GEN/1/Rev.9 (Vol. I), at 9 (May 27, 2008).

¹⁶⁰ See Second Amended Petition and Petitioner’s Observations on the Government’s Reply Concerning the U.S. Government’s Failure to Protect the Human Rights of the Residents of Mossville, Louisiana, United States of America, Mossville Environmental Action Now et al., Inter-Am. Comm’n H.R. (Petition No. P-242-05), 1–9 (June 23, 2008), http://www.ehumanrights.org/docs/Mossville_Amended_Petition_and_Observations_on_US_2008.pdf [hereinafter Mossville Environmental Action Now et al.].

¹⁶¹ *Id.* at 1; *Demographics*, CALCASIEU PARISH, <http://www.cppj.net/government/demographics> (last visited Jan. 7, 2018); *Current Calcasieu Parish, Louisiana Population, Demographics and Stats in 2016, 2017*, SUBURBAN STATS, <https://suburbanstats.org/population/louisiana/how-many-people-live-in-calcasieu-parish> (last visited Jan 7, 2018).

¹⁶² Mossville Environmental Action Now et al., *supra* note 160, at 1.

¹⁶³ *Id.* at 2. The Mossville based companies required to report toxic releases to the EPA include: Air Liquide; Arch Chemical; Biolab; Certainteed; Conoco Lake Charles Refinery; Entergy Roy S. Nelson Power Plant; Georgia Gulf; Tesserlo Kerley Chemicals; Lyondell Chemical; Olin; PPG Industries; Sasol; Tetra Chemicals. *Id.* at 2–3 n.5–6.

¹⁶⁴ *Id.* at 1.

By contrast, the Parish overall is about 70% white.¹⁶⁵ While the Parish overall has a healthy environment, Mossville does not. The air and water in Mossville are affected by the disproportionate industrial sitings, and the health consequences for the residents of Mossville have been severe.¹⁶⁶

The Civil Rights Act of 1964 was intended to correct the scourge of racial discrimination.¹⁶⁷ To that end, Title VI prohibits government funding of racially discriminatory activities. Section 601 of Title VI requires the federal government to ensure that federal funds are not used to discriminate against people on the basis of race, color, or national origin.¹⁶⁸ Section 602 requires federal agencies to promulgate regulations designed to implement Section 601.¹⁶⁹ The EPA duly promulgated regulations. Most federal agencies, including the EPA, have adopted such regulations under their Section 602 authority.¹⁷⁰

During the nearly thirty-five years since the Civil Rights Act was passed, it has become clear that racial minorities in the United States are burdened by a disproportionate share of environmental risks.¹⁷¹

¹⁶⁵ *Current Calcasieu Parish, Louisiana Population, Demographics and Stats in 2016, 2017, supra* note 161.

¹⁶⁶ *Id.* at 5.

¹⁶⁷ Civil Rights Act of 1964, Pub. L. No. 88-352, 78 Stat. 241 (codified as amended in scattered sections of 2 U.S.C., 28 U.S.C., and 42 U.S.C.).

¹⁶⁸ Civil Rights Act § 601 (codified as amended at 42 U.S.C. § 2000d (2012)) (providing that “[n]o person shall . . . , on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.”).

¹⁶⁹ Civil Rights Act § 602 (codified as amended at 42 U.S.C. § 2000d-1 (2012)).

¹⁷⁰ *Agency-Specific Civil Rights Information*, DEP’T. OF JUST., <https://www.justice.gov/crt/agency-specific-civil-rights-information> (last visited Jan. 5, 2017).

¹⁷¹ See generally Marianne Lavelle & Marcia Coyle, *Unequal Protection: The Racial Divide in Environmental Law, A Special Investigation*, 15 NAT’L L.J. S2 (1992) (documenting glaring inequities between how agencies enforced environmental laws in communities of color and majority white communities); 1 U.S. ENVTL. PROT. AGENCY, EPA230-R-92-008A, ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES 3 (1992); D. R. Wernette & L. A. Nieves, *Breathing Polluted Air: Minorities Are Disproportionately Exposed*, 18 EPA J. 16, 17 (1992); UNITED CHURCH OF CHRIST, COMM’N FOR RACIAL JUSTICE, TOXIC WASTE AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL

Study after study documents the same result. Even studies that control for urbanization and socioeconomics document that the racial composition of a community is the best predictor for proximity to polluting facilities like hazardous waste facilities.¹⁷² The plight of Mossville is only one example of how seriously this kind of racially-disparate treatment can harm a community.¹⁷³ Unfortunately, Mossville is also an example of a glaring blind spot in United States domestic law—one that leaves the residents of Mossville without a remedy.¹⁷⁴

At first blush, Mossville seems like exactly the kind of discriminatory situation that the Civil Rights Act was intended to remedy.¹⁷⁵ Unfortunately, the Supreme Court has limited the “majestic sweep”¹⁷⁶ of the Act in a fashion that eviscerates the Act’s promised protections for environmental justice claimants. First, in both *Village of Arlington Heights v. Metropolitan Housing Developmental Corp.*¹⁷⁷ and *Washington v. Davis*,¹⁷⁸ the Supreme Court limited the reach of the Fourteenth Amendment solely to acts of intentional discrimination. Then, in *Regents of the University of California v. Bakke*, the Supreme Court ruled that Title VI reaches only conduct that would violate the Fourteenth Amendment.¹⁷⁹

AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES (1987); U.S. GEN. ACCOUNTING OFFICE, GAO/RCED-83-168, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES (1983).

¹⁷² See generally Lavelle & Coyle, *supra* note 171.

¹⁷³ See generally *id.*

¹⁷⁴ See Mossville Environmental Action Now et al., *supra* note 160, at 15–31.

¹⁷⁵ See generally Civil Rights Act of 1964, Pub. L. No. 88-352, 78 Stat. 241 (codified as amended in scattered sections of 2 U.S.C., 28 U.S.C., and 42 U.S.C.).

¹⁷⁶ *Regents of the Univ. of Cal. v. Bakke*, 438 U.S. 265, 284 (1978).

¹⁷⁷ 429 U.S. 252, 264–66 (1977).

¹⁷⁸ 426 U.S. 229, 238–39 (1976).

¹⁷⁹ *Regents of the Univ. of Cal.*, 438 U.S. at 287; accord *Alexander v. Choate*, 469 U.S. 287, 293 (1985) (threading together the multiple opinions in *Guardian Association v. Civil Service Commission of N.Y.C.* to find a ruling that Title VI reached only instances of intentional discrimination). See generally *Guardian Ass’n v. Civil Serv. Comm’n of N.Y.C.*, 463 U.S. 582 (1983).

Thus, a plaintiff asserting a civil rights violation under Section 601 must prove intentional discrimination; a showing of discriminatory effect or impact is not enough.¹⁸⁰ Unfortunately, that has meant that the Civil Rights Act cannot help the citizens of Mossville.¹⁸¹ Even though multiple studies have demonstrated that minority communities in general, and Mossville residents in particular, are exposed to significantly more environmental pollution than are their white counterparts, it is next to impossible to prove that the siting of *any particular* facility was driven by the intent to discriminate.¹⁸² Absent explicit evidence of a racially-discriminatory motive, even siting decisions that are “insensitive and illogical,” will fail to satisfy this extremely stringent standard.¹⁸³ As a result, United States courts faced with environmental justice claims have repeatedly found that “the Equal Protection Clause does not impose an affirmative duty to equalize the impact of official decisions on different racial groups.”¹⁸⁴

Regulations promulgated under Section 602 have been rendered similarly toothless. In *Guardians Association v. Civil Service Commission of N.Y.C.*,¹⁸⁵ the Supreme Court held that while Section 601 requires proof of discriminatory intent, agencies may validly adopt regulations implementing Title VI that also prohibit discriminatory effects. However, in *Alexander v. Sandoval*,¹⁸⁶ the Supreme Court blunted the impact of Section 602 by concluding that there was no private right of action to enforce regulations promulgated under that Section.¹⁸⁷ Thus, communities like Mossville have no remedy under United States law.¹⁸⁸

¹⁸⁰ *Bean v. Sw. Waste Mgmt. Corp.*, 482 F. Supp. 673, 677, 679–80 (S.D. Tex. 1979), *aff’d mem.*, 782 F.2d 1038 (5th Cir. 1986).

¹⁸¹ *See* Mossville Environmental Action Now et al., *supra* note 160, at 26.

¹⁸² *See id.* at 8, 26; *see, e.g., Bean*, 482 F. Supp. at 677, 679–80. *See generally* Lavelle & Coyle, *supra* note 171.

¹⁸³ *Bean*, 482 F. Supp. at 681.

¹⁸⁴ *R.I.S.E., Inc. v. Kay*, 768 F. Supp. 1144, 1150 (E.D. Va. 1991).

¹⁸⁵ 463 U.S. 582, 587 (1983).

¹⁸⁶ 532 U.S. 275, 293 (2001).

¹⁸⁷ *Id.* (holding that “[n]either as originally enacted nor as later amended does Title VI display an intent to create a freestanding private right of action to enforce regulations promulgated under § 602. We therefore hold that no such right of action exists.”).

¹⁸⁸ Mossville Environmental Action Now et al., *supra* note 160, at 15–31.

Reframing their complaint in the language of human rights offered Mossville residents a path forward.¹⁸⁹ Where United States domestic law could not see Mossville's complaint, human rights law is more encompassing because it recognizes the interwoven nature of human rights and the environment.¹⁹⁰ Indeed, it has become a well-accepted principle of international law that that full enjoyment of human rights depends on protection against environmental harms.¹⁹¹ To that end, the Committee on the Elimination of Racial Discrimination included environmental racism as a state policy and practice that violates fundamental human rights.¹⁹² And, by encompassing state actions that have the effect of preventing equal enjoyment of fundamental human rights, this vision of equality goes well beyond the narrow United States Supreme Court equal protection jurisprudence.

By bringing a claim before the Inter-American Commission on Human Rights, the Mossville plaintiffs were finally able to argue that there was a problem with the very structure of United States law.¹⁹³ It was only by leaving the jurisdiction of the United States Supreme Court that Mossville's residents could argue that the Court's Title VI jurisprudence created an untenable legal standard.¹⁹⁴ In *Mossville Environmental Action Now v. United States*, Mossville's citizens could finally assert that the domestic law interpretation of equality that denied them the opportunity to raise their claims in the United States was itself a human rights violation—depriving them of equality before the law.¹⁹⁵ The Mossville plaintiffs also had the opportunity to raise their substantive claims about the

¹⁸⁹ See Cahill-Jackson, *supra* note 128, at 174.

¹⁹⁰ See John H. Knox (Independent Expert on Human Rights and the Environment), *Mapping Rep. on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*, U.N. Doc. A/HRC/25/53, ¶ 53 (Dec. 30, 2013).

¹⁹¹ See Rep. of the Comm. on the Elimination of Racial Discrimination on Its Sixty-First Session, at 107–08, U.N. Doc. A/57/18 (2002).

¹⁹² *Id.* (identifying “the rights to freedom, equality and adequate access to basic needs such as clean water, food, shelter, energy, health and social care” as rights potentially violated by environmental racism).

¹⁹³ See Cahill-Jackson, *supra* note 128, at 183, 187.

¹⁹⁴ See *Mossville Environmental Action Now et al.*, *supra* note 160, at 26.

¹⁹⁵ *Id.* at 15–18.

harm to health and welfare from the operations of the fourteen facilities located in their community.¹⁹⁶ By agreeing to hear the case, the Inter-American Commission created the possibility of a new consideration within the United States of how its domestic law falls short of international human rights standards.¹⁹⁷

This kind of space for legal argument will be invaluable in the climate context. The Inuit Petition is a good example of the legal changes that can come from access to an international tribunal to raise a human rights claim.¹⁹⁸ The Inuit Petition marked a definitive moment in the legal conversation about the relationship between human rights and climate change.¹⁹⁹ The Petition alleged that the United States' carbon emissions (and lack of a climate change policy) violated Inuit rights to culture, property, health, life, food, and family.²⁰⁰

By any conventional legal standard, the Inuit surely “lost”—their petition was dismissed as nonjusticiable, with the Commission

¹⁹⁶ *Id.* at 2.

¹⁹⁷ *Mossville Environmental Action Now v. United States*, Inter-Am. Comm'n on H.R., Report No. 43/10 ¶¶ 42–43 (2010) (finding that Mossville Plaintiffs have a cause of action under the American Declaration on the Rights of Man for, *inter alia*, violation of their right to equality before the law).

¹⁹⁸ See generally *Petition Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the U.S.*, Sheila Watt-Cloutier, Inter-Am. Comm'n H.R. (Dec. 7, 2005), http://earthjustice.org/sites/default/files/library/legal_docs/petition-to-the-inter-american-commission-on-human-rights-on-behalf-of-the-inuit-circumpolar-conference.pdf [hereinafter Watt-Cloutier].

¹⁹⁹ For a discussion of the centrality of this petition, see Hari M. Osofsky, *A Right to Frozen Water? The Institutional Spaces for Supranational Climate Change Petitions*, in *PROGRESS IN INTERNATIONAL LAW* 749, 761–63 (Russell A. Miller & Rebecca M. Bratspies eds., 2008); Bratspies, *supra* note 107, at 76–77.

²⁰⁰ The Petition alleged multiple violations of the American Declaration of the Rights and Duties of Man including: the right to life (Art. I), the right to residence and movement (Art. VIII), the right to the inviolability of the home (IX), the right to the preservation of health and to well-being (Art. XI), the right to the benefits of culture (Art. XIII), and the right to work and to fair remuneration (Art. XIV). See generally Watt-Cloutier, *supra* note 198; American Declaration of the Rights and Duties of Man, *adopted* May 2, 1948, by the Ninth International Conference of American States, Bogota, Colombia, *reprinted in* BASIC DOCUMENTS PERTAINING TO HUMAN RIGHTS IN THE INTER-AM. SYSTEM 17, OEA/Ser.L.V/II.82, doc.6 rev.1 (1992).

concluding that “the information provided does not enable us to determine whether the alleged facts would tend to characterize a violation of rights protected by the American Declaration.”²⁰¹ Yet in terms of taming the super-wicked problem of climate change, the Inuit Petition was a critical first step. It not only forced the question of climate change onto the Commission’s agenda, but also prompted the Commission toward action.²⁰² The Inuit Petition was dismissed in November 2006;²⁰³ however, by March 2007, the Commission had convened a hearing to explore the links between human rights and climate change.²⁰⁴ The Inuit Petitioners were invited to provide testimony at that hearing.²⁰⁵ During the 2015 run up to the Paris Agreement, the Commission “recognized that the realization of the right to life, and to physical security and integrity is necessarily related to and in some ways dependent upon one’s physical environment.”²⁰⁶ By providing both the lever and the proverbial place to stand, the Inuit Petition used access to the international legal tribunal to move the world.²⁰⁷ As such, the Petition underscores the vital connection between political mobilization and human-rights centered strategies.

²⁰¹ Letter from Ariel E. Dulitzky, Assistant Exec. Sec’y, Inter-Am. Comm’n on Human Rights (“IACHR”), to Paul Crowley, Legal Representative of Sheila Watt-Cloutier et al. (Nov. 16, 2006), <https://graphics8.nytimes.com/packages/pdf/science/16commissionletter.pdf>.

²⁰² See Hari M. Osofsky, *The Inuit Petition as a Bridge? Beyond Dialectics of Climate Change and Indigenous Peoples’ Rights*, in ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES 272, 273, 282 (William C.G. Burns & Hari M. Osofsky eds., 2009).

²⁰³ Andrew C. Revkin, *World Briefing: Americas: Inuit Climate Change Petition Rejected*, N.Y. TIMES, Dec. 16, 2006, at A9; Verónica de la Rosa Jaimes, *The Petition of the Arctic Athabaskan Peoples to the Inter American Commission on Human Rights*, U. CALGARY FAC. L. (July 22, 2013), <https://ablawg.ca/2013/07/22/the-petition-of-the-arctic-athabaskan-peoples-to-the-inter-american-commission-on-human-rights/>.

²⁰⁴ Osofsky, *supra* note 202, at 273.

²⁰⁵ Letter from Ariel E. Dulitzky, Assistant Exec. Sec’y, Inter-Am. Comm’n on Human Rights (“IACHR”), to Sheila Watt-Cloutier, Martin Wagner, Managing Attorney for Earthjustice, and Daniel Magraw from the Ctr. for Int’l Env’tl. Law (Feb. 1, 2007), http://earthjustice.org/sites/default/files/library/legal_docs/inter-american-commission-on-human-rights-inuit-invite.pdf.

²⁰⁶ Watt-Cloutier, *supra* note 198, at 74.

²⁰⁷ See Osofsky, *supra* note 202, at 282.

V. CONCLUSION

Climate change is truly a super-wicked problem that challenges human society on all fronts—it stretches legal and political institutions beyond their current boundaries even as it simultaneously erodes the bio-geophysical underpinnings upon which those institutions rest. If we are to succeed in keeping the effects of anthropogenic greenhouse gases within parameters amenable to human existence, we will need new ways to conceptualize our human-created legal and social institutions. Invoking human rights can help. Thinking about climate change in human rights terms offers a relatively new, cross-cutting way to restructure critical institutions—one which transcends national boundaries, empowers ordinary citizens, and reorients bureaucratic decision-making.

This kind of an approach views law and rights as elements of struggle that must “be politicized before they are legalized.”²⁰⁸ Human rights does this by reframing environmental disputes and redirecting attention away from experts, from technical specifications, and from legal categories. Instead, human rights focuses attention on ordinary people and on questions of equality and fundamental justice. As such, human rights can move marginalized groups and issues to the center. It is this potential for reframing that gives the narrative of human rights so much power. Human rights are one of the few legal theories capable of taming some of the super-wicked institutional challenges posed by climate change, and thus creating a “place to stand” from which to confront climate change’s bio-geophysical challenges.

²⁰⁸ Boaventura de Sousa Santos and César A. Rodríguez-Garavito, *Law, Politics and the Subaltern in Counter-Hegemonic Globalization*, in *LAW AND GLOBALIZATION FROM BELOW: TOWARDS A COSMOPOLITAN LEGALITY* 1, 16 (Boaventura de Sousa Santos and César A. Rodríguez-Garavito eds., 2005).