

CULTURE, COGNITION, AND CLIMATE

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Climate change is not just the mother of all market failures, it is a deep cognitive puzzle. Despite the scientific consensus, Americans remain divided over the existence of climate change and its link to human activity. Social science offers competing explanations for this phenomenon. One view says people lack good information. Another view claims people get sidetracked by “cognitive biases.” But a more recent and more persuasive view posits that a person’s attitude about climate change is not a risk assessment at all, but rather an expression of cultural values. This view, associated with the theory of “cultural cognition,” suggests that the public will turn its attention to climate change only when political leaders and judges are able to communicate about climate in ways that resonate with an audience’s deeply held values. This Article describes in detail how expressive techniques from Cultural Cognition Theory (“CCT”) can be applied to policy making and judicial decisions where climate is concerned. While this can be done in both the contexts of mitigation and adaptation, the results will not be equal. This is because CCT prescriptions work best where the policy benefits are local in scale, tangible, and accessible—characteristics that cut in favor of adaptation goals. Thus, CCT should be expected to produce more impressive results when applied to adaptation efforts, making our attention to that side of the equation all the more important. Put bluntly, we need good adaptation policies not just to manage the climate change we can’t avoid; we need them because they are the cognitive gateway for addressing climate change at all.

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I have made these observations chiefly because they are all strictly applicable to the events and appearances of nature.

—Thomas Bayes (1763)¹

To elaborate is no avail—learn'd and unlearn'd feel that it is so.

—Walt Whitman (1855)²

I. INTRODUCTION: A COGNITIVE PUZZLE

Climate change is not just the mother of all market failures,³ it is a deep cognitive puzzle. Despite the scientific consensus, Americans remain divided over the existence of climate change and its link to human activity. Even those who recognize the risk and its cause do not give it the priority it deserves. Social scientists offer three competing explanations. According to one view, normally rational people are either ignorant of or confused by the evidence; the solution here is education. According to another view, people are prevented from arriving at proper conclusions because of “cognitive biases” endemic to the human experience. The solution in this case involves deferring to less biased “experts” and isolating their judgments from popular influence. The third view posits that a person’s attitude toward climate risk is not an assessment at all, rational or irrational; rather, it’s an expression of cultural values. Thus, in special cases where beliefs about risk carry a strong political or cultural charge, a person’s opinions on the issue are likely to reflect his or her underlying worldview. This third view, associated with the theory of “cultural cognition” (also called “motivated reasoning”), finds support in an increasing body of experimental study.

For members of the third camp, progress will not come through increased education or insulated blue-ribbon committees. Instead, the public will turn its attention to climate change only when political leaders and judges are able to communicate about the problem in ways that resonate with an audience’s cultural values. The currency in this democratic project is not knowledge, but trust. When trust is won and values affirmed, desired interpretations of facts and information follow.

Cultural Cognition Theory (“CCT”) thus offers good news and bad news. The good news is that there really is a way to strengthen public commitment for climate action. The bad news is that much of the progress would appear to be slow and incremental, since culturally congenial messages have to be tailored to fit particular groups. Since the window of

1. Thomas Bayes & Richard Price, *An Essay Towards Solving a Problem in the Doctrine of Chances. By the Late Rev. Mr. Bayes, F.R.S. Communicated by Mr. Price, in a Letter to John Canton, A.M.F.R.S.*, 53 PHIL. TRANSACTIONS 370, 408 (1763), available at <http://rstl.royalsocietypublishing.org/content/53/370.full.pdf>.

2. WALT WHITMAN, *SONG OF MYSELF* 3 (Dover Thrift ed. 2001).

3. ERIC POOLEY, *THE CLIMATE WAR: TRUE BELIEVERS, POWER BROKERS, AND THE FIGHT TO SAVE THE EARTH* 67 n.* (2010).

opportunity for effective climate policy is “fast closing,” that is a big problem.⁴

But I believe CCT suggests a way around it. Basically, climate policy takes two different forms: climate-change mitigation and climate-change adaptation.⁵ Climate-change mitigation involves reducing the emission of greenhouse gases (“GHGs”) as a means of slowing the process of global warming. Climate-change adaptation involves coping with the impacts of climate change that cannot be managed through climate change mitigation. Mitigation is the more important—and more discussed—form of climate action. But its broad scale and abstract principles make it ill-suited for engaging citizens in terms of their closely held values. Climate-change adaptation, on the other hand, is much better suited in this regard because its scale is more local and its processes more concrete.

Of course, the best course is to pursue *both* climate-change mitigation *and* adaptation *at the same time*. To the extent possible, political and judicial decision makers should appeal to a variety of cultural frames in order to build awareness and emphasize the values at stake. This Article describes in detail how expressive techniques from the CCT literature can be applied in the realms of policy making and judicial decision making. While this can and should be done *concurrently* for *both* mitigation *and* adaptation, the results will not be equal. By far, the more impressive results, I suggest, are more likely to come from adaptation efforts, making our attention to that side of the equation all the more important. Put bluntly, we need good adaptation policies not just to manage the climate changes we can’t avoid; we need them because they are the cognitive gateway for addressing climate change at all.

Much of the analysis here is new for legal literature. In the last few years, CCT has won a lot of attention from journalists and public intellectuals, who frequently speculate on its implications for climate policy.⁶ But there has been little discussion in law reviews about how exactly the lessons of CCT would work in the area of climate policy and what we

4. Alex Morales & Alex Nussbaum, *Planet ‘Has a Fever,’ Ban Ki-Moon Says, Demanding Action*, BLOOMBERGBUSINESS (Dec. 9, 2014, 3:39 PM), <http://www.bloomberg.com/news/articles/2014-12-09/ban-ki-moon-says-window-of-opportunity-on-climate-is-closing> (quoting U.N. Secretary General Ban Ki-Moon).

5. There is also climate engineering, arguably a third branch. While I occasionally mention climate engineering in my analysis, I do not focus on it. At this point, the efficacy of climate engineering (also called “geoengineering”), in most of its forms, is too uncertain and catastrophically dangerous; and unlike mitigation or adaptation, geoengineering has not yet been the object of serious policy proposals. For an excellent review of climate engineering methods under study, see INTEGRATED ASSESSMENT OF GEOENGINEERING PROPOSALS, <http://www.iagp.ac.uk> (last visited Nov. 25, 2015).

6. Art Markman, *Who Rejects Evidence of Global Climate Change? The Relationship Between Motivated Reasoning and Belief in Scientific Evidence*, PSYCHOL. TODAY (May 21, 2013), <https://www.psychologytoday.com/blog/ultimate-motives/201305/who-rejects-evidence-global-climate-change>; Judith Shulevitz, *This is How You Should Talk to a Climate Change Denier: The Complicated Science of Discussing Risk*, NEW REPUBLIC (Oct. 22, 2013), <http://www.newrepublic.com/article/115022/how-talk-climate-change-deniers>.

should expect in terms of results.⁷ The absence is even more pronounced when it comes to judicial decision making and litigation.⁸ The idea that climate-change adaptation might be more amenable to CCT prescriptions has not surfaced in law reviews either and makes only a brief appearance in the social science literature.⁹ Finally, much of the legal conversation on CCT has tended to focus on discrete experiments or claims, without examining the theory in terms of CCT's full body of study. I hope to address those gaps, examining the range of experiments that support CCT and positioning the idea in the larger context of legal theory. I then show specifically how CCT principles can be applied to the fields of climate-change mitigation and climate-change adaptation, as well as why, in terms of strengthening public motivation, adaptation strategies are the better bet.

II. THE POLARIZED VORTEX

Before discussing the lessons (and a few limitations) of CCT (Part III) and its application to climate change policy (Part IV), let's first recognize the problem that, more than anything else, threatens to doom our feverish planet: *we don't care enough*. More specifically, we in the United States, as a people, do not care enough. (For current purposes, we'll leave aside the rest of the world.) Some Americans care a lot, while others care in just a general, lukewarm way. Some don't believe that global warming is actually happening, or they doubt that human activity has anything to do with it. A not-insignificant segment of our population doesn't know what to think about global warming at all.¹⁰ As with many important political issues, these attitudes tend to congregate in partisan groupings, with strongly held views becoming quite polarized.

All this occurs at a time when the scientific consensus on climate change has never been stronger. According to the Fifth Climate Assessment of Intergovernmental Panel on Climate Change, published in 2013:

7. Research that does address CCT in the context of climate policy includes, Katrina Fischer Kuh, *Capturing Individual Harms*, 35 HARV. ENV'T'L L. REV. 155 (2011); Albert Lin, *Evangelizing Climate Change*, (UC Davis Legal Stud. Res. Paper No. 145, 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1142919; Hari M. Osofsky & Jacqueline Peel, *Energy Partisanship*, EMORY L.J. (forthcoming 2016), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2523911. For the most part, however, discussions about CCT and climate policy have been rather general and have not examined the studies or prescriptions in close detail. And, surprisingly, such legal literature has not devoted much attention to judicial decision making.

8. The central text on CCT in judicial decision making remains Dan M. Kahan, *The Supreme Court 2010 Term - Foreword: Neutral Principles, Motivated Cognition, and Some Problems for Constitutional Law*, 125 HARV. L. REV. 2 (2011) [hereinafter Kahan, *Foreword*]. This work, which I draw upon in Part III, does not take up the issue of climate change.

9. See Dan M. Kahan, *Making Climate-Science Communication Evidence-Based—All the Way Down*, in CULTURE, POLITICS AND CLIMATE CHANGE 203 (Deserai A. Crow & Maxwell T. Boykoff eds., 2014), available at <http://ssrn.com/abstract=2216469>.

10. See, e.g., ANTHONY LEISEROWITZ ET AL., CLIMATE CHANGE IN THE AMERICAN MIND: AMERICANS' GLOBAL WARMING BELIEFS AND ATTITUDES IN NOVEMBER 2013, at 33 (2014), available at <http://environment.yale.edu/climate-communication/files/Climate-Beliefs-November-2013.pdf> (reporting that 14 percent of respondents "don't know" whether global warming is happening or not).

“Human influence has been detected in warming of the atmosphere and the ocean. . . . This evidence for human influence has grown since [the Fourth Assessment]. It is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century.”¹¹ Indeed, surveys of the scientific literature show that ninety-seven percent of climate scientists agree that climate-warming trends over the last one hundred years are very likely due to human activities.¹²

Recent opinion polls tell the story. A Gallup poll from 2013, for instance, found that since 1989, the percentage of respondents who correctly believe that global warming over the past century is primarily due to human activity actually *declined* from 61 percent to 57 percent, while the percentage of respondents who attribute such warming primarily to natural causes *increased* from 33 percent to 39 percent.¹³ The public’s concern has also fallen, with 63 percent of Gallup respondents saying in 1989 that they worried “a great deal” or “a fair amount” about climate change, compared to 58 percent of respondents in 2013.¹⁴ According to a 2013 survey by the Pew Research Center, dealing with climate change ranks at the bottom of the average voter’s lists of concerns—behind improving education, reforming taxes, and reducing the influence of lobbyists.¹⁵

Within this spiral of numbers is a clear polarized effect. According to a different Pew survey taken in 2013, the public’s belief in global warming and its predominant human cause varies according to political identity.¹⁶ For instance, while 84 percent of Democrats believe that the earth is warming primarily because of human activities, only 60 percent of “non-Tea Party Republicans” believe this, and only 25 percent of “Tea Party Republicans” believe this.¹⁷ Not surprisingly, the priority that Democrats give to addressing the problem of climate change differs markedly from the priority Republicans assign it.¹⁸ We should not over-emphasize the partisan axis: as we will soon see, an individual’s more general worldview may better explain such variety.¹⁹ But attitudinal differences of some kind clearly exist.

11. U.N. Intergovernmental Panel on Climate Change, *Summary for Policymakers*, in CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS 17 (Thomas F. Stocker et al. eds., 2013).

12. See *Scientific Consensus: Earth’s Climate is Warming*, NASA, <http://climate.nasa.gov/scientific-consensus/> (last visited Nov. 25, 2015) [hereinafter *Scientific Consensus*] (citing three studies, including William R.L. Anderegg et al., *Expert Credibility in Climate Change*, 107 PROC. NAT’L ACAD. SCI. 12107, 12107 (2010)).

13. Lydia Saad, *Americans’ Concerns About Global Warming on the Rise*, GALLUP (Apr. 8, 2013), <http://www.gallup.com/poll/161645/americans-concerns-global-warming-rise.aspx> (reporting on poll conducted March 7–10, 2013).

14. *Id.* The figure of 58 percent did represent an increase from 2012. *Id.*

15. PEW RESEARCH CENTER, PUBLIC’S POLICY PRIORITIES: 1994–2013 (Jan. 24, 2013), available at <http://www.people-press.org/files/legacy-pdf/01-24-13%20Prioritie%20Release.pdf> (chart on page 1).

16. See generally PEW RESEARCH CENTER, GOP DEEPLY DIVIDED OVER CLIMATE CHANGE, (Nov. 1, 2013), available at <http://www.people-press.org/files/legacy-pdf/11-1-13%20Global%20Warming%20Release.pdf>.

17. *Id.* at 1.

18. *Id.* at 2.

19. See discussion *infra* Part III.D.2.

In addition, Americans also feel a variety of emotions when asked to think about climate change. This is important because, as we'll see, CCT posits that cultural views conjure emotions that inform reasoning.²⁰ According to a 2013 survey published by the Yale Project on Climate Change Communication, the strongest emotions are felt by respondents who are “alarmed” or “concerned” about climate change. Their feelings include fear, anger, helplessness, sadness, and hopefulness, among others.²¹ Respondents who are “dismissive” of climate change also reported feeling strong emotions, namely anger and disgust—presumably in reaction to the media attention devoted to the issue, which they believe is overblown.²²

Finally, there is some good news in the numbers too. A 2013 survey published by Stanford University, Resources for the Future, and *USA Today* found that a majority of respondents said the U.S. government should be doing “a great deal” or “a lot” about global warming.²³ The survey also found that a majority of respondents supported government limits on GHG emissions from power plants.²⁴ But as long as beliefs and opinions remain polarized within the electorate, history suggests we will see more gridlock than action. Breaking such gridlock is one priority of those studying cultural cognition.

III. CULTURAL COGNITION THEORY

Cultural cognition describes “a collection of psychological mechanisms that moor our perceptions of societal danger to our cultural values.”²⁵ When we evaluate societal risks, we rely not just on facts and experience, but on emotions and values.²⁶ According to this view, we tend to evaluate risk within the context of some version of an “idealized way of life.”²⁷ When a threatening event affirms (or challenges) a cherished value, we have an emotional response. That emotional response, or “af-

20. See discussion *infra* Part III.

21. LEISEROWITZ, *supra* note 10, at 6.

22. *Id.* at 7.

23. STANFORD UNIVERSITY, RESOURCES FOR THE FUTURE, & USA TODAY, GLOBAL WARMING AND CLEAN ENERGY POLL, at 6 (Dec. 2013), available at <http://www.rff.org/files/sharepoint/Documents/Stanford-RFF-USAT-2013-TOPLINE.pdf> (Interview dates: Nov. 20–Dec. 5, 2013).

24. *Id.* at 14–15.

25. Dan M. Kahan, *The Cognitively Illiberal State*, 60 STAN. L. REV. 115, 117 (2007); see also Dan M. Kahan, Opinion, *Fixing the Communications Failure*, 463 NATURE 296 (2010).

26. Kahan, *The Cognitively Illiberal State*, *supra* note 25, at 117.

27. Dan M. Kahan et al., *Cultural Cognition of Scientific Consensus*, 14 J. RISK RES. 147, 148 (2011) (internal quotation marks omitted). Much of today's research on cultural cognition can be traced to Mary Douglas and Aaron Wildavsky's path-breaking “cultural theory of risk perception.” See generally MARY DOUGLAS & AARON WILDAVSKY, RISK AND CULTURE: AN ESSAY ON THE SELECTION OF TECHNICAL AND ENVIRONMENTAL DANGERS (1982). Other predecessors include Steve Rayner, *Cultural Theory and Risk Analysis*, in SOCIAL THEORIES OF RISK 83, 87 (Sheldon Krinsky & Dominic Golding eds., 1992) (“Whatever objective dangers exist in the world social organizations will emphasize those that reinforce the moral, political or religious order that hold the group together.”).

fect,” influences the importance and relevance we give to that event.²⁸ According to CCT, people holding values that are relatively hierarchical and individualistic will tend to be skeptical of environmental risks because recognizing those risks would justify restrictions on commerce and industry that they find problematic.²⁹ In contrast, people who embrace more egalitarian and communitarian values will more easily acknowledge such risks because the likely prescription—stronger government regulation—coincides with a mindset that is already skeptical of corporate power and social inequality.³⁰

When we are unsure about the harm of a given activity—say, regulating handguns or emitting carbon—we are more likely to trust those advisers who share our cultural values. In turn, those advisers, be they scientists, politicians, or the neighbor next door, are subject to the same emotional dynamics that we are. In a fundamental way, cognition is moored to emotion and culture. Sometimes that line can't be cut.

A. *The Effect*

CCT finds support in an ever-growing body of experimental studies on risk-based decision making. Some of the best-known studies in this area have been conducted by researchers associated with the Cultural Cognition Project at Yale Law School.³¹ This group includes Dan Kahan, a professor of law and of psychology, Paul Slovic, a theorist on risk perception, and several other experts in law, social psychology, anthropology, communications, and political science.

In one experiment, the Project examined people's perception of the risks of nanotechnology.³² They found that supplying neutral, balanced information to a group of subjects caused them (in contrast to a control group) to divide into factions consistent with previously held views on nuclear power and genetically modified foods.³³

Another experiment asked a group of subjects to interpret a table of numbers describing the effects of a hypothetical skin cream.³⁴ A second group was given an identical table, but told the numbers instead described the effects of a law restricting the possession of concealed handguns as a means of reducing crime.³⁵ Researchers discovered that people whose position on gun control ran counter to the gun-control data had

28. *See id.*

29. *Id.*

30. *See id.*

31. *See* THE CULTURAL COGNITION PROJECT AT YALE LAW SCHOOL, <http://www.culturalcognition.net> (last visited Nov. 25, 2015).

32. Dan M. Kahan et al., *Cultural Cognition of the Risks and Benefits of Nanotechnology*, 4 NATURE NANOTECHNOLOGY 87 (2009).

33. *Id.* at 87–88.

34. Dan M. Kahan et al., “Motivated Numeracy and Enlightened Self-Government,” (Cultural Cognition Project Working Paper No. 116, 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2319992.

35. *Id.* at 10.

more difficulty in interpreting the numbers than did those with similar political views who were asked only to review the effectiveness of skin cream.³⁶ Indeed, the higher a participant's math skills, the *more* likely it was that her political views would interfere with her ability to decipher the information.³⁷ "Politics," cried the journalist Chris Mooney in a headline about the research, "Wrecks Your Ability to Do Math."³⁸

What does this mean for climate change, today's political powder keg? The Cultural Cognition Project decided to find out. They interviewed a representative sample of 1,540 Americans about the level of risk associated with climate change.³⁹ Beforehand, subjects were given tests to measure their levels of scientific knowledge and numeracy. Subjects were also tested to determine their place on two "value scales" that social psychologists associate with risk-based decision making: a Hierarchy-Egalitarianism scale and an Individualism-Communitarianism scale.⁴⁰ The team found little connection between the respondents' scientific literacy/numeracy scores and their opinions on climate change; indeed as respondents' scientific literacy/numeracy scores increased, their concerns about climate change slightly *decreased*.⁴¹

On the other hand, researchers found that climate-change beliefs correlated quite well with respondents' cultural values. "Hierarchical Individualists," they found, rated climate-change risks "much lower" than did "Egalitarian Individualists."⁴² This was so even after the researchers controlled for differences in scientific literacy and numeracy.

Finally, researchers found that the area of widest disagreement on climate change occurred *not* among subjects with the *lowest* scientific literacy/numeracy scores, but among subjects with the *highest*.⁴³ This suggests that values are not what people turn to *after* knowledge or reasoning fails (as advocates of "bounded rationality" might have you believe).⁴⁴ In emotionally charged situations, values are what move people *first*. And it is the people with the *most* intellectual firepower (that is, the people thought to be the *least* affected by bounded rationality) who are the *most* vulnerable to emotional sorcery.

36. *Id.* at 15–17.

37. *Id.* at 27.

38. Chris Mooney, *Science Confirms: Politics Wrecks Your Ability to Do Math*, MOTHER JONES (Sept. 4, 2013, 11:59 AM), <http://www.motherjones.com/politics/2013/09/new-study-politics-makes-you-innumerate>.

39. Dan M. Kahan et al., *The Polarizing Impact of Science Literacy and Numeracy on Perceived Climate Change Risks*, 2 NATURE CLIMATE CHANGE 732 (2012).

40. *Id.* at 733.

41. *Id.* at 732.

42. *Id.* at 733.

43. *Id.*

44. See, e.g., Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1477 (1998) (attributing phrase to economist and Nobel laureate Herbert Simon). Many of the cognitive biases most associated with bounded rationality—probability neglect, the overconfidence bias, and so on—are thought to be rooted in emotional reactions based on an individual's strongly held values. Dan M. Kahan, *Two Conceptions of Emotion in Risk Regulation*, 156 U. PA. L. REV. 741, 747 (2008); Daniel Kahneman, *Maps of Bounded Rationality: Psychology of Behavioral Economics*, 93 AM. ECON. REV. 1449, 1451 (2003).

Similarly, people with individualist outlooks appear less concerned about climate change because they have come to believe that addressing climate change would involve restrictions on commercial activity.⁴⁵ But Kahan and his colleagues have found that when citizens are informed about the possibility that global warming could be partially addressed through a *technological* approach like nuclear power or geoengineering,⁴⁶ the traditional polarization over climate-change science eases.⁴⁷ In fact, people who were informed about geoengineering in his experiment showed slightly *more* concern over climate change than those who were not.⁴⁸

Still there are limits. For instance, people will resist culturally congenial messages if they perceive they are being manipulated. Thus, in an experiment where hierarchical climate skeptics were given a mock news report expressing concern over climate-change impacts from a national security angle, subjects were more likely to reject the evidence, seemingly out of resentment.⁴⁹ Once people hold beliefs that are factually incorrect, it may be hard to change their minds with new data. Researchers Brenden Nyhan and Jason Reifler found that on the subject of the Iraq War, subjects were likely to interpret “corrective information” in mock news reports according to prior ideological viewpoints.⁵⁰

Most people, of course, do not evaluate societal risk on their own. Instead, they rely on people they trust to point them in the right direction. If you have terrible allergies, you take what your doctor prescribes. If you want a screaming kick serve, you see a tennis pro. You might first consult Medline or freeze-frame Federer on YouTube,⁵¹ but there is a limit to how much time you’ll spend on complicated issues.

On topics that are culturally polarized, research shows that emotions and values help determine whom you trust. In such cases, what makes an authority trustworthy appears to have less to do with objective expertise and more to do with cultural affinity. Thus, when test subjects were introduced to information about vaccinating school girls against a sexually transmitted virus (HPV), they were much more likely to believe

45. Kahan, *Fixing the Communications Failure*, *supra* note 25.

46. Geoengineering refers to “deliberate, large-scale manipulations of Earth’s environment designed to offset some of the harmful consequences of climate change.” NATIONAL RESEARCH COUNCIL, *ADVANCING THE SCIENCE OF CLIMATE CHANGE* 377 (2010), available at <http://www.nap.edu/catalog/12782/advancing-the-science-of-climate-change>.

47. Dan M. Kahan et al., *The Second National Risk and Culture Study: Making Sense of—and Making Progress in—The American Culture War of Fact* 11–12 (GWU Legal Studies Research Paper No. 370, 2007), available at <http://ssrn.com/abstract=1017189> (describing influence of nuclear power as on decision making); Dan M. Kahan et al., *Geoengineering and the Science Communication Environment: A Cross-Cultural Experiment* (Cultural Cognition Project Working Paper No. 92, 2012), available at: <http://ssrn.com/abstract=1981907> (describing the influence of geoengineering on decision making).

48. Kahan et al., *The Second National Risk and Culture Study*, *supra* note 47.

49. *Id.* at 14.

50. Brenden Nyhan & Jason Reifler, *When Corrections Fail: The Persistence of Political Misperceptions*, 32 *POLITICAL BEHAV.* 303, 304 (2010).

51. See dima1994, *Roger Federer-Monster Kick Serve Ace*, YOUTUBE (Dec. 8, 2008), <http://www.youtube.com/watch?v=mM1P2ej4YtY>.

evidence concerning the drug's safety and its effects on sexual behavior when the physical appearance of the communicating expert matched their cultural outlook.⁵² (Hierarchs like gray-haired men in suits; egalitarians dig beards and denim shirts.)⁵³ Indeed, whether a person is even considered an expert can depend—despite his having the highest professional credentials—on whether his conclusions resonate with the cultural outlook of the evaluator.⁵⁴

One might expect cultural effects to recede when a consensus of many experts, from a range of cultural groups, bubbles up (beards, suits, and more!). But in such cases, the very existence of an expert consensus becomes a debatable point, influenced again by the amygdala of the beholder. Thus, in an experiment examining peoples' understanding of expert consensus on the issues of climate change, nuclear waste disposal, and gun control, researchers found “a strong correlation” between subjects' cultural values and their perception of whether an expert consensus existed on a particular issue.⁵⁵

Kahan sums it up:

Taken together, these dynamics [of cultural cognition] help to explain the peculiar cultural polarization on scientific issues in the United States and beyond. Like fans at a sporting contest, people deal with evidence selectively to promote their emotional interest in their group. On issues ranging from climate change to gun control, from synthetic biology to counterterrorism, they take their cue about what they should feel, and hence believe, from the cheers and boos of the home crowd.⁵⁶

Beyond “cheers and boos from the home crowd,” experiments conducted by the political scientist James Druckman and others suggest that political leaders in particular play an outsize role in shaping public opinion on polarized issues.⁵⁷ Where issues are polarized, Druckman and his col-

52. Dan. M. Kahan et al., *Who Fears the HPV Vaccine, Who Doesn't, and Why? An Experimental Study of the Mechanism of Cultural Cognition*, 34 *LAW & HUM. BEHAV.* 501 (2010).

53. Kahan et al., *The Second National Risk and Culture Study*, *supra* note 47, at 7 (with photographs).

54. Kahan et al., *Cultural Cognition of Scientific Consensus*, *supra* note 27 (examining views on climate change, nuclear waste disposal, and gun control).

55. *Id.*

56. Kahan, *Fixing the Communications Failure*, *supra* note 25, at 297.

57. James N. Druckman et al., *How Elite Partisan Polarization Affects Public Opinion Formation*, 107 *AM. POL. SCI. REV.* 57, 74-75 (2013); *see also* MARTIN GILENS, *AFFLUENCE AND INFLUENCE: ECONOMIC INEQUALITY AND POLITICAL POWER IN AMERICA* 19 (2012) (“Taking cues from more knowledgeable elites or acquaintances is a sensible strategy for citizens who lack the ability or inclination to gather the information needed to formulate a preference on a given policy issue.”); MATT GROSSMANN, *ARTISTS OF THE POSSIBLE: GOVERNING NETWORKS AND AMERICAN POLICY CHANGE SINCE 1945* 127 (2014) (studies in post-war American political development); Martin Gilens & Benjamin I. Page, *Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens*, 12 *PERSPECTIVES ON POL.* 564, 564 (2014); Rune Slothuus & Claes H. de Vreese, *Political Parties, Motivating Reasoning, and Issue Framing Effects*, 72 *J. POL.* 630, 642-43 (2010). For research particular to climate change, see Robert J. Brulle et al., *Shifting Public Opinion on Climate Change: An Empirical Assessment of Factors Influencing Concern over Climate Change in the U.S., 2002-2010*, 114 *CLIMATIC CHANGE* 169, 169 (2012), available at <http://www.pages.drexel.edu/~brullerj/02-12 ClimateChangeOpinion.Fulltext.pdf> (“A time-series analysis indicates that elite cues and structural

leagues find, “citizens turn to partisan biases and ignore arguments that they otherwise consider to be ‘strong.’”⁵⁸ What’s more, disagreement between political leaders plays an important role in determining whether an issue will be considered polarized, giving leaders strong leverage over the public conversation.⁵⁹

With that, I’ll stress two points sometimes overlooked in popular discussions of cultural cognition. First, while adherents to the theory believe that often objective answers to risk-based questions do exist and can be known, they are *not* saying that individual reactions that disagree with the objective answers are *wrong* about what those reactions mean to assess. That’s because what an individual reaction means to assess is *not* the objective probability of harm. It is, instead, the subjective *cultural meaning* of the risk of such harm, an assessment that can only be determined within the context of an individual’s cherished values.⁶⁰ When assessing risk, it turns out that we are more Walt Whitman than Thomas Bayes.

My second point is that it sometimes makes *practical sense* for an individual to prefer assessments of cultural meaning to assessments of objective probability. Imagine a person agnostic on the issue of climate change who lives in a conservative community where most of her friends and colleagues reject climate science. After reading a science magazine and some news posts on *Dot Earth*,⁶¹ she is inclined to believe the factually correct assessment that anthropogenic climate change is happening and that it is a serious problem.

But what will that get her? On her own, any effort she makes to reduce carbon emissions (or elect the right leader, or sue the right polluter) will achieve almost nothing. But the effects on her social relationships (if she takes action) or emotional equilibrium (if she doesn’t) will be exhausting. It’s like being a Yankees fan in Boston—just too much trouble! Adherents of CCT refer to this phenomenon as “the tragedy of the risk perception commons.”⁶² The scale of this tragedy is vast. For while it’s

economic factors have the largest effect on the level of public concern about climate change.”); and Martina K. Linnenluecke et al., *Executives’ Engagement with Climate Science and Perceived Need for Business Adaptation to Climate Change*, 131 CLIMATIC CHANGE 321 (2015).

58. Druckman et al., *supra* note 57, at 75.

59. *Id.*

60. See Kahan, *supra* note 44, at 752. (“Rather than conform their emotional appraisals of a putatively dangerous activity . . . to their assessment of its risks, individuals conform their assessments of its risks to their emotional appraisals.”).

61. Dot Earth, an award-winning environmental blog, is written and curated by science writer Andrew Revkin for the *New York Times*. See Dot Earth, N.Y. TIMES, <http://dotearth.blogs.nytimes.com/?module=BlogMain&action=Click®ion=Header&pgtype=Blogs&version=Blog%20Main&contentCollection=Opinion> (last visited Nov. 25, 2015).

62. See Kahan et al., *supra* note 39, at 734; Dan M. Kahan, *Ideology, Motivated Reasoning, and Cognitive Reflection*, 8 JUDGMENT & DECISION MAKING 407, 420 (2013) (using the phrase “tragedy of the science communications commons” to describe how it is “*individually rational* for ordinary members of the public to attend to [antagonistic] information in a manner that reliably connects them to the positions that predominate in their identity-defining groups”). Lawrence Lessig has also noted the social cost of subscribing to norms (in this case a norm of belief) not shared in the local community. See Lawrence Lessig, *Social Meaning and Social Norms*, 144 U. PA. L. REV. 2181, 2185 (1996).

true that the world won't collapse if we lose a few (even many) Yankees fans, a lack of popular interest in climate change could be devastating.⁶³

B. *The Remedy*

CCT is a challenge for policy makers. In a democracy devoted to the public good, we want risks addressed in ways consistent with the public will. But we also want policy based on accurate facts. The problem isn't new, nor is the search for politically acceptable solutions. In fact, two approaches, each derived from economic theory, have long dominated the legal and social-science literature. But neither is entirely convincing.

1. *Two Unconvincing Approaches*

The first approach follows standard neoclassical economics and has been called the "rational weigher" model.⁶⁴ The idea is that individuals are normally rational actors, and that, over time and in the aggregate, they weigh risk-based information in ways calculated to maximize utility. If people make inefficient choices, it is probably because they lack good information or have been misled. The role of government, in this view, is to make sure that members of the public have access to accurate information and to prevent unreasonable attempts by others to mislead them. Or if such efforts are impractical, government should implement regulations designed to "mimic cost-benefit tradeoffs reflected in well-functioning markets."⁶⁵

A second approach to risk-based policy making, based on behavioral economics, assumes a citizenry made up of "irrational weighers."⁶⁶ In this view, individuals have difficulty weighing risks to maximize utility because their rational capacity is "bounded" by limits in access to information, time to consider the facts, or basic processing power.⁶⁷ As a workaround, people instead deploy heuristic shortcuts. They base probabilities on events they can easily recall (the "availability heuristic"),⁶⁸ prefer things they already own (the "endowment effect"),⁶⁹ overemphasize the predictive power of the past ("hindsight bias"),⁷⁰ and more. Such "cognitive biases" work much of the time, but they can cause troubling

63. Kahan et al., *supra* note 39, at 734 ("Although it is effectively costless for any individual to form a perception of climate-change risk that is wrong but culturally congenial, it is very harmful to collective welfare for individuals in aggregate to form beliefs this way.")

64. See Kahan, *supra* note 44, at 745 (using this term).

65. *Id.* at 760 (internal quotation omitted).

66. *Id.* at 746.

67. *Id.*

68. Dan M. Kahan et al., *Fear of Democracy: A Cultural Evaluation of Sunstein on Risk*, 119 HARV. L. REV. 1071, 1077 (2006) (reviewing CASS R. SUNSTEIN, *LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE* (2005)).

69. *Id.* at 1078.

70. See generally Jolls et al., *supra* note 44, at 1523–24.

and recurring mistakes.⁷¹ Because adherents to this model believe that persons capable of more deliberation (having more facts, more training, more time, more intellectual capacity) are less likely to take mental shortcuts, adherents favor solutions that involve expert panels of one kind or another, isolated from populist influences. Such panels are meant to make more rational risk-based tradeoffs and integrate those into regulations or incentive programs to steer people toward better choices.⁷²

Where emotionally charged issues are in play, CCT advocates are skeptical of the solutions designed for either rational or irrational weighers. They doubt solutions designed for rational weighers because their research convincingly shows that, at least on certain topics, giving people more information does not lead them to arrive at more factually accurate risk assessments. They doubt solutions designed for irrational weighers because their research gives them reason to distrust politically insulated expert panels. One reason they should distrust expert panels is that, at least on some topics, their research shows little support for the idea that people with more scientific knowledge or fluency in math are better at arriving at more accurate risk assessments; indeed, sometimes they're worse.⁷³ Proponents of CCT should also distrust expert panels because, unlike adherents of the irrational actor model, CCT proponents believe that emotional appraisals of risk have valid content—namely the expression of cherished values.⁷⁴ In a democracy, decision making processes should seek to *integrate* deeply held values like these, not strip them away.⁷⁵

2. *Frames and Neighbors: The CCT Alternative*

So what do proponents of CCT offer? Researchers prefer a two-pronged strategy based on framing and outreach. The first prong, informed by the work of Geoffrey Cohen, a social psychologist at Stanford, suggests presenting information to citizens in a way that validates rather than threatens their values.⁷⁶ Thus, in arguing for a favorite worker-safety

71. *Id.* at 1477.

72. See generally RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 3–6 (Penguin Books 2009) (2008) (arguing “choice architects” have the power to alter human decision making by subtly altering the decision’s context with a low-cost and easily avoidable “nudge”).

73. For these reasons, Dan Kahan is skeptical of expert panels as a means of reaching better risk-based decisions. See Kahan, *supra* note 44, at 761–62.

74. MARTHA C. NUSSBAUM, *UPHEAVALS OF THOUGHT: THE INTELLIGENCE OF EMOTIONS* 88 (2001) [hereinafter NUSSBAUM, *UPHEAVALS*] (“For now, we are beginning to have some idea of what it is to understand emotions as a certain sort of vision or recognition, as value-laden ways of understanding the world.”); see also MARTHA C. NUSSBAUM, *POLITICAL EMOTIONS: WHY LOVE MATTERS FOR JUSTICE* 11 (2013) [hereinafter NUSSBAUM, *POLITICAL EMOTIONS*]; Dan M. Kahan & Martha C. Nussbaum, *Two Conceptions of Emotion in Criminal Law*, 96 COLUM. L. REV. 270, 285–86 (1996).

75. See Kahan, *supra* note 44, at 762; NUSSBAUM, *POLITICAL EMOTIONS*, *supra* note 74, at 10 (arguing for a place in democratic decision making for emotions as a means of obtaining “motivational power that bare abstractions” of principles lack).

76. See Geoffrey L. Cohen et al., *When Beliefs Yield to Evidence: Reducing Biased Evaluation by Affirming the Self*, 26 PERSONALITY & SOC. PSYCHOL. BULL. 1151, 1151 (2000); Geoffrey L. Cohen et

rule, a political leader should appeal not only to general utilitarian reasons but also to sincerely held values that are characteristic of the messenger. Describing Cohen's research, Kahan concludes, "people tend to resist scientific evidence that could lead to restrictions on activities valued by their group. If, on the other hand, they are presented with information in a way that upholds their commitments, they react more open-mindedly."⁷⁷

Research shows, for instance, that individuals with egalitarian outlooks are generally more skeptical of nanotechnology, an enterprise backed by powerful commercial interests.⁷⁸ But when information on nanotechnology emphasizes the benefits for environmental protection, opposition among egalitarians seems to melt.⁷⁹ These findings align with theories on "framing," popularized by the political linguist George Lakoff and others.⁸⁰ CCT scholars believe that advocates of policy proposals dealing with issues like nanotechnology or climate should suffuse the public debate with "multiple meanings that are attractive to different cultural groups."⁸¹ Kahan calls the process "expressive overdetermination."⁸² Through it, policy advocates can hope to win a broader range of adherents even if their supporters disagree among themselves as to the basis for their support. Some CCT scholars argue that expressive overdetermination can be applied to judicial decision making too.⁸³ That idea, which encourages judges to be more open about their equivocations and to affirm a broader range of values relevant to a case, will be further examined in Part IV.⁸⁴

The second prong of the cultural-cognition strategy requires communicating accurate information about charged topics through "a diverse set of experts."⁸⁵ Remember the test subjects who more easily accepted information about a sexually transmitted virus when communicating experts were seen as more congenial to the subjects' worldviews?⁸⁶ When a knowledgeable member of a cultural community accepts information and *vouches* for it, others in that community feel safer considering the issue

al., *Bridging the Partisan Divide: Self-Affirmation Reduces Ideological Closed-Mindedness and Inflexibility in Negotiation*, 93 J. PERSONALITY & SOC. PSYCHOL. 415, 426 (2007), available at https://ed.stanford.edu/sites/default/files/bridging_divides1.pdf; see generally, David K. Sherman & Geoffrey L. Cohen, *Accepting Threatening Information: Self-Affirmation and the Reduction of Defensive Biases*, 11 CURRENT DIRECTIONS IN PSYCHOL. SCI. 119, 121–22 (2002) (discussing overcoming individual biases in the face of disconfirming evidence, successes, and failures).

77. Kahan, *Fixing the Communications Failure*, *supra* note 25, at 297.

78. Kahan et al., *supra* note 32, at 88–89.

79. See *id.*

80. See, e.g., GEORGE LAKOFF, *MORAL POLITICS: HOW LIBERALS AND CONSERVATIVES THINK* (3d ed. 2002).

81. David Jaros, *Flawed Coalitions and the Politics of Crime*, 99 IOWA L. REV. 1473, 1484 (2014) (describing the prescriptions of CCT scholars).

82. Kahan, *The Cognitively Illiberal State*, *supra* note 25, at 145.

83. See, e.g., Kahan, *Forward*, *supra* note 8, at 58–72 (applying expressive overdetermination principles to judicial decision making).

84. See discussion *infra* Parts IV.A.2, IV.B.2.

85. Kahan, *Fixing the Communications Failure*, *supra* note 25, at 297.

86. See *supra* notes 52–54 and accompanying text.

with an open mind.⁸⁷ Such cultural neighbors—whom social scientists call “vouchers”—build trust within a community and show how information that is perhaps jarring at first may fit within a group’s preexisting worldview.⁸⁸ If group members are persuaded, they, too, may become vouchers as they deliver this information to people in their social circles. Regarding law and policy, vouchers can include political actors, judges, or experts in relevant fields of study. As Druckman’s research suggests, vouchers who are seen as leaders in their political parties can play an especially powerful role in shaping public beliefs.⁸⁹ The whole process becomes a cycle of first *framing* and then *expressing*. Because the expression resonates at both a cognitive and emotional level, it is more likely to “stick” and, as Nussbaum might argue, more likely to create long-term stability in the policy making process.

Note that I described “frames and neighbors” as the *preferred* approach in CCT literature, not the only one. That’s because scholars in the field have also considered what might seem a simpler means: bleed the value-laden content out of policy proposals before submitting them to the public then allow debate on the objective merits.⁹⁰ The trouble is that even thinkers who entertain this idea tend to doubt its effectiveness.⁹¹ Some issues like climate change or gun control may be so infused with cultural meaning that personal values are unlikely to be squeezed out.⁹² Plus, at least in my view, cherished values deserve a place in democratic decision making and should be welcomed to the extent practicable.⁹³

C. CCT in Its Theoretical Context

While the science behind CCT is innovative, CCT’s claims are far from exotic and should not be seen as falling outside the mainstream of western thought. On the contrary, the best way to understand CCT is as an extension of the many theories in philosophy, law, and science that have sought a working relationship between passion and reason. On this score, Aristotle jumps to mind. Questioning Plato’s mandate for “reason as monarch,” Aristotle argued that reason draws from virtues expressed in emotions like courage and fidelity.⁹⁴ Centuries later, David Hume top-

87. Kahan, *Fixing the Communications Failure*, *supra* note 25, at 297.

88. Kahan, *The Cognitively Illiberal State*, *supra* note 25, at 147.

89. See Druckman et al., *supra* note 57.

90. See Dan M. Kahan, *Cultural Cognition as a Conception of the Cultural Theory of Risk*, in 2 HANDBOOK OF RISK THEORY: EPISTEMOLOGY, DECISION THEORY, ETHICS, AND SOCIAL IMPLICATIONS OF RISK 725, 756 (Sabine Roeser et al. eds., 2012) (“At least in theory, then, it should be possible to build into policy making institutions and procedures devices that . . . stifle the sorts of cues that the mechanisms of cultural cognition depend on.”).

91. See, e.g., Donald Braman & Dan M. Kahan, *Overcoming the Fear of Guns, the Fear of Gun Control, and the Fear of Cultural Politics: Constructing a Better Gun Debate*, 55 EMORY L.J. 569, 584–85 (2006) (describing the difficulty of separating empirical findings from cultural commitments); Jaros, *supra* note 81, at 1512.

92. Braman & Kahan, *supra* note 91, at 584–85.

93. See discussion, *supra* Part III.B.1.

94. ARISTOTLE, NICOMACHEAN ETHICS (bks. 2–4) (Lesley Brown, ed., David Ross trans., 2009) (describing cultivation of moral virtues).

pled Plato's pyramid, making reason the "slave" to passion.⁹⁵ Anticipating CCT's scholars' linkage between cultural views, emotion, and assessment, Hume teaches that, "[t]he approbation of moral qualities . . . proceeds entirely from a moral taste, and from certain sentiments of pleasure or disgust."⁹⁶ In the twentieth century, many philosophers turned to the role of emotions in governance, some concluding that draining passion from political decision making was dangerous and degrading. Max Weber, for instance, warned against what he viewed as the trend toward "dehumanized" bureaucracies that "eliminate[ed] from official business love, hatred, and all purely personal, irrational, and emotional elements which escape calculation."⁹⁷ The contemporary philosopher Martha Nussbaum, drawing from classical philosophy, lends an inspiring voice to the call for the role of emotions in democratic governance.⁹⁸

American legal theory has also reminded us of the double-helix bond between reason and passion. Benjamin Cardozo in 1921 observed that "[d]eep below consciousness are other forces, . . . the complex of instincts and emotions and habits and convictions, which make the man, whether he be litigant or judge."⁹⁹ Justice William Brennan believed that judges should be open and upfront about their emotional and intuitive responses and argued for what he called "vital rationality" in judicial decision making.¹⁰⁰ Answering Justice Brennan's summons, Martha Minow and the philosopher Elizabeth Spelman once proposed a set of principles for "good judging," enjoining jurists to "not disguise how he or she actually reached the decision" and to express reasoning "that would persuade [the losing] party or explain the result in terms that party would concede are fair."¹⁰¹ "Passion" they wrote, "is no longer an attribute of 'women' or 'minorities' (or 'minority women') but a feature of all humans, including those who judge."¹⁰² These themes, in fact, are echoed in CCT's own prescription for good judging.¹⁰³ Legal scholars have also examined the general business of lawmaking in all its forms, reflecting on the social and emotional meanings that law transmits.¹⁰⁴

95. 3 DAVID HUME, A TREATISE OF HUMAN NATURE: BEING AN ATTEMPT TO INTRODUCE THE EXPERIMENTAL METHOD OF REASONING INTO MORAL SUBJECTS 397, 399 (1739), in THE ESSENTIAL PHILOSOPHICAL WORKS (2011) ("[R]eason is, and ought only to be, the slave of the passions . . .").

96. *Id.* at 399.

97. 2 MAX WEBER, ECONOMY AND SOCIETY 975 (Guenther Roth & Claus Wittich eds., 1978) (1922).

98. See NUSSBAUM, POLITICAL EMOTIONS, *supra* note 74, at 2; NUSSBAUM, UPHEAVALS, *supra* note 74, at 88.

99. BENJAMIN CARDOZO, THE NATURE OF THE JUDICIAL PROCESS 167 (1921).

100. William J. Brennan, Jr., *Reason, Passion, and "The Progress of Law"*, 10 CARDOZO L. REV. 3, 9 (1988) (noting "the range of emotional and intuitive responses to a given set of facts or arguments, responses which often speed into our consciousness far ahead of the lumbering syllogisms of reason").

101. Martha L. Minow & Elizabeth V. Spelman, *Passion for Justice*, 10 CARDOZO L. REV. 37, 50-51, 57 (1988).

102. *Id.* at 76.

103. See discussion *infra* Part III.B.2.

104. See, e.g., Dan M. Kahan, *Social Influence, Social Meaning, and Deterrence*, 83 VA. L. REV. 349, 350 (1997); Randall L. Kennedy, *McCleskey v. Kemp: Race, Capital Punishment, and the Supreme*

At the same time, developments in the social and natural sciences identified new connections between reason and emotion. In the 1970s, the “new synthesis” of sociobiology suggested that moral institutions had evolved from our emotions.¹⁰⁵ “Ethical philosophers,” wrote E.O. Wilson, an early proponent, “intuit the deontological canons of morality by consulting the emotive centers of their own hypothalamic-limbic system.”¹⁰⁶ The social psychologist, Jonathan Haidt, whose book, *The Righteous Mind*,¹⁰⁷ became a *New York Times* bestseller, has referred to the phenomenon as the “emotional dog and its rational tail.”¹⁰⁸ He argues that emotional responses (good-bad, like-dislike) precede rational moral judgments “without any conscious awareness of having gone through steps of searching, weighing evidence, or inferring a conclusion.”¹⁰⁹ According to Paul Slovic, “a large research literature in psychology” now chronicles “the importance of affect in conveying meaning upon information and motivating behavior.”¹¹⁰

D. Answering Objections

Despite the historical context, there remains a healthy skepticism around some of CCT’s claims. So before discussing CCT’s application to climate-change policy, let’s address a few important criticisms of the theory. Some of these criticisms have satisfying answers. Others require more general debate, but should pose less of a problem in the comparatively narrow context of climate policy. The objections start off easy and get harder.

1. *It’s Nothing New*

It may be tempting to see CCT as a retelling of an effect we’ve long known about, namely that some beliefs reflect irrational commitments: “a man hears what he wants to hear/And disregards the rest.”¹¹¹ Does CCT say more than this? The answer is yes, because CCT names not just the effect, but the *mechanism*. That mechanism involves emotional reactions that are *not* meaningless distractions, but which are meaningful appraisals of events based on deeply held philosophical commitments about

Court, 101 HARV. L. REV. 1388, 1391–93 (1988) (examining social meaning of how black victims of crime are valued); Lawrence Lessig, *Social Meaning & Social Norms*, 144 U. PA. L. REV. 2181, 2182 (1996); Cass R. Sunstein, *On the Expressive Function of Law*, 144 PA. L. REV. 2021, 2022 (1996).

105. 2 HANDBOOK OF SOCIAL PSYCHOLOGY 800–01 (Susan T. Fiske et al. eds., 2010).

106. *Id.* at 801 (quoting Wilson).

107. JONATHAN HAIDT, *THE RIGHTEOUS MIND: WHY GOOD PEOPLE ARE DIVIDED BY POLITICS AND RELIGION* (2012).

108. Jonathan Haidt, *The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment*, 108 PSYCHOL. REV. 814, 814 (2001).

109. *Id.* at 818.

110. Paul Slovic, *If I Look at the Mass I Will Never Act: Psychic Numbing and Genocide*, 2 JUDGMENT AND DECISION MAKING 79, 82 (2007) (citations omitted).

111. PAUL SIMON, *THE BOXER* (Columbia, 1969).

how human beings should interact with one another and how the state relates to its members.¹¹²

This reasoning leads to three points that *directly challenge* much contemporary thought. First, emotional responses have political content that are valuable, even necessary, for democratic deliberation.¹¹³ Thus, efforts to purge that evaluative content through expert panels and cost-benefit analysis are misguided.¹¹⁴ Second, even if not misguided, those efforts do not work because experts are, themselves, equally susceptible to motivated reasoning.¹¹⁵ Third, Kahan's prescription for political communication—to openly discuss values distinctive of constituents even when those are not widely shared—“stands on its head” the prevailing liberal notion that leaders should discuss policy only in terms of less divisive, *overlapping* values.¹¹⁶

One last thought: while the identification of cultural cognition and its mechanisms are new, its surprising effects may not be as *pervasive* as some early CCT scholarship and later journalistic descriptions suggest.¹¹⁷ Nearly all CCT experiments involve emotionally charged issues like gun control, sexually transmitted viruses, and climate change—issues that in the United States push the needle of polite conversation into the red zone. Recently, adherents of CCT have been careful to remind readers that some of their counterintuitive findings on numeracy and enlightenment seemed to be reserved for a handful of hot-button issues.¹¹⁸ Even regarding climate change, research shows that a plurality of Americans are “persuadable” on the issue and that by far, the plurality would trust scientists above others to educate members on the details.¹¹⁹

112. See discussion *supra* Part III.B.2.

113. Kahan et al., *supra* note 68 at 1082 (2005).

114. Robert R.M. Verchick, *The Case Against Cost Benefit Analysis*, 32 *ECOLOGY L.Q.* 349, 366–67 (2005); ROBERT R.M. VERCHICK, *FACING CATASTROPHE: ENVIRONMENTAL ACTION FOR A POST-KATRINA WORLD* 205–06, 216–18 (2010).

115. Kahan et al., *supra* note 68, at 1093–94 (stating that this is so, whether experts are engaged in so-called “System 1” or more deliberative “System 2” thinking); *id.* at 1081 (discussing systems of thinking posited by economist Daniel Kahneman). *But see* Cass R. Sunstein, *Misfearing: A Reply*, 119 *HARV. L. REV.* 1110, 1115 (2006).

116. Kahan, *The Cognitively Illiberal State*, *supra* note 25, at 145–46.

117. See Dan Kahan, *MAPKIA “Answers” Episode 2: There is No Meaningful Cultural Conflict over Vaccine Risks, & the Tea Party Doesn’t Look Very “Libertarian” to Me!*, CULTURAL COGNITION PROJECT AT YALE L. SCH. (Dec. 9, 2013, 10:13 AM), <http://www.culturalcognition.net/blog/2013/12/9/mapkia-answers-episode2-there-is-no-meaningful-cultural-conf.html> (“Cultural polarization on risk is *not* the norm. Most of the time culturally diverse citizens converge on the best available scientific evidence . . .”).

118. Dan Kahan, *Mooney’s Revenge?! Is There “Asymmetry” in Motivated Numeracy?*, CULTURAL COGNITION PROJECT AT YALE L. SCH. (Oct. 10, 2013, 7:09 AM), <http://www.culturalcognition.net/blog/2013/10/10/mooneys-revenge-is-there-asymmetry-in-motivated-numeracy.html>.

119. CONNIE ROSER-RENOUF ET AL., *GLOBAL WARMING’S SIX AMERICAS IN OCTOBER 2014: PERCEPTIONS OF THE HEALTH CONSEQUENCES OF GLOBAL WARMING AND UPDATE ON KEY BELIEFS* (2014), available at <http://environment.yale.edu/climate-communication/files/Six-Americas-October-2014.pdf>.

2. *It's Politicized Science*

A related body of research, popularized by Chris Mooney, suggests that, generally speaking, conservatives prefer simplicity and clear distinctions, while liberals are more comfortable with ambiguity and nuance.¹²⁰ This led Mooney to conclude that conservatives are psychologically (and perhaps genetically) predisposed to distrust novel scientific findings.¹²¹ Conservatives respond by saying that Mooney and other advocates of this model are so openly motivated by partisan politics that they cannot be taken seriously.¹²²

In contrast, CCT does *not* posit that liberals and conservatives differ in their acceptance of scientific information. Kahan, in fact, tends to doubt this view (which is sometimes called the “asymmetry thesis”).¹²³ And, so far, CCT experiments show no support for partisan asymmetry.¹²⁴ It is, rather, the attachment to certain core values (individualism, communitarianism, hierarchy, and egalitarianism) that influences one’s response to data on emotionally charged topics. Those values may, but do not always, correspond with partisan commitments.¹²⁵ On the topic of climate change, CCT scholars find that people’s worldviews explain their beliefs about global warming “more powerfully than any other characteristic,” including liberal-conservative ideology and gender.¹²⁶

3. *It's Not Scientifically Objective*

CCT proponents claim to be using objective tools—observation, statistics, logic—to show that human reasoning, and in particular assessments of risk, are inherently subjective.¹²⁷ Having established this point, they go on to argue that such “motivated reasoning” harms a society by causing members to assign less concern to a known danger, say HPV or climate change, than they should.¹²⁸

120. See generally CHRIS MOONEY, *THE REPUBLICAN BRAIN: THE SCIENCE OF WHY THEY DENY SCIENCE—AND REALITY* (2012).

121. See *id.* at 59–60, 111–16 (noting, among other things, that Republicans have larger amygdalae, which play a key role in emotional responses to threats and stimuli that evoke fear).

122. See, e.g., Jonah Goldberg, *Republicans Have Bad Brains?*, NAT'L REV. (May 4, 2012, 12:00 AM), <http://www.nationalreview.com/article/298913/republicans-have-bad-brains-jonah-goldberg>.

123. Dan Kahan, *What Do I Think of Mooney's "Republican Brain"?*, CULTURAL COGNITION PROJECT AT YALE L. SCH. (July 27, 2012, 5:26 PM), <http://www.culturalcognition.net/blog/2012/7/27/what-do-i-think-of-mooneys-republican-brain.html>.

124. Dan Kahan, *How to Recognize Asymmetry in Motivated Reasoning If/When You See It*, CULTURAL COGNITION PROJECT AT YALE L. SCH. (Aug. 3, 2012, 2:02 AM), <http://www.culturalcognition.net/blog/2012/8/3/how-to-recognize-asymmetry-in-motivated-reasoning-ifwhen-you.html>.

125. See Dan M. Kahan, *Culture, Cognition, and Consent: Who Perceives What, and Why, in Acquaintance-Rape Cases*, 158 U. PA. L. REV. 729, 793 (2010) (noting that political ideology correlates with cultural worldview, but that worldview is the more predictive variable); Dan M. Kahan et al., *Cultural Cognition and Public Policy: The Case of Outpatient Commitment Laws*, 34 LAW & HUM. BEHAV. 118, 128 (2010) (“ideology and party affiliation . . . had no significant effect.”).

126. Kahan et al., *The Second National Risk and Culture Study*, *supra* note 47, at 4.

127. See *id.* at 2.

128. See *id.* at 12.

But how do they know how concerned we should be about these hazards? Or, more precisely, how *can* they know?¹²⁹ Let's concede that Kahan et al. are model experts, with dazzling knowledge and statistical fluency. Aren't they *exactly* the kind of people that they have warned us about?¹³⁰ When we are told that society should pay more attention to HPV or to climate change, how do we know they are right? When they describe their experiments and propose a theory of emotional reasoning to explain it, how do we know their interpretation of the data is correct?

How big a problem this is depends on the factual conclusion you're studying. If you are concerned about experts' own ability to weigh the societal risk of nanotechnology or wide access to handguns, there is reason, I think, for concern. Nothing in their research shows that careful researchers like themselves have any advantage over ordinary people in assessing the risk of politically controversial projects like these.

But if you are concerned about the risk of climate change, the need for concern seems low. That is because there is already an overwhelming consensus among climate scientists that anthropogenic climate change is occurring and that it should be addressed.¹³¹ That consensus, which is made up of thousands of experts, is so large we may assume it contains a variety of individuals with a range of cultural views, making the sample less susceptible to a cultural bias in any one direction. Further, we can safely conclude that this consensus is real because, unlike the subjects in Kahan's consensus experiment, we can confirm the existence of a consensus by looking at statistical data on the subject, rather than relying on our rather unreliable memories.

As for the second question—How do we know CCT is an accurate portrayal of the experiments underlying it?—we must, I'm afraid, take a small leap of faith. CCT is still a relatively new theory. What it has in its favor is that it appears to explain some kinds of human decision making more easily and completely than competing theories. But we should recognize that at this point, its proponents are relatively small in number and that there is no broad consensus among experts (representing a range of worldviews) yet supporting it.

129. See Mark Tushnet, "*I Couldn't See It Until I Believed It*": *Some Notes on Motivated Reasoning in Constitutional Adjudication*, 125 HARV. L. REV. FOR. 1 (2011) ("[F]rom what position is Kahan able to stand such that he is a detached observer?").

130. See Kahan et al., *Fear of Democracy*, *supra* note 68, at 1092 ("[E]xperts themselves are hardly of one mind about societal risks.").

131. See *Scientific Consensus*, *supra* note 12.

4. *It's the End of Liberalism*

The two-prong strategy urges leaders and citizens to emphasize values outside the general consensus in defending their views.¹³² It also recommends bringing in neighbors who represent those views in order to vouch for those values.¹³³ This opens CCT up to the criticism that it leads to strategies inconsistent with liberal democracy. This is a problem for those who believe (as I do) that liberalism is a key feature of successful democracy. Kahan cheerfully accepts the charge and argues for an enlightened “illiberal state.”¹³⁴

But we don't have to abandon the liberal state in order to adopt CCT's prescriptive agenda. Martha Nussbaum writes movingly about the use of emotions in political communications and in policy making.¹³⁵ She also embraces much of the underlying theory of cultural cognition.¹³⁶ Nussbaum shows that liberal democracy, even as conceived by John Rawls (a vocal advocate of liberalism), allows space for the airing of a range of value-based emotions, so long as those values are rooted in democratic virtues.¹³⁷ The diversity of values important to CCT (moving along scales from individualism toward communitarianism and hierarchy toward egalitarianism) appears to fall in that range. In fact, the U.S. Constitution and America's related traditions and institutions continually invite conversation about the proper balancing of these core values.

IV. CLIMATE CHANGE POLICY

CCT provides both a psychological model for understanding public response to climate change and a way to push the public toward taking the issue more seriously. I've argued that CCT also presents a normative structure, consistent with liberal democratic principles for addressing controversial topics like climate change that are within our philosophical and political traditions. There is a role for law in doing this expressive work—legislation, agency policy making, litigation. We need strategies that encourage decision makers to reveal their values and that create space for citizens to inject their values into the debate (abetting “expres-

132. This idea of bringing all perspectives and values to the table is not unlike the philosophical pragmatism of John Dewey. See SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, *ACHIEVING DEMOCRACY: THE FUTURE OF PROGRESSIVE REGULATION* 9–10 (2014). And as with philosophical pragmatism, readers should note that CCT does not require us to accept or condone all of the beliefs that are brought to the table (such as, racism, superstition, or crack-pot philosophies, to name a few). Rather, the point is that once those views are brought into political discourse, they can be debated, evaluated against shared values, and processed through democratic means within the constraints of constitutional protections. See *id.*

133. *Id.*

134. See Kahan, *The Cognitively Illiberal State*, *supra* note 25, at 116–17.

135. NUSSBAUM, *UPHEAVALS*, *supra* note 74, at 435–38 (“What [political leaders] say (and institutionally recommend) about welfare, race, and other pertinent issues cannot help but contribute to public attitudes that shape the boundaries of compassion.”).

136. Kahan & Nussbaum, *supra* note 74, at 296.

137. NUSSBAUM, *POLITICAL EMOTIONS*, *supra* note 74, at 318–19.

sive overdeterminism”). We need strategies that present opportunities for respected neighbors who can “vouch” for the truth and urgency of critical issues. Let’s now examine the prospects for pursuing this agenda in the context of climate change mitigation.

A. CCT and Climate-Change Mitigation

Scientific experts have been warning Americans for at least two decades about the profound risk of climate change, yet over that time, public concern has only declined.¹³⁸ CCT suggests an answer familiar to any Paul Newman fan: “What we’ve got here is failure to communicate.”¹³⁹ According to Bob Lalasz, director of science communications at the Nature Conservancy, climate scientists have relied too heavily on what he calls the “empty bucket” approach to public communications.¹⁴⁰ Put bluntly, if scientists could just shovel enough knowledge into enough heads, “those people would *of course* change their minds to agree with us, changing their voting patterns and behavior in the ways we desire . . . and the world would be saved.”¹⁴¹ The problem is that the “empty bucket” model (also called the “information deficit” model) is just a specialized account of the “rational weigher” theory, which, as we learned earlier, has been repeatedly discredited in empirical studies.¹⁴²

CCT suggests a new model for communicating about the need for carbon reductions: the two-prong approach using frames and vouchers.¹⁴³ We should absolutely try it. But we should be prepared for a long slog. The reason is that climate mitigation is not very open to reframing and vouching. The reason has to do with three factors: *scale*, *tangibility*, and *accessibility*. Reducing GHG almost always involves the transfer of costs and benefits across continents and over several generations. The large *scale* of this operation makes it harder for government to appeal to local community values. Plus the payoff is not a jackpot, but an abstraction. Problems that are less *tangible* and more abstract make it harder to sustain an emotional response. Finally, where decision making is less *accessible* to public debate, either because of narrow points of entry or hyper-technical language, citizens will not forge strong emotional bonds. These troubles afflict all three branches of government. Decision makers can sand the sharp corners, but the challenge in climate-change mitigation is inherent.

138. See discussion *supra* Part II.

139. COOL HAND LUKE (Warner Brothers/Seven Arts 1967).

140. Bob Lalasz, *Why Everything You Know about Science Communications is Wrong, and More Science is the Answer*, COOL GREEN SCIENCE BLOG (Mar. 1, 2013), <http://blog.nature.org/science/2013/03/01/dan-kahan-climate-changescience-communications>.

141. *Id.*

142. See discussion *supra* Part III.B.1.

143. See discussion *supra* Part III.B.2.

1. *Legislative and Executive Action*

To have any real effect on atmospheric carbon concentrations, in any location, these efforts must be brought to scale across the United States and, indeed, around the world. Policy must unfold like an octopus—with long muscular arms. In the United States, Richard Lazarus imagines a strong role for the U.S. Congress: statutory directives, “hammer” clauses that force action when agencies go idle, review provisions that keep growling courts at bay, and requirements that federal agencies consult frequently across all sectors of the government domain.¹⁴⁴ We can imagine variations, but in the end, we should agree that any plan intended to succeed at scale must be national, centralized, and insistent. In addition, the global community will require a unified effort, through global or multi-lateral agreements, to reduce carbon concentrations around the world.¹⁴⁵

In the “political” branches of government, this means having lawmakers, executives, and administrative officials who can use the elements of expressive determinism to build consensus on the facts about climate change as well as the preferred method of tackling it. The work obliges these officials to embrace what Kahan calls “expressive candor,” that is, “to acknowledge, and not conceal, how they understand a law or policy proposal to express meanings *distinctive* of their own worldviews.”¹⁴⁶ Officials can, and probably should, appeal to instrumental goals too (saving money, avoiding harm), but their cultural values must always shine through.

In addition, political actors must help “create conditions under which all citizens can conform to the imperative of expressive candor.”¹⁴⁷ That endeavor, which Kahan calls “cooperative overdetermination,” means crafting policy that lets people with opposing cultural views also see their own values taken into consideration.¹⁴⁸ To this, I would add that actors should prefer methods of policy making that encourage citizens to become as directly engaged in the deliberative process as possible. This suggestion would not only increase the chance that other cultural meanings would be successfully incorporated into policy, but also, it would empower citizens to express values in their own words and assign cultural meaning as law is made.

From a cognitive standpoint, there is an even more important advantage. We have seen how the “empty bucket” model crumples when information is incompatible with ideological values. Research in educa-

144. Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 5 CORNELL L. REV. 1153, 1158 (2009).

145. *The Global Climate Change Regime*, COUNCIL ON FOREIGN RELATIONS (June 19, 2013), <http://www.cfr.org/climate-change/global-climate-change-regime/p21831>.

146. Kahan, *The Cognitively Illiberal State*, *supra* note 25, at 145 (describing the role of legislators).

147. *Id.*

148. *Id.*

tional psychology suggests there may be an exception for cases in which exposure to factual information is deep and sustained, as in a classroom or workshop setting.¹⁴⁹ The key is offering an experience more weighty and engaging than a single news article or radio segment. Thus, it seems reasonable to believe that decision-making methods that involve citizens in interactive, deliberative processes could lead individuals to be more open to the factual information presented to them.

As it turns out, expressive candor and cooperative overdetermination are tall orders where climate mitigation is concerned. There are three reasons: scale, tangibility, and accessibility.

a. Scale

It is one thing to build a consensus for climate policy in a single city like Portland, Oregon, or even the whole of California. But imagine selling legislation (or a treaty or a regulation) to 320 million citizens *en masse* across the entire country. The problem is the audience is just too big for the kind of contextualized values-based discussions that CCT demands. Lawrence Lessig, whose concept of “meaning talk” is very similar to the CCT prescription, puts it this way: “Meaning talk is not cheap, at least epistemically. One cannot use meaning talk in ways that purport to be general laws of humanity. Meaning prescriptions, and descriptions, are more local, more contingent.”¹⁵⁰

What is wrong with political communication on a broad scale? For one thing, as Lessig’s statement suggests, speech broadly cast is almost by necessity “general.” Look at how the Obama administration sells its environmental agenda. White House incantations like “green jobs,”¹⁵¹ “common-sense” carbon limits,¹⁵² or the “all-of-the-above energy strategy”¹⁵³ are bandied about without any specific articulation of what these things actually mean, not literally, and certainly not contextually. Instead, they seem calculated to avoid any whiff of cultural meaning that might possibly offend.

149. Susannah Locke, *How to Debunk False Beliefs Without Having It Backfire*, VOX (Dec. 22, 2014), <http://www.vox.com/2014/12/22/7433899/debunk-how-to> (interview with Stephan Lewandowsky, author and psychologist at the University of Bristol: “Now, the trick appears to be that you’ve got to get people the opportunity to deal with information in great depth. If you have a situation like a classroom where people are forced to sit down and pay attention, that’s when more information is helpful. There’s a lot of evidence of this in educational psychology.”); *see also* John Cook & Stephen Lewandowsky, *The Debunking Handbook*, University of Queensland (Nov. 27, 2011), <http://www.skepticalscience.com/Debunking-Handbook-now-freely-available-download.html>.

150. Lessig, *supra* note 62, at 2188.

151. *See* WHITE HOUSE TASK FORCE ON THE MIDDLE CLASS, GREEN JOBS: A PATHWAY TO A STRONG MIDDLE CLASS (2009), http://www.whitehouse.gov/assets/documents/mctf_one_staff_report_final.pdf.

152. *Climate Change*, THE WHITE HOUSE, <http://www.whitehouse.gov/energy/climate-change> (last visited Nov. 25, 2015).

153. Jason Furman & Jim Stock, *New Report: The All-of-the-Above Energy Strategy as a Path to Sustainable Economic Growth*, THE WHITE HOUSE (May 29, 2014, 11:30 AM), <http://www.whitehouse.gov/blog/2014/05/29/new-report-all-above-energy-strategy-path-sustainable-economic-growth>.

A favorite example of mine involves President Obama's fuel efficiency policy for new cars and trucks, issued under the Clean Air Act ("CAA").¹⁵⁴ In 2009, the President made history when he announced a joint rulemaking by the EPA and the Department of Transportation to increase fuel economy and reduce GHG from new mobile sources.¹⁵⁵ The proposal, a response to the Supreme Court's path-breaking decision in *Massachusetts v. EPA*,¹⁵⁶ would become the first and most significant (as of today) restriction on heat-trapping gases in the United States. Yet the official press release, while referring four times to "greenhouse gases" never once explained why they mattered or how they affected climate.¹⁵⁷ In fact the press release, which emphasized fuel savings and energy independence, did not mention the climate at all.¹⁵⁸ I'm not criticizing. There may be no better way to appeal to broad audiences in such single, high-stakes gambits. But that is the point: what the communicator gains in audience share will be lost on the epistemic side of the ledger.

A second problem with broadly cast political discussions is that it is easy for powerful groups to dominate and distort them. With so much at stake, companies have a big incentive to enlard the public debate with the kinds of emotional messages that will promote their interests. The energy industry's campaign to misinform the public about the scientific consensus on climate change is well documented.¹⁵⁹ Often their efforts are couched in values-based arguments directed against government regulation or in defense of Americans' "way of life." Simultaneously, companies sell an image of perpetual innovation and optimism. BP promises to move "Beyond Petroleum."¹⁶⁰ A lobby group sings the praises of "Clean Coal," backed by a choir of hard-working Americans, clad in shop aprons, lab coats, and welding masks, all insisting "I Believe."¹⁶¹ It's easy to parody emotional appeals like these, but CCT research suggests

154. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 76 Fed. Reg. 74854 (proposed Dec. 1, 2011); see also *Regulatory Announcement: EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks*, ENVTL. PROT. AGENCY (2012), <http://www.epa.gov/otaq/climate/documents/420f12051.pdf>.

155. Press Release, Office of the Press Secretary, President Obama Announces National Fuel Efficiency Policy (May 19, 2009) [hereinafter Fuel Efficiency Policy], available at http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy.

156. *Mass. v. EPA*, 549 U.S. 497 (2006).

157. See Fuel Efficiency Policy, *supra* note 155.

158. See *id.* The word *climate* does appear as part of Carol Browner's title at the time—"Assistant to the President for Energy and Climate Change"—but that is not the same thing.

159. See, e.g., Justin Gillis & John Schwartz, *Deeper Ties to Corporate Cash for Doubtful Climate Researcher*, N.Y. TIMES (Feb. 21, 2015), <http://www.nytimes.com/2015/02/22/us/ties-to-corporate-cash-for-climate-change-researcher-Wei-Hock-Soon.html?ref=topics&r=0>; Jill Fitzsimmons, *Meet the Climate Denial Machine*, MEDIA MATTERS FOR AMERICA BLOG (Nov. 28, 2012, 3:16 PM), <http://mediamatters.org/blog/2012/11/28/meet-the-climate-denial-machine/191545>.

160. Miriam A. Cherry & Judd F. Sneirson, *Beyond Profit: Rethinking Corporate Social Responsibility and Greenwashing After the BP Oil Disaster*, 85 TUL. L. REV. 983, 1002 (2011).

161. American Coalition for Clean Coal Electricity, *Clean Coal: 60 TV Spot "I Believe"*, YOUTUBE (Apr. 16, 2008), https://www.youtube.com/watch?v=X_5OrJVR_Vc (last visited Nov. 27, 2015).

they *can* move public opinion, particularly where climate commitments are shallow.

A final scale-based challenge concerns the need for vouchers. When appealing to a mass audience, it is not enough to find a local member of the clergy, family doctor, or other trusted individual to affirm community values. The situation demands a spokesperson who is both *universally* known and *universally* trusted—a kind of “super voucher.” In today’s fractured media, where heroes can be crowned and demolished in one Twitter-fed news cycle, super vouchers are in very short supply. For the time being, climate activists are making do with people like Bill Nye the Science Guy and the celebrity astrophysicist Neil deGrasse Tyson. Some environmentalists say the smart money should be on Pope Francis, whose encyclical on global warming seemed intended to energize the United Nations’ 2015 climate meeting in Paris.¹⁶² But several conservatives, Catholic and secular, are already taking shots at the pontiff’s credibility by questioning his expertise and spiritual jurisdiction.¹⁶³ Whether today’s “superman pope”¹⁶⁴ will morph into the planet’s next “super voucher” remains to be seen.

b. Tangibility

Psychology teaches that some of our strongest emotional responses are tied to tangible experience.¹⁶⁵ In his research on public apathy toward genocide, psychologist Paul Slovic argues that the human desire to act depends on an emotional response to the situation.¹⁶⁶ An emotional response, in turn, is fed by “imagery” and “attention,” where “imagery” describes pictures, “words, sounds, memories, and products of our imagination,” and “attention” describes a level of singularity and detail that captures and maintains awareness.¹⁶⁷ Thus a news report describing a mass killing is more likely to elicit a desire to act when the focus of the story falls on a single individual with specific needs, as opposed to a large

162. See generally Encyclical Letter from the Holy Father Francis (May 24, 2015), available at http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

163. See Michelle Boorstein, *Pope’s Encyclical Generates Responses from Over-the-Top Enthusiasm to Harsh Dismissal*, WASH. POST (June 18, 2015), https://www.washingtonpost.com/local/popes-encyclical-generates-responses-from-over-the-top-enthusiasm-to-harsh-dismissal/2015/06/18/502c3a4a-153f-11e5-9518-f9e0a8959f32_story.html; Coral Davenport, *Pope’s Views on Climate Change Add Pressure to Catholic Candidates*, N.Y. TIMES (June 16, 2015), <http://www.nytimes.com/2015/06/17/us/politics/popes-views-press-gop-on-climate-change.html>; John Schwartz, *Reactions to Pope Francis’ Encyclical on Climate Change*, N.Y. TIMES (June 18, 2015), <http://www.nytimes.com/live/updates-on-pope-francis-encyclical-on-climate-change/>.

164. John Vidal, *Pope Francis’s Edict on Climate Change Will Anger Deniers and US Churches*, THE GUARDIAN (Dec. 27, 2014, 4:06 PM), <http://www.theguardian.com/world/2014/dec/27/pope-francis-edict-climate-change-us-rightwing> (taking note of this new, informal moniker).

165. See Slovic, *supra* note 110, at 80–83.

166. *Id.*

167. *Id.*; see also HUME, *supra* note 95, at 385 (“Now ’tis evident, that those sentiments, whencever they are derived, must vary according to the distance or contiguity of the objects; nor can I feel the same lively pleasure from the virtues of a person, who liv’d in *Greece* two thousand years ago, that I feel from the virtues of a familiar friend and acquaintance.”).

or even small group of people.¹⁶⁸ We can think of “imagery” and “attention” as components of what I will call “tangibility,” a term meant to describe the level of an idea’s specific concreteness.

Earlier, I suggested that the public’s commitment to climate change mitigation is shallow. That is partly because of the broad scale of the discourse and partly because of the broad scale of the problem (which can engender helplessness and a lack of commitment).¹⁶⁹ But another reason is that, unlike a clear-cut forest or an exploding oil well, the *process* of climate change is all but invisible to the senses. It lacks compelling imagery. No one sees the ocean of carbon rolling across the sky, or the sizzling radiation trapped beneath it. Many of the most dramatic effects of global warming, like the crumbling of mighty glaciers, occur far away. Other events, like droughts and hurricanes, erupt without “fingerprints,” making it impossible to see the suspected cause and effect. Still, other phenomena like weakened stream flow and rising seas, occur so gradually that they escape casual notice.

For the same reason, the promise of GHG reduction appears to many people as just another fuzzy abstraction. There’s no jackpot to be won, just a promise that fewer bad things will happen in the future. A lot of that benefit, by the way, will be accrued in poorer, far-away countries—not places like the United States, where officials already have a head start on protective infrastructure, insurance programs, and other forms of resilience. Most importantly, the time lag between emissions reductions and the stabilizing effects on climate may be longer than the remaining years of any adult now drawing a breath. “The upshot,” as Richard Lazarus writes, “is that no one who is asked to curtail activities to reduce greenhouse gas concentrations will be likely to live long enough to enjoy the benefits of that curtailment.”¹⁷⁰ People do care about the children and grandchildren they will someday leave behind. But despite our best intentions, it’s thought that generational compassion begins and ends with the young people already born whom we already know.¹⁷¹ That extends the circle of concern, but not by much.

Such dissociations in space and time pose a challenge to those hoping for expressive candor among political actors. The strategy requires a concrete effect that can trigger an emotional response among actors with varying worldviews. To appreciate the problem, compare two situations.

168. See Slovic, *supra* note 110, at 80.

169. See Stephen Kaplan, *Human Nature and Environmentally Responsible Behavior*, 56 J. SOC. ISSUES 491, 498 (2000) (size of environmental problems can lead to feelings of helplessness and reduced commitment).

170. Lazarus, *supra* note 144, at 1167. It is arguable that under some climate scenarios, an individual might live to experience some modest benefit from climate change mitigation. But Lazarus’s point stands, since that chance is far from certain and probably not foremost in people’s thoughts anyway.

171. HENDRICK PH. VISSER ‘T HOOFT, JUSTICE TO FUTURE GENERATIONS AND THE ENVIRONMENT 46–47 (1999); see also PETER SINGER, THE EXPANDING CIRCLE: ETHICS, EVOLUTION, AND MORAL PROGRESS 79 (1981) (“[T]hough I care deeply for my children and grandchildren because I know and love them, I may have no regard for more remote descendants whom I shall never live to meet.”).

In the first, you are senator with a worldview tending toward communitarianism. After some consideration, you may find that global action on climate change appeals to you despite the nearly invisible nature of the problem and the long lag-time for meaningful results. That's because your commitment to communitarianism might allow a frisson of excitement when the treaty you support pulls leaders into a press conference, where they announce firm commitments. The planet is not saved, but you have a tangible goal that stokes your passion.

Now imagine a second situation in which your worldview leans toward individualism. A treaty is ratified, and the only results you will compute are government limits on one's choice to burn fossil fuel. Sure, if all goes well, the liberties of people in the future will be enhanced by a stabilized climate. But those people probably do not include you or anyone you know. And unless you have a healthy dose of egalitarianism, you will have trouble living vicariously through their expanded opportunities.¹⁷² This same dynamic would apply to citizens when presented with policy choices designed to resonate with various cultural views: some would find emotional pay-offs despite the distancing effect; others would draw a blank.

c. Accessibility

Neither expressive candor nor cooperative overdetermination can function without a public point of entry. When political actors are urged to express their values with candor, the presumed audience is the citizenry. When actors are encouraged to frame policy in terms that resonate with a range of values, those values belong, again, to the citizenry. My added suggestion that decision making involve meaningful opportunities for citizens to take part in values-based discussions is an explicit call for public entrance.¹⁷³ This point of entry, which I call "accessibility," takes a tangible form when we talk about the concrete mechanisms by which citizens engage with or directly participate in the relevant decision-making processes whose outcomes may affect them. In a more figurative way, accessibility can also describe the degree to which the language or methods associated with the relevant process can be understood and employed by the people whose interests are at stake. Put bluntly, we want to know how easy it is for a person to understand what is going on and get involved.

Where climate change mitigation is concerned, the answer is *not very*. Here, I am again referring to policy making at the federal (and, by extension, the international level) since that is the only scale at which there is a realistic chance to reduce GHGs in anything approaching an

172. According to one recent experiment, material self-interest may be the strongest motivator for climate action among individuals knowledgeable about climate change. See Bethany Albertson & Joshua William Busby, *Hearts or Minds? Identifying Persuasive Messages on Climate Change*, RES. & POL. 1, 6 (2015), available at <http://rap.sagepub.com/content/srap/2/1/2053168015577712.full.pdf>.

173. See discussion *supra* Part IV.A.1.

effective time frame. The problem comes down to the overlapping issue of scale and to the technical nature of the issues involved. A federal rulemaking on carbon emissions from tailpipes or smokestacks will simply not afford the kind of tangible access a citizen would require to speak meaningfully about his cherished values. Notice-and-comment periods and public hearings are simply not enough. Regulations this contentious will necessarily involve the kind of political trading and backdoor deals that even seasoned activists will never know about. In fact, the main reason the Obama administration's groundbreaking fuel economy standards were so well received (comparatively) was that they had been forged in a de facto negotiated-rulemaking process involving industry leaders and regulators. The process surrounding international agreements is, of course, even more opaque, and by many orders of magnitude.

Nor does the language or methodology of carbon reduction strategies invite public curiosity or comprehension, since the details are, by necessity, expressed in scientific and economic terminology difficult for even politicians to understand.

2. *Judicial Decision-Making*

As noted earlier, the “frames and neighbors” philosophy can be extended to judicial decision making.¹⁷⁴ Specifically, courts are urged to be more forthright about the difficulty of resolving disputes in which legal interpretations, precedents, and core values can all conflict. They are also asked to make efforts to describe and even empathize with the core values articulated by all parties, even as they declare a winner. Thus, a CCT-inflected opinion would say two things that a losing party does not often hear: “It’s hard.” and “You make a good point.”¹⁷⁵

a. *Aporia and Affirmation*

Kahan refers to these efforts as “aporia” and “affirmation.”¹⁷⁶ Aporia, as he uses the term, refers to a rhetorical mode that explicitly acknowledges complexity and that is ready to admit “when an inescapable (perhaps tragic) difficulty is an essential property of the problem or phenomenon under investigation.”¹⁷⁷ Cognitive research suggests that expressions of equivocation, or aporia, can reduce culturally polarizing effects in deliberative settings.¹⁷⁸ Kahan speculates that expressions of

174. See discussion *supra* Part III.B.2.

175. It’s reasonable to ask how influential judges can be in the swirl of public debate. But there are times their words might carry special force. Some judicial opinions—because of the public stature of the judge, the topic, or both—will become news items themselves, with excerpts quoted in the news, on Twitter, on Facebook, and elsewhere. As for the sleeper opinions that fly under the public’s radar, their messages can still shape the views of the experts and party elites who do influence public opinion. See *supra* note 1 (citing sources that examine the influence of party elites on public opinion).

176. Kahan, *Foreword*, *supra* note 8, at 62, 67.

177. *Id.* at 62.

178. Dan Simon & Nicholas Scirich, *Lay Judgments of Judicial Decision Making*, 8 J. EMPIRICAL LEGAL STUD. 709 (2011) (demonstrating that the sample group expressed greater “acceptability to

aporia in judicial decisions could similarly reduce polarizing effects.¹⁷⁹ Judicial aporia would also suggest to the losing group that the decision should be accepted as something more than a political power grab. To the winning group, aporia would suggest that a group member can voice doubt (or even dissent) without losing status within the tribe. This idea borrows from the theory of neighbors “vouching” for a desirable approach.

Judicial affirmation works much the same way. Judicial affirmation occurs where a court evaluates a dispute by referring to an array of culturally infused arguments as a means of showing respect for, and thus affirming, the range of cherished values at stake in the case.¹⁸⁰ As such, it is a kind of expressive overdetermination.¹⁸¹ The idea is based on research involving “self-affirmation,” a process by which a person is reminded of a treasured quality or belief that adds value to the world. Studies show that this “boost in self-esteem” can make people less defensive and counteract group conflict.¹⁸² Kahan speculates that judges could similarly reduce group conflict by injecting bursts of values-based self-affirmation into their decisions.¹⁸³

Judicial affirmation could manifest itself in a “split the baby” approach, where one side gets something for one set of reasons and the other side gets something for another set of reasons.¹⁸⁴ But it can also be winner-take-all, as long as a court takes care to articulate the values of the losing side and perhaps suggest that had things been a little different, those values might have carried the day.¹⁸⁵ A judge must be honest; but she is not required to obliterate the other side.

b. The Aporia-Affirmation Deficit

An avid reader of judicial decisions involving climate mitigation must surely concede that the virtues of aporia and affirmation run in short supply. That situation seems unlikely to change. To see why, consider the aporia-affirmation deficit in two important climate-mitigation decisions issued by the Supreme Court during two different presidential

decisions that openly admitted to good reasons on both sides of the case as compared with decisions accompanied by reasons that supported one side of the case exclusively”); Tom R. Tyler & Gregory Mitchell, *Legitimacy and the Empowerment of Discretionary Legal Authority: The United States Supreme Court and Abortion Rights*, 43 DUKE L.J. 703 (1994) (discussing the public’s willingness to accept legitimacy in authority).

179. Kahan, *Foreword*, *supra* note 8, at 64.

180. *Id.* at 68–69.

181. *Id.* at 68.

182. Dan M. Kahan, *Cognitive Bias and the Constitution*, 88 CHI.-KENT L. REV. 367, 400–01 (2013); see David K. Sherman & Geoffrey L. Cohen, *The Psychology of Self-Defense: Self-Affirmation Theory*, 38 ADVANCES EXPERIMENTAL SOC. PSYCHOL. 183, 192–93 (2006).

183. Kahan, *Foreword*, *supra* note 8, at 67–69.

184. Kahan associates this approach with Cass Sunstein’s theory of judicial “trimming” and with Judge J. Harvie Wilkinson’s description of “splitting the difference.” See *id.* at 68 (citing J. Harvie Wilkinson III, *The Rehnquist Court at Twilight: The Lures and Perils of Split-the-Difference Jurisprudence*, 58 STAN. L. REV. 1969, 1983 (2006)).

185. Kahan, *Foreword*, *supra* note 8, at 68.

administrations: *Massachusetts v. EPA*¹⁸⁶ and *Utility Air Regulatory Group v. EPA*.¹⁸⁷

Massachusetts v. EPA involved a challenge by twelve states and several cities to force the EPA to regulate GHGs emitted from automobiles.¹⁸⁸ The Agency, in keeping with the views of the Bush White House, argued that it lacked authority under the CAA to regulate heat-trapping gases and that, even if it did, it was within the Agency's discretion to choose not to limit them at the time.¹⁸⁹ In a 5-4 split, the Supreme Court disagreed, holding that the CAA did grant such authority and that EPA had a duty to use it, absent some scientific reason for doing otherwise.¹⁹⁰ The decision, the first direct treatment of climate change issues in the high court, opened the gates for much of the regulation that now makes up the Obama administration's climate-change mitigation strategy.

Massachusetts v. EPA involved two of the toughest issues in administrative law: judicial standing and the forever-yrating standards of agency discretion. But you would never know it because Justice Stevens' majority opinion is poised and unflappable. His analysis of standing is peppered with confidence-builders like, "it is clear," and "by any standard."¹⁹¹ In approaching the merits, the Court's majority concludes with "little trouble" that the CAA authorizes science-based limits on carbon,¹⁹² even as four dissenters insist the Act can be read the other way.¹⁹³ EPA's strongest argument was probably its assertion that the Act granted it the discretion to refuse to regulate carbon for reasons driven by administration policy. But the majority dismisses those reasons almost in passing as jots on a "laundry list."¹⁹⁴ No matter that those justifications were exactly what had convinced the Court of Appeals to earlier rule in the EPA's favor.¹⁹⁵

Indeed, if there is any hint of equivocation in the majority opinion, it alights surprisingly on a question of empirical observation. When discussing the effects of sea-level rise on the Eastern seaboard, a fact observed and verified in countless studies,¹⁹⁶ the majority slips in a hesitant em dash: "In sum—at least according to petitioners' uncontested affida-

186. 549 U.S. 497 (2007).

187. 134 S. Ct. 2427 (2014).

188. *Massachusetts*, 549 U.S. at 504 nn.2–3. Plaintiffs also included several non-profit organizations and the territory of American Samoa. *Id.* at 504 nn.3–4.

189. *Id.* at 497.

190. *Id.* at 533–34.

191. *Id.* at 521, 525.

192. *Id.* at 528–30, 532–35.

193. *Id.* at 558–59 (Scalia, J., dissenting).

194. *Id.* at 533.

195. *Mass. v. EPA*, 415 F.3d 50, 58 (2005), *rev'd*, 549 U.S. 497 (2007).

196. See, e.g., RICHARD H. MOSS ET AL., JOINT GLOBAL CHANGE RESOURCE INST., CLIMATE CHANGE IMPACTS: MARYLAND RESOURCES AT RISK (2002), http://www.globalchange.umd.edu/data/publications/Maryland_at_risk_complete_2July02.pdf; NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS (2001), http://stephen.schneider.stanford.edu/Publications/PDF_Papers/climatechange.pdf; Richard Z. Poore et al., *Sea Level and Climate*, U.S. GEOLOGICAL SURVEY (2000), <http://pubs.usgs.gov/fs/fs76-00/fs076-00.pdf> (last visited Nov. 25, 2015).

vits—the rise in sea levels associated with global warming has already harmed and will continue to harm Massachusetts.”¹⁹⁷ This is a small point, perhaps. But we cannot forget that the goal of rhetorical openness is a richer expression of values-based complexity, *not* equivocation on verifiable facts.

Utility Air Regulatory Group v. EPA asks whether the EPA has authority under two CAA programs to regulate GHGs from power plants and other stationary sources.¹⁹⁸ Because 66 percent of U.S. GHG emissions come from stationary sources,¹⁹⁹ the question is central to any national carbon-reduction strategy that relies on existing legislation. One section of the CAA appears to require that GHGs be regulated according to “best available control technology” (“BACT”).²⁰⁰ Another section appears to conflict with that dictate by setting emission thresholds so low as to make any permit scheme nearly unworkable.²⁰¹ When the EPA raised the emission thresholds to capture large polluters, but to spare coffee shops and other small businesses, the utility industry cried foul.

In oral argument, an equivocating Justice Kagan had described the issue as a “conundrum.”²⁰² But the Court’s written opinion, penned by Justice Scalia, is as free of apprehension as a Viking war chant. Complaining that the statutory language is hardly “conducive to clarity,”²⁰³ the Court almost instantly finds it so, ruling that the EPA has the authority to regulate carbon emissions from facilities that already require emissions permits for other substances (so-called, “anyway sources”), but that it lacks authority to regulate carbon emissions from other large sources that did not already require permits.

In reaching its decision, the Court ignores the interpretive deference normally given an agency and accuses the EPA of “laying claim to extravagant statutory power over the national economy.”²⁰⁴ The Court suggests that any reading that would result in such an “enormous and transformative expansion” of agency power must be met with strong skepticism.²⁰⁵

EPA had hoped, of course, that it could minimize extravagant claims by raising the emission thresholds. But that conflicts with the stat-

197. 549 U.S. at 526.

198. *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427 (2014).

199. See *EPA Regulation of Greenhouse Gas Emissions from New Power Plants*, CTR. FOR CLIMATE AND ENERGY SOLUTIONS, <http://www.c2es.org/federal/executive/epa/ghg-standards-for-new-power-plants> (last visited Dec. 15, 2015).

200. 42 U.S.C. § 7475(a)(4) (2012) (“[T]he proposed facility is subject to the best available control technology for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility.”).

201. See 42 U.S.C. § 7479(1) (2012) (“The term ‘major emitting facility’ means any of the following stationary sources of air pollutants which emit, or have the potential to emit, one hundred tons per year or more of any air pollutant from the following types of stationary sources . . .”).

202. Transcript of Oral Argument at 16, *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427 (2014) (No. 12-1146).

203. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2441.

204. *Id.* at 2444.

205. *Id.*

ute's explicit low thresholds. So, as one justification, the EPA argued it was entitled to some flexibility in order to regulate the big sources first and deal with the smaller sources later (perhaps by a general permit or some other means).²⁰⁶ It's the kind of argument Justice Scalia, himself, made in *Massachusetts v. EPA*, when he defended the EPA's broad "judgment" to delay action until a complete carbon plan was hatched.²⁰⁷ But today, the jurist's patience is sapped. "We are not willing to stand on the dock and wave goodbye as the EPA embarks on this multiyear voyage of discovery," says he.²⁰⁸

So much for aporia. But is there affirmation? The Court does, after all, "split the difference": it denies EPA's claim to regulate GHGs from sources that do not otherwise require permits, but it grants the authority the EPA most wanted—the power to limit GHG emissions from "anyway sources." The answer is no because, in conceding EPA's view, the Court refuses to admit that the agency's side might have even a mote of integrity. The analysis seems almost passive-aggressive. Suggesting the EPA has won its point on a technicality, the Court warns that the agency may soon be barreling toward "an unreasonable and unanticipated degree of regulation."²⁰⁹ In the end, the best the Court can say about EPA's plan to regulate "anyway sources" is that, in the end, it is "not so disastrously unworkable."²¹⁰

c. Explaining the Deficit

One might attribute these examples of aporia-affirmation deficit to very particular circumstances. For believers in expert-driven regulation, *Massachusetts v. EPA* came at a frustrating time, when the Bush administration's opposition to climate policy seemed almost pathological. Justice Scalia's majority opinion in *UARG* reads as if it might originally have been drafted as a dissent, with a fifth vote and a "split the difference" fix tacked on at the end. But a broader reading of such cases suggests an explanation that is mainly structural. Just as problems with scale, tangibility, and accessibility dampen the communicative power of legislation and regulation, the same elements inhibit judicial expression too.

In terms of scale, the need for nationwide reductions in carbon emissions requires a nationwide regulatory structure, more specifically, the behemoth CAA. Most of the important legal challenges concerning climate mitigation will involve interpretations of this Act. To minimize conflict among the nation's courts, the Act funnels all disputes directly to either the federal trial or appellate courts of the District of Columbia.²¹¹ An appeal to the U.S. Supreme Court is almost always assured. What is

206. *Id.* at 2444–46.

207. *Mass. v. EPA*, 549 U.S. 497, 550 (2007) (Scalia, J., dissenting).

208. *Util. Air Regulatory Grp.* 134 S. Ct. at 2446.

209. *Id.* at 2449.

210. *Id.* at 2448.

211. *See* 42 U.S.C. § 7607(b)(1) (2012).

good for administrative efficiency is bad for aporia and affirmation. The prominence of the Supreme Court and the D.C. Circuit make them susceptible to political bargaining when appointments are made; this can polarize membership, depriving a court of more nuanced or inclusive voices. Indeed, one recent study coauthored by Maya Sen, a political scientist at Harvard, found that while political ideology plays a significant role in shaping the judiciary at all levels of government, the most politicized courts (all leaning more conservative than overall membership of the bar would suggest) are, in order, the federal appellate courts, the state high courts, and the federal trial courts.²¹² Indeed, polarization at the Supreme Court and the U.S. Court of Appeals for the D.C. Circuit are the stuff of regular newspaper headlines.²¹³

At the Supreme Court, the arbiter of many high-stakes climate-mitigation disputes, nuance and inclusion are even harder to achieve because of the necessity of corraling five votes to reach a majority. It is easier to water the opinion down to the basics and forget about paying tribute to the surrounding values. And while some justices are reliable in their “pro-environmental” votes, the Court today lacks a passionate voice for environmental ethics, an essential element in these values-based discussions. Traditionalists have Justice Thomas. Feminists have “Notorious R.B.G.”²¹⁴ But today’s Court has no Lorax to speak—in wheezing sound bites—for the Trees.²¹⁵

Even the key interpretive standard for regulatory review, the *Chevron* “two-step,” repels equivocation and eclecticism by insisting that courts skeptical of agency conduct couch their objections in terms of what is unambiguous or clearly unreasonable.²¹⁶ Because the standard is

212. Adam Bonica & Maya Sen, *The Politics of Selecting the Bench from the Bar: The Legal Profession and Partisan Incentives to Politicize the Judiciary* (Harvard Kennedy Sch., Working Paper, No. RWP15-001, 2015); Adam Liptak, *Why Judges Tilt to the Right*, N.Y. TIMES, Jan. 31, 2015, <http://www.nytimes.com/2015/02/01/sunday-review/why-judges-tilt-to-the-right.html>.

213. David Paul Kuhn, *The Incredible Polarization and Politicization of the Supreme Court*, THE ATLANTIC, June 29, 2012, <http://www.theatlantic.com/politics/archive/2012/06/the-incredible-polarization-and-politicization-of-the-supreme-court/259155/>; Adam Liptak, *The Polarized Court*, N.Y. TIMES, May 10, 2014, <http://www.nytimes.com/2014/05/11/upshot/the-polarized-court.html>.

214. Otherwise known as Justice Ruth Bader Ginsburg. The affectionate nickname, which puns on the name of gangsta rapper Notorious B.I.G., originated on a Tumblr blog site and soon went viral, inspiring a series of t-shirts, coffee mugs, and other gear. See Notorious R.B.G., <http://notoriousrbg.tumblr.com> (last visited June 21, 2016). The 81-year-old justice has embraced the meme and admits to owning several “Notorious R.B.G.” t-shirts herself. Jamie Fuller, *Ruth Bader Ginsburg Owns a Surprisingly Large Number of “Notorious RBG” T-shirts*, WASH. POST, Oct. 20, 2014, <http://www.washingtonpost.com/blogs/the-fix/wp/2014/10/20/ruth-bader-ginsburg-owns-a-surprisingly-large-number-of-notorious-rbg-t-shirts/>; see also Nia-Malika Henderson, *Ruth Bader Ginsburg Digs That Whole Notorious R.B.G. Thing*, WASH. POST, July 31, 2014, <http://www.washingtonpost.com/blogs/she-the-people/wp/2014/07/31/ruth-bader-ginsburg-digs-that-whole-notorious-r-b-g-thing/> (quoting Ginsburg: “I think [Shana Knizhnik, the blog’s originator] has created a wonderful thing with Notorious R.B.G. I will admit I had to be told by my law clerks, what’s this Notorious, and they explained that to me, but the Web site is something I enjoy, all of my family do.”).

215. See generally DR. SEUSS, *THE LORAX* (1971).

216. *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842–45 (1984) (explaining that a reviewing court first examines the language of a provision in order to determine if there is an unambiguous mandate, and second, in the case where ambiguity exists, will examine an agency’s

so often applied to policy at the national level, it is also part of the challenge of scale.

Where climate change mitigation is concerned, judicial decisions also suffer from a lack of tangibility. When James Milkey argued for judicial standing during oral argument in *Massachusetts v. EPA*, he described carbon emissions as an imminent injury-in-fact, akin to lighting “a fuse on a bomb.”²¹⁷ The image was brilliant, but it is as concrete as anyone’s legal analysis ever got. The truth is, everyone involved in the case—from litigators on both sides to the justices in majority and dissenting opinions—seems to understand that what turned out to be one of the most important environmental cases in American history was, for better or worse, just a “straight-forward administrative law case.”²¹⁸

The tangibility deficit here is even worse than the deficit affecting the political branches. There the problem involves the mind’s comprehension of subtle *physical effects*—the accumulation of gases, increases in temperature, the rising of seas. That problem surely exists for lawyers and judges, hence the need for Milkey’s bomb simile. But in addition to this, the administrative nature of most climate-mitigation controversies demands that they be styled in terms of heady, *non-physical* concepts like authorial intent, agency discretion, separation of powers, and federalism. If there’s a better way to talk about administrative law, I haven’t found it. Still, the abstract nature of such legal disputes makes them poor candidates for public education on issues of concrete facts and future risks.

Legal disputes of the kind discussed above are also not very accessible, that is, they are not easy to participate in. Lawsuits, by design, are supposed to focus on disagreements between discrete parties. While judicial decisions, particularly those from appellate courts, can affect public policy in expansive ways, the keyhole for citizen contribution is small—an amicus brief, a day of picketing on the courthouse steps—efforts that will probably have little, if any, effect. It is true that prominent lawsuits can inspire important public discussion, as has the litigation over same-sex marriage or gender-based pay equity.²¹⁹ But the underlying issues in most cases like that are immediately understandable and affect a per-

interpretation for reasonableness, deferring to that interpretation if the agency’s view seems reasonable).

217. Transcript of Oral Argument at 16, *Mass. v. EPA*, 549 U.S. 497 (2007) (No. 05-1120) (“[T]he harm is already occurring . . . it plays out continuously over time . . . once [greenhouse gases] are emitted the laws of physics take over, so our harm is imminent in the sense that lighting a fuse on a bomb is imminent harm.”).

218. *Massachusetts v. EPA*, 549 U.S. at 560. While Justice Scalia believed the dispute was “a straightforward administrative-law case,” he did not believe the majority saw it this way, instead suggesting the majority was “substituting its own desired outcome for the reasoned judgment of the responsible agency.” *Id.* Still, the more plausible view, as I read the decision and the briefs, is that all the participants were treating the dispute (if even for tactical reasons) as one involving garden-variety administrative law.

219. See Jill Lepore, To Have and to Hold, *NEW YORKER* (May 25, 2015), <http://www.newyorker.com/magazine/2015/05/25/to-have-and-to-hold>; Peter_Venkman_1, *Supreme Court Legalizes Gay Marriage*, REDDIT, <https://www.reddit.com/comments/3b6zln> (displaying comments from hundreds of Reddit users regarding gay marriage) (last visited Nov. 25, 2015).

son's life (or the lives of loved ones) in real time. In big regulatory cases, it's hard for the average citizen to know what's going on. Look no further than *King v. Burwell*, the Supreme Court case in which four citizens sued the Department of Health and Human Services to eliminate insurance subsidies made available under the Affordable Care Act in the thirty-four states that opted for federally run insurance exchanges in lieu of setting up their own.²²⁰ Less than a month before oral argument, a journalist reported that at least one of the plaintiffs was unaware that a favorable ruling could result in the loss of health-care coverage for millions of citizens—an outcome she said she didn't want.²²¹

3. *Prescriptions for the Future*

The situation is not impossible. Close observers of President Obama will notice his attempts to create space for leaders across the ideological spectrum to talk about climate. In his celebrated remarks on climate change at Georgetown University in 2013,²²² the President pulled all the levers. Announcing the administration's Climate Action Plan, President Obama recalled the Apollo 8 moonshot, quoted scripture, shared his concerns as a father, praised courageous firefighters, pressed for job training, and promoted nuclear power.²²³ And when he referred to carbon dioxide, he called it—for perhaps the first time in his presidency—"pollution."²²⁴ Hoping to bring immediacy and concreteness to the issue, the President was clearly reaching for emotional handles. It may work to some extent. But the road is steep.

Michael Vandenberg and Anne Steinemann recommend identifying a strong national norm, like personal responsibility, to use as a frame for federal climate initiatives.²²⁵ It's possible that public disclosures of industrial carbon emissions or personal carbon use could tap into this norm to encourage better choices. Others have proposed that advocates of climate action should frame their ideas in terms of religious evangelical concerns, taking advantage of the personal expressive opportunities (preaching, witnessing, storytelling, community-based problem-solving) that play such important roles in many evangelical churches.²²⁶

220. *King v. Burwell*, 135 S. Ct. 2480, 2487, 2493 (2015) (finding that the Affordable Care Act extends tax credits to individuals purchasing health insurance on an exchange created by the federal government).

221. Stephanie Mencimer, *Meet the Unusual Plaintiffs Behind the Supreme Court Case That Could Destroy Obamacare*, MOTHER JONES (Feb. 9, 2015), <http://www.motherjones.com/politics/2015/02/king-burwell-supreme-court-obamacare> (reporting on an interview with one of the plaintiffs).

222. Press Release, Office of Press Secretary, Remarks by the President on Climate Change (June 25, 2013), available at <https://www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change>.

223. *Id.*

224. *Id.* (referring to carbon dioxide as "carbon pollution"). My electronic search for public use of that term by President Obama before his 2013 remarks at Georgetown University comes up empty.

225. Michael P. Vandenberg & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 N.Y.U. L. REV. 1673, 1724 (2007).

226. See, e.g., Lin, *supra* note 7, at ii.

Several scholars have persuasively argued that local clean-energy initiatives are better able to engage citizen passions by making the issues more compelling and concrete.²²⁷ Community benefits could include tax savings from long-term efficiencies, economic development for new industries, public health benefits from reduced pollution, aesthetic and recreational benefits, a feeling of social responsibility, and so on.²²⁸ The local nature of the advocacy makes it easier to tailor messages to particular constituents. The smaller scale also allows for a more effective use of culture-based neighbors to vouch for the activities involved. Because local political processes are more likely to involve meaningful public participation, the advantages of learning-through-accessibility and the goal of self-governance are also supported.

Strategies like these should all be immediately pursued. I would emphasize the hopeful role that land-use polices might play, as they are quintessentially local, provide rich opportunities for public participation, and can be combined with adaptation efforts too. But my enthusiasm is curbed in ways it is not where climate change adaptation is concerned. The social norms that could play nationally, like personal responsibility, are still abstract and could probably not compete toe-to-toe with a more concrete value like saving money or enjoying more convenience. This has been the very fate of environmentalism in many situations.

The local activities appear more promising, but there are some important differences between community-based clean-energy initiatives and the community-based adaptation efforts we'll investigate below. First, the local co-benefits derived from clean energy (cost savings, economic development, and so on) are not directly related to global warming in the sense that a person would be likely to favor these things whether or not climate change is happening. That can be seen as a good thing. But the downside is that getting involved in clean energy does not necessarily require that you at some point later become familiar with the facts of climate change. Clean energy provides a gateway into climate learning, but advocates are not required to go through it. That takes away the advantage that citizens would otherwise get by being exposed to factual information in deep and sustained ways—one of the few ways that new knowledge can overcome values-based conclusions.²²⁹

What remains is the argument that people may be more comfortable accepting climate science if they realize that one of the solutions, local clean energy, is not as scary as they thought. This resembles the find-

227. See, e.g., Osofsky & Peel, *Energy Partisanship*, *supra* note 7, 22–34; Kevin L. Doran, *U.S. Sub-Federal Climate Change Initiatives: An Irrational Means to a Rational End?*, 26 VA. ENVTL. L.J. 189, 226 (2008); Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015, 1025 (2006); Laura H. Kosloff et al., *Outcome-Oriented Leadership: How State and Local Climate Change Strategies Can Most Effectively Contribute to Global Warming Mitigation*, 14 WIDENER L.J. 173, 204 (2004).

228. See Osofsky & Peel, *Energy Partisanship*, *supra* note 7, at 22–34 (discussing many of these benefits as opportunities to appeal to citizens with differ political ideologies).

229. See *supra* note 149.

ing in the CCT literature that individuals are much more likely to accept climate science when they perceive that nuclear power might offer a solution to the problem.²³⁰ But because nuclear power seems likely to excite passions more readily in hierarchs than “softer” approaches like conservation or solar panels, the comparison may not be completely valid.

A second difference between local clean-energy efforts and local adaptation efforts is that we can expect the national fossil-fuel industry to fight back, effectively elevating the on-the-ground community debate to a nationally broadcast campaign advocating for carbon-based “bridge fuels” over new-fangled carbonless solutions. This expansion of scale could seriously weaken efforts to confine the discussion to community-based issues. (As we’ll see, there is a big-business angle to the adaptation debate, but in some ways, it will favor adaptation.)²³¹

A final difference between adaptation and energy policy, whether large or small, is that there does not appear to be an advantageous role for judicial decision making since it is likely that many of the issues at stake will remain relatively abstract and inaccessible, a description that is different where adaptation is concerned.

While we must press for a national, centralized, and insistent climate-mitigation strategy, we should not expect that strategy to awaken urgency among climate skeptics. In addition, it makes sense to press for local clean-energy initiatives too, in hopes of cracking values-based grid-lock. But we should be realistic about the prospects. For the reasons discussed below, climate adaptation appears a much better bet.

B. CCT and Climate-Change Adaptation

The prospects seem better when we turn from climate-change mitigation to *climate-change adaptation*. For instance, did you know that Louisiana’s former governor, Bobby Jindal, a Republican who once upbraided the EPA for even acknowledging climate change, also championed a multi-billion dollar coastal restoration plan premised on the threat of rising seas and swollen rivers?²³² That plan, developed by the state and bearing Jindal’s name on the cover, relies on the same models used by the EPA and other federal agencies to understand how carbon emissions are threatening the Pelican State.²³³

One can find similar stories in other Republican-led states. There is Rick Scott, the Tea Party governor of Florida, who questions climate science but signed a bill requiring local governments to start examining the

230. See Kahan et al., *The Second National Risk and Culture Study*, *supra* note 47, at 6.

231. See discussion *infra* Part IV.B.3.

232. Mark Schleifstein, *Gov. Bobby Jindal Pressed to Take Greenhouse Gases More Seriously*, TIMES-PICAYUNE (Jan 21, 2010, 8:30 PM), http://www.nola.com/politics/index.ssf/2010/01/gov_bobby_jindal_pressed_to_ta.html.

233. See generally LOUISIANA’S COMPREHENSIVE MASTER PLAN FOR A SUSTAINABLE COAST 83 (2012) (discussing models outlining the impact of carbon emissions on the state), available at http://issuu.com/coastalmasterplan/docs/coastal_master_plan-v2?e=3722998/2447530.

threat of expanding oceans and more intense hurricanes.²³⁴ And there is Jan Brewer, the former governor of Arizona, who may forever be remembered punching a reporter who asked about climate change.²³⁵ Brewer's own Department of Energy Quality used federal climate models to project strains on regional water supplies.²³⁶

We should not make too much of such contradictions, but there is reason to believe that adaptation is more congenial to a wider range of citizen values.²³⁷ This is because, for reasons I'll explain, most adaptation efforts are more local, tangible, and accessible. This allows adaptation to appeal to both the open-hearted environmentalist and the security-minded traditionalist. And if we find that appeals to adaptation soften the skepticism of climate deniers, we may make wider inroads for climate change mitigation as well.

People have been adapting to climatic changes for millennia. They resist. They adjust. Or they retreat. These concepts don't change, but the technologies do. Resistance might refer to coastal engineering activities that reduce the risk of flooding, erosion, or inundation of land and structures. Approaches for maintaining shorelines in the face of sea level rise include both "soft" measures and "hard" measures. Each of these approaches or some combination of them may be appropriate depending on the characteristics of a particular location (for instance, shore-protection costs, property values, the environmental importance of habitat, the feasibility of protecting shores without harming the habitat). "Soft" measures aim to develop living shorelines through beach nourishment, planting dune grasses, marsh creation, and planting submerged aquatic vegetation. Seawalls are impermeable barriers designed to withstand the strongest storm waves and prevent overtopping during a storm.

Adjustment, as I use the term, refers to the myriad ways that communities have learned to live with excess water, heat, or other stressors. On the coast, it might involve elevating buildings in flood-prone areas. In the desert, it might require building codes that emphasize passive cooling technologies and the capture and reuse of rainwater. Adjustment also includes changes in settlement and land-use practices, modifications to financial mechanisms or incentives, and enhancements to public safety (effective warning and evacuation systems, fortified "safe houses," and public education).

Retreat involves the migration of people, property, businesses, and perhaps wildlife. Its goal is to minimize hazards and environmental impacts by removing development (or, in the case of wildlife, habitat) from

234. Florida Community Planning Act, Fla. Laws Ch. 2011-139; *see also* Dan M. Kahan, *Making Climate-Science Communication Evidence-Based*, *supra* note 9, at 14 (discussing this example).

235. Connor Simpson, *Jan Brewer Punched a Reporter When He Asked About Climate Change*, YAHOO! NEWS (Dec. 5, 2012, 2:55 PM), <http://news.yahoo.com/jan-brewer-punched-reporter-asked-climate-change-195526329.html>.

236. *See* Kahan, *Making Climate-Science Communication Evidence-Based*, *supra* note 9, at 14 (discussing this example).

237. *Id.* at 15-16.

the most vulnerable areas. In its most extreme form, retreat means abandoning development that cannot reasonably be protected or serviced in another way. But retreat can also mean imposing limits, such as restricting development in existing communities or prohibiting development in sensitive undeveloped landscapes. Although we often think of retreat in the context of coastal communities, the strategy might also be considered in forested areas prone to wild fire or desert communities experiencing continued water shortages.

Today there is not a lot of law specifically designed with adaptation in mind.²³⁸ Most of the “explicit” law on the subject concerns commissioned studies or planning efforts. In the courts, climate lawsuits still mostly involve climate-change mitigation, although, as we’ll see, a trend on the adaptation side is brewing.²³⁹ The ultimate goal is to build *resilience* into a community or ecosystem by mixing standard risk-management strategies with a robust array of planning and economic initiatives. Adaptation planners seek transformation on a broad scale by doing what is reasonably affordable and by preferring options that offer multiple benefits and help protect against an array of challenges. In this way, planning for resilience is like eating a healthy diet. You don’t eat right *just* to avoid heart disease or to run the half-marathon. You eat right because it makes your body stronger and less vulnerable to risks of all kinds, including some you don’t expect.

1. *Legislative and Executive Action*

Most adaptation efforts are today spurred by the political branches, with many occurring on the local and regional levels. At least fourteen states now have state-wide climate-adaptation plans in operation, while many others maintain adaptation plans for particular geographic regions or agency sectors.²⁴⁰

The federal government has picked up its game too. While some federal agencies, like the Department of Defense and the Department of Interior have been pondering their climate vulnerabilities for many years, adaptation was not articulated as a national priority until the Obama administration, when, in 2009, the President created the Inter-agency Climate Change Adaptation Task Force (“Adaptation Task Force”) (on which I served) and charged it with recommending ways for federal agencies to evaluate their vulnerabilities and prepare for them in the long- and short-terms.²⁴¹ The President’s Climate Action Plan of 2013

238. For an overview of U.S. law pertaining to climate change adaptation, see *THE LAW OF ADAPTATION TO CLIMATE CHANGE: U.S. AND INTERNATIONAL ASPECTS* (Michael B. Gerard and Katrina Fischer Kuh, eds., 2012).

239. See discussion *infra* Part IV.B.2.

240. See *State and Local Adaptation Plans*, GEORGETOWN CLIMATE CENTER, <http://www.georgetownclimate.org/adaptation/state-and-local-plans> (last visited June 21, 2016).

241. See WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY, *PROGRESS REPORT OF THE INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE: RECOMMENDED ACTIONS IN SUPPORT OF A NATIONAL CLIMATE CHANGE ADAPTATION STRATEGY* (Oct. 5, 2010), *available at* <https://>

pushed things further. In addition to the carbon-reduction strategies discussed earlier, the Climate Action Plan promised a series of new actions on adaptation, from supporting resilience efforts at the state, local, and tribal levels, to building scientific capacity in key areas like water management, agriculture, and public health.²⁴² An Executive Order issued later that year again stressed the need for supporting regional and local efforts.²⁴³ It encouraged partnerships with states and other jurisdictions, charged agencies with developing databases and tools for regional and local use, and created an advisory board of sitting governors, mayors, county officials, and tribal leaders.²⁴⁴

Federal officials have also begun some “crosswalk” initiatives among agencies that also connect with communities. In 2009, the “Sustainable Communities Partnership” joined the forces of the Department of Housing and Urban Development, the Department of Transportation, and EPA, to coordinate federal housing, transportation, and water management resources in local areas.²⁴⁵ One of its top priorities for 2015, it has announced, is “helping communities adapt to a changing climate, while mitigating future disaster losses.”²⁴⁶ In fact, the federal government is often pushing efforts to combine related interests like adaptation and disaster risk management. Thus, the federal Hurricane Sandy Rebuilding Strategy incorporates elements of climate-change adaptation, while President Obama’s Climate Action Plan includes strong principles of disaster planning and management.²⁴⁷ Combinations like these might seem obvious, but the fact is that, in large bureaucracies, it is hard to get people with like interests together unless required by a more formal framework.

An instructive example that shows how a combination of adaptation and disaster planning can enable the “frames and neighbors” approach comes from an EPA pilot project designed to help communities recover from the 2008 Iowa floods.²⁴⁸ In 2010, the EPA convened a pilot project on behalf of the President’s Adaptation Task Force to bring together

www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf

242. See EXECUTIVE OFFICE OF THE PRESIDENT, THE PRESIDENT’S CLIMATE ACTION PLAN (June 2013), available at <https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>.

243. Exec. Order No. 13,653, 78 Fed. Reg. 66,819 (Nov. 1, 2013).

244. *Id.*

245. PARTNERSHIP FOR SUSTAINABLE COMMUNITIES, ABOUT US, <http://www.sustainablecommunities.gov/mission/about-us> (last visited June 21, 2016).

246. *Id.*

247. See DANIEL A. FARBER ET AL., DISASTER LAW AND POLICY (3d ed. 2015) (forthcoming) (discussing the crossover).

248. Disclosure: while serving on the President’s Climate Adaptation Task Force, I supervised the development of the pilot project described above. For an official account of the effort, see U.S. EPA, IOWA CLIMATE CHANGE ADAPTATION & RESILIENCE REPORT 1–4 (2011) [hereinafter IOWA CLIMATE CHANGE REPORT], available at http://epa.gov/smartgrowth/pdf/iowa_climate_adaptation_report.pdf. I have also written about the Iowa project with my co-author Abby Hall, an EPA official who led the effort; for that analysis, see Robert R.M. Verchick & Abby Hall, *Adapting to Climate Change While Planning for Disaster: Footholds, Rope Lines, and the Iowa Floods*, 2011 BYU L. REV. 2203, 2204.

stakeholders from all levels of government to understand how principles of climate resilience might be incorporated into a more traditional disaster-recovery strategy.²⁴⁹ In the last twenty years, Iowa has experienced *three* catastrophic floods.²⁵⁰ The repeated damage had led to a federal and state effort to rebuild Iowa's devastated communities and to reduce disaster-based hazards in the region.²⁵¹

The EPA, which had already been working with state officials and the Federal Emergency Management Administration ("FEMA") to provide smart-growth planning assistance, opened discussions on the second front of climate resilience. The program intended to bring together state officials, regional scientists, and community leaders for a series of discussions about the risk of regional climate impacts, such as increased flooding, heat waves, and extreme weather. The EPA hoped the meetings would encourage members to identify adaptation goals and locate legal and policy tools for implementing them.²⁵²

After months of work, project participants concluded that climate change projections and up-to-date hydrological data needed to be mainstreamed into Iowa's planning processes. They located many existing structures that could accommodate this. At the local level, they suggested that climate information could be integrated into comprehensive land-use plans, zoning codes, and ordinances.²⁵³ At the state level, the group imagined folding climate resilience into the state's Smart Planning Act,²⁵⁴ which requires communities and state agencies to consider "Smart Planning Principles" when planning for future land use and development. Because planning requires community outreach and public participation, the move would also open the climate conversation not only to hundreds of local planners, but also to a large swath of state residents. The project team also highlighted the potential of integrating climate scenarios into FEMA's Hazard Mitigation Assistance program, which sets standards for thousands of hazard mitigation plans throughout the country.²⁵⁵ The team's conclusion that local government and land-use decisions lie at the heart of climate-change adaptation finds support in much of the planning literature, as well as in research in other fields.²⁵⁶

The Iowa pilot project also emphasized the need for relationships among actors across many levels of government and sectors. Federal as-

249. IOWA CLIMATE CHANGE REPORT, *supra* note 248.

250. A WATERSHED YEAR: ANATOMY OF THE IOWA FLOODS OF 2008 vii, xi–xii (Cornelia F. Mutel ed., 2010); Perry Beeman, *State has 'Long Way to Go' on Flood Prevention, Mitigation*, DES MOINES REGISTER, June 23, 2013, <http://archive.desmoinesregister.com/article/20130623/NEWS/306230049/State-has-long-way-go-flood-prevention-mitigation>.

251. *Smart Growth Technical Assistance in Iowa*, U.S. ENVTL. PROT. AGENCY, http://epa.gov/smartgrowth/iowa_techasst.htm (last visited Nov. 25, 2015).

252. IOWA CLIMATE CHANGE REPORT, *supra* note 248, at 2.

253. *Id.* at 19, 34–35.

254. IOWA CODE § 18B (2015).

255. IOWA CLIMATE CHANGE REPORT, *supra* note 248, at 12.

256. See, e.g., Verchick & Hall, *supra* note 248, at 2243; AM. PLANNING ASS'N, POLICY GUIDE ON PLANNING & CLIMATE CHANGE (Apr. 11, 2011), available at <http://www.planning.org/policy/guides/pdf/climatechange.pdf>.

sistance through the EPA and FEMA, for instance, relied heavily on Iowa's Rebuild Iowa Office ("RIO"), which provided trustworthy links to scores of participating communities.²⁵⁷ Equally important was a roster of trusted organizations and individuals who had helped establish many cross-community and crosscutting partnerships. (Iowa has ninety-nine counties, many of them full of very small towns and rural communities.)²⁵⁸

The experience provides a nice example of what I call "footholds" and "rope lines," where footholds describe policies or laws that may be used to "anchor" climate initiatives, and rope lines describe the formal and informal relationships among public and private actors at various levels of jurisdictional boundaries and across many sectors.²⁵⁹ While Iowa's adaptation work is an ongoing process, these preliminary results show how the use of footholds and rope lines helps to enforce CCT principles by framing issues in congenial ways and providing a network of trusted vouchers. All this is accomplished by keeping the scale partly local, the benefits tangible, and the method accessible.

The footholds strategy capitalized on this effect by presenting climate-change concerns within the context of laws and programs that *already existed*, and therefore (we can assume), *already reflect a consensus of values*. In Iowa, a focus on hazard mitigation framed climate adaptation in a way that made the risks more concrete. During the Iowa pilot project meetings, participants noted "that while politicians and residents were reluctant to talk about climate change in the context of pollution control, sometimes questioning the underlying science, these same people were often willing to learn about climate change and future scenarios within the context of hazard mitigation and disaster planning."²⁶⁰

These statements may reflect the contextual nature of risk in the public mind. It may be that Iowa residents have a tendency to frame pollution and energy issues in terms of a balance (accurate or not) between short-term economic productivity and long-term public health and environmental protection. Where such a balance is central to the analysis, it may be easier for people who do not follow climate issues closely to dismiss the scientific findings. But when citizens are instead asked to think about disaster planning, their tendency may be to frame policy issues in terms of insuring against low-probability, high-impact events. In such situations, the certainty of the science may seem less important than the mere plausibility of a bad event.

These experiences, coupled with the insights of CCT, suggest that federal, state, and local governments should inventory their legal authorities with climate adaptation in mind, focusing on relevant laws that cast

257. IOWA CLIMATE CHANGE REPORT, *supra* note 248, at 6.

258. See *County Directory*, IOWA STATE ASS'N OF CNTYS., <http://www.iowacounties.org/member-resources/county-directory/> (last visited June 21, 2016).

259. See Verchick & Hall, *supra* note 248, 2204–05.

260. *Id.* at 2245.

climate in ways that appeal to missions like public health and hazard mitigation, which resonate with a diverse range of core values. Alternatively, adaptation advocates could search for footholds that appeal to a narrower range of values, but that could be linked to other footholds that resonate with a different cohort. The effect would not simply be to move citizens past today's Greenhouse Holy War. It would also solicit and affirm the cherished values that citizens carry with them, as well as honoring the expressive content of their emotional responses.

The rope lines strategy helped build trust among the many diverse groups assembled to address disaster recovery. RIO served as a bridge between federal officials and local community leaders. While climate adaptation was never RIO's top concern, it seized on opportunities offered by FEMA and the EPA when it became clear the adaptation pilot project would enhance *other* benefits (stormwater management, smart-growth strategies) that would have short-term pay offs. RIO's trust in the EPA had been developed months earlier through related federal assistance projects in which EPA staff visited the region frequently. RIO was able to build local support for adaptation efforts through its own strong connections with far-flung communities.

At the project's opening meeting, the EPA had intended to highlight the risks from climate change. Early on, the Agency dropped the idea of using climate experts from Washington, D.C., and instead invited scientists from Iowa State University's Climate Science Program.²⁶¹ Participants later remarked that having well-known local experts speaking about local geography and local development needs made all the difference.²⁶² Perhaps not everyone was convinced that anthropogenic climate change was beyond argument, but no one dismissed the idea of anticipating larger and larger floods. The "tragedy of the risk perception commons"²⁶³ had temporarily been thwarted. Local officials and community activists were then able to frame climate resilience efforts as issues of security, efficient planning, or even fiscal conservatism. (Who, after all, wants to spend money on a bridge that could sink in the next flood?)

Congress has also taken tentative steps toward adaptation, although seldom publicized as such. The most salient example is its recent tinkering with the National Flood Insurance Program ("NFIP"), which has long needed reform. (It is \$24 billion in debt.)²⁶⁴ The Biggert-Waters Insurance Reform Act of 2012 ("BW-12")²⁶⁵ removed subsidized rates on certain classes of structures, including single-family homes.²⁶⁶ The ex-

261. *Id.* at 2238–39.

262. *Id.*

263. See discussion *supra* Part III.A.

264. Alex Newman, *Fixing the National Flood Insurance Program, in Three Charts*, ALJAZEERA AMERICA (Oct. 27, 2013, 5:02 AM), available at <http://america.aljazeera.com/multimedia/2013/10/fixing-the-nationalfloodinsuranceprograminthrecharts0.html>.

265. Biggert-Waters Flood Insurance Reform Act of 2012, Pub. L. No. 112-141, 126 Stat. 916 (2012).

266. H.R. REP. NO. 112-4348, at 1 (2012) (Conf. Rep.), available at http://www.floodplain.ar.gov/2012_NFIP_Reform_Act_ASFPM_Summary_of_Contents.pdf; see also Robert R.M. Verchick

pected effect would send a price signal conducive to climate retreat: it would discourage developers from building in flood-prone areas and would encourage policyholders to move to higher ground. BW-12 also required that new flood maps be driven by an expert advisory council and use the most accurate topography and elevation data available.²⁶⁷ This would appear to require that climate projections be used in developing new maps, a move that would introduce climate projections into the land-use decisions of thousands of American communities. After Hurricane Sandy, public opposition to impending premium hikes crescendoed, and Congress reinstated many (but not all) of those subsidies and promised to revisit the whole issue in 2017.²⁶⁸ Significantly, the new legislation retained BW-12's mapping reforms (which are now underway), although it added stronger public participation requirements into that decision-making process.²⁶⁹

In contrast to the Iowa Pilot Project, BW-12's attempted reform is mostly an example of what not to do. Sending a price signal through premiums to alert residents to risk is necessary, but not sufficient. This top-down approach avoided many obvious shortcomings that could have localized the scale and appealed to a broader range of values. Critics have long bemoaned the NFIP's underinvestment in structural hazard mitigation ("flood proofing") and its failure to hold municipalities accountable for enforcement of building codes, zoning provisions, and the like.²⁷⁰ Years before BW-12 was passed, the General Accountability Office ("GAO") had also warned of the effect skyrocketing premiums would have on low-income families,²⁷¹ reducing the value of their homes to nothing (since "uninsurable" equals "unsalable") and leaving them few choices but to eke it out uninsured in a floodplain. The GAO proposed ways to address such effects,²⁷² but in the end, BW-12 avoided issues of localized enforcement and the particularized effects on low-income communities.

Not only would attending to these needs probably save the government money in the long-run, but they would also open conversations in local communities about climate impacts and risk trade-offs. It would also have introduced a broader range of tangible effects. After Hurricane Sandy, there was nothing more tangible than the thought of \$458 annual

& Lynsey R. Johnson, *When Retreat Is the Best Option: Flood Insurance after Biggert-Waters and Other Climate Change Puzzles*, 47 J. MARSHALL L. REV. 695, 709–14 (2013) (describing reforms in 2012 and 2014).

267. H.R. REP. NO. 112-4348, *supra* note 266, at 2–3.

268. Verchick & Johnson, *supra* note 266, at 708–09.

269. Homeowner Flood Insurance Affordability Act of 2014, Pub. L. No. 113-89, § 18(a) 128 Stat. 10127 (2014); *Id.* § 30, 128 Stat. 1034.

270. Verchick & Johnson, *supra* note 266, at 713–14 (noting these criticisms).

271. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-20, OPTIONS FOR ADDRESSING THE FINANCIAL IMPACT OF SUBSIDIZED PREMIUM RATES ON THE NATIONAL FLOOD INSURANCE PROGRAM 26 (2008), available at <http://www.gao.gov/assets/290/283427.pdf>.

272. *Id.* at 27.

premium in Queens, New York, jumping to \$15,000.²⁷³ But a federally endorsed national conversation about home security, subsidized structural modifications, and enforcement of local public-safety laws could have provided other viable frames. Finally, accessibility was lacking on many counts. Predictably, public discussion through the media about BW-12 was very limited before passage. There was certainly no broad discussion about climate impacts, public safety, or the needs of the poor. (One of the bill's sponsors, Congresswoman Maxine Waters, claimed not even to know that premiums were predicted to jump so high.)²⁷⁴ The circuitous history and complex provisions of FEMA regulations were difficult to explain too. After Hurricane Sandy, the media conversation rather predictably degenerated into a debate about holding floodplain residents accountable and lowering the deficit versus pushing storm victims out into the street. The national scale of the debate, demanded by the scale of the legislation, already made particularized conversations difficult, but BW-12's avoidance of local issues to begin with all but insured a narrow range of discourse. That said, the surviving reforms do deserve points for introducing climate data into future flood maps and providing a mechanism for local citizens to contribute—and learn—from that process.

2. *Judicial Decision-Making*

In the United States, legal actions on topics related to climate-change adaptation are more scattered than on the topic of climate-change mitigation. One reason is that they are harder to define. A takings decision about “beach renourishment” on the Florida coast²⁷⁵ might not mention global warming, but when the need for beach restoration is caused in part by climate-induced sea-level rise, it's hard to leave that case off the list. Plus the precedent that is set will affect the availability of similar adaptation techniques in the future.²⁷⁶ Another reason is that, unlike cases involving carbon reduction, the range of disputes directly related to adaptation is much more diverse, stretching from disagreements about viable lizard habitat to the design specifications of an urban electric power plant. Finally, because the trend toward explicit adaptation efforts occurred several years after state and regional calls for carbon re-

273. See Jenny Anderson, *Outrageous Homeowners Prepare for Substantially Higher Flood Insurance Rates*, N.Y. TIMES, July 28, 2013, <http://www.nytimes.com/2013/07/29/nyregion/overhaul-and-a-hurricane-have-flood-insurance-rates-set-for-huge-increases.html> (discussing the drastic increases in flood insurance premiums and the local reactions to these increases).

274. Laura Vecsey, *Coastal Area Residents Stunned by Flood Insurance Rate Hikes*, FORBES (Oct. 22, 2013), <http://www.forbes.com/sites/zillow/2013/10/22/coastal-area-residents-stunned-by-flood-insurance-rate-hikes/> (reporting on comments by Rep. Maxine Waters that no one in Congress had anticipated the “harm and heartache” the reform act would cause because of premium hikes).

275. See *Stop the Beach Renourishment, Inc. v. Fla. Dep't of Env'tl. Prot.*, 560 U.S. 702 (2010).

276. See Robert R.M. Verchick & Joel D. Scheraga, *Protecting the Coast*, in *THE LAW OF ADAPTATION TO CLIMATE CHANGE: U.S. AND INTERNATIONAL ASPECTS* 235, 253–54 (Michael B. Gerrard and Katrina Fischer Kuh, eds., 2012) (discussing the *Stop the Beach Renourishment* case as an important precedent in the law of climate change adaptation).

duction, some of the most interesting litigation in this area is just getting started.

That said, it is possible to loosely inventory such cases. Jacqueline Peel and Hari Osofsky, for instance, recently examined some of the more noteworthy adaptation cases in the United States and Australia, dividing them into those involving climate-related species loss, post-disaster tort, disaster-mitigation planning, and other topics.²⁷⁷ In reviewing judicial decisions on the subject of adaptation, or that involve restorative activities important to adaptation, it is striking to see how often opportunities arise for judges to employ the CCT prescriptions of aporia and affirmation, which allow judges to offer the losing party a silver lining of commiseration or even encouragement. Climate resilience thus makes space for a kind of “Silver Linings Playbook” that allows courts to speak in more inclusive terms about global warming.

Consider *Barasich v. Columbia Gulf Transmission Company*,²⁷⁸ a case involving damage in the wake of Hurricane Katrina. In 2006, a class of residents from Louisiana’s southern parishes sued several oil companies in federal court for harm caused by “wetland loss attributable to oil and gas exploration and/or production activities.”²⁷⁹ The companies’ pipeline canals, they alleged, had destroyed millions of acres of marshland, which deprived inland communities like New Orleans of “their natural protection from hurricane winds and accompanying storm surge.”²⁸⁰ Although not mentioned in the case, the threat of more frequent and intense storms in the Gulf has increased because of climate change,²⁸¹ making coastal restoration all the more important. Plaintiffs sought relief under Louisiana’s Civil Code, relying on claims similar to the common law doctrines of nuisance and negligence.²⁸²

The federal district court dismissed the claims, ruling that under Louisiana law, the parties were too far away “in time and space” and that their connection was too “attenuated” to establish a duty to the plaintiffs, who lived miles away from the sunken marsh.²⁸³ But Judge Sarah Vance, whose courtroom is located in New Orleans, appeared anything but removed from the values at stake. She acknowledged that “[b]y all accounts, coastal erosion is a serious problem in south Louisiana.”²⁸⁴ Then to further affirm the principles defended by the residents, she invited them to try again. “If plaintiffs are right about the defendants’ contribution to this development,” she wrote, “perhaps a more focused, less ambitious lawsuit between parties who are proximate in time and space,

277. Jacqueline Peel & Hari Osofsky, *Sue to Adapt?*, 99 MINN. L. REV. 2177, 2192 (2015).

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

279. *Id.* at 678–79.

280. *Id.* at 679.

281. U.S. GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, NATIONAL CLIMATE ASSESSMENT 43 (2014), available at <http://nca2014.globalchange.gov/report/our-changing-climate/changes-storms>.

282. *Barasich*, 467 F. Supp. 2d at 689.

283. *Id.* at 695.

284. *Id.*

with a less attenuated connection between the defendant's conduct and the plaintiff's loss, would be the way to test their theory."²⁸⁵ This acknowledgement of factual contingency and understanding of the plaintiff's aspiration is exactly the kind of judicial work that CCT scholars recommend.²⁸⁶

Something similar occurred when a native Alaskan village sought relief for damages caused by climate-induced erosion. In *Kivalina v. ExxonMobil Corp.*,²⁸⁷ the village of Kivalina, located on the Chukchi Sea, sued several electric companies, oil companies, and a coal company for spewing excess carbon that contributed to the greenhouse effect. The plaintiffs alleged that global warming had stalled the formation of arctic sea ice, causing the protective shores of their peninsular community to erode and slip into the ocean.²⁸⁸ The village had to move and sought several hundred million dollars to relocate.²⁸⁹ A federal court of appeals ultimately dismissed the claim, which plaintiffs had based on the federal common law of nuisance. Relying on the Supreme Court's recent ruling in *Connecticut v. A.E.P.*,²⁹⁰ the appellate court found that the federal claim had been displaced by the CAA.²⁹¹ The legal conclusion was not surprising, and the court did not equivocate on its reasoning. But Judge Sidney Thomas, writing for the majority, did sympathize and acknowledged the villagers' desperate and unfair situation. "Our conclusion obviously does not aid Kivalina," he wrote, "which itself is being displaced by the rising sea. But the solution to Kivalina's dire circumstance must rest in the hands of the legislative and executive branches of our government."²⁹² In a concurring opinion, Judge Pro suggested the plaintiffs might try a nuisance theory rooted in *state* common law, a possibility that the *A.E.P.* decision did not foreclose.²⁹³

We now conclude with a case where the decision favors the environmentalist view and the silver lining cuts the other way. That case, *Borough of Harvey Cedars v. Karan*,²⁹⁴ involved a state takings claim examined against the backdrop of Hurricane Sandy. (While this case did not directly involve climate change, its focus on takings and shoreline protection is a staple of climate-adaption policy debates and sets im-

285. *Id.*

286. See Kahan, *Foreword*, *supra* note 8, at 71 (describing the majority decision in *District of Columbia v. Heller*, 544 U.S. 570 (2008) as an example of judicial affirmation because, while invalidating the District of Columbia's gun-control regulation as a violation of guaranteed liberties, it nonetheless recognized the public safety concerns of the losing side and suggested that in a future case with a less restrictive regulation, the values of public safety might carry the day).

287. 663 F. Supp. 2d 863 (N.D. Cal. 2009), *aff'd*, 696 F.3d 849 (9th Cir. 2012).

288. *Kivalina*, 663 F. Supp. 2d at 868.

289. *Id.* at 869.

290. 131 S. Ct. 2527, 2537–38 (2011) (holding that "the Clean Air Act and the EPA actions it authorizes displace any federal common law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired power plants.").

291. *Native Vill. of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 856–58 (9th Cir. 2012).

292. *Id.* at 858.

293. *Id.* at 866–67.

294. 70 A.3d 524 (N.J. 2013).

portant precedent.) Back in 2009, the borough of Harvey Cedars, New Jersey, began a beach replenishment program, offering shoreline homeowners \$300 in exchange for use of the ribbon of beachfront needed for the construction of protective sand dunes.²⁹⁵ Most homeowners accepted the offer, but Harvey and Phyllis Karan refused, complaining the dunes would block their ocean view.²⁹⁶ Borough officials then condemned a strip of their beachfront through eminent domain and offered “just compensation,” but the parties could not agree on the amount.²⁹⁷

In 2011, a trial court set the amount at \$375,000, refusing to offset the award by any “general benefit” provided by the sand dunes.²⁹⁸ The benefit, as it turns out, was not theoretical. When Hurricane Sandy struck the coast in 2013, the dunes held, and the Karans’ home escaped significant damage.²⁹⁹ Later, the Supreme Court of New Jersey overturned the \$375,000 award, explaining that the sum must be offset by the protective benefit of the dunes.³⁰⁰ The Karans settled with the borough for \$1.³⁰¹ Justice Barry Albin, writing for a unanimous court, reaches his conclusion by way of aporia and affirmation. New Jersey’s law of “partial takings” (that is, takings subject to offsets), as it turns out, *is* pretty perplexing; and the Court acknowledges that point, admitting that finding the right answer is “difficult ‘even for trained legal minds.’”³⁰² Arriving at its conclusion, the Court re-examines some of its precedent and arguably shifts the law to accommodate the borough’s desired outcome; but it is careful to show respect for the Karans’ property rights³⁰³ and stresses that the dunes project has benefitted the couple “to a great degree.”³⁰⁴ The prospect of some compensation, though the parties settled for only \$1, suggests also the type of “split the baby” approach that Kahan believes can, over time, create space for losing parties to see some recognition of their values.³⁰⁵

These three cases illustrate how CCT’s Silver Linings Playbook can be used in resolving disputes about climate resilience. I don’t claim that all, or even most, adaptation cases will follow this path, although exam-

295. *Id.* at 527–29.

296. *Id.* at 527–28.

297. *Id.* at 528.

298. *Id.* at 531.

299. Erin O’Neill, *Harvey Cedars Neighbors Say Dune Protection Outweighs Obstruction of Ocean Views*, NJ.COM (July 9, 2013, 6:30 AM), http://www.nj.com/news/index.ssf/2013/07/karan_harvey_cedars_dunes.html.

300. *Harvey Cedars*, 70 A.3d at 544.

301. MaryAnn Spoto, *Harvey Cedars Couple Receives \$1 Settlement for Dune Blocking Ocean View*, NJ.COM (Sept. 25, 2013, 1:21 PM), http://www.nj.com/ocean/index.ssf/2013/09/harvey_cedars_sand_dune_dispute_settled.html.

302. *Harvey Cedars*, 70 A.3d. at 539 (quoting PHILIP NICHOLS, ON EMINENT DOMAN, § 8A.02[4][a] (Matthew Bender, 3d ed. 2013)); *see also id.* at 538 (noting that New Jersey courts have sometimes “obscured or confused” the relevant principles).

303. *Harvey Cedars*, 70 A.3d at 543 (“We cannot devise a perfect means for compensating a property owner whose land is partially taken We can only ensure that every person will receive just compensation . . .”).

304. *Id.* at 541.

305. *See supra* Part IV.A.2.a.

ples like these are noteworthy. Rather, my point is that there is something *contextually different* about judicial decision making on the topic of adaptation that makes it *more amenable* to the use of aporia and affirmation when compared to judicial decision making on the topic of mitigation. For jurists interested in pursuing this form of public communication, the field of adaptation is much more fertile.

The reason, I believe, is that these disputes are more likely to involve *real people* with *concrete problems* that can be addressed in *cognizable time frames*. The values are personal: public safety, property ownership, a people's homeland. The scale is human sized, and the stakes easy to picture in the mind. And while the legal framework might require a technical analysis—legislative displacement, partial takings, and the like—the jurists involved seem more engaged by the human values at stake than do the jurists in the climate-change mitigation cases examined earlier. What's more, the consequences of these decisions, and the role of the litigation itself, seems more engaging to the public and, therefore, more likely to serve a communicative purpose, a point we should examine further.

More than a means of resolving individual disputes, litigation has long been valued for its expressive value.³⁰⁶ Because of the scale, tangibility, and accessibility of many kinds of adaptation litigation, it should not be surprising to learn many of these decisions have begun changing the terms of local and regional debates. The cases discussed above have epilogues illustrating the point.

Despite Judge Vance's entreaty in *Barasich*, the litigating parishes in that case did not return with a refurbished lawsuit. But six years later, the Southeast Louisiana Flood Protection Authority sued more than ninety oil and gas companies for alleged damage to coastal wetlands, which they argue has increased the costs of protecting New Orleans and other communities from storm-based floods.³⁰⁷ The suit, which included many of the same legal theories but a shorter radius of dead marsh, closely resembled *Barasich*. As this Article goes to press, a federal district court has dismissed the Authority's claims (citing *Barasich*), and the Authority has appealed.³⁰⁸ But as noted by John Barry, an author and historian who served on the Authority at the time it filed suit, the lawsuit "already has a legacy, changing politics and public awareness of the industry's role."³⁰⁹ Other commentators agree that the lawsuit has

306. See Minow & Spelman, *supra* note 101, at 39; Sunstein, *supra* note 104, at 2022–24.

307. See Petition for Damages and Injunctive Relief, Bd. of Comm'rs of the Se. La. Flood Prot. Auth.-E. v. Tenn. Gas Pipeline Co., No. CIV.A. 13-5410, (E.D. La. July 24, 2013), available at http://jonesswanson.com/wp-content/uploads/2015/02/SLFPAE-Petition_Exhibits.pdf.

308. Bd. of Comm'rs v. Tenn. Gas Pipeline Co., LLC, 88 F. Supp. 3d 615, 646 (E.D. La. 2015); see also *Federal Judge Dismisses Massive Suit Against Oil and Gas Companies by Flood Protection Board*, LOUISIANA RECORD.COM (Feb. 16, 2015, 4:26 PM), <http://louisianarecord.com/news/266503-federal-judge-dismisses-massive-suit-against-oil-and-gas-companies-by-flood-protection-board>.

309. John Barry, Opinion, *Land Loss, Not Lawsuit, Is the Problem*, NEW ORLEANS ADVOCATE (Feb. 19, 2015, 7:12 PM), <http://www.theneworleansadvocate.com/opinion/11634759-123/guest-commentary-land-loss-not>.

“changed the conversation,”³¹⁰ and suggest there is some chance that public pressure will bring the oil and gas industry to the negotiating table to address the substantial harm it has inflicted on Louisiana’s coast.³¹¹

The plight of Kivalina, broadcast to the world during its famous legal struggle, has become a *cause célèbre* in the national and international community. The village’s struggle has become the focus of social justice campaigns,³¹² federal relief efforts,³¹³ and a sea of high school and college research papers. In forums large and small, because of Kivalina’s lawsuit, the public has begun digesting the social, scientific, and cultural meaning of planned climate retreat.

Finally, the *Harvey Cedars* litigation led to an eruption of local debate about beach replenishment and the problem of “holdouts” like the Karans. Community residents used peer pressure and other social wrangling to promote voluntary participation in the program.³¹⁴ (Picture Robert Ellickson’s cattlemen on the Jersey Shore.)³¹⁵ And, of course, the story was covered in the *New Yorker*.³¹⁶ Almost immediately after the borough’s victory in the high court, New Jersey’s governor, Chris Christie, signed an executive order to acquire more than one thousand easements to facilitate the building of sand dunes in communities hard hit by Hurricane Sandy.³¹⁷

There are other examples too. After Hurricane Sandy, the Sabin Center for Climate Change Law at Columbia Law School became concerned about the vulnerability of New York City’s power infrastructure, particularly given the impacts of climate change. In 2014, it formally intervened in an adjudicative hearing before the New York State Public Service Commission in which Consolidated Edison (“Con Ed”) was seeking a rate change.³¹⁸ Working with other academic centers and nonprofits, the Center helped to negotiate the adoption of new design standards for Con Ed, reviewable every five years, to protect vital infrastruc-

310. Stephanie Grace, Opinion, *Was the Coastal Lawsuit Worth It?*, ADVOCATE (Feb. 22, 2015, 6:00 AM), <http://theadvocate.com/news/opinion/11652795-123/stephanie-grace-was-the-coastal>.

311. *Id.*

312. See *Project Model Kivalina*, WORLD JUSTICE PROJECT, <http://worldjusticeproject.org/opportunity-fund/project-model-kivalina-0> (last visited June 21, 2016).

313. Matthew F. Smith, *In Kivalina, Interior Secretary Jewell Hears “Real Stories” About Living With Climate Change*, KTOO PUBLIC MEDIA (Feb. 18, 2015), <http://www.ktoo.org/2015/02/18/kivalina-interior-secretary-jewell-hears-real-stories-living-climate-change/>.

314. See John Seabrook, *The Beach Builders, Can the Jersey Shore Be Saved?*, NEW YORKER (July 22, 2013), <http://www.newyorker.com/magazine/2013/07/22/the-beach-builders> (“In the months after Sandy, people who hadn’t signed their easements [to allow dune construction] were the villains of many a town-hall meeting along the Shore.”).

315. Robert C. Ellickson, *Of Coase and Cattle: Dispute Resolution Among Neighbors in Shasta County*, 38 STAN. L. REV. 623, 628–29, 672–85 (1986) (describing use of social norms among ranchers in Shasta Country, California, to enforce good neighborly behavior).

316. Seabrook, *supra* note 314.

317. Spoto, *supra* note 301.

318. Maria Gallucci, *N.Y. Regulator, Con Ed Embrace Plan to Climate-Proof Power Grid*, INSIDECLIMATE NEWS, (Mar. 12, 2014), <http://insideclimatenews.org/news/20140312/ny-regulator-con-ed-embrace-plan-climate-proof-power-grid>. See Peel & Osofsky, *supra* note 277, at 2199–02 (describing involvement of Columbia University Climate Center in ConEd negotiations).

ture from flood risks compounded by climate change.³¹⁹ The effort is now seen as a model among citizen groups seeking to introduce climate discussions to other metropolitan areas with similar needs.³²⁰

That same year in Chicago, a group of insurance companies sued the water reclamation district for that metropolitan area, alleging increased payouts caused by a failure to provide for adequate storm water management.³²¹ Among other things, the companies argued that the district should have paid more attention to the city's climate action plan, issued in 2008, which had projected an increase in annual rainfall.³²² The plaintiffs later dropped the case, but the story now has city planners all over the country noodling over the impacts of climate change—and the wisdom of having a climate action plan that could later be used against them.³²³ Peel and Osofsky, who in the course of their research interviewed several local officials about the impacts of lawsuits like these, say their interviewees expect adaptation litigation to lead to greater consideration of climate change in local planning.³²⁴

3. *Prescriptions for the Future*

The short history of climate-change adaptation policy in the United States suggest a number of ways political actors and judges could approach the issue so as to foster public awareness and concern. Where legislation and executive action is concerned, policymakers should take full advantage of using footholds and rope lines in developing strategies. These elements not only help build programs that are flexible and forward looking, but also, they take advantages of scale, tangibility, and accessibility—elements that are important to framing and expressing values. The take-away lesson is that while vertical networks are important in transferring information, they are equally as important as a means of framing that information and building trust between communicators and receivers. These networks themselves, then, become expressions of shared values and our emotional responses to them. In developing project-based networks, those designing them should keep this in mind and search for opportunities to build values-based trust among cooperating groups.

In contrast to local prescriptions for climate-change mitigation, such as community clean-energy initiatives, such adaptation efforts would appear to have some advantages from a CCT perspective. First, the focus on coping with climate impacts almost necessarily involves exposing de-

319. *Id.*

320. *Id.*

321. Ill. Farmers Ins. Co. & Farmers Ins. Exch. v. Metro. Water Reclamation Dist., No. 2014CH06608 (Ill. Cir. Ct. Apr. 16, 2014), available at http://www.arnoldporter.com/public_document.cfm?id=23667&key=18H3.

322. *Id.* at 20–21.

323. See Peel & Osofsky, *supra* note 277, at 2209–10 (discussing dilemma faced by state and city officials contemplating the implications of similar law suits filed in the future).

324. *Id.* at 2245, 2248–49.

cision makers (and an involved public) in understanding what those impacts are and will be. It is sometimes said that policy makers can sell resilience to citizens without ever having to discuss climate change. That is true in the short term. But when the details of any response are presented, they will have to incorporate projections of future precipitation, stream flows, heat waves, and the like. And all of those projections, if using the best science, will necessarily involve scenarios about future GHG emissions. There is no escaping that reality. But the learning process allows people to “ease in” and gradually immerse themselves into information which after awhile may not seem so intuitively unbelievable.³²⁵

Second, the role of national industry is different in the case of adaptation. The truth is that many global construction and engineering companies see climate resilience as a major new market. Within the adaptation community, this will pose important challenges because many industrial interests will favor structural strategies like levees and sea walls, as opposed to non-structural strategies like wetlands preservation. But, with industry on the side of adaptation of some kind, there is a greater likelihood that its voice will be more generally compatible with the local and regional voices advocating for adaptation.

Where judicial decision making and litigation are concerned, judges should be encouraged to take the best examples of aporia and affirmation outlined here and elsewhere, and imitate them. Lawyers can do their part by choosing cases with strong emotional appeal and waging part of the battle in the media, where resonating stories will be heard and discussed.

V. CONCLUSION: (K)NO(W) PASSION

CCT offers a new and convincing way of looking at familiar controversies, particularly those dominated by perceptions of risk. It urges us to see disagreements on factual issues as arising not from deficits in knowledge or from the misguided intuition of “non-experts.” Rather, these disagreements arise from the human tendency to mix factual in-

325. While research in this area is preliminary, studies conducted in the United States and New Zealand suggest that subjects’ willingness to reduce carbon emissions increases when they are prompted to consider local adaptation needs first. Isabella Furth & Heidi Gantwerk, *Citizen Dialogues on Sea Level Rise: Start with Impacts/End with Action*, Union of Concerned Scientists, Spring 2013, at 6-9 available at <http://bit.ly/1XKAt14> (surveying subjects in Florida and Virginia); Steve Adams, Stacy Vynne, Sarah Mazze, Roger Hamilton, Melissa Ocana, & Jean Stockard, *Can Climate Change Preparedness Efforts Spur Greater Interest in Emissions Reductions? The Influence of Adaptation Planning on Attitudes Toward Climate Change Mitigation: Evidence from Oregon*, The Resource Innovation Group, 2011, at 3, available at <http://bit.ly/25geMqD> (Oregon); Laurel Evans, Taciano L. Milfont, & Judy Lawrence, *Considering Local Adaptation Increases Willingness to Mitigate*, 25 *Global Env’tl. Change* 69, 72-73 (2014), available at <http://bit.ly/1U7jxK8> (New Zealand). *But see* Rachel A. Howell, Stuart Capstick, & Lorraine Whitmarsh, *Impacts of Adaptation and Responsibility Framings on Attitudes Towards Climate Change Mitigation*, 136 *Climate Change* 445, 452 (2016), available at <http://bit.ly/1VeUN5j> (failing to confirm this effect in an experiment in the United Kingdom, but finding that “an adaptation framing was associated with *higher* level of belief in the reality of climate change—relative to the mitigation framing—for those who were *less* concerned about climate change”).

formation with emotional values-based responses, a tendency shared by experts and non-experts, alike. Much of the CCT project has thus far focused on making the empirical case for this phenomenon and suggesting ways it might be considered when communicating about risk. The next step is to examine how CCT's prescriptive agenda might be applied in a policy making setting in the context of an important and emotionally-charged societal risk.

This Article has tried to do this. Against the backdrop of climate change, I argue that the insights of CCT might bear the most fruit in efforts to adapt to climate change. In applying CCT's two-prong remedy of "frames and neighbors," adaptation efforts could broaden public support of climate issues, while at the same time encouraging the expression of cherished values backed by emotional commitment.

It is often said that the trouble with climate change is that it is too abstract for people to understand. Such is the destiny of our evolutionary path. Some people are moved by principle alone, but most are not. As Martha Nussbaum writes, "[T]he human mind is quirky and particularistic, more easily able to conceive a strong attachment if these high principles are connected to a particular set of perceptions, memories, and symbols that have deep roots in personality and in people's sense of their own history."³²⁶ Addressing climate change will require us to connect our principles to the particularity of our values and feelings. No amount of science will help, unless we also know passion.

326. NUSSBAUM, POLITICAL EMOTIONS, *supra* note 74, at 10.

