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Planetarian Identity Formation and the Relocalization of Environmental Law

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Planetarian Identity Formation and the Relocalization of Environmental Law

Sarah Krakoff*

Abstract

Local food, local work, local energy production—all are hallmarks of a resurgence of localism throughout contemporary environmental thought and action. The renaissance of localism might be seen as a retreat from the world’s global environmental problems. This paper maintains, however, that some forms of localism are actually expressions, and appropriate ones, of a planetary environmental consciousness. The paper’s centerpiece is an in-depth evaluation of local climate action initiatives, including interviews with participants as well as other data and observations about their ethics, attitudes, behaviors, and motivations. The values and identities being forged in these initiatives form the basis for timely conceptions of the human relationship with the planet, which in turn provide grist for environmental law and policy design. One overarching conclusion is that environmental laws, even those aimed at solving problems of planetary scale, should include elements that foster localism. The reasons to do so are two-fold, and strangely complementary. First, in an instrumentalist vein, sustained attitude and behavior changes are most likely to be accomplished through the positive feedbacks between personal and community norms. Second, if we fail to reign in carbon emissions as a global matter, at least some communities will have nurtured the attitudes, behaviors, and patterns of living that might be most adaptive to the vicissitudes of a post-climate changed world. By fostering the planetarian identity, localism therefore has the potential to redeem environmental law, even in the face of its potential failure.

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Introduction

Local food, local work, local energy production—all are hallmarks of a resurgence of localism throughout contemporary environmental thought and action.¹ The renaissance of localism might be seen as a retreat from the world’s big, scary, and intractable problems. This paper argues, however, that some forms of localism are actually expressions, and appropriate ones, of a planetary environmental consciousness. These forms of localism are not withdrawals from the world, but rather self-conscious attempts to link ethics and behaviors with environmental problems of planetary scale. The paper’s centerpiece is an evaluation of local climate action initiatives, including interviews with participants as well as other data and observations about their ethics, attitudes, behaviors, and motivations. The values and identities being forged in these initiatives form the basis for timely conceptions of the human relationship with the planet, which in turn provide grist for environmental law and policy design. The upshot is this: environmental laws, even those aimed at solving problems of planetary scale, should include elements that foster localism. The reasons to do so are two-fold, and strangely complementary. First, in an instrumentalist vein, sustained attitude and behavior changes are most likely to be accomplished through the positive feedbacks between personal and community norms.² Climate action groups, for these and other reasons, hold out promise to be important parts of what Elinor Ostrom has described as the necessary “polycentric” approach to addressing climate change.³ Second, if we fail to reign in carbon emissions as a global matter (a more than likely scenario), at least some communities will have nurtured the attitudes, behaviors, and patterns of living that might be most adaptive to the vicissitudes of a post-climate changed world.

Part I situates local climate action initiatives in the larger trend toward relocalization. Part I also explores the potential paradox of local climate action groups, which is that they are tackling a collective

¹ Documenting this trend, many popular books support a return to localism. *See, e.g.,* BILL MCKIBBEN, *EAARTH* (2010) (supporting localism in response to climate change); MICHAEL POLLAN, *IN DEFENSE OF FOOD* (2009) (supporting local and sustainable food production and farming practices); BARBARA KINGSOLVER, *ANIMAL, VEGETABLE, MIRACLE : A YEAR OF FOOD LIFE* (2007) (documenting a family’s effort to live for one year only on food that they produced or could barter for locally); MICHAEL POLLAN, *THE OMNIVORE’S DILEMMA* (2006) (examining the origins of a typical meal, and arguing in support of local food production).

² *See infra* at notes 7, 8, 223.

³ *See* Elinor Ostrom, *A Polycentric Approach for Coping with Climate Change*, (The World Bank, Policy Research Working Paper No. 5095, 2009), available at <http://go.worldbank.org/09BW8HU3A0>.

action problem of global and intergenerational scale. Localism, in this context more than others, warrants study to illuminate how and why norms and behaviors of planetary concern emerge despite their apparent long odds of success.

Part II investigates neighborhood climate action groups—informal, community-based efforts to reduce greenhouse gas emissions—close up. Participants in such groups were surveyed and interviewed concerning their motivations to join and participate, changes they have made to their behavior, their success at reducing emissions, their assessment of the group’s role in encouraging those reductions, and whether they are optimistic about the future with respect to stabilizing global climate change. The responses indicate, first, that many participants have engaged in a wide range of behavior changes to reduce their carbon footprint. Second, the responses reveal that participants in these movements have, in general, a very nuanced and complicated view of their own motivations. They want to contribute to a global solution that will stabilize greenhouse gas concentrations and preserve the Earth as they know it. At the same time, some respondents express skepticism that such a result will be forthcoming, and therefore also articulate a mix of reasons why they are taking action nonetheless. These reasons include: the importance of building community; doing the “right thing” irrespective of outcomes; leaving a legacy of trying to avert tragedy for future generations, even if tragedy ensues; and establishing habits and patterns that will equip us and future generations to live in a very different world. As one participant put it, “Even if our civilization fails, at least we’ve tried to create a blueprint for future cultures. We owe this to the generations that follow us and all the human beings that have sacrificed to give us what we have today.”⁴

Robert Socolow, co-author of the widely cited “wedges” approach to stabilizing climate change,⁵ has mused that we might need the emergence of a “planetary identity” as much as or more than we need regulatory and technological solutions to address climate change.⁶ Local climate action participants might be characterized as the leaders in planetary identity formation. In addition, their actions yield information about steps individuals, albeit the most committed and engaged ones, will take to reduce their carbon footprint, and how those steps have affected their lives. This information, coupled with respondents’ articulation of their motivations, helps to fill in our

⁴ Response of Henry Mueller, Local Climate Action Groups Questionnaire (June, 15, 2009) (on file with author).

⁵ See Stephen Pacala & Robert Socolow, *Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies*, 305 SCIENCE 968 (2004).

⁶ See Robert Socolow & Mary English, *Living Ethically in a Greenhouse*, in ENERGY AND ETHICS (Denis Arnold ed., forthcoming 2011).

understanding of the efficacy of top-down, state led efforts to encourage similar behavior changes.⁷

Part III considers the role of the state in light of what has been learned about local climate action initiatives. To date, the literature on individual behavior and climate change has largely addressed how the state can prod us to reduce our greenhouse gas emissions.⁸ Relying on insights from behavioral economics, cognitive psychology, and the literature on institutional design, commentators propose various mechanisms for regulating, incentivizing, and otherwise nudging people to be more carbon neutral.⁹ This paper approaches the issue from the bottom up, asking not what the state can do to prod us, but rather what are people already doing to live a life that might be meaningful and even fun, while at the same time creating habits and paths for subsequent generations to follow. In other words, rather than formulate proposals to get the state to act on us, this article addresses how and why we should act. Yet focusing on communities and individuals does not let the state off the hook.¹⁰ Rather, the idea is to rethink the state role; government efforts to mitigate and adapt to climate change should be organized to support rather than kill off local practices that foster the planetarian identity. That way, even if state efforts fail to stabilize the climate (the chances of which, as discussed in Part I, are sadly undeniable), we will have the opportunity to fashion societies capable of weathering the climate. Part III therefore concludes by considering how a federal climate regime might embrace local climate action initiatives. By engaging

⁷ Several scholars have examined how the state might influence individual behavior changes and their contributions to climate change. See Michael P. Vandenbergh & Anne C. Steineman, *The Carbon Neutral Individual*, 82 N.Y.U. L. REV. 1673 (2007); Michael P. Vandenbergh, et al., *Individual Carbon Emissions: The Low Hanging Fruit*, 55 UCLA L. REV. 1701 (2008); John C. Dernbach, *Harnessing Individual Behavior to Address Climate Change: Options for Congress*, 26 VA. ENVTL. L.J. 107 (2009); Andrew Green, *You Can't Pay Them Enough: Subsidies, Environmental Law, and Social Norms*, 30 HARV. ENVTL. L. REV. 407 (2006); Albert Lin, *Evangelizing Climate Change*, 17 N.Y.U. ENVTL. L.J. 1135 (2009).

⁸ See Vandenbergh & Steineman, *supra* note 7; Jed S. Ela, *Law and Norms in Collective Action: Maximizing Social Influence to Minimize Carbon Emissions*, 27 UCLA J. ENVTL. L. & POL'Y 93 (2009) (arguing that the state should target high visibility behaviors based on insights from social norms literature). Similarly, commentators have focused on legal and institutional designs that could counter-balance our tendencies to discount the value of future benefits and minimize the risks of future harms. See Richard Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153 (2009).

⁹ See Vandenbergh & Steineman, *supra* note 7; Dernbach, *supra* note 7.

¹⁰ Indeed, as Katherine Trisolini writes, “[t]o achieve critical climate change goals, we will likely need *all* levels of government acting in concert.” *All Hands on Deck: Local Governments and the Potential for Bidirectional Climate Change Regulation*, 62 STAN. L. REV. 669, 667 (2010) (emphasis added); see also Garrick B. Pursley & Hannah J. Wiseman, *Local Energy*, 60 EMORY L.J. (forthcoming 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1567585.

with communities rather than acting on individuals, the state might generate new possibilities for governance in a world increasingly bereft of examples of relevant and successful state action.¹¹ Furthermore, given the failure to pass any comprehensive climate legislation to date, and the unlikely prospects for doing so in the near future, spurring and cultivating local action may be all the state will manage to do.

The article concludes, despite some of its optimism, with some realism about what local climate action might ultimately yield. If we assume that the local initiatives never translate up into higher scale solutions, and that the state fails to be part of a polycentric solution (or any kind of solution), then local climate action groups may be important solely because of the habits of living that they cultivate. Norms and behaviors reflecting less dependence on energy, more local knowledge about food, landscape and weather, and greater reliance on friends and neighbors may be ends in themselves. In this scenario, the efforts of local climate action groups will not be enough to save the planet, or at least a planet with ecologies, cultures, and species that have evolved for the climate as we know it. But they might be enough to sow the seeds for a different planet that would nonetheless be worth living on.

I. The Resurgence of Localism in a Globalized World

Localism—placing value on working and buying locally—has been touted as among the top twenty trends that will shape the next decade.¹² Whether that prediction proves to be true or not, the resurgence of interest in creating vital, self-sustaining communities is undeniable. To provide some context for the local climate action groups examined in Part II, this Part describes localization trends generally, and briefly traces localism’s roots in environmental thought. Despite localism’s appeal, there are reasons to be skeptical that communities, acting on their own, can do anything about environmental problems of planetary scale. To give this skepticism

¹¹ See TONY JUDT, *ILL FARES THE LAND* 134-35, 163-66 (2010) (describing failure of politics to address climate change and other urgent global problems, and consequent loss of faith in political institutions). The “New Governance” movement in legal scholarship also aspires to describe relevant models for successful state action in a post statist-world. See Daniel J. Fiorino, *Rethinking Environmental Regulation: Perspectives on Law and Governance*, 23 *HARV. ENVTL. L. REV.* 441 (1999); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 *MINN. L. REV.* 342, 423-32 (2004) (describing new governance approaches to environmental law).

¹² Emergent Research & Intuit Inc., *Intuit 2020 Report*, INTUIT.COM, 4 (Oct. 2010), http://http-download.intuit.com/http.intuit/CMO/intuit/futureofsmallbusiness/intuit_2020_report.pdf.

its due, this Part then describes the daunting collective action problem that climate change presents.

A. Manifestations and Roots of Localism

It might at first seem curious that localism would be a response to environmental challenges that are increasingly global in cause and effect. Yet the impulse, put in bumper sticker terms, to “think globally, act locally,” is widespread. The “Transition” movement is perhaps the most all-encompassing version of localism. The Transition movement supports efforts to create small community groups with the dual purpose of encouraging low carbon lifestyles and preparing for a post-carbon world by “rebuilding a community’s capacities to meet its own essential needs in food, energy and economy.”¹³ As one scholar described, these groups work “at the grassroots level, to develop local solutions to peak oil and climate change based on developing much more resource-poor yet enjoyable and fulfilling livelihoods based in more localised economies.”¹⁴ According to “Transition US,” the Transition Movement has taken hold in seventy-nine communities in North America.¹⁵

The local food movement, which embraces a return to local food production and consumption, is a related manifestation of the localization trend.¹⁶ One of the local food movement’s initial goals was to reduce the number of miles that food traveled before people ate it.¹⁷ Reducing “food miles” would, according to proponents, improve the quality of food consumed as well as reduce its carbon footprint.¹⁸ In 2010, the USDA Farmers Market Directory listed 6,132 operational farmers markets in the United States, representing a 16 percent growth rate from 2009.¹⁹ The local food movement

¹³ TRANSITION COLORADO, <http://www.transitioncolorado.us/transitioncolorado.php> (last visited Feb. 14, 2011). According to Transition U.S.’s “cheerful disclaimer,”

[w]e truly don’t know if this will work. Transition is a social experiment on a massive scale. What we are convinced of is this: If we wait for the governments, it’ll be too little, too late. If we act as individuals, it’ll be too little. But if we act as communities, it might just be enough, just in time.

TRANSITION U.S., <http://www.transitionus.org/initiatives/cheerful-disclaimer> (last visited Feb. 14, 2011).

¹⁴ Peter North, *Eco-localisation as a progressive response to peak oil and climate change – A sympathetic critique*, 41 GEOFORUM 585 (2010).

¹⁵ See TRANSITION U.S., <http://www.transitionus.org/initiatives-map> (last visited Feb. 9, 2011).

¹⁶ Amory Starr, *Local Food: A Social Movement?* 10 CULTURAL STUDIES <=> CRITICAL METHODOLOGIES 479-490 (2010).

¹⁷ Derrick Braaten & Marne Coit, *Legal Issues in Local Food Systems*, 15 DRAKE J. AGRIC. L. 9, 11 (2010).

¹⁸ See *id.*

¹⁹ Press Release, U.S. Dep’t of Agric., *USDA Announces that National Farmers Market Directory Totals 6,132 Farmers Markets* (Aug. 4, 2010),

spawned a term, “localvore,” (or “locavore”) for one who eats only food sourced within a 100-mile radius of one’s home.²⁰ The most visible locavore lives in the White House: First Lady Michelle Obama made headlines for planting and then expanding the first White House vegetable garden since Eleanor Roosevelt.²¹

The economic theory of eco-localism posits that environmental sustainability requires the creation of “local currency systems, food co-ops, micro-enterprise, farmers’ markets, permaculture, community supported agriculture (CSA) farms, car sharing schemes, barter systems, co-housing and eco-villages, mutual aid, home-based production, community corporations and banks, and localist business alliances.”²² The over-arching idea is that local economies can simultaneously reduce over-all consumption and create the proper norms and incentive structures to perpetuate meaningful yet environmentally sustainable ways of life. Yet economists and environmentalists alike recognize that “[r]educing material per capita consumption may be the most difficult aspect of eco-localism for many to accept as it contravenes the culture of consumerism, the more-is-better assumptions of conventional economic theory, existing settlement patterns (cities), and the goals of globalization.”²³

The return to localism implicates a number of concepts that have deep roots in environmental thought.²⁴ The aesthetic justification for environmental ethics, for example, can be traced to the intimate experiences with nature that writers like George Perkins Marsh, Henry David Thoreau, and Aldo Leopold chronicled for the public.²⁵

<http://www.ams.usda.gov/AMSV1.0/ams.printData.do?template=printPage&navID=&page=printPage&dDocId=STELPRDC5085966&dID=136193&wf=false&docTitle=USDA+Announces+that+National+Farmers+Market+Directory+Totals+6%2C132++Farmers+Markets.>

²⁰ Katy McLaughlin, *The Rise of the Lazy Localvore*, WALL ST. J., Nov. 13, 2010, at D4.

²¹ See Marian Burros, *Obamas to Plant Vegetable Garden at White House*, N. Y. TIMES, Mar. 19, 2009, at A1; Natasha Metzler, *Michelle Obama Expands the White House Garden*, CHRISTIAN SCI. MONITOR, Apr. 1, 2010, available at <http://www.csmonitor.com/The-Culture/Gardening/2010/0401/Michelle-Obama-expands-the-White-House-garden>. Some have criticized the Obamas for failing to take local food values much beyond the publicity phase, however. See Wenonah Hauter, *Dear Obamas: Let’s Move . . . on Food Policy Reform*, Feb. 11, 2011, <http://www.grist.org/article/2011-02-11-dear-obamas-lets-move-on-food-policy-reform>.

²² Fred Curtis, *Eco-localism and sustainability*, 46 ECOLOGICAL ECON. 83, 83 (2002)

²³ See *id.* at 92.

²⁴ See Ursula K. Heise, *Ecocriticism and the Transnational Turn in American Studies*, 20 AM. LITERARY HIST. 381, 384 (2008) (describing localism as “a foundation of environmental thought and ethics”).

²⁵ See GEORGE PERKINS MARSH, *MAN AND NATURE* (Harvard Univ. Press 1965) (1864); HENRY DAVID THOREAU, *The Ponds, in WALDEN* (Houghton Mifflin 2000) (1854) (making minute observations of local ecology around Walden Pond); ALDO

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While aesthetic appreciation can also extend to far-away and grand or exotic places, these writers and many of their latter-day followers wrote about places that, at least to them, were close to home.²⁶ Leopold's *Sand County Almanac*, though better known for the chapter "The Land Ethic,"²⁷ is largely composed of essays describing, in intimate naturalist detail, the seasons on his family's "sand farm in Wisconsin."²⁸

Moving beyond aesthetics, communitarian versions of an environmental ethic quite naturally rely on the local connection to nature. Wendell Berry is perhaps the most well-known popularizer of this vein of ecological thought.²⁹ For Berry, work in small agrarian communities was both an end in itself and a pathway to an ecologically healthier planet.³⁰ In an early critique of industrial agriculture, Berry argued that large-scale, factory farming would ultimately harm nature and humanity; soils and ecosystems would become depleted, and people would lose the knowledge of how to cultivate and produce food, resulting in dependence on a systems-approach to agriculture that would therefore leave them vulnerable to system-wide failure.³¹ Berry's antidote was a return to small-scale farming, which he argued would address not only problems of food quality and environmental health, but also human integrity and dignity:

Industrial agriculture has tended to look on the farmer as a 'worker'—a sort of obsolete but not yet dispensable machine—acting on the advice of scientists and economists. We have neglected the truth that a *good* farmer is a craftsman of the highest order, a kind of artist. It is the good work of good farmers—nothing else—that ensures a sufficiency of food over the long term.³²

LEOPOLD, A SAND COUNTY ALMANAC WITH ESSAYS ON CONSERVATION FROM ROUND RIVER 237 (Oxford U. Press 1966) (1949).

²⁶ Examples of contemporary environmental writers in this aesthetic vein include Terry Tempest Williams, who writes about places close to her home in Utah, Bill McKibben, and Barbara Kingsolver. See TERRY TEMPEST WILLIAMS, AN UNSPOKEN HUNGER 49-78, DESERT QUARTET (1995), AND REFUGE (1992); MCKIBBEN, *supra* note 1; KINGSOLVER, *supra* note 1.

²⁷ LEOPOLD, *supra* note 25, at 237.

²⁸ *Id.* at xviii.

²⁹ See generally WENDELL BERRY, BRINGING IT TO THE TABLE: ON FARMING AND FOOD (2009).

³⁰ See *id.*

³¹ See *id.* at 23-24 (describing several weaknesses of industrial agriculture).

³² See *id.* at 29.

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Good farmers, according to Berry, do their work on small, local farms, in communities that are at least relatively self-sustaining, where subsistence is a guiding principle.³³

Environmental justice also implicates localism. The environmental justice (EJ) movement of the 1980's and 90's brought attention to the fact that toxic and other waste facilities were disproportionately sited in poor and minority communities.³⁴ Mainstream environmentalism, despite its many successes, had failed to deliver cleaner and healthier environments to all communities equally.³⁵ While the EJ movement was (and is) diverse and complex, one of its core tenets remains that environmentalism means little for disempowered communities if it does not touch them locally, which is where and how they live.³⁶

³³ See *id.*

³⁴ See, e.g., Bunyan Bryant, *History and Issues of the Environmental Justice Movement*, in OUR BACKYARD: A QUEST FOR ENVIRONMENTAL JUSTICE 3 (Gerald R. Visgilio & Diane M. Whitelaw eds., 2003); David Getches & David Pellow, *Beyond "Traditional" Environmental Justice*, in JUSTICE AND NATURAL RESOURCES: CONCEPTS, STRATEGIES AND APPLICATIONS 3 (Kathryn Mutz et. al. eds., 2002); Tom Stephens, *An Overview Of Environmental Justice*, 20 T.M. COOLEY L. REV. 229 (2003).

³⁵ See Luke W. Cole & Sheila R. Foster, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 16 (2001); David Monsma, *Equal Rights, Governance, and the Environment: Integrating Environmental Justice Principles in Corporate Social Responsibility*, 33 ECOLOGY L.Q. 443, 454 (2006).

³⁶ See Luke W. Cole, *Foreword: A Jeremiad on Environmental Justice and the Law*, 14 STAN. ENVTL. L.J. ix, xiii (1995) (noting that mainstream environmental groups "have, by history and design, a national focus and a legal orientation. This stands in direct contrast to the environmental justice movement, which has historically had a local focus and a community orientation."); Carita Shanklin, *Pathfinder: Environmental Justice*, 24 ECOLOGY L.Q. 333, 349 (1997) (noting that the environmental justice movement has "broadened the definition of environmentalism to include the quality of life in people's homes, schools, neighborhoods, work, and playgrounds."). Majora Carter, an environmental justice activist from the South Bronx neighborhood of New York City who fought to transform an illegal garbage dump into a public park, sums up her view of the EJ movement:

The environmental groups have little to no presence here. . . . We have to reclaim our right to the environmental issue, we have to understand that it's more than just really wealthy white people driving Priuses because they can. . . . Why aren't we at the table helping shape big-picture strategy? . . . The debate has to examine how environmental improvements to low-income communities lift up the economy, the safety, and the morale -- not just locally, but regionally and nationally. . . . Things like parks and green roofs and decent zoning policies and green-collar jobs and public transportation don't cost a huge amount, but can make a tremendous difference that has long-term economic advantages both locally and nationally.

Amanda Little, *Majora League: An Interview with Majora Carter, Founder of Sustainable South Bronx*, GRIST.ORG (Sept. 28, 2006, 1:30 PM), http://www.grist.org/article/m_carter/.

Finally, though not exhaustively, the international environmental community took up localism when it began to look at the root causes of global environmental challenges. The United Nations Commission on the Environment's report on sustainable development ("the Brundtland Report") made the connection between local development for poor communities and global consumption and pollution.³⁷ While the "sustainable development" concept has become tarnished from both overuse and underachievement,³⁸ the Report nonetheless consummated what has now become common sense for those committed to almost any form of environmentalism, and that is that there will be no solution to the world's environmental problems if we fail to focus on the livelihood and well-being of local communities throughout the world.

B. The Tragedy of the Atmospheric Commons

Localism's roots are deep and its current revival seems to be broad. Yet there remain reasons to be surprised about, if not skeptical of, localism's potential to address climate change. To understand why this is so, and why therefore it is all the more important to understand how and why local climate action groups form and function, this section will sketch the features that render climate change the mother of all collective action problems.

The story of global warming as a particularly intractable commons problem is by now well known. It goes like this. The global atmosphere is a common pool resource,³⁹ and since industrialization, agents have acted in their rational self-interest by

³⁷ See Chairman of World Comm'n on Env't and Dev., *Our Common Future*, delivered to the General Assembly, U.N. Doc. A/42/427 (Aug. 4, 1987) [hereinafter "the Brundtland Report"], available at <http://www.un-documents.net/wced-ocf.htm>.

³⁸ See, e.g., James C. Kraska, *Global and Going Nowhere: Sustainable Development, Global Governance & Liberal Democracy*, 34 DENV. J. INT'L L. & POL'Y 247 (2006); Chris Sneddon et. al., *Sustainable Development in a Post-Brundtland World*, 57 ECOLOGICAL ECON. 253, 259 (2006) ("We can agree . . . that the Brundtland Report, and much of the sustainable development discourse, is a tale that a disenchanted (modern) world tells itself about its sad condition.")

³⁹ In her important body of work on natural resource commons problems, Elinor Ostrom makes the following definitional distinctions. She defines "commons" as "systems, such as knowledge and the digital world, to which it is difficult to limit access, but one person's use does not subtract a finite quantity from another's use." See Elinor Ostrom, *The Challenge of Common Pool Resources*, 50 ENV'T. 10, 11 (2008). Professor Ostrom defines common-pool resources as resources that are "sufficiently large that it is difficult, but not impossible, to define recognized users and exclude other users altogether. Further, each person's use of such resources subtracts benefits that others might enjoy." *Id.* The atmosphere is a common pool resource, as are fisheries and forests. A third category is a joint property commons, like Garrett Hardin's classic sheep pasture. See *id.* See also ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990).

emitting greenhouse gases in order to benefit from inexpensive energy. Even now that we know about the market's failure to internalize the price of greenhouse gas emissions, rational actors will opt for cheap energy over reductions because of the possibility that a defector could undermine the regime of curbing emissions. Stephen Gardiner has argued that global warming is a true prisoner's dilemma, as opposed to a different kind of collective action challenge, because it is possible for non-cooperators to undermine the good produced by a sub-group of cooperators, and it is likely, working from the assumption of rational self-interest, that they will have the incentive to do so.⁴⁰ This is so, according to Gardiner, because any one defector from a global regime to reduce greenhouse gas emissions has the potential to push total global emissions above the agreed-upon cap.⁴¹ In other words, the problem is worse than one in which non-cooperators can "free ride" off of others' cooperation. In the global warming context, non-cooperators can potentially render meaningless (within a rational choice framework,) the cooperation of others.⁴² This was the Bush Administration's rationale about why it backed out of the Kyoto Accords: without China and India committing to limitations on emissions, we may be tightening our carbon belts for nothing. This position gets its traction from the game theoretic account.

The temporally dispersed nature of global warming adds yet another barrier to a collective solution. As Gardiner puts it, "Human-induced climate change is a severely lagged phenomenon."⁴³ Carbon dioxide remains in the atmosphere for centuries, if not longer.⁴⁴ Compounding this, global warming's effects on natural systems create their own feedbacks, resulting in changes occurring well beyond the

⁴⁰ See Stephen M. Gardiner, *A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption*, 15 ENVTL. VALUES 397 (2006) [hereinafter *A Perfect Moral Storm*]; Stephen M. Gardiner, *The Real Tragedy of the Commons*, 30 PHIL. AND PUB. AFF. 387, 410 n.35, 413 (2001). But see Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 ECOLOGY L. Q. 183 (2005) (arguing that recent collective action literature and economic modeling indicate that it is not irrational for large greenhouse gas emitters to act unilaterally to reduce their greenhouse gas emissions).

⁴¹ See Gardiner, *A Perfect Moral Storm*, *supra* note 40, at 412-13.

⁴² See *id.*

⁴³ *Id.* at 402.

⁴⁴ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007, THE PHYSICAL SCIENCE BASIS, SUMMARY FOR POLICY MAKERS at 12-13 (2007), stating that "Anthropogenic warming and sea level rises would continue for centuries due to times scales associated with climate processes and feedbacks, even if greenhouse gas concentrations were to be stabilized." *Id.* at 12. See also James Hansen, et al., *Target Atmospheric CO₂: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217, 227 (2008) [hereinafter *Target Atmospheric CO₂*] ("A large fraction of fossil fuel CO₂ emissions stays in the air a long time, one-quarter remaining airborne for several centuries.") .

date that the greenhouse gases were added to the atmosphere. A study by Susan Solomon and others found that changes in surface temperature, rainfall, and sea level are largely irreversible for more than 1,000 years after emissions are completely stopped.⁴⁵ The deferral of many serious climate change effects means that we are faced not merely with a present-time (or spatial) collective action problem, but a very daunting temporal one. The first challenge presented by this lag is one of perception. It is understandable that we have a hard time experiencing today's daily activities as contributing to an increasingly intractable global problem when the effects of these normal, culturally reinforced activities will be felt decades from now. To put this in concrete terms, every time we drive, turn on the lights, use the computer, push the button on the clothes drier, or use any of the other myriad carbon-based fuel dependent appliances, we are adding to the total parts per million of CO₂. Yet we cannot see, smell or feel our emissions. They are not like particulate matter, which everyone can point to on a low-air quality day. They do not wash up on the shores of our beaches like clots of oil, plastic bags, and Styrofoam packing peanuts. So we do not perceive the effects of our actions, yet they are more enduring than any of these more obvious phenomena.⁴⁶

A related challenge is that the temporal lags put us in the position of setting targets for emissions based on predictions about the future, rather than certainties about the here and now.⁴⁷ Until recently, one such prediction was that to avoid reaching average temperature increases resulting in potentially catastrophic and irreversible trends, we had to stabilize the concentration of CO₂ in the atmosphere at somewhere between 450-500 parts per million.⁴⁸ This presented a sufficiently daunting challenge, given that global emissions of CO₂ have continued to increase since 2000, moving us from roughly 378 ppm to 385 ppm. Yet a paper authored by James Hansen and others

⁴⁵ See Susan Solomon, et al., *Irreversible Climate Change Due to Carbon Dioxide Emissions*, Proceedings of the National Academy of Science (Dec. 16, 2008), available at <http://www.pnas.org/content/early/2009/01/28/0812721106.full.pdf+html>.

⁴⁶ See GERALD T. GARDNER & PAUL C. STERN, ENVIRONMENTAL PROBLEMS & HUMAN BEHAVIOR 261 (1996) (describing the availability heuristic); Elke U. Weber, *Experience-Based and Description-Based Perceptions of Long-Term Risk: Why Global Warming Does Not Scare Us (Yet)*, 77 CLIMACTIC CHANGE 103, 108 (2006) (describing hyperbolic discounting).

⁴⁷ For a useful assessment and critique of framing climate policy goals in terms of greenhouse gas stabilization, see Maxwell T. Boykoff, et al., *Discursive Stability Meets Climate Instability: A Critical Exploration of the Concept of Climate Stabilization in Contemporary Policy*, 20 GLOBAL ENVTL CHANGE 53 (2010), available at www.elsevier.com/locate/gloenvcha.

⁴⁸ See Hanson et al., *supra* note 44; Martin I. Hoffert et al., *Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet*, 298 SCIENCE 981, 981 (2002).

sets the goal target for avoiding catastrophic effects even lower, at 350 ppm.⁴⁹ The paper is equally urgent about the relevant time frame, suggesting that if emissions are not reined in within the next decade, “prospects for avoiding a dangerously large, extended overshoot of the 350 ppm will be dim.”⁵⁰

Gardiner terms the temporal aspects of global warming a “pure intergenerational problem,” and concludes “the intergenerational analysis will be less optimistic about solutions than the tragedy of the commons analysis. For it implies that current populations may not be motivated to establish a fully adequate global regime, since given the temporal dispersion effects . . . such a regime is probably not in *their* interests.”⁵¹ To make matters even grimmer, the problem reiterates itself with each generation, and also gets worse for each subsequent generation, as the effects multiply over time and the costs both of mitigating emissions and adapting to climate change’s effects increase.⁵²

At the level of describing the world’s response to global climate change over the last three decades, and in particular the United State’s response, the tragedy of the atmospheric commons seems apt.⁵³ We do not have to accept the assumptions about human nature at the core of the rational choice view of collective action problems (and there is an important literature that rejects them⁵⁴) to recognize that despite knowing with increasing degrees of certainty since at least 1988 that we should curb emissions, to date there is no global agreement or enforcement regime, and greenhouse gas emissions continue, in general, to rise.⁵⁵

C. Political and Psychological Tragedy

Complementing (or supplanting, depending on one’s view), the rational choice theory for why the world has failed to stabilize greenhouse gas emissions, there are compelling explanations rooted in

⁴⁹ See Hanson, et al., *supra* note 44 at 217.

⁵⁰ *Id.* at 229.

⁵¹ Gardiner, *A Perfect Moral Storm*, *supra* note 40, at 405.

⁵² *See id.*

⁵³ Although I find Gardiner’s account compelling, it is not all that important whether Gardiner is correct to label this a true prisoner’s dilemma, or whether the collective action problem is better described in some other way. Compare, e.g., Engel & Saleska, *Subglobal*, *supra* note 40, at 199-202 (describing the problem as a “glass half full” rather than as a true prisoner’s dilemma.) Irrespective of the label, it remains the case that the world’s largest emitters (now the United States and China) have yet to reduce their emissions in the absence of participation in a global regime.

⁵⁴ See OSTROM, GOVERNING THE COMMONS, *supra* note 39; see also MICHAEL TAYLOR, RATIONALITY AND THE IDEOLOGY OF DISCONNECTION (2006).

⁵⁵ See James Butler, *The NOAA Annual Greenhouse Gas Index* (Sep. 9. 2009), <http://www.esrl.noaa.gov/gmd/aggi/>.

power and psychology. Murmurs about “global warming” began to seep out to the general public some time in the 1980’s,⁵⁶ and the problem had been known to high level government officials even before then.⁵⁷ Scientific opinion was just beginning to gel during this period, yet early media coverage of the issue was confounded by the gap between how scientists talk about certainty and the way the public and politicians hear and translate scientific terms.⁵⁸ Complicating public perception further, the petroleum industry funded research by some of the climate skeptics, and despite constituting a small minority among scientists, the skeptics commanded equal time in the press.⁵⁹ Thus rather than present a story about steady progress towards scientific certainty, much of the media coverage of climate change presented a misleading balance of views. Compounding these issues, from 2001-2008, federal officials suppressed information about climate change from within their own agencies.⁶⁰ As a result, public attention wavered, and public confusion about global warming persisted even as the science became increasingly clear:

In the early years of the new century, polls in the United States showed an outright decline in concern for global warming. Since the late 1980s, a large majority of Americans had told poll-takers that they personally worried about global warming, but the fraction who claimed they worried about it “a great deal” — roughly a third — declined in the early 2000s, and by 2004 a bare majority in the United States expressed any worry at all about global warming.⁶¹

For a brief period between 2005-2008, several factors seemed to heighten both awareness and concern about climate change. The fourth IPCC report⁶² and increased media discussion of climate change in the wake of Hurricane Katrina, among other causes, seemed

⁵⁶ See Spencer Weart, *The Public and Climate* 27, <http://www.aip.org/history/climate/pdf.htm> (last visited Mar. 8, 2009).

⁵⁷ See A.P., *Moynihan, as Nixon aide, Warned of Global Warming*, SEATTLE TIMES, (July 10, 2010) available at http://seattletimes.nwsourc.com/html/nationworld/2012268564_apusnixonlibrarydocuments.html (describing papers recently released from the Nixon library indicating that Moynihan urged President Nixon to begin a program to monitor global carbon dioxide emissions due to the potential threat to climate and risks of sea level rise).

⁵⁸ See Weart, *supra* note 56, at 47-48.

⁵⁹ See *id.*

⁶⁰ See *id.*

⁶¹ *Id.* at 59.

⁶² R.K. Pachauri & A. Reisinger, eds., *IPCC Fourth Assessment Report: Climate Change 2007 (AR4)*, IPCC, Geneva, Switzerland, available at http://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html (last visited Mar. 13, 2010).

to increase public knowledge and concern.⁶³ Yet awareness and concern have failed to translate into a widespread sense of urgency. Even more troubling, public acceptance that climate change is occurring and is caused by human activity has again declined. A study by the Pew Center for Research and the Press found that public acceptance that climate change was occurring dropped from seventy-one percent in April, 2008 to fifty-seven percent from in October, 2009. During the same period, public acceptance that any warming was caused by human activity dropped from forty-seven percent to thirty-six percent.⁶⁴

There are several plausible explanations for this. The 2008-2009 economic meltdown displaced all other issues on the public's priority list, and likely knocked climate change down a notch or two.⁶⁵ In addition, the psychology of climate change is complex. First, cognitive dissonance theory posits that we tend to minimize or discount facts or behaviors that are inconsistent with primary beliefs about ourselves.⁶⁶ Cognitive dissonance helps to explain why most people would tend to disregard messages indicating that their normal behaviors, bound up as they are with dependence on carbon emitting activities, have contributed to a threat to the world as we know it.⁶⁷ Second, that very framing-- "a threat to the world as we know it"--while accurate in many senses, is itself part of the problem. Polling data and marketing studies have indicated that threatening messages, even if (and perhaps especially if) they are accurate tend to have a deflating effect on most of the public. Messages of alarm or emergency, particularly in the context of a problem that seems beyond individual redress, tend to result in a sense of helplessness or apathy.⁶⁸ In addition, there are problems associated with perception and cognition. According to cognitive psychologists, human beings tend

⁶³ See *Katrina and Global Warming*, Pew Center on Global Climate Change, <http://www.pewclimate.org/specialreports/katrina.cfm> (last visited Mar. 3, 2010); John M. Broder, *Climate-Change Debate Is Heating Up in Deep Freeze*, N.Y. TIMES, Feb. 10, 2010.

⁶⁴ See The Pew Research Center for the People and the Press, *Fewer Americans See Solid Evidence of Global Warming*, (Oct. 22, 2009), available at <http://people-press.org/report/556/global-warming>.

⁶⁵ See Frank Newport, *Americans: Economy Takes Precedent Over Environment*, GALLUP, Mar. 19, 2009. Available at <http://www.gallup.com/poll/116962/Americans-Economy-Takes-Precedence-Environment.aspx> (last visited Mar. 7, 2010)

⁶⁶ See Elliot Aronson, *The Theory of Cognitive Dissonance: A Current Perspective*, 2 ADVANCES IN EXPERIMENTAL SOC. PSYCHOL. 1 (1969).

⁶⁷ See *Id.*; Andrew J. Elliot & Patricia G. Devine, *On the Motivation Nature of Cognitive Dissonance: Dissonance as Psychological Discomfort*, 67:3 J. OF PERSONALITY & SOC. PSYCHOL. 382 (1994).

⁶⁸ See Anthony Leiserowitz, *Communicating the Risks of Global Warming: American Risk Perceptions, Affective Images and Interpretive Communities in CREATING A CLIMATE FOR CHANGE: COMMUNICATING CLIMATE CHANGE AND FACILITATING SOCIAL CHANGE* 44 (Susanne C. Moser & Lisa Dilling eds., 2007).

to have difficulty valuing the future more than the present, and taking actions today for pay-offs in their own future lives, let alone the lives of future generations.⁶⁹ Further, we tend to filter information about disputed public policy issues through predispositions towards certain core values. This means that even as the dust settles about key aspects of climate change, some people will remain skeptical unless the message is delivered either by a trusted messenger or one who validates core aspects of an individual's values or identity.⁷⁰

Finally, it is difficult, psychologically speaking, to keep an issue on the front burner that is only knowable through abstractions. Nobody experiences climate change directly. What we experience is weather, and weather is not changing in a steady, observable way such that it tracks (according to our sense impressions) with global warming. We tend to overvalue our own perceptions, particularly when so much is at stake in terms of setting them aside.⁷¹

D. Tragedy at the Highest Scales of Governance (The Role of the State, Part One)

These intractable features of global warming point to a potentially heroic role for the state. Indeed, the need to solve collective action problems, and commons problems in particular, provided the grist for Garrett Hardin's classic account justifying regulation (or some alternative version of governmentally imposed coordination) in the environmental context.⁷² The options for the state are more plentiful, more consistent with individual liberty, and more attuned to psychological barriers than Garrett Hardin envisioned,⁷³ but his central insight regarding the challenges represented by common pool resources remains apt. To save us from ourselves or, more generously, to help us collectively to realize our

⁶⁹ See Chrisoula Andreou, *Environmental Preservation and Second-Order Procrastination*, 35 PHIL. & PUB. AFF. 233, 237 (2007); Dustin J. Penn, *The Evolutionary Roots of Our Environmental Problems: Toward a Darwinian Ecology*, 78 THE Q. REV. OF BIOLOGY 275, 284-85 (2003).

⁷⁰ See Dan Kahan, Hank Jenkins-Smith & Donald Braman, *Cultural Cognition of Scientific Consensus* (Yale Law Sch. Pub. Law Working Paper No. 205, 2010); and Dan Kahan, Donald Braman, Paul Slovic, John Gastil & Geoffrey Cohen, *The Second National Risk and Culture Study: Making Sense of – and Making Progress In – The American Culture War of Fact*, (Yale Law Sch. Working Paper No. 154, 2007).

⁷¹ See Jeffery Rachlinski, *The Psychology of Global Climate Change*, 2000 ILL. L. REV. 299, 303. (2000); Lazarus, *supra* note 8, at 1176 (2009) (describing the cognitive psychological barrier to understanding climate change as an “unavailability heuristic” resulting in under-regulation).

⁷² See Garrett Hardin, *The Tragedy of the Commons*, 163 SCIENCE 1243 (1968).

⁷³ See generally RICHARD THALER & CASS SUNSTEIN, *NUDGE* (2008) (making the case for government interventions that shape individual choices to maximize welfare without intruding on liberty).

Krakoff, *Planetary Identity Formation and the Relocalization of Environmental Law*

common interests, the state must step in and inform, coordinate, coerce, nag, incentivize and/or penalize to help us do the right things for the long run.⁷⁴ The persistent calls for federal regulation recognize the irreplaceable state role in this regard.⁷⁵ It is therefore unsurprising that a great deal of political, scholarly, and activist effort has focused on national and international regimes for coordination and enforcement.⁷⁶

Thus, there are very few commentators (who are not climate skeptics) who do not advocate for a national, and ultimately international, emissions control regime of some kind.⁷⁷ Yet such a regime has not materialized. To date there is no federal greenhouse gas emissions control legislation,⁷⁸ and none appears to be on the horizon. At the international level, events in Copenhagen, December,

⁷⁴ For a helpful catalogue of the various collective action dilemmas that call for federal government control and coordination in the environmental context, see Robert L. Glicksman & Richard E. Levy, *A Collective Action Perspective on Ceiling Preemption by Federal Environmental Regulation: The Case of Global Climate Change*, 102 NW. U. L. REV. 579, 616-37 (2008) (analyzing different collective action problems in the context of whether they justify federal ceiling preemption of state efforts to regulate greenhouse gases); see also THALER & SUNSTEIN, *supra* note 73.

⁷⁵ See Lazarus, *supra* note 8, at 1205-1231 (discussing design strategies for federal law to overcome various and severe temporal and spatial challenges of climate change).

⁷⁶ See William Pizer, *A U.S. Perspective on Future Climate Change Regimes*, RESOURCES FOR THE FUTURE (2007), available at <http://rff.org/Documents/RFF-DP-07-04.pdf> (last visited Mar. 7, 2010); FARHANA YAMIN & JOANNA DEPLEDGE, *THE INTERNATIONAL CLIMATE CHANGE REGIME; A GUIDE TO RULES, INSTITUTIONS AND PROCEDURES* (2004); Jonathan Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961 (2006-2007); Yasuko Kameyama, *The Future Climate Regime: A Regional Comparison of Proposals*, 4 INT'L ENV'T AGREEMENTS: POL., LAW & ECON. 307 (2004).

⁷⁷ Even scholars highlighting the unique contributions that local and state governments can make recognize the need for national regulations. See Trisolini, *supra* note 10, at 745-46; Engel & Saleska, *supra* note 40, at 233 (concluding that unilateral action by sub-national governments can make meaningful contributions to climate change, but acknowledging that “cooperative international standards . . . remain the optimal framework for addressing global commons problems.”)

⁷⁸ Federal legislation has addressed some aspects of clean energy development and technology transfer, and Congress has funded climate change research. See National Agricultural Law Center, *Climate Change Statutory Citations*, available at www.nationalaglawcenter.org/assets/climatechange/federal.pdf. But despite episodic momentum for a federal law that would put a price on carbon, no such statute has emerged from Congress for presidential signature. See American Clean Energy and Security Act, H.R. 2454, 111th Cong. (2009); John Larsen, *Emissions Reductions Under Cap-and-Trade Proposals in the 111th Congress*, WORLD RESOURCES INSTITUTE, Dec. 17, 2009; Rachel Gold, Laura Furrey, Steven Nadel, John Laitner & R. Neal Elliott, *Energy Efficiency in the American Clean Energy and Security Act of 2009: Impacts of Current Provisions and Opportunities to Enhance the Legislation*, ACCEEE REPORT E096 (Sept. 2009), available at <http://www.thewheelerreport.com/releases/sept09/sept10/0910wienvironmentreport.pdf> (last visited Mar. 9, 2010).

2009, failed to produce a binding multilateral treaty,⁷⁹ and the idea of achieving one is on life support at best. The news is not all bad on these fronts. In the absence of mandatory federal emissions limitations, the federal government has taken other steps to put a climate change mitigation regime in place. Federal legislation has funded climate science, clean energy development, and encouraged technology transfer.⁸⁰ Recently, federal agencies have begun to take climate change seriously, issuing endangerment findings for greenhouse gases, and taking a range of actions to coordinate climate planning and adaptation efforts.⁸¹ In the international arena, the Kyoto accords stimulated Europe's carbon trading and regulation system, and spawned a host of other trans-regional efforts, either directly or indirectly.⁸² More than nothing has been done at the higher levels of coordination, but much less than has been repeatedly called for, and far less than is required to stabilize the climate.

E. The Localization of Climate Law

Despite (or perhaps due to) relative inaction at the federal level, efforts have sprung up at the sub-national level.⁸³ Regions, states and cities developed programs to address greenhouse gas emissions and develop renewable energy alternatives.⁸⁴ State level activities range from maintaining greenhouse gas inventories to implementing

⁷⁹ See Jane Leggett, *A U.S.-centric Chronology of the International Climate Change Negotiations*, CONG. RESEARCH SERV. Jan 7, 2010.

⁸⁰ See National Agricultural Law Center, *Climate Change Statutory Citations* *supra* note 78.

⁸¹ See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (to be codified at 40 C.F.R. pt. 5); Order No. 3298, 3(b) (2009); Sec. of the Int., Order No. 3298, 3(b) (2009), *Addressing the Impacts of Climate Change on America's Water, Land and Other Natural and Cultural Resources*, available at <http://www.interior.gov/climatechange/SecOrder3289.pdf> (last visited Mar. 9, 2010); COUNCIL ON ENVTL. QUALITY, DRAFT NEPA GUIDANCE ON CONSIDERATION OF EFFECTS OF CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS (February 18, 2010) available at http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.

⁸² See Pew Center on Global Climate Change, *Climate Change Mitigation Measures in the European Union* (Dec., 2009), available at <http://www.pewclimate.org/brief/international/mitigation-measures-european-union> (describing measures taken to reduce greenhouse gas emissions throughout Europe).

⁸³ J.R. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1521-30 (2007) (analyzing state plans); Engel & Saleska, *supra* note 40, at 215-23 (describing categories of state climate action and theorizing that sub-national activities are rationally motivated at least in part by desire to undertake symbolic action on a serious problem).

⁸⁴ For an overview of state and regional initiatives, see Pew Center on Global Climate Change, *U.S. States and Regions*, <http://www.pewclimate.org/states-regions> (last visited Mar. 9, 2010).

greenhouse gas emissions limitations.⁸⁵ California has been the leader in these efforts, imposing emissions limitations on motor vehicles,⁸⁶ and establishing firm goals for reducing the state's greenhouse gas emissions to 1990 levels by 2020.⁸⁷ California's climate regime now consists of caps on emissions by certain industries, a nascent trading and offset program, and a timeline for further ratcheting down emissions in order to meet emissions reductions goals.⁸⁸ Cities too have become engaged.⁸⁹ As Katherine Trisolini has documented, cities have harnessed their core regulatory powers over matters such as zoning, transportation planning, construction, and waste disposal to play what may be a crucial role in larger climate mitigation policy.⁹⁰

Most intriguingly, in light of the pure intergenerational collective action features of climate change, the attendant likelihood of engaging in strategies of "moral corruption,"⁹¹ and the psychological barriers to perceiving and acting on climate change,⁹² individuals and communities have formed relatively informal local initiatives to address climate change. Attending to these local efforts makes sense for two reasons, one instrumental and the other not. First, as Michael Vandenberg and others have discussed, individual attitude and behavior change will be an important part of any successful effort to reduce greenhouse gas emissions.⁹³ Local climate action groups are

⁸⁵ See *id.*; see also Kevin Doran, *U.S. Sub-Federal Climate Change Initiatives: An Irrational Means to a Rational End*, 26 VA. ENVTL. L.J. 189 (2008).

⁸⁶ See California Environmental Protection Agency ("Cal. EPA"), California Air Resources Board ("CARB"), Climate Change Emission Control Regulations (Dec. 10, 2004), http://arb.ca.gov/cc/factsheets/cc_newfs.pdf; California Vehicle Standards, Pew Center on Global Climate Change, http://www.pewclimate.org/what_s_being_done/in_the_states/vehicle_ghg_standard-moreinfo.cfm (last visited Mar. 10, 2010). Kevin Davis, *The Road to Clean Air is Paved with Many Obstacles: The U.S. Environmental Protection Agency Should Grant a Waiver for California to Regulate Automobile Greenhouse Gas Emissions Via Assembly Bill 1493*, 19 FORDHAM ENVTL. L. REV. 39 (Spring 2009).

⁸⁷ See California Global Warming Solutions Act, CAL. HEALTH & SAFETY CODE §§ 38500-38599 (West 2006).

⁸⁸ See Assembly Bill 32: California Global Warming Solutions Act, California Environmental Protection Agency, Air Resources Board, <http://www.arb.ca.gov/cc/ab32/ab32.htm> (last visited Mar. 13, 2010).

⁸⁹ See U.S. Mayors' Climate Protection Agreement, ICLEI-Local Governments for Sustainability, City of Seattle and the U.S. Conference of Mayors, <http://www.seattle.gov/climate/docs/ClimateActionHandbook.pdf#35> (last visited 3.13/2010); Maike Sippel & Till Jenssen, *What About Local Climate Governance? A Review of Promise and Problems*, (Nov. 2009), available at <http://ssrn.com/abstract=1514334>.

⁹⁰ See Trisolini, *supra* note 10.

⁹¹ See Gardiner, *Perfect Moral Storm*, *supra* note 40.

⁹² See Kahan, *Cultural Cognition of Risk*, *supra* note 70, at 25.

⁹³ See Vandenberg & Steineman, *supra* note 7; Gert Cornelissen et al., *Cueing Common Ecological Behaviors to Increase Environmental Attitudes*, in *PERSUASIVE TECHNOLOGY* 39, 39-44 (Wijnand Ijsselsteijn et al. eds. 2006); R.D. Katsev & T.R.

composed of individuals who are “early adopters” of those sorts of changes, and thus provide role models as well as insight into strategies that might be successful for the broader public. Second, the motivations, practices and ethical worldviews articulated by participants in these groups may provide a blueprint for individual and community action even in a world where state coordination and enforcement either never fully materializes, or even if it does, fails nonetheless to achieve its stated goals.⁹⁴

II. Local Climate Action Groups: What, How and Why

*If you did accept climate change as something that could affect your own community in your own lifetime, you might feel obliged to change your pattern of consumption, and perhaps some political opinions. For many people, this was enough to raise mental barriers to further consideration.*⁹⁵

The political and psychological barriers to widespread public concern about global warming may actually help to explain why smaller communities started to take action to reduce greenhouse gas emissions well before climate change made its way onto the national agenda. In smaller communities, affinities of value, politics, and culture can overcome the epistemological and psychological barriers that exist for the public at large.⁹⁶ Indeed, the cities that have taken the lead in formulating and implementing climate action plans tend to be ones with populations whose demographic profiles are the most likely to believe that climate change is happening and to rate it as an urgent problem. In 1993, Portland, Oregon became the first city to adopt a strategy for reducing emissions of carbon dioxide. In June, 2005 Portland issued a “Progress Report” which concluded that the city and surrounding county had reduced per capita emissions by 12.5% since 1993.⁹⁷ Others cities joined Portland in establishing

Johnson, *A Social-Psychological Analysis of Residential Electricity Consumption: The Impact of Minimal Justification Techniques*, 3 J. ECON. PSYCHOL. 267, 267-284 (1983); Pam Scholder Ellen et al., *The Role of Perceived Consumer Effectiveness in Motivating Environmentally Conscious Behaviors*, 10 J. PUBLIC POL’Y & MARKETING 102, 103 (1991).

⁹⁴ Ostrom’s advocacy of the polycentric approach stems from the difficulties presented by formulating a top-down global solution as well as the benefits of local engagement. See Ostrom, *supra* note 3.

⁹⁵ Weart, *supra* note 56, at 54-55 (discussing observations by Bill McKibben and Andrew Revkin).

⁹⁶ See Robert Cialdini, *Crafting Normative Messages to Protect the Environment*, 12 CURRENT DIRECTIONS IN PSYCHOL. SCI. 105, 105-109 (2003); P. Wesley Schultz, *Changing Behavior with Normative Feedback Interventions: A Field Experiment with Curbside Recycling*, 21 BASIC AND APPLIED SOCIAL PSYCHOL. 25, 26 (1998).

⁹⁷ See Portland Online, “A Progress Report on the City of Portland and Multnomah County Local Action Plan on Global Warming,” (June 2005),

emissions reduction targets, and to unite and further catalyze these efforts, Mayor Greg Nickels of Seattle created the U.S. Mayors Climate Protection Agreement (MCPA), to which there were nine original signatories, all of which might be, with the possible exception of Salt Lake City, on Rush Limbaugh's list of the Most Dangerous Place in America: Boulder, Colorado; Burlington, Vermont; Minneapolis, Minnesota; Portland Oregon; Redmond, Washington; Salt Lake City, Utah; Santa Monica, California; and Seattle, Washington.⁹⁸ The MCPA urges action at the federal and state levels, advocating policies that meet or surpass the Kyoto target of reducing global warming pollution to 7% below 1990 levels by 2012, but the Agreement also states that signatory mayors will strive to meet or exceed the Kyoto targets within their own communities by creating an inventory of emissions in their cities, setting reduction targets, and increasing use of alternative energy sources. More than 1,000 mayors have signed onto the agreement.⁹⁹ Similarly, more than 500 cities have joined the Cities for Climate Protection Campaign (CCP) under the auspices of the International Council for Local Environmental Initiatives. CCP cities pledge to reduce emissions using agreed-upon criteria and measurements.¹⁰⁰

The initiatives discussed and explored below are even further down the scale. In the United States, England, Canada, and elsewhere, groups of individuals have come together to create communities centered on reducing individual greenhouse gas emissions, increasing public awareness, and promoting activism

<http://www.portlandonline.com/shared/cfm/image.cfm?id=112118> (last visited Mar. 7, 2009).

⁹⁸ See "Endorsing the U.S. Mayors Climate Protection Agreement," http://www.seattle.gov/mayor/climate/PDF/Resolution_FinalLanguage_06-13-05.pdf (last visited Mar. 7, 2007).

⁹⁹ See "The U.S. Conference of Mayors Climate Protection Page," <http://www.usmayors.org/climateprotection/map.asp> (last visited May 19, 2010).

¹⁰⁰ While several cities have taken serious steps towards achieving the MCPA and CCP goals, for most the efforts remain fairly symbolic. The nine original cities that were signatories to the U.S. Mayors Climate Protection Agreement have each taken measures that move beyond the symbolic, as have Berkeley and San Francisco. See Berkeley, Boulder, Burlington, Minneapolis, Portland, Redmond, Salt Lake City, San Francisco, Santa Monica, Seattle, Chart of City Initiatives (on file with author); see also Trisolini, *supra* note 10. This is understandable, in that city governments are limited in their ability to address some core aspects of energy, transmission and pollution control policy. See Engel & Saleska, *supra* note 34, at 215; Hari Osofsky, *Climate Change Legislation in Context*, 102 NW. L. REV. COLLOQUY 245 (2008); Hari Osofsky, *The Scale of Networks: Local Climate Change Coalitions*, 8 CHI. J. INT'L L. 409 (2007-2008). Cities can, however, affect patterns of energy consumption, promote energy efficiency, and create programs designed to encourage alternative transportation. See Trisolini, *supra* note 10; Alice Kaswan, *Climate Change, Consumption and Cities*, 36 FORDHAM URBAN L.J. 253 (2009) (arguing that cities can play significant roles in reducing greenhouse gas emissions through land use planning, transportation infrastructure and green building requirements).

regarding climate change. Rather than continuing to theorize about how and why such groups form, the sections below discuss the responses of participants in these groups to these very questions.

A. Local Climate Action Initiatives Up Close

1. A Sunday Afternoon in Boulder, Colorado

On Sunday, June 14, 2009 at 2:00 p.m., a group of roughly 30-35 people arrived at the home of Dan Friedlander in the Shanahan Ridge neighborhood of Boulder, Colorado.¹⁰¹ Shanahan Ridge is on the south side of town, perched just below the “blue line” that Boulder established in the 1950’s to ensure that development would creep no further into the mountains. The people ranged in age from early twenties through sixties, with one or two apparently over 65. Most were over 40, with just a few 20 and 30-somethings. Dress was casual; people were not wearing fancy clothes, jewelry or much make-up. They were also not tricked out in expensive workout gear, muscles bulging through their quick-dry fabric, as one version of a Boulder stereotype might have it. It was an ordinary looking group—nice, unassuming. They had gathered for the Shanahan Ridge Neighbors for Climate Action Tour of Energy Efficient Homes.

Don Allen’s house, just a few doors down the street, was the first stop on the tour. The featured item was blown-in insulation. As he described the process of injecting foam insulation into the space between the exterior and interior walls of his home, Don, in crisp khaki shorts, a navy polo shirt and appearing to be in his seventies or so, pointed out the small holes that had been cut out of the exterior walls, and then plastered and painted over. Questions from the crowd ensued: “What happened to the previous insulation?” “It gets pushed aside by the cellulose that is blown in.” “Does it feel warmer?” “It does not feel warmer; but the furnace does not have to stay on as much to keep it just as warm.” “What is the R factor of the insulation?” Don did not know the answer to that one. “How much did it cost?” “Roughly \$1200.” Don also had solar pv panels on his roof, though these were not the focus of this stop on the tour. Don described the process he undertook to decide which energy saving and power generating changes to make to his home. First, he got an energy audit, and then decided what steps to take from there.

The second stop was around the corner at Henry Mueller’s house. Henry’s home featured solar panels, laid flat to the roof and facing east. “I chose to have them face east, and lie flush to the roof, rather than raise them for the southern exposure. This was solely an aesthetic choice. I’m an architect, and I do not like the look of the

¹⁰¹ Notes from Tour of Energy Efficient Homes (June 14, 2009) (on file with author). The descriptions and quotations in this sub-section are all from this source.

raised panels. They make the house seem like an engineering feat rather than a home.” Unlike Don Allen, Henry installed his solar panels before getting a home energy audit, but realized that he should have done things in reverse order. “The home is a 1970’s McStain home,” Henry told the group, “and has common McStain problems, such as 2 by 4 construction, which allows only R-11 to R-13 insulation in the walls. Crawl spaces are not insulated; the house has an inefficient joint structure, with lots of angles, which makes for lots of leakage.” For the solar panels, Henry received a 3.98/watt rebate from Excel (the electric utility company providing service to Boulder residents) as opposed to higher, because of his choice to have the panels facing east. Still, he now generates more energy than he uses with his 4.92 kilowatt system. One advantage of the east facing panels is that they have a chance to cool off, making them operate more efficiently (like batteries, if they stay hot they become less efficient.) Henry described the other changes he made to increase the energy efficiency of his home: window quilts on the interior of the windows, which retain heat during cold weather and insulate against it in the summer; (“You can order them or get kits at Joanne’s Fabric’s,” one of the tour leaders volunteered); exterior shutters, which reflect the heat during the day (“My green building guru swears by them,” Henry added); an evaporative cooler mounted on the exterior of the house, which uses one third of the energy of an air conditioner (“Excel has rebates on evaporative coolers.”) “Regarding windows, you get the most R value for medium-insulating windows plus window quilts or other interior or exterior insulation, as opposed to the highest insulating, most expensive windows, which cost more but do not do a better job of reflecting heat in summer or retaining it in winter as my combination approach.” The group shuffled off, some members quickly jotting down notes from the many tips Henry had shared.

The third stop, at Judy Beler’s home, demonstrated an energy audit in action. Eric, the energy auditor, explained that when they do an energy audit, first they look at everything in the structure of the home, such as insulation and sealing, then assess appliances, and only last do they examine energy sources. Eric led us to Judy’s basement to check out her water heater. Several members of the tour crammed into the closet-sized space, while the rest peered in from the stairway. The water heater’s copper pipes had been wrapped with insulation. “Builders need to learn to do this,” commented Eric. Next, he described the inefficiencies of the heater itself. “Old water heaters waste lots of energy because they heat the huge tank first. You can lower energy use first by lowering the temperature on your water heater.” Eric cut through the crowd and led us back upstairs. “In terms of insulation,” Eric said, pointing at Judy’s walls and high living room ceiling, “the Department of Energy suggests R-18 for

walls and R-38 for cathedral ceilings.” Eric then conducted a demonstration of the audit test that sucks the air out of the house to see where the leaks are. A large reverse fan was mounted in a living room window, and Eric held an infrared camera to locate the leaky spots. Members of the tour moved around Judy’s living room and dining room, putting hands in front of electric sockets, wall joints and fireplaces. “You can feel the air coming in here,” commented one member of the group, hand poised near a socket. Judy and Eric also pointed out Judy’s Home Energy Monitor (also known as a Power Cost Monitor), which shows how much energy you are using at any given moment, and from what sources. “These are available at McGuckin’s for \$180. Just seeing how much energy you use, and seeing how it can go down with little things, helps save energy,” commented Eric. “Identifying how much you use helps a lot—I reduced my energy consumption by 8% just with this monitor,” added Judy.

After Judy’s, the official three-home tour was over, and the group headed back to Dan Friedlander’s house for a reception. Dan’s living room has floor-to-ceiling windows on the east side, providing a panoramic, almost vertigo-inducing view of Boulder as the city tumbles down hill and then fades into the plains. Asphalt ribbons line the way towards Denver. “What kind of windows do you have?” inquired one of the visitors. “The highest insulating ones. We wanted the view, and the window provides passive solar light and heat, so for us it was a good balance.” The guests milled about, snacking on fruit, cheese and crackers and asking follow-up questions of the people whose homes had been on the tour. After a few minutes, Dan hushed the crowd to make some remarks. “We want to change the world... it is not easy to change the world. We can do it by first changing our relationships with each other. We live in a suburb, let’s be honest about that, and suburbs can be very, very depersonalizing, bad for our moral sense and bad for our ability to relate to one another... We have been through a process led by Larry to focus on balancing between the community and global warming. When Judy asks you to volunteer for a few hours, we want to build a stronger community... we don’t want it to feel like something else you have to do, we want it to be valuable for you too... we want it be morally and personally valuable... You change the world by changing your construction of the world around you... which is your own community.” When Dan was finished, Henry Mueller took the floor. “We, the Shanahan Neighborhood for Climate Action, are examples for the other groups forming throughout the city of Boulder. Boulder is an example for the whole country. So what we are doing here really is making a difference...” Dan then followed up again: “How do you form community? It is an uphill battle, so give a big hand to the folks who volunteered their homes today. Then raise your hand to

be the next to help out.” Dan then paired those who had raised their hands with an active member of the group to provide them with a contact and support to reinforce the impulse to get involved. A third person, a co-host of the event who had been minding the drink table, then spoke up. “I am Larry Bangs, and I want to add that it is not just about volunteering. We also want to get to know each other. We want to have fun! We want to reinvigorate a sense of neighborliness and community. You don’t *have* to work; we just want to get to know you.” Beth Powell, a Boulder employee implementing the city’s ClimateSmart program, whose mandate includes supporting neighborhood efforts, added a few words: “People from 28 neighborhoods have contacted me to start their own groups. Shanahan has led the way.”

The event wrapped up, and visitors took cards, bought “Shanahan Neighbors for Climate Action” organic cotton t-shirts, and asked some last questions. One guest asked Dan, one of the founders of the Shanahan Ridge group and a clear leader on these issues, about his motivations. “Carbon is a poison. Efficiency is one way to address it. Also, conservation and creating new sources of energy, through renewables, has to happen. Efficiency is not going to solve the problem alone. We can’t think that or we will become disillusioned, but it is a major part and we can control it and lead by example. That’s why we are starting here. We can do something, and at the same time we can build an engaged community.”

2. Building Community, Tearing Down the Old Energy Economy?

The Shanahan Ridge Neighbors for Climate Action is one of several types of local groups that have organized around the goal of doing something about climate change. The Tour of Energy Efficient Homes is one of the events that they produced in the last few years, and other neighborhood groups in Boulder are following suit. In other cities that are also members of the Mayors Climate Action Plan, similar groups have formed or are in the process of forming.¹⁰² Even in some places where the surrounding community is less involved, climate action groups of varying degrees of formality have coalesced. In addition, a movement known as Carbon Rationing Action Groups (CRAGs) began in England. CRAGs are the most hardcore versions of neighborhood groups, organized around creating accountability for

¹⁰² See Carolyn Jones, *Berkeley Nudging Residents to Cut Carbon*, S.F. CHRON. (Jan. 20, 2009) available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2009/01/20/BA3J15C3EC.DTL>.

Krakoff, *Planetarian Identity Formation and the Relocalization of Environmental Law*

individual emissions reductions.¹⁰³ The CRAG scheme, describe in detail below, is a small-scale version of a per capita emissions regime.

These groups can be viewed through a variety of different lenses, all of them relevant to the quandary of addressing climate change. First, under any scenario for stabilizing atmospheric greenhouse gases within the range of acceptable concentration levels, reductions in individual and household energy use are part of the solution.¹⁰⁴ This is particularly so in the United States, which has by far the highest per capita rate of emissions of any country in the world.¹⁰⁵ Social psychology literature supports the general notion that neighborhood groups can play an important role in fostering attitude and behavior change,¹⁰⁶ and, whether consciously or not, many of the successful experimental strategies have been internalized (in varying degrees) by these groups.¹⁰⁷ Local climate action groups are therefore a living experiment in strategies for reducing individual energy consumption. Second, and less directly instrumental, the highly motivated individuals who are involved in these groups can shed light on the values, norms and identities that lend themselves to taking action on the mother of all collective action problems. Third, as we will revisit

¹⁰³ See Andy Ross, *CRAGS: A Short Guide*, Carbon Rationing Action Groups, available at <http://www.carbonrationing.org.uk/wiki/crags-a-short-guide> (last visited Mar. 2, 2009).

¹⁰⁴ See Pacala & Socolow, *supra* note 5; Vandenbergh & Steineman, *supra* note 7 (recommending reduced energy consumption, whether through efficiency gains or behavior changes, as part of the solution). See also A Report by the Middle Class Task Force, Council on Environmental Quality, *Recovery Through Retrofit*, (Oct. 2009) (recommending use and coordination of stimulus funds to create jobs and spur investment in increasing home energy efficiency).

¹⁰⁵ See Netherlands Env. Assessment Agency, *No Growth in CO₂ Emissions in 2009*, (July, 2010) available at <http://www.pbl.nl/en/publications/2010/index.html> (stating the United States per capita emissions in 2009 were 17.2 tons; the next highest per capita emissions were more than 9 tons less even in a year of economic downturn resulting in an overall decrease in western nation emissions) (last visited July 15, 2010).

¹⁰⁶ See Schultz, *supra* note 96; STEWART BARR, ENVIRONMENT AND SOCIETY: SUSTAINABILITY, POLICY, AND THE CITIZEN 247 (2008) (noting the importance of community support for environmental behavior).

¹⁰⁷ The groups' structures and activities include a variety of strategies and techniques that have been found to encourage attitude and behavior change, including affirmation, attribution, cueing, and pledges. See Richard Miller et al., *Attribution Versus Persuasion as a Means for Modifying Behavior*, 31 J. PERSONALITY AND SOCIAL PSYCHOL. 430, 431 (1975) (describing effectiveness of attribution versus persuasion in encouraging environmental behavior change); Gert Cornelissen et al., *Cueing Common Ecological Behaviors to Increase Environmental Attitudes*, in PERSUASIVE TECHNOLOGY 39, 39-44 (Wijnand Ijsselsteijn et al. eds. 2006) (describing effectiveness of cueing strategies); R.D. Katsev & T.R. Johnson, *A Social-Psychological Analysis of Residential Electricity Consumption: The Impact of Minimal Justification Techniques*, 3 J. ECON. PSYCHOL. 267, 267-284 (1983) (describing effectiveness of pledges).

in Part III, these groups may be cultivating the values and norms necessary to live in a world that has failed to reign in climate change through means other than purely geo-engineering solutions.

3. A Brief Word on Methodology

Interviews were conducted by e-mail, in person, or over the phone. In addition, information similar to that sought through interviews was collected from individuals' self-reporting on web sites and in discussion groups. Participants were questioned about their background; their history of other environmental or political activism or engagement; their motivations for reducing their carbon footprint and any particular catalysts that pushed them to take action; the actions they had taken to reduce their individual emissions; their perception of the role that the neighborhood group or CRAG played in their individual actions; their knowledge about geo-engineering solutions and their opinions thereof; their sense of optimism about the future, and their explanation of their actions if they were not optimistic.¹⁰⁸ The rationale for the first questions—background, history of other activism, motivations, actions, and effects of group participation—is likely obvious. These questions relate directly or indirectly to the object of study—what are people willing to do on their own or in small groups to reduce their greenhouse gas emissions, and why are they willing to do it? I included the geo-engineering question for two reasons. First, it sheds light on the depth of knowledge that participants have about the issues surrounding climate change. It is a proxy, in some sense, for levels of engagement about the issue. Second, I thought it might also deepen our understanding of the participant's motivations and outlook in a way that they might not express directly. Similar to reactions to nuclear power as a low-carbon alternative (which I did not ask about), I hypothesized that reactions to geo-engineering might correlate with background values of anti-growth (if anti-geo-engineering) versus technological optimism and pro-growth (albeit sustainable growth) if in favor. The extent to which this appeared to be the case is discussed below. Finally, the questions about optimism were seeking to deepen the explanation of motivations. I was curious about whether participants had thought about the potential futility of their actions, and if so, how they explained to themselves why they were taking these actions anyway. I hoped that this would lead to more philosophical answers than merely asking about motivations alone, and also hoped that the responses might shed some light on debates about altruism, happiness, and related meaning-of-life topics.

4. CRAGS

¹⁰⁸ See NCAG and CRAG Questionnaires, on file with author.

a. Background

CRAGs, which began in England, are composed of groups of people who have committed themselves to reducing their individual carbon footprints.¹⁰⁹ The main aims of the CRAG scheme are:

1. to make us all aware of our personal CO₂ footprint;
2. to find out if [the CRAG scheme] can help us make radical cuts in our personal CO₂ emissions
3. to help us argue for (or against) the adoption of similar schemes at a national ... and/or international level
4. to build up solidarity between a growing community of carbon conscious people
5. to share practical lower-carbon-living knowledge and experience.¹¹⁰

In England, the average citizen contributed 5.4 tons of CO₂ emissions to the atmosphere in 2003. The CRAG assumption is that “a sustainable level of personal CO₂ emissions may be as low as about 0.6 tons . . . a 90% reduction from [2003.]”¹¹¹ To reach this level by 2030, which might be necessary to “avoid dangerous and potentially runaway climate change,” requires a rate of emissions reductions of 10% per year. There are five categories that make up individual CO₂ emissions: air travel, household heating, car use, household electricity consumption, and public transportation. With this as the background, the CRAG method is to have individual CRAG members set annual emissions targets based on four of the five categories, excluding public transportation for simplicity. The personal carbon ration for each group member is set by consensus at the beginning of each “carbon year.” Members report to the group’s “carbon accountant” the basics of their living circumstances (whether they live alone or with others; how their home is heated, whether electricity comes from any renewable resources, whether other household members are CRAG members, whether they own a car) so that their CO₂ is accurately counted. The carbon accountant then establishes a “carbon account” for the CRAG member, who reports her carbon emitting activities (energy bills, plane travel, etc.) to the accountant throughout the year so that her account can be properly debited. Some time during the first quarter of the carbon year, the CRAG decides on a

¹⁰⁹ See Carbon Rationing Action Groups Page, available at <http://www.carbonrationing.org> (last visited Mar. 2, 2009).

¹¹⁰ CRAGS: A Short Guide, available at <http://www.carbonrationing.org.uk/wiki/crags-a-short-guide> (last visited Mar. 2, 2009).

¹¹¹ *Id.*

rate per kilogram of CO₂. If, at the end of the carbon year, a member has exceeded her ration, she has to pay a “carbon debt” based on the agreed on rate, to the group. The funds may be used to reward those who have met or exceeded their goal, may be invested in causes chosen by the group, or may be used by the group to buy offsets in the European market.¹¹²

There are currently twenty-seven active CRAGs that have set their rules and started at least one carbon year: twenty-one in the United Kingdom, four in the United States, and one each in Canada and China.¹¹³ In addition, there are thirteen startup CRAGs which are still recruiting, or have not set their rules or started their carbon year: eleven in the United Kingdom, and one each in the United States and Canada.¹¹⁴ Perhaps because their goals are so lofty and their scheme of individual carbon quotas seems extreme, CRAGs have received a fair amount of media coverage. The New York Times, BBC, CBS News and others have reported on CRAGs and their members, who have been quoted about their carbon savings, the group dynamic, and their personal motivations.¹¹⁵ In addition, some CRAG members, when contacted, indicated that other researchers had contacted them and asked them for various categories of information. Nonetheless, I am not aware of any other publication addressing the motivational, affective, and behavioral questions discussed below.

b. Responses

Motivations and Catalysts

CRAG members identified a range of motivations for limiting their own carbon emissions. One respondent reported being motivated by a general concern about global warming and a desire to “do something about [it] and help other people to act in a way that would generate consciousness for a larger movement.”¹¹⁶ Another stated that, although he has been “a green” for twenty years, “carbon emissions and climate change is [sic] the biggest challenge we face.”¹¹⁷ Another reported that “two books and a march” motivated

¹¹² See *Some More Thoughts on Using the EU Emissions Trading Scheme*, <http://www.carbonrationing.org.uk/fora/threads/some-more-thoughts-on-using-the-eu-emissions-trading-scheme> (last visited July 16, 2010) (discussing idea of purchasing offsets outside of the CRAG group instead of trading carbon within it in order to maximize total emissions reductions).

¹¹³ See CRAG Groups, <http://www.carbonrationing.org.uk/groups?&country=uk> (last visited June 29, 2010).

¹¹⁴ See *id.*

¹¹⁵ See CRAGs in the Media, <http://www.carbonrationing.org.uk/wiki/crags-in-the-media/> (last visited Mar. 15, 2010).

¹¹⁶ Response of Shannon Moore, Maryland CRAG founder (Feb. 18, 2009) on file with author.

¹¹⁷ Response of John Cossham, UK CRAG member (Feb. 18, 2009) on file with author.

him to found UK CRAG's.¹¹⁸ One of the books, *High Tide*, "brings disturbing news from a warming world" and the other *How We Can Save the Planet* "explains the idea of carbon rationing." Another CRAG member described her motivations as two-fold. First, "because it's hypocritical to argue for global and national reductions unless I make personal reductions too."¹¹⁹ Second, "managing my own footprint is the best way of learning more about the challenges and solutions."¹²⁰ For another, the predominate motivator was the appeal of the CRAG method: "We obviously need effective carbon policies, and rationing was looking disturbingly like the only feasible and somewhat equitable option."¹²¹

In summary, the motivations reflect a desire to make headway on what is perceived to be an urgent problem, to lead others by example and inspiration, to live consistently with environmental and other moral values, and to participate in a process that itself seemed fair and right. Some respondents refer to books or other sources of factual information as catalysts.

Individual Behavior Changes and Their Efficacy

The individual actions taken by CRAG members to reduce their carbon footprints are often quite dramatic. One respondent heats his home with two smoke-free woodstoves, which he fuels with found waste wood; does not own a car; uses a bicycle, walks, or uses public transportation to travel; does not fly (and has not flown since 1997); uses little electricity and gas due to A-rated appliances and use of woodstove to heat hot water for baths and cooking; and engages in a range of other low-impact behaviors that do not register in his CRAG accounting, but contribute nonetheless to overall emissions reductions.¹²² This respondent reported that his emissions for the most recent year accounted for by his CRAG were .45 tons (less than one-tenth of the UK average.)¹²³

Another respondent sold his car, gave up flying, moved closer to family, changed his job to work on projects that required less travel, and moved from his own home into a shared flat. His annual

¹¹⁸ Response of Andrew Ross, Founder of UK CRAGs (Aug. 28, 2008) on file with author.

¹¹⁹ Response of Angela Raffle, Member of Redland-Bristol CRAG (Oct. 19, 2009) on file with author.

¹²⁰ *Id.*

¹²¹ Web Statement of Despina, CRAG Administrator for Leeds, UK, available at <http://www.carbonrationing.org.uk/user/despina> (last visited Oct. 20, 2009).

¹²² See Response of John Cossham, *supra* note 117. The CRAG only registers the categories of personal emissions. Mr. Cossham also grows most of his own food, hardly ever eats out or gets take-away, collects what food he does not grow from food that would otherwise be thrown away; uses a compost toilet which uses sawdust, and "campaigns tirelessly for people to make changes in their lifestyle."
Id.

¹²³ *See id.*

emissions have gone down 80% since 2006 (from 7.3 tons in 2006-2007 to 1.3 tons the following carbon year).¹²⁴

Similarly, someone who described herself as a “professional woman with a busy job” (she is a medical practitioner) had gone “car free,” and stopped flying in 2005. She also put solar water heating panels on her roof, stopped heating the whole house and instead keeps “one or two rooms cozy.” She and her family also “totally changed” their shopping habits, started growing more fruits and vegetables and joined a community orchard.¹²⁵

Another respondent’s adjustments were less extreme. She drives less, turns off lights when she is not in the room, turns off her heating and cooling during the day, and lives close to her job. Still, she reports that she uses 50% less electricity per year than most people, and also uses far less fuel for heat. “For that, I get to cut my carbon emissions by about a third.” She did not yet have the estimate from her CRAG’s first full year, however.¹²⁶

The behavior changes described above reflect the range of actions taken by CRAG members generally. To summarize, they include giving up airline travel, giving up or greatly reducing automobile travel, making a range of efficiency improvements to one’s home, choosing to live with others rather than alone, growing some or a great deal of one’s own food, changing one’s source of electricity and heat to solar or other less carbon intensive sources, and changing one’s eating habits to consume less carbon-intensive foods.¹²⁷

Importance of the CRAG in Spurring Personal Reductions

CRAG members were queried about the role the CRAG played in spurring them on, and also what else, if anything, the group dynamic adds. Some respondents indicated that they thought they would take many of the actions they did regardless, but that the CRAG helped to provide accountability and morale. Some also took satisfaction in the example that they could set for the group, and that the group could set for others. As one respondent put it “we are creating an example.”¹²⁸ Another cited the benefits of the group dynamic itself, saying that one

¹²⁴ See Response of Andrew Ross, *supra*, note 118. Like John Cossham, Mr. Ross also reported behavior changes that are not directly related to his personal carbon emissions, but that likely reduce overall emissions, including eating local and discarded foods and buying “less new stuff.”

¹²⁵ Response of Angela Raffle, *supra* note 119.

¹²⁶ See Response of Shannon Moore, *supra* note 116.

¹²⁷ See Responses from CRAG Members (on file with author); CRAG Web Site User Profiles, available at <http://www.carbonrationing.org.uk> (last visited Oct. 20, 2009).

¹²⁸ Response of Shannon Moore, *supra* note 116.

of his aims was to “build up solidarity between a growing community of carbon conscious people.”¹²⁹

Others saw the CRAG as crucial to their personal actions. The group is “very effective, wouldn’t have made these changes without it, makes it fun and [creates] solidarity.”¹³⁰ Another commented similarly that the CRAG motivated her household to make “fairly cheap, easy and efficient home insulation measures” and also to seek out a grant for further work in their house. “Thank you CRAG, and shame on the six of us for not being quicker off the mark...”¹³¹ This CRAG member also editorialized that “Exchanging tips with other people who were also striving to cut on their carbon . . . seemed like a good idea, but I hadn’t appreciated at the time just how valuable a resource my fellow CRAGgers would turn out to be! And nice too.”¹³²

Assessment of Emissions Reductions: Quantity and Quality

Not surprisingly, CRAG participants rated themselves as very successful at reducing their personal carbon footprint. As noted above, several participants calculate their emissions at well below their country’s average, sometimes by as much as 1/7 of average annual individual emissions. In terms of reduction relative to their own previous emissions, CRAG members report a range, from reductions of approximately one third from previously levels, to as much as eighty percent reductions in individual emissions.¹³³

Several CRAG members touted the individual ration method in particular. As one described it, “my carbon allowance is becoming a secondary currency that informs all sorts of day-to-day decisions. It shows you the limits of sustainability, but leaves you free to decide how to spend your allowance—libertarian carbon reduction! It also highlights the most productive areas of your footprint to tackle, and the effectiveness of different actions or technologies.”¹³⁴ And another put it this way: “The sooner carbon becomes just like money, the better. All the arguing about flying and 4x4’s will stop and people can choose how they spend their carbon, just as they currently do with money.”¹³⁵

¹²⁹ Electronic Communication from Andrew Ross (Aug. 20, 2008) (on file with author).

¹³⁰ Response of Angela Raffle, *supra* note 119.

¹³¹ Web Statement of Despina, *supra* note 121.

¹³² *Id.*

¹³³ See Shannon Moore, *supra* note 116 (reporting reductions of one third); Electronic Communication with Andrew Ross, *supra* note 129.

¹³⁴ CRAG User Profiles, David Bassendine, available at <http://www.carbonrationing.org.uk/user/david> (last visited Oct. 20, 2009).

¹³⁵ CRAG User Profiles, Bruce, Cornwell CRAG, available at <http://www.carbonrationing.org.uk/user/bruce> (last visited Oct. 20, 2009).

On the other hand, Andrew Ross, the founder of the UK CRAGs movement, now believes that individual carbon rationing is too bureaucratic to implement at anything other than a local level: “I think ‘downstream’ carbon accounting systems at either national or international level are unnecessarily bureaucratic. Upstream proposals seem much more workable (e.g. ‘cap and share’ or ‘cap and dividend.’) They retain the incentives towards lower carbon consumption but do not require the setting up of a parallel currency.”¹³⁶ While the mutual support and accountability of CRAGs have contributed to their success as neighborhood groups, Ross is dubious that the accounting mechanisms necessary to make individual carbon rationing work will translate well on a broad scale.¹³⁷ In addition, Ross believes that a national or international cap and share approach will more quickly converge “to equal per capita shares rather than a convergence over some negotiated period.”¹³⁸ (A “cap and share” or “cap and dividend” approach would set a national or international cap on greenhouse gas emissions, auction off the allowances to emitters, and then distribute the dividends to individuals on an equal per capita basis.)

In addition to the quantitative assessments of their efforts, CRAG members commented on how the changes affected their quality of life. The reports were uniformly positive. One CRAG member (the busy professional woman quoted above) reported that she had “learned a lot, life is much better for it.” Her positive reactions to the changes she and her family made appeared to be bound up in her sense of living consistently with her values: “It’s helped my ability to lead on this stuff in the workplace too, and if I get interviewed on the telly then they can’t attack me for being a hypocrite.”¹³⁹ Similarly, another CRAG member, responding to the question about the effectiveness of his individual actions, wrote “I know from within that I have a highly ethical, albeit slightly unusual, lifestyle.”¹⁴⁰ Another cheerily reported that his personal emissions reduction from 6.14 tonnes to 3.4 tonnes from one year to another was achieved “with no

¹³⁶ See Electronic Communication with Andrew Ross, *supra* note 129. *But see* Amy Sinden, *Revenue-Neutral Cap and Trade*, 39 ENV. L. REP. 10944 (2009) (advocating a “fair share cap and trade” approach to national carbon regulation, under which tradeable emissions allowances would be issued to individual consumers (as opposed to industry), who could sell them to fossil fuel producers and importers). While not the same as a national individual carbon ration program, Professor Sinden’s proposal might replicate some of the “excessive bureaucracy” problems that Ross identifies. Professor Sinden acknowledges this concern, and as an alternative also advocates the simpler “cap and dividend” approach embraced by Ross. *See id.*

¹³⁷ See Ross, Electronic Communication (Aug. 28, 2008), *supra* note 129; *see also* Andrew Ross, Electronic Communication (Oct. 26, 2009) (on file with author).

¹³⁸ Ross, Electronic Communication (Aug. 28, 2008), *supra*, note 129.

¹³⁹ Response of Angela Raffle, *supra*, note 119.

¹⁴⁰ Response of John Cossham, *supra* note 117.

wearing of hair shirts!”¹⁴¹ And another that “In general, happiness seems inversely related to size of your income (and carbon footprint!)¹⁴²

Views About Geo-Engineering Solutions

The CRAG respondents were skeptical about geo-engineering options, yet open to the possibility that they might be a necessary part of the suite of solutions. One CRAG member was concerned about “negative secondary consequences,” yet thought, given the decay curve of CO₂, that “it’s in our best interest to investigate options.”¹⁴³ Another rated ocean-seeding very low on the list of acceptable options but was open-minded about certain forms of carbon sequestration, although ultimately he much preferred “investment in renewable energy generation and reducing demand. If there is a finite pot of money to deal with the problem it should be spent on those things rather than hair-brained ideas...although some research should still be directed at these in case they might be part of the solution.”¹⁴⁴ Yet another said that he suspects “we will need all the help we can get,” but is also aware that “many so-called solutions have resulted in more problems in need of more solutions.”¹⁴⁵ And another said “I think it’s a mistake to wait for a magic bullet. We need to reduce.”¹⁴⁶ One CRAG member held a completely negative view, saying he was “against geo-engineering,” though even he described such ideas as “well meaning in intent but not getting at the heart of the problem, which is excess consumption.”¹⁴⁷ To summarize, to the extent that CRAG members expressed views about geo-engineering, they ranged from open-minded yet cautious to negative.

Degree of Optimism; How Optimism or Pessimism Informs Assessment of the Worth of Individual and Small Group Action

Not all CRAG respondents answered this question, in part due to the fact that it was added to the questionnaire after some CRAG members had already been interviewed. One who did include a response wrote that he was “neither optimistic nor pessimistic, although I am sure we need to take a precautionary approach. We know that as a species we are currently having a massive negative impact on our environment and life on earth in general but there is so much more to know. It is my guess that it is the unknown unknowns that will probably be more important in the end!”¹⁴⁸ Another said that

¹⁴¹ CRAG User Profiles, Bruce, Cornwell CRAG, *supra* note 135.

¹⁴² CRAG User Profiles, David Bassendine, *supra* note 134.

¹⁴³ See Response of Shannon Moore, *supra* note 116.

¹⁴⁴ See Response of John Cossham, *supra* note 117.

¹⁴⁵ Response of Andrew Ross, *supra* note 118.

¹⁴⁶ Response of Angela Raffle, *supra* note 119.

¹⁴⁷ Response of Jan Steinman (Oct. 21, 2009) (on file with author.)

¹⁴⁸ Response of Andrew Ross, *supra* note 118.

she thought “peak oil and economic collapse will have an impact on the pattern that global human behaviour takes, what will happen to climate is harder to predict.”¹⁴⁹ One person described himself as wavering “between righteous anger and great hope for humanity and the world.”¹⁵⁰ And one said more definitively that he was “Not optimistic. Problems have solutions. This is a predicament; predicaments only have coping strategies.” He described his community’s coping strategies as “engaging in permaculture, voluntary simplicity, and also planting trees that are more comfortable hundreds of miles south.”¹⁵¹ This person also “thinks we will learn to live without affluence. Most people are in denial and think they can buy their way out of the problem” He thinks he “is paving the way towards a new way of living sufficiently in the future, when it will be necessary to do so.”¹⁵²

5. Neighborhood Climate Action and Sustainability Groups

a. Background

There are many groups that could arguably fit in the more nebulous category of a “Neighborhood Climate Action Group” (NCAG). The formality of the CRAG’s and their commitment to group and individual reductions, complete with accounting systems and a day of reckoning, render them easy to categorize as local carbon mitigation groups. When the formal hallmarks are lacking, it becomes difficult to distinguish between local groups committed to green living in general and those committed to action on climate change. My admittedly arbitrary line, then, was whether the group self-identified either at its origin or today as primarily committed to affecting climate change.

b. Responses

Motivations and Catalysts

Participants in NCAG’s expressed a range of motivations and catalysts. Not surprisingly, the most commonly expressed motivation was a generalized concern about the environment or the health of the planet.¹⁵³ These ranged from expressions of wanting to “preserve the environment”¹⁵⁴ to more urgent statements such as “I believe we are

¹⁴⁹ Response of Angela Raffle, *supra* note 119.

¹⁵⁰ CRAG User Profile, Blane Friest, *available at* <http://www.carbonrationing.org.uk/user/ddmemissions> (last visited Oct. 20, 2009).

¹⁵¹ Response of Jan Steinman, *supra* note 147.

¹⁵² *Id.*

¹⁵³ *See* Summary of NCAG Respondents (on file with author).

¹⁵⁴ Response of Digger Braymiller (Aug. 8, 2009) (on file with author).

killing the/our planet!”¹⁵⁵ Some indicated that they were motivated by a sense of obligation to the future, whether future generations specifically or the future of the planet in general.¹⁵⁶ A smaller number stated that they were motivated by a concern that we might run out of resources.¹⁵⁷

Another motivation, similar to one expressed by some of the CRAG members who had taken individual action in advance of joining or starting a CRAG, was to assist others and set an example.¹⁵⁸ Related to this, some were motivated by a desire for community and fellowship, both to learn from others and to make the efforts more fun and meaningful.¹⁵⁹ In a similar vein, some acknowledged that a healthy sense of peer pressure and evolving community norms had motivated them.¹⁶⁰ Also similar to the CRAG responses, NCAG members articulated personal ethical motivations, including hypocrisy avoidance (“Felt I couldn’t lobby neighbors without doing it myself”¹⁶¹), and more general expressions of moral obligation to tend to and take care of things. As one respondent put it, he evolved from seeing the issue in the abstract to the “personal, seeing that it was happening much more quickly and starting to feel personally responsible.”¹⁶² Finally, and also similar to some CRAG members, some NCAG participants indicated that specific factual information about the severity of the consequences of failing to act, and the small window of time in which to act to avoid those consequences, had made a difference to them.¹⁶³ As one participant described, “I first became aware of the climate problem in 1981 or 1982 . . . but it became front-burner for the last four or five years due to increasing knowledge of certainty and urgency of the problem.”¹⁶⁴

Individual Behavior Changes and Their Efficacy

¹⁵⁵ Response of Cynthia Frigard (July 12, 2009), on file with author.

¹⁵⁶ See Responses of Digger Braymiller, *supra* note 154; Response of Sue Cable (Aug. 8, 2009); Response of Henry Mueller, *supra* note 4; Response of Scott Ruprecht (Aug. 8, 2009), all on file with author.

¹⁵⁷ *E.g.*, Response of Sue Cable, *supra* note 156; Response of Donald Price (Aug. 8, 2009) (on file with author.)

¹⁵⁸ See Response of Dan Friedlander (June 15, 2009) (on file with author); Response of Tom Mckinnon (June 11, 2009) (on file with author).

¹⁵⁹ See Response of Linda Cornett (July 4, 2009) (on file with author); Response of John Hatch (July 23, 2009) (on file with author); Response of Tom Mckinnon, *supra* note 158.

¹⁶⁰ See Response of Digger Braymiller, *supra* note 154; Response of John Hatch, *supra* note 159; Response of Tom Mckinnon, *supra* note 158.

¹⁶¹ Response of Doug Parker (July 20, 2009) (on file with author).

¹⁶² Response of Doug Parker, *supra* note 161.

¹⁶³ See Response of Tom Mckinnon, *supra* note 158; Response of Henry Mueller, *supra* note 4; Response of Zev Paiss (July 20, 2009) (on file with author); Response of Jeffrey Yin (Aug. 8, 2009) (on file with author.)

¹⁶⁴ Response of Tom Mckinnon, *supra* note 158.

The range of behavior changes that NCAG participants made was somewhat narrower than the CRAG members. For example, no NCAG participant reported moving in with other people in order to reduce their carbon footprint, and only one NCAG participant indicated giving up airline travel entirely. The CRAG structure, consisting of a carbon rationing scheme and accounting program, reflects and reinforces a more intense orientation towards personal emissions reductions. The NCAG structures, on the other hand, were less formal and more focused on social and educational methods for encouraging carbon neutral behavior than on setting personal or group emissions reductions goals and monitoring schemes. Nonetheless, the range of actions taken to reduce greenhouse gas emissions (and live with less environmental impact generally) was impressively broad.

With respect to transportation, many reported that they had reduced their driving by walking or cycling as often as they can.¹⁶⁵ Several also reduced their driving by moving closer to their work place or commuting to work by public transportation.¹⁶⁶ One respondent had reduced his annual vehicle miles driven to less than 2,000 per year.¹⁶⁷ Several commented that their families relied on only one car, and others that they had purchased high mileage vehicles.¹⁶⁸ Only one person reported that she had given up flying.¹⁶⁹ Another reported that he had cut his air travel by fifty percent, though without indicating his previous baseline.¹⁷⁰ For another, however, reducing air travel had proven very difficult and he described it as the “Achilles heel” of his carbon footprint.¹⁷¹

In the category of home efficiency improvements, almost everyone reported that they had switched from incandescent to compact fluorescent light bulbs. People also reported a range of changes to their appliances, including using a manual, as opposed to gasoline-powered, lawn-mower; purchasing new hot water heaters or furnaces; installing ceiling fans for heat and cooling; adding programmable thermostats; installing evaporative cooling systems

¹⁶⁵ Response of Digger Braymiller, *supra* note 154; Response of Sue Cable, *supra* note 156; Response of John Hatch, *supra* note 159; Response of Tom Mckinnon, *supra* note 158; Response of Henry Mueller, *supra* note 4; Response of Zev Paiss, *supra* note 163; Response of Doug Parker, *supra* note 162; Response of Doug Smith, (Aug. 3, 2009) (on file with author); Response of Sarah Van Pelt (Aug. 8, 2009) (on file with author); Response of Jeffrey Yin, *supra* note 163.

¹⁶⁶ See Response of Cynthia Frigard, *supra* note 155; Response of Graham Hill (Oct. 20, 2009) (on file with author); Response of Doug Parker, *supra* note 162.

¹⁶⁷ Response of Dan Friedlander, *supra* note 158.

¹⁶⁸ See Response of Linda Cornett, *supra* note 159; Response of Cynthia Frigard, *supra* note 155; Response of Graham Hill, *supra* note 166; Response of Tom Mckinnon, *supra* note 158; Response of Scott Ruprecht, *supra* note 156; Response of Doug Smith, *supra* note 165.

¹⁶⁹ See Response of Linda Cornett, *supra* note 159.

¹⁷⁰ See Response of Dan Friedlander, *supra* note 158.

¹⁷¹ See Response of Tom Mckinnon, *supra* note 158.

instead of air conditioners; and installing dual flush and low flow toilets.¹⁷² In addition, like Don Allen, who participated in the Shanahan Neighbors Home Energy Efficiency Tour described above, many NCAG members reported improving their home insulation or otherwise making construction improvements to increase the natural heating and cooling properties of their homes.¹⁷³

Many also reported that they reduced their energy consumption by hanging laundry to dry,¹⁷⁴ and some expressed particular satisfaction about this. “It just feels real good,” one person commented after describing her year-round system for outdoor clothes drying on her sunny Colorado deck.¹⁷⁵ Another, who had made extensive changes to reduce his carbon footprint, including building a house that “is an attempt at zero energy,” equipped with solar pv and solar hot water panels, added that “I like and enjoy the simple things more, like the laundry line. I actually really enjoy hanging out my laundry because I know I am using less electricity . . .”¹⁷⁶

Another category of action was to change the source of home energy use. Many NCAG respondents had mounted either solar pv panels or solar hot water heaters on their homes.¹⁷⁷ Others had built or modified their homes to maximize passive solar energy, and some had purchased wind energy credits from their utility provider.¹⁷⁸ Finally, NCAG participants reported a variety of activities that contribute more indirectly to emissions reductions, and that also fit generally with environmental sustainability. These included growing more of their own food in backyard or community gardens; generally buying food from local producers; eating low on the food chain; using reused and recycled consumer products whenever possible; composting; avoiding excessive packaging and bringing their own bags for grocery and other shopping, and similar no-waste behavior.¹⁷⁹

The informal nature of NCAG’s, as compared to CRAG’s, makes it more difficult to assess the quantitative efficacy of these individual efforts. Very few respondents reported that they had kept records of

¹⁷² See Summary of NCAG Respondents, *supra* note 153.

¹⁷³ See *id.*

¹⁷⁴ See Response of Tom Mckinnon, *supra* note 158; Response of Doug Parker, *supra* note 162; Response of Sarah Van Pelt, *supra* note 165; Linda Cornett, *supra* note 159.

¹⁷⁵ Comments of Bev Bien, ClimateSmart Web Site, <http://www.beclimatesmart.com/whatAreYouDoing/videos.php> (last visited Oct. 10, 2009).

¹⁷⁶ Comments of Josh Weinstein, ClimateSmart Web Site, <http://www.beclimatesmart.com/whatAreYouDoing/videos.php> (last visited Oct. 10, 2009).

¹⁷⁷ See Summary of NCAG Respondents, *supra* note 153.

¹⁷⁸ See *id.*

¹⁷⁹ See *id.*

how their efforts had reduced their carbon footprint. The reports of the changes themselves, however, indicate that participants have adopted many of the transportation, efficiency, and energy source behaviors that experts tout as key to part of a larger shift to a carbon-free economy.¹⁸⁰

Importance of the Neighborhood Group in Spurring Personal Reductions:

NCAG members had a variety of views about the role and importance of the neighborhood group. Some indicated that the group played an important role in motivating or encouraging their own personal behavior changes.¹⁸¹ Others, similar to some of the CRAG members, said that they would have made the individual changes anyway, but either initiated or joined a group to educate and encourage others.¹⁸² Some indicated that their groups had not proven to be as active as they had hoped.¹⁸³ Many respondents said that the social and community-building aspects of the group were important to them.¹⁸⁴ As one put it, she joined her neighborhood group to “do a good deed” and “get to know my neighbors.”¹⁸⁵ Another said that she wanted to be more connected to her community and that there was “strength in numbers.”¹⁸⁶ One person described his group as a “mellow” one that served social and communication purposes (such as sharing information about wildlife sightings in the neighborhood) in addition to encouraging emissions reductions.¹⁸⁷

For some, their group’s establishment of connections, mutual support, and habits of sustainability were more important than any quantitative effects on emissions reduction. One neighborhood leader said that his group, which was one of the most active, has, in the big scheme of things “a miniscule effect on carbon emissions. Overall GHG emissions [are] a population-economic-technology-social-cultural and political issue. Our main accomplishment is to give people hope, unite them as neighbors and prepare them to play a role in the future as the global warming crisis moves south from the arctic to envelop our reality.”¹⁸⁸

¹⁸⁰ See Vandenberg & Steineman, *supra* note 7; Pacala & Socolow, *supra* note 5.

¹⁸¹ See Response of Sarah Van Pelt, *supra* note 165; Response of Henry Mueller, *supra* note 4.

¹⁸² See Response of Dan Friedlander, *supra* note 158; Response of Graham Hill, *supra* note 166; Doug Parker, *supra* note 162.

¹⁸³ See Response of Linda Cornett, *supra* note 159; Response of Doug Parker, *supra* note 162; Response of Doug Smith, *supra* note 165.

¹⁸⁴ See Summary of NCAG Respondents, *supra* note 153.

¹⁸⁵ Response of Sue Cable, *supra* note 156.

¹⁸⁶ Response of Cynthia Frigard, *supra* note 155.

¹⁸⁷ Response of John Hatch, *supra* note 159.

¹⁸⁸ Response of Dan Friedlander, *supra* note 158.

Views About Geo-Engineering Solutions:

Many NCAG participants had no views about geo-engineering solutions because they did not know enough about them to comment.¹⁸⁹ Several, however, were quite knowledgeable and tended to express concern or skepticism. One strand of concern was that the costs would be difficult to assess due to the unknown, and perhaps unknowable, effects of some geo-engineering strategies.¹⁹⁰ Another was the moral hazard concern that we tend to veer towards technological alternatives that appear to be easy and costless (to our way of life), rather than take actions that we know will work today, such as decarbonizing our energy supplies and decreasing energy demand through behavior change and efficiency.¹⁹¹ Despite these strongly articulated worries, some of the same respondents acknowledged that research into some geo-engineering solutions was warranted.¹⁹²

Degree of Optimism About Solving the Problem; How Optimism or Pessimism Informs Assessment of the Worth of Individual and Small Group Action.

Like the CRAG respondents, NCAG members were thoughtful in their articulations of optimism or pessimism. Overall, they were split in their outlook, with equal numbers reporting clear optimism or pessimism, and several in the middle with mixed expressions about their views.¹⁹³ Those who expressed pessimism or a mixed outlook had poignant explanations for why they nonetheless are taking action. One said that she was not optimistic that “we will be able to maintain the world as it exists now. However, I hope we will give ourselves wholly to the effort to do so, so we will be better prepared to deal with the world that will come to be. I’m doing what I can because doing nothing is unthinkable. If I was shipwrecked alone in the middle of the ocean, I wouldn’t lie back and wait to sink. I’d swim toward an unseen shore because it’s all I could do.”¹⁹⁴ Another said that he is not always optimistic, but thinks that we have to take action and attempt to find solutions, because “even if our civilization fails, at least we’ve tried to create a blueprint for future cultures. We owe this to the generations that follow us and all the human beings that have

¹⁸⁹ See Summary of NCAG Respondents, *supra* note 153.

¹⁹⁰ See Response of Tom Mckinnon, *supra* note 158; Response of Linda Cornett, *supra* note 159; Response of Zev Paiss, *supra* note 163.

¹⁹¹ See Response of Tom Mckinnon, *supra* note 158; Response of Linda Cornett, *supra* note 159; Response of Henry Mueller, *supra* note 4; Response of Zev Paiss, *supra* note 163; Response of Doug Parker, *supra* note 162.

¹⁹² See Response of Linda Cornett, *supra* note 159; Response of Tom Mckinnon, *supra* note 158.

¹⁹³ See Summary of NCAG Respondents, *supra* note 153.

¹⁹⁴ Response of Linda Cornett, *supra* note 159.

sacrificed to give us what we have today.”¹⁹⁵ Another said that while he was generally an optimist, he worried that we “haven’t started early enough to make a smooth transition. Some will continue to suffer (like the poor will be hit particularly hard over this.) Things on the other side will look very different. Could be much better, but will be more local and less consumptive. . . .”¹⁹⁶ And one said that he is not optimistic in general, but that he acts as if he is because “if I didn’t I would be suicidal.” He “loves the outdoors” so feels he has to act, and he does so for “hope,” even though when he started out he thought we was going to be able to solve a problem.¹⁹⁷

B. Insights from Local Climate Action: Behavior, Happiness, Ethics, and Values

The in-depth and qualitative look at local climate initiatives yields several conclusions. First, on a quantitative level, CRAG and NCAG members are doing quite a lot to reduce their greenhouse gas emissions. Michael Vandenberg, et al., have described certain behavioral changes as “low hanging fruit” because they can be achieved at low cost and yet have relatively high impacts on emissions reduction.¹⁹⁸ These behaviors include reducing motor vehicle idling, accelerating compact fluorescent light bulb adoption, adjusting thermostats by two degrees, and other minor efficiency adjustments.¹⁹⁹

Many CRAG and NCAG participants have reached much higher up the tree. To reduce their carbon emissions, some have given up driving, and some have stopped flying.²⁰⁰ Others have abandoned electric appliances that have been touted as the birthright of successful Americans for the last several decades.²⁰¹ And some have done all of these things, taking every conceivable measure to reduce their energy consumption, even including altering their living circumstances.²⁰² Vandenberg, et al., calculated that household emissions account for as much as 31% of total U.S. emissions, and therefore advocate for policies and programs that influence behaviors

¹⁹⁵ Response of Henry Mueller, *supra* note 4.

¹⁹⁶ Response of Zev Paiss, *supra* note 163.

¹⁹⁷ Response of Doug Smith, *supra* note 165.

¹⁹⁸ See Vandenberg, et al. *The Lowing Hanging Fruit*, *supra* note 7, at 1706.

¹⁹⁹ See *id.* at 1719. In addition to the ones listed above, the “low hanging fruit” changes include decreasing hot water heater temperature, maintaining recommended tire pressure, and changing air filters in cars on recommended schedule. See *id.*

²⁰⁰ See II.A.4-5, *supra*.

²⁰¹ See II.A.5, *supra* (several participants gave up use of their clothes dryer; others stopped using gas-powered mowers and other appliances).

²⁰² See *id.*

in cost-effective ways.²⁰³ Policy makers desirous of targeting household emissions can point to the CRAG and NCAG participants as early adopters of behaviors that, through incentives, decision influence, and like measures, the state can assist others in making.²⁰⁴ To be sure, CRAG and NCAG members represent a highly motivated leading edge, rather than the average citizen. But their actions and attitudes can be highlighted as exemplary, both to inspire others and to encourage practices that might form the first step towards other, more significant attitude and behavior changes.²⁰⁵

Beyond the quantitative effects, many CRAG and NCAG participants express a sense of joy and satisfaction with their actions. They claim that “no hair shirts” have been donned;²⁰⁶ that hanging their laundry makes them happy; that they enjoy walking and biking everywhere; that their actions “just feel good . . .”²⁰⁷ And they feel these things despite the fact that many of them harbor no illusions that their actions alone can or will be enough. They know that their individual efforts must, some day very soon, be complemented by state led initiatives to corral the rest of the world to de-carbonize. As Andy Ross, founder of the UK CRAG’s, mused:

Maybe it goes like this. At first, people are attracted to the CRAGgy idea that Climate Justice should begin at home through a careful look at their personal contribution to the ecological crisis and through taking responsibility for it through involvement in a CRAG. Later, they begin to feel that for their efforts to make sense, this notion of Climate Justice has to migrate to the corridors of Westminster and Washington in order to be made into law.²⁰⁸

According to Ross, local climate action participants are motivated by a sense of personal and group obligation, but they hope

²⁰³ See Vandenberg, et al., *The Low Hanging Fruit*, *supra* note 7, at 1704-05; see also Michael P. Vandenberg, et al., *Implementing the Behavioral Wedge*, 40 ENVTL. L. REPTR. 10547, 10549 (June 2010).

²⁰⁴ See Vandenberg, et al., *Implementing the Behavioral Wedge*, *supra* note 203, at 10551-10552 (describing principles for achieving wide-spread behavioral changes).

²⁰⁵ See Jonathan Freedman & Scott Fraser, *Compliance Without Pressure: The Foot-in-the-Door Technique*, 4 J. PERSONALITY AND SOCIAL PSYCHOL. 195 (1966) (concluding that small initial behavior changes can lead to openness to more significant changes); ROBERT B. CIALDINI, *INFLUENCE: SCIENCE AND PRACTICE*, 64-65 (2009) (describing “foot-in-the-door” studies in the context of environmental behavior change); see also Ela, *supra* note 8, at 143 (describing importance of visibility to influence of social norms on behavior change).

²⁰⁶ See Bruce CRAG user profile, *supra* note 135.

²⁰⁷ See Josh Weinstein, ClimateSmart Web Site, *supra* note 176.

²⁰⁸ Electronic Communication from Andrew Ross (Oct. 30, 2009) (on file with author.)

that their efforts inspire government to take action.²⁰⁹ They understand that they need the state to transform their efforts into policies that stand a chance of reducing emissions globally.²¹⁰ This complicated picture of satisfaction, inspiration, and political engagement fills in what has been missing from discussions of the role “happiness” assessments might play in formulating environmental policy.²¹¹ For the most part, happiness (or satisfaction) has been proposed as an alternative measure to assess wellbeing.²¹² Subjective happiness evaluations, the argument proceeds, are an improvement over quantified measures such as income because they allow for a more realistic assessment of the difference that material wealth makes to wellbeing, relative to other factors.²¹³ CRAG and NCAG participants seem, on one hand, to fit into some of the literature’s conclusions regarding the diminishing happiness effects of extra consumption beyond certain levels of wealth.²¹⁴ They are creating a new social norm of responsible low-carbon living, and generating happiness from their association with that status.²¹⁵ And yet it seems unlikely, for many of them, that they will remain satisfied with their personal actions if they are not also contributing to an effective global solution. Or perhaps more accurately, many will vacillate, as humans do, between satisfied, wistful, frustrated, joyous, depressed, and outraged.

This is where ethics come in; NCAG and CRAG participants are doing more than what feels good. They are trying to do what seems right.²¹⁶ This is a complicated formula for wellbeing, and one that does not translate easily into empirical data, let alone policy prescriptions formulated from such data.²¹⁷ Participants in local

²⁰⁹ *See id.*

²¹⁰ *See id.*

²¹¹ *See* Mark A. Cohen & Michael P. Vandenbergh, *Consumption, Happiness and Climate Change*, 38 ENVTL. L. REPTR. 10834 (2008).

²¹² *See id.* at 10834-10835 (summarizing happiness literature); *see also* DANIEL KAHNEMANN, ED DIENER & NORBERT SCHWARTZ, *WELLBEING: THE FOUNDATION OF HEDONIC PSYCHOLOGY* (1999) (describing psychological basis for including happiness assessments in economic theory); RICHARD LAYARD, *HAPPINESS: LESSONS FROM A NEW SCIENCE* (2005) (summarizing and assessing happiness studies).

²¹³ *See* Cohen & Vandenbergh, *supra* note 211, at 10834-10835.

²¹⁴ *See id.* at 10835 (describing studies that indicate that “the marginal utility of extra consumption approaches zero as countries become richer, while their marginal utility of status never approaches zero.”)

²¹⁵ *Cf.* Richard A. Easterlin, *Does Money Buy Happiness?*, PUB. INT. 3-4 (Winter 1973).

²¹⁶ *See* II.4.b.; II.5.b., *supra* (discussing CRAG and NCAG participants’ motivations and assessments of their actions).

²¹⁷ There had been some limited empirical research concerning the link between virtue and happiness, where virtue is defined as expressing belief in a core of unwavering ethical obligations. *See* Harvey S. James, Jr., *Is the Just Man a Happy Man? An Empirical Study of the Relationship Between Ethics and Subjective*

climate action groups are attempting to forge an ethics and identity that includes obligations to the planet, other species and to future generations.²¹⁸ While philosophers and legal academics theorize about such obligations, these people are just doing it.²¹⁹ As one CRAG member said, “Ask not what the planet may do for you...ask rather what you can do to save the planet...and do it.”²²⁰ Aldo Leopold, proponent of the “land ethic,” would be proud, particularly given that he turned to ethics because, like our planetarians, he did not think government alone would or could do the job.²²¹ Yet, to circle back to the role of the state, part of the CRAG/NCAG aspiration is to influence government to do its part as well.²²² CRAG and NCAG participants are forging the planetarian identity in part because they want it to spread. The next Part therefore explores the possibility for a state role in that regard.

III. Tending the Planetarian Identity

A. The Role of the State, Part Two

Two strands of insight emerge from the narratives of local climate action. First, although the literature about how to get the state to “activate norms,” “harness behavior,” and otherwise prod, nudge, and incentivize us is important, it is missing something.²²³ Despite

Wellbeing, WORKING PAPER NO. AEW P 2009-07, U. OF MO. DEPT. OF AG. ECON. (Dec. 2009). The study was unable, however, to assess the extent to which the subjects actually adhered to their professed values. *See id.*

²¹⁸ *See* Socolow & English, *supra* note 6.

²¹⁹ *See, e.g.*, LAURA WESTRA, ENVIRONMENTAL JUSTICE AND THE RIGHTS OF UNBORN AND FUTURE GENERATIONS (2008); Jamison Colburn, *Splitting the Atom of Property: Rights Experimentation as Obligation to Future Generations*, 77 GEO. WASH. L. REV. 1411 (2009); Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations*, 39 ENVTL. L. 43 (2009). The foregoing are a small sample of many recent books and articles on the topic.

²²⁰ John Banks, CRAG user profile, available at <http://www.carbonrationing.org.uk/user/> (last visited June 30, 2010) (emphasis added).

²²¹ *See* LEOPOLD, *supra* note 25, at 250:

Government ownership, operation, subsidy or regulation is now widely prevalent in forestry, range management, and migratory bird management, with more to come. Most of this growth in governmental conservation is proper and logical, some of it is inevitable. Nevertheless, the question arises: What is the ultimate magnitude of the enterprise? At what point will governmental conservation, like the mastodon, become handicapped by its own dimensions? The answer, if there is any, seems to be in a land ethic . .

Id.

²²² *See* e-mail communication from Andrew Ross, *supra* note 137.

²²³ *See* Vandenberg & Steinemann, *supra* note 7; Sinden, *supra* note 136; Ela, *supra* note 8 (proposing policies that foster and recruit social norms to target high

the efforts of these commentators to bring ethics, norms, and individual actions to bear on environmental law, there remains something familiarly and numbingly bureaucratic about the framework and the vocabulary. People remain the object of state action, the passive subjects of state behavior modification. The stories about local climate action groups remind us that, in the beginning, these efforts are about people trying to live meaningful lives by working out their ideas and ideals in communities.²²⁴ That set of ideals and goals is at the heart of localism, even localism that has global and highly abstract goals at its core.

Second, as the pessimists in local climate action groups know, there truly is a tragic structure to their situation. They are taking action because they feel moral and social responsibility to do so.²²⁵ Yet, as Andrew Ross's comments above indicate,²²⁶ they want the world to follow suit, which will require top-down coordination, legislation, regulation, incentivization, and so forth, which (a) will drag these and other local efforts back into bureaucratic systems and (b) have an uncertain chance of succeeding in any event, for all of the reasons discussed in Part I. The dual tragedy that haunts these efforts is that, on the one hand, success may mean that bureaucratic systems, and not the vibrant life worlds of local communities, will take over, and on the other, even when bureaucratic systems assume their place, they might not stave off many of the effects of climate change. What if, despite designing the optimal climate regime (which to date, we have failed to do) we nonetheless cannot keep our emissions in check?²²⁷ Then, if we have relinquished to the state the job of adjusting our behavior for us, we will be in even greater difficulty,

visibility carbon emitting behaviors); Dernbach, *supra* note 7 (suggesting legislative provisions and strategies for addressing consumer behavior and encouraging individual enforcement of carbon reduction); Hope Babcock, *Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm*, 33 HARV. ENT'L. L. REV. 117 (2009) (arguing that individual behavior can be changed by a combination of activating norms, engaging in public education campaigns, and adopting sanctions and incentives).

²²⁴ These are the "life worlds" of communities, people engaging their faculties of reason and their values to create identities and meaning. See JÜRGEN HABERMAS, *THE THEORY OF COMMUNICATIVE ACTION VOLUME TWO, LIFEWORLD AND SYSTEM: A CRITIQUE OF FUNCTIONALIST REASON* 113-52 (Thomas McCarthy, trans., Beacon Press, 1989) (1981).

²²⁵ See II.4.b., II.5.b., *supra* (discussing motivations of CRAG and NCAG participants).

²²⁶ See Electronic Communication with Andrew Ross, *supra* note 137.

²²⁷ Scholars have documented the various ways in which the state might backtrack even if legislation is passed. See Eric Biber, *Climate Change and Backlash*, 17 N.Y.U. ENVTL. L. J. 1295 (2009) (describing features of climate change that make legislation targeting emissions, even if passed, susceptible to under-enforcement and backlash); Lazarus, *supra* note 8. These articles address this country's challenges; the entire world's commitment to sticking with any emissions limitations regime would face similar problems.

because we will lack the skills, norms and communities to chart a path through a protean and unknowable world.

This particular risk for the state has never been fully considered in the context of environmental law, perhaps because the debate has been framed largely as a contest between the pro-regulatory crowd and the pro-market crowd.²²⁸ On the pro-regulatory side, the emphasis is on solving the particular environmental problem. On the pro-market side, the emphasis is on maximizing welfare as defined with reference to human preference, which is reducible to monetary value. The question is therefore posed, often both in the policy context and the academic literature, in the following way: “should our laws aim to achieve x environmental goal at the expense of economic and other considerations, or should our laws take account of the total cost-benefit picture when implementing environmentally protective policies?” Underlying both questions is the assumption that humans will inevitably make progress towards either goal, and that the losses are only those accounted for when selecting the particular goal. Yet what if the progress assumption is wrong? Then, in both accounts, we are mis-describing the appropriate roles and risks for the state. Understanding this may help to illuminate a recurring love-hate, or hope-cynicism, cycle that recurs with respect to public attitudes toward government in the realm of natural resources and the environment.²²⁹ That cycle is in part a product of the inevitable alienation from local community concerns that results from recruiting the state to address environmental problems. The vibrancy of the local gets lost to the bureaucrats’ (or the market’s) expertise, a loss perhaps worth enduring if the air and water get cleaner (or, pursuant to the market-based alternative, everyone gets wealthier and we achieve an efficient amount of environmental health). But what if neither goal is attainable? Then the local environmental instinct, which at its core is to take care of where we live, will have been snubbed for nothing.

²²⁸ See RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 167 (2004) (describing the recurring themes in environmental law as including the “too much regulation” versus “not enough protection” debate). Note that I don’t mean to oversimplify this. Positions about how to address environmental issues fall along a spectrum, and often depend on the initial value placed on protection of the environment versus protection of other values. See Douglas A. Kysar, *Law, Environment and Vision*, 97 NW. U. L. REV. 675 (2003). But it is fair to say that in terms of how the positions are framed (i.e., described and understood by the public) pro-regulatory versus pro-market is the dichotomy.

²²⁹ See ecoAmerica & SRI Consulting, *The American Environmental Values Survey: American Views on the Environment in an Era of Polarization and Conflicting Priorities* 3 (Oct. 2006) (“Americans’ active support for environmental protection has been steadily eroding And while 77% of Americans say they worry about the environment a great deal or a fair amount, for most of them it is neither a personal nor a public priority.”)

B. A Blue Print for a Climate Changed Democracy²³⁰

To construct solutions that link global scale regulation with local actions, and recruit the best science and technology without obliterating the communities whom those technologies would purport to serve, it will help to look backward as well as ahead. In 1878, John Wesley Powell proposed to stop westward expansion long enough to allow for a detailed survey of the lands in what he called the Arid Region.²³¹ After the survey, settlement could resume in an orderly manner, based upon what the land and resources could sustain.²³² Powell was not anti-settlement. Nor was he even a conservationist, let alone an anti-growth radical environmentalist. Rather, he wanted to ensure that resource exploitation would occur in a manner that would be sustainable in the long run, and would allow human communities to flourish in an environment marked by scarcity.²³³ Powell knew well the limits of the Arid Region. He, along with various crews of intrepid and rag-tag amateur surveyors, had already begun the project of cataloguing every acre between the one hundredth meridian and the Sierra mountains.²³⁴ His recommendations to Congress, submitted in what has become known as the Arid Lands Report, were based on his personal, intimate, and very scientific knowledge of the land and its limits.²³⁵

Two aspects of Powell's proposals have salience to the subject matter of this paper. First, Powell aimed to instigate democratic communities capable of local natural resource governance. The recommendations that supported this ideal included that homestead boundaries should be determined by topography and availability of water, rather than by rectangular grids,²³⁶ and that cooperative districts composed of bona-fide settlers should govern irrigation and pasturage lands.²³⁷ With sound scientific information (afforded by the surveys) and local institutions, Powell believed the arid west could be settled humanely, sustainably and democratically.²³⁸

²³⁰ See WALLACE STEGNER, *BEYOND THE HUNDREDTH MERIDIAN* 202-42 (Penguin Books 1992 (1953)) (describing, in a chapter entitled "Blueprint for a Dryland Democracy," John Wesley Powell's proposals for land and resource settlement in the arid west during the 1870's).

²³¹ See J.W. Powell, *Report on the Lands of the Arid Region of the United States with a More Detailed Account of the Lands of Utah* (Gov't. Printing Office, 1879).

²³² See *id.*

²³³ See *id.*, see also STEGNER, *supra* note 230, at 220-29 (describing Powell's motivations, which included settling the land in a manner consistent with the land's capacities to support small farming communities).

²³⁴ See STEGNER, *supra* note 230, at 116-201.

²³⁵ See J.W. Powell, *supra* note 231.

²³⁶ See J.W. Powell, *supra* note 231, at 27-37.

²³⁷ See *id.*

²³⁸ See STEGNER, *supra* note 230, at 220-29.

The second relevant aspect of Powell's approach was that the state, in the form of the federal government, had to impose the necessary restraint on the populace in order to ensure that democratic agrarian communities would form. Without a temporary halt to settlement, accompanied by clear rules about how settlement would take place and the conditions that would pertain for ownership of land and water, Powell believed that the ordinary person would suffer and that agrarian democracy would fail.²³⁹ Powell was willing to employ his expertise in top-down fashion in order to ensure that individuals and communities could thrive in the Arid Region.

As discussed in Part I, scholars and activists have identified the analogous need for expertise and imposition of restraint (including market-based solutions as a form of restraint) at the highest levels of government in the context of climate change.²⁴⁰ Approaching the problem at the lower ends of the scale, some individual states, counties, and American Indian tribes are engaging in climate adaptation planning in order to achieve a mix of expertise, regulation and support for communities.²⁴¹ Yet they are doing so without the aid of top-down legislation and enforcement of limitations on carbon. Powell's plans, by contrast, included both the high and low levels of organization.²⁴² What if federal climate legislation, along with some mechanism for putting a price on greenhouse gas emissions, included local climate action districts, charged with the authority and means to come up with the most sustainable, flexible, and locally appropriate habits for living in a zero-carbon (and ecologically uncertain) world?²⁴³ Note that this is different from, though not necessarily exclusive of, suggesting that federal legislation should include mechanisms to modify or shape our norms and behavior.²⁴⁴ Rather, the idea, like Powell's, is to legislate in a manner that allows people to

²³⁹ See *id.* at 220-26; see also DONALD WORSTER, *A RIVER RUNNING WEST: THE LIFE OF JOHN WESLEY POWELL* 354-60 (2001) (describing Powell's motivations and efforts to get his Arid Lands proposals passed): "The large economic interests did not line up, understandably, since Powell's motive was to save the West for the people, not the corporations." *Id.* at 358.

²⁴⁰ See I.B., *supra*. Richard Lazarus has gone one step further, aptly describing the need for the federal government to restrain *itself* from unraveling its own climate regime, if it passes one. See Lazarus, *supra* note 8, at 1184-1204 (describing obstacles to passing climate legislation as well as post-passage likelihood of receding from legislative commitments).

²⁴¹ See, e.g., 2009 California Climate Adaptation Strategy, *supra* note 16; 2007 King County Climate Plan (Feb. 2007) available at <http://your.kingcounty.gov/exec/news/2007/0207warming.aspx>; Swinomish Climate Change Initiative, available at http://www.swinomishnsn.gov/departments/planning/climate_change/project/project.html (last visited July 13, 2010).

²⁴² See J.W. Powell, *supra* note 231, at 27-37.

²⁴³ This idea is consistent with Professor Ostrom's proposal for a polycentric approach. See Ostrom, *supra* note 3.

²⁴⁴ See Vandenberg, et al., *supra* note 7; Green, *supra* note 7.

realize their values and norms on the ground and in communities, the same way people actually live.²⁴⁵ There are likely several possible designs for achieving this through federal law and policy.²⁴⁶ This article's modest objective in this regard is merely to begin the conversation about the value of such a structure.

The vision of regional democratic communities, governing consistently with what the land and water would sustain over the long run, sounds utopian. And indeed it was, at least in Powell's day. Those aspects of Powell's proposals never became law, and as quickly as settlement was paused, it resumed again.²⁴⁷ The surveys were not completed in time, and people rushed the land, seizing their rectangular homestead plots, and facing, for many, repeated cycles of failure.²⁴⁸ Many western natural resource experts have mused over whether a lot of heartache, corruption, and ecological waste could have been avoided if Powell's plans had gone through.²⁴⁹ What will the experts of the next century muse about with respect to what we found too odd, too utopian and unrealistic today?

Conclusion

Climate change is the ultimate reflection of human control, domination and influence. We have altered the earth's atmosphere, with effects ranging from the chemical composition of the world's oceans to the life cycle of a small beetle.²⁵⁰ If humans are responsible for the contours of life on both the largest and smallest scales, then whether to walk or drive, whether to hang the laundry, whether to

²⁴⁵ The bio-regionalism movement is similar in spirit and outline to this suggestion. See ROBERT L. THAYER, JR., *LIFEPLACE: BIOREGIONAL THOUGHT AND PRACTICE* 1-9 (2003) (describing tenets of bioregionalism). The key difference is that citizens engaged in local climate action are intimately involved in their own regions and communities while at the same time working in service to a planetarian (global, as well as future-generational) goal.

²⁴⁶ See, e.g., Patricia E. Salkin, *Cooperative Federalism and Climate Change: New Meaning to "Think Globally, Act Locally,"* 40 ENVTL L. REPTR. 10562, 10570 (2010) (listing recommendations for federal and state governments to ensure robust local government participation and community engagement).

²⁴⁷ See STEGNER, *supra* note 230, at 337.

²⁴⁸ See *id.* 328-45

²⁴⁹ See, e.g., Charles F. Wilkinson, *Western Water: The Ethical and Spiritual Questions*, 1 SEATTLE J. FOR SOC. JUST. 367 (2002); Charles F. Wilkinson, *Prior Appropriation, 1848-1991*, 21 ENVTL. L. v (1991).

²⁵⁰ See Ken Caldeira & Micahel E. Wickett, *Anthropogenic Carbon and Ocean Ph*, 425 NATURE 365 (2003) ("We find that oceanic absorption of CO₂ from fossil fuels may result in larger ph changes over the next several centuries than any inferred from the geological record of the past 300 million years. . . ."); Jacques Regniere & Barbabra Bentz, *Mountain Pine Beetle and Climate Change*, 2008 USDA RESEARCH FORUM ON INVASIVE SPECIES, available at <http://www.nrs.fs.fed.us/pubs/gtr/gtr-nrs-p-36papers/47regniere-p-36.pdf> (describing climate effects on the lifecycle of the pine beetle).

leave the lights on-- suddenly all of these humdrum events have the potential to be shot through with morality. This is the ethical framework being created in local climate action groups, where neighbors meet to swap tips about insulating window treatments, hoping that their daily habits will translate into communities capable of saving the world, or failing that, of communities fit for the lost world to come.

Localism, in the context of climate change, acknowledges the sweep of human control and influence, and attempts to construct a morality to match it. For the majority of people, however, the law of global warming remains an enervating topic.²⁵¹ This can be attributed, at least in part, to the ways in which the collective action features of global warming leave to the state the familiar, and familiarly dull and begrudged, role of expert super-bureaucrat. If we overemphasize the state's role at the expense of the role of the local law of climate change, we come away bored, despairing, apathetic, or all three.²⁵² Bored, because the problem is so abstract and technical that only scientists, engineers, economists, and other wonky types can understand let alone do anything about it. Despairing, because the problem seems unsolvable without massive changes in politics as usual. Apathetic, because, combining the abstract and technical nature of the problem with its seeming insolubility, why care?²⁵³

Yet, as participants in local climate action groups recognize, they need the state to assume the roles that only it can play—regulator, taxor, nudger-in-chief—to ensure that their local efforts are not futile. Lurking behind this paradox is an even deeper one. Even if the state assumes these roles very soon, it remains possible (even probable) that the world will never succeed at stabilizing the climate at a level that avoids serious consequences for our and other species. But if the worlds being created in local climate action groups take hold, they will at least have arrived, ethically, at the possibility of tending the planet (and whichever communities it will sustain) even as global surface temperatures continue to rise. Norms, laws, and perhaps most importantly, senses of humor to facilitate the planetarian identity may be the best we can do, and not in the defeatist sense. It may actually be the best thing that humans can do. If the law of local climate action contributes to this, then it may complement the quantitative and

²⁵¹ See, e.g., ecoAmerica & SRI Consulting, *The American Environmental Values Survey: American Views on the Environment in an Era of Polarization and Conflicting Priorities*, (2006) (surveying Americans on a range of environmental issues and finding waning support for environmentalism generally as well as fluctuating views about the value of government action).

²⁵² See *id.* at 10-11. Key findings of this national survey of American views on the environment included that “Issue complexity has paralyzed many Americans,” “Environmentalism is hampered by anti-science attitudes,” and that “Indifference is a major factor among some groups of Americans.” *Id.*

²⁵³ See *id.*

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technological accomplishments of national environmental regulation in ways that lead us to a cleaner, greener, more sustainable world. And if the quantitative and technological accomplishments, in the realm of climate change, are not forthcoming, then at least some human communities will have formed the habits of flexibility, mutual support, and low-impact living necessary to face the alternative. Either localism will redeem statist versions of environmental law by helping each to realize the planetarian goals of the other, or localism alone will nurture a planetarian identity, the object of which will be a moving target in every conceivable sense.