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From Warranted to Valuable Belief: Local Government, Climate Change, and Giving up the Pickup to Save Bangladesh

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ABSTRACT

Although the public discourse about efforts to address global climate change understandably focuses on national- and international-level efforts, in the United States much of the authority for regulating greenhouse gas emitting activities resides with state and local governments. Many local governments have initiated efforts to address global climate change in some fashion. But this article argues that there remains a disconnect between the local causes and global consequences of climate change sufficient to prevent the adoption of durable and effective local efforts to reduce greenhouse gas emissions. In other words, individuals remain largely unable to connect their personal decisions with broader global consequences—they have yet to convert the warranted assertions of the scientific community regarding climate change into beliefs that have enough value to motivate personal and institutional change. Consequently, the best path to developing effective and durable local climate change programs is to connect those programs to local benefits that sacrificing residents can readily experience.

I. INTRODUCTION

Over the past few years, the causes and consequences of global climate change have contributed to the public discourse in an increasingly obvious and thorough fashion. Whether the result of Al Gore's movie-making skills, the Intergovernmental Panel on Climate Change's increasingly worried analysis and rhetoric,[1] or television images of Hurricane Katrina or other devastating weather events, the American public appears now more aware of global climate change, at least in an abstract

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1. Former Vice President Al Gore and the Intergovernmental Panel on Climate Change (IPCC) shared the Nobel Peace Prize in 2007 "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change." NobelPrize.org, The Nobel Peace Prize 2007, http://nobelprize.org/nobel_prizes/peace/laureates/2007/press.html (last visited Mar. 5, 2009).

sense, and is potentially more ready to act to reduce the severity of its effects. In my own region, climate change has the potential to affect all residents, regardless of occupation, location, or political persuasion, and despite our apparent disconnect from the rising sea levels often suggested as the most significant global consequence of climate change.[2] Thus, even in the Intermountain West, far inland and sparsely populated, the apparent increase in the frequency and severity of drought and wildfires and ongoing decreases in the supply of water available for agriculture, wildlife, and our growing cities and towns, insist that reducing the effects of climate change, delaying its arrival, or adapting to it become part of all policy discussions. But this article argues that, notwithstanding the increasing attention being paid to global climate change at all levels of human interaction (local, regional, national, and global), the connections between causes (particularly local causes) and effects remain difficult for individuals to conceptualize in a personal way. Because of this disconnect between individual choices—including where we live and what we drive—and global consequences, meaningful efforts to address climate change *at a local level* remain largely illusory.

This article focuses on potential efforts by *local* units of government (e.g., cities, towns, and counties) to reduce, mitigate, or adapt to global climate change. The article's purpose is not to argue that local governments will not adopt any initiatives intended to address global climate change. In fact, many local governments have already done so. Rather, this article provides a theoretical framework for considering both the willingness of local governments to adopt new institutional regimes addressing climate change in the first instance, as well as the durability and long-term efficacy of those new institutional regimes once adopted. As Oregonians learned with Measure 37 in 2004,[3] even the most successful land-use regimes are subject to emerging or evolving perspectives about the proper role of government in the regulation of land. Given the nature of the problems presented by rapidly increasing greenhouse gases in the earth's atmosphere, the severity of the institutional or behavioral changes that will be necessary to address those problems, and the obvious potential for changing economic, social, and cultural conditions to influence our willingness to make those changes, it seems prudent to

2. *See, e.g.*, Richard A. Kerr, *Global Warming Coming Home to Roost in the American West*, 318 SCI. 1859 (2007).

3. Measure 37 required local governments to compensate landowners for any loss in value caused by land-use regulations enacted after a claimant had purchased the land at issue. Prior to enacting Measure 37, Oregon boasted one of the most progressive statewide smart growth regimes in the country. *See generally* Michael C. Blumm & Erik Grafe, *Enacting Libertarian Property: Oregon's Measure 37 and Its Implications*, 85 DENV. U. L. REV. 279 (2007).

thoughtfully consider the impediments that exist, if any do exist, to addressing a global problem at a local level in a durable and effective manner. Put another way, it is insufficient to argue that the adoption of climate change initiatives by certain (and by no means, of course, all) state or local governments *today* necessarily means that those or similar efforts will increase in number and will remain or will be successful *tomorrow*. The problem, of course, will remain tomorrow, and for many tomorrows after that.

Unlike many of the issues addressed by local governments, the most significant effects of global climate change are just that: global. But the sacrifices required to address those global consequences on a local level are more personal and direct. However, the public discussion on this point focuses primarily on whether the *science* of climate change is legitimate, rather than on whether the political and personal will exists to address the issue. In other words, the public discourse continues to focus on whether the assertion (or belief) that climate change is real is warranted—i.e., is the science legitimate and sufficiently established that the rest of us should feel comfortable accepting it? The discussion about whether that assertion is *valuable*—i.e., whether the lay public finds it sufficient to motivate behavioral change on a local and personal level—remains much less well developed. It is that transition, however, from believing that the science of climate change is warranted to believing that it is sufficiently important—i.e., valuable—to individual actors to motivate action to address the problem that remains the most significant hurdle to be overcome in attaining durable and effective local efforts to address climate change. At this point, the belief in global climate change appears warranted (the science is well-established and widely accepted in the scientific community); but is it valuable (will it motivate us to act)? If not, how do we make it valuable to the millions of individuals in cities and towns across the country that must change their behavior in order to address climate change?

Because we must start with determining whether a belief in climate change is warranted, this article will proceed by briefly discussing the state of the science regarding both the causes and consequences of global climate change, with the specific intent of tying both to the actions of local units of government. The purpose of this initial discussion is not to contribute to the thorough and widely supported analyses and conclusions provided by climate change scientists worldwide, but rather to provide a context for the remainder of the discussion—that is to say, to establish the warranted assertion from which valuable belief might emerge. Part III considers one genre of climate change efforts that is increasingly gaining attention, even as federal efforts appear more likely: greenhouse gas and related regulation by local units of government.

Given our federal system, and the constitutional limitations of central governmental authority in that system, any holistic approach to addressing global climate change must include local governments. Part IV borrows from two preexisting theoretical structures—institutional economics and pragmatism—to argue that durable and effective local efforts to address global climate change face a number of significant obstacles. We must explicitly recognize and address these obstacles if we are to arrive at valuable belief and ultimately achieve our "created imaginings" of thousands of local laboratories independently and successfully combating global climate change.

II. WARRANTED ASSERTABILITY? THE CAUSES AND CONSEQUENCES OF GLOBAL CLIMATE CHANGE

The first step on the path toward regulation of any issue is the initial determination that there exists an issue that should be regulated. This apparently simple statement belies a simple determination, but often that is not the case. In many cases, the more difficult question is not "*what* should we do?"; but rather, "should we do *anything*?" In the environmental law context, these "should we do anything?" questions frequently require consideration of complex scientific relationships, and thus require some amount of reliance on a scientific community. In order to answer our "should" question, that scientific community must demonstrate that its opinions or assertions on the issue are legitimate, and thus warrant our serious consideration. Before we can consider regulating to address climate change, we must consider whether the scientific community's conclusions on the subject are warranted. Simply, is climate change real? And is it a problem?

A. The Causes of Climate Change

Despite some continuing confusion within the lay public,[4] the greenhouse effect is a relatively simple concept. As the sun's energy reaches the earth, most of it is absorbed by land masses and oceans and then subsequently radiated back into the atmosphere in the form of heat where it is absorbed by water vapor, carbon dioxide, and other green-

4. *See, e.g.*, Adam Douglas Henry, *Public Perceptions of Global Warming*, 7 HUM. ECOLOGY REV. 25 (2000); *see also* Matthew C. Nisbet & Teresa Myers, *The Polls—Trends: Twenty Years of Public Opinion About Global Warming*, 71 PUB. OPINION Q. 444 (2007); Paul M. Kellstedt et al., *Personal Efficacy, the Information Environment, and Attitudes Toward Global Warming and Climate Change in the United States*, 28 RISK ANALYSIS 113 (2008).

house gases.[5] Much of this heat is then re-radiated back to earth. Without this absorption and re-radiation of heat by the earth's atmosphere—i.e., without the greenhouse effect—the global climate would be substantially cooler, in the range of 33 degrees Celsius below the current global average temperature.[6] Because the twentieth-century global average temperature is approximately 8.5 degrees Celsius,[7] without the greenhouse effect most water on Earth would remain permanently frozen and life would be impossible. Of course, as changes in the concentrations of greenhouse gases occur, the amount of energy re-radiated back to earth increases, thereby increasing the total amount of energy contained in the earth's climatic system and increasing average temperatures.[8]

This story is relatively uncontroversial, and according to the Intergovernmental Panel on Climate Change (IPCC), there is no longer credible debate among the world's scientists that the global climate is warming,[9] even though much of the public discourse about climate change continues to focus on the validity of the science.[10] But an equally important, and increasingly prevalent, component of the discussion concerns the *consequences* of climate change if, when, and as it does occur. From the perspective of the scientific community, this is a more difficult discussion, particularly as it tries to predict consequences that might occur in the future.[11] The difficulty in predicting future consequences is

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5. *See, e.g.*, Pew Center on Global Climate Change, The Greenhouse Effect, http://www.pewclimate.org/global-warming-basics/facts_and_figures/climate_science_basics/ghe.cfm (last visited Feb. 25, 2009).

6. H. Le Treut et al., *2007: Historical Overview of Climate Change*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 93, 97 (S. Solomon et al. eds., 2007).

7. ScienceDaily.com, 2008 Global Temperature Ties as Eighth Warmest on Record, http://www.sciencedaily.com/releases/2009/01/090116163206.htm (last visited Feb. 25, 2009).

8. *See, e.g.*, Pew Center on Global Climate Change, *supra* note 5; *see also* Intergovernmental Panel on Climate Change, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 5 (S. Solomon et al. eds., 2007) [hereinafter IPCC, *Summary for Policymakers* I].

9. *Id.*

10. *See, e.g.*, Michael Crichton, Speech to the National Press Club (Jan. 25, 2005), *available at* http://www.michaelcrichton.com/speech-ourenvironmentalfuture.html (last visited Mar. 5, 2009); *see also* Richard Lindzen, *Climate of Fear: Global-Warming Alarmists Intimidate Dissenting Scientists Into Silence*, WALL ST. J., Apr. 12, 2006.

11. At a recent presentation regarding the effect of climate change on ocean pH, a widely-respected climate scientist responded to a question about potential consequences of global climate change with the following comment (to paraphrase): "I am more than happy to offer predictions, so long as they are not about the future."

reflected in language used in the IPCC reports; although the levels of confidence expressed still range from "medium confidence" to "very high level of confidence," the statements themselves are much less specific.[12] But our knowledge is growing daily of those events or changes, resulting from global climate change, that have already happened or that we are currently witnessing.

The importance of these consequences of climate change in the context of this broader discussion is significant. It is in these on-the-ground effects that the science of climate change connects with our lives. Much more than the apparently abstract science of climate change, these consequences—and perceptions of the validity of our understanding of their causes—construct the story that we must consider in determining the importance of climate change and climate-change-related regulatory efforts. It is these effects, and nothing more, that constitute the entirety of the public's understanding of climate change, and either justify or fail to justify regulatory action to avoid, delay, or mitigate its effects.

B. The Consequences of Climate Change

Although much attention has focused on warming temperatures, the phrase "global climate change" is better than "global warming" for a variety of reasons, though it is not to say that global "warming" is not occurring. The average temperatures in the Northern Hemisphere over the past 50 years are "very likely"[13] higher than any other 50-year period in the last 500 years, and "likely" higher than any similar period in the past 1,300 years.[14] Eleven of the 12 years between 1995 and 2006 were among the warmest 12 years on record since 1850.[15] Because oceans absorb most of the heat added to the global climatic system, average ocean temperatures have increased to depths of at least 3,000 meters, resulting in thermal expansion of seawater and contributing to sea level rise.[16] The extent of Arctic sea ice has decreased and the Arctic permafrost layer has

12. *See, e.g.*, Intergovernmental Panel on Climate Change, *Summary for Policymakers*, *in* CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY. CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (M.L. Parry et al. eds., 2007) [hereinafter IPCC, *Summary for Policymakers* II]. As one example, one statement about freshwater resources provides, without geographic specificity, that "drought-affected areas will likely increase in extent."

13. "Very likely" is a term of art used to represent a prediction with a 90–95 percent degree of certainty. IPCC, *Summary for Policymakers* I, *supra* note 8, at 3.

14. *Id.* at 9. "Likely" refers to a prediction with a greater than 66 percent degree of certainty.

15. *Id.* at 5.

16. *Id.*

experienced steadily increasing temperatures since the 1980s.[17] On average, mountain glaciers and snow cover have declined in both hemispheres.[18] Arctic temperatures have increased at almost twice the average global rate in the past 100 years.[19] It is "very likely" that the increases in global temperatures observed over the past 50 years are the result of increased greenhouse gas concentrations of carbon dioxide, methane, and nitrous oxide from anthropogenic activities.[20]

But many of the more significant effects of global climate change are not measured in "degrees." Some areas of the globe—including eastern North and South America, northern Europe, and northern and central Asia—have experienced significantly increased precipitation since 1900.[21] Other areas—for example, the Sahel, Mediterranean, southern Africa and southern Asia—experienced drying trends.[22] Since the 1970s, the tropics and subtropics have endured more intense and longer droughts.[23] And notwithstanding the drying trends and increasingly severe drought cycles, the frequency of abnormally heavy precipitation events has increased in most areas.[24]

Climate change also affects landscapes. As glaciers melt, the number and size of glacial lakes increase, as does instability in permafrost regions and the frequency of rock avalanches.[25] Peak spring runoff events in glacier- and snow-fed rivers are larger and occur earlier.[26] Warming lakes and rivers experience changed or degraded thermal structures and water quality.[27] Vegetation is greening earlier in the spring, migratory birds have varied migration timing, and on a larger scale, the ranges of both plant and animal species have shifted upward in both elevation and latitude.[28] These changes affect more than just terrestrial systems. Observed changes in marine and freshwater ecosystems include range shifts and changes in algal, plankton, and fish abundance in high-latitude oceans, and range changes and earlier migration of fish in rivers.[29]

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17. *Id.* at 7.
18. *Id.* at 5.
19. IPCC, *Summary for Policymakers* I, *supra* note 8, at 7.
20. *Id.* at 10.
21. *Id.* at 7.
22. *Id.*
23. *Id.* at 8.
24. *Id.*
25. IPCC, *Summary for Policymakers* II, *supra* note 12, at 2.
26. *Id.*
27. *Id.*
28. *Id.*
29. *Id.*

Region-specific consequences also have been identified. In the U.S. Pacific Northwest, long-term studies demonstrate that regional average temperatures have increased over the past decade.[30] In a snow resource study covering most of the western United States, researchers found that widespread declines in springtime snow water equivalent have been occurring over the last 50 to 75 years, caused by increased greenhouse gas concentrations from anthropogenic sources.[31] Additional changes have been observed across the American West, including an earlier bloom period for plants, earlier snowmelt, and an overall decrease in snow extent and depth.[32] In another study of the western United States, researchers surveyed undisturbed 200-year-old forest stands and found that regional warming had increased tree mortality rates significantly for all plots, all genera, and in all regions.[33] In the Midwest, a National Science Foundation study reviewed records from the past 150 years, finding that on average, lake ice freeze dates are occurring later, lake ice breakup is occurring earlier, and there are fewer overall days of ice cover.[34] In a study in Washington, D.C., researchers examined the first-flowering records of 100 plant species from 1970 to 1999, finding that 89 of 100 plant species are blooming earlier.[35]

Although, as noted above, the scientific community expresses some reticence to make claims about *future* consequences of global climate change, the information we do know about the past and present provides some ability to map trends into the future. Perhaps the most significant of these trends predicts that even if greenhouse gas concentrations were to stabilize at year 2000 levels, global temperatures would continue to increase.[36] But if atmospheric concentrations of greenhouse gas continue to increase (which, compared to 2000 levels, they obviously

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30. *See* Philip W. Mote et al., *Preparing for Climatic Change: The Water, Salmon, and Forests of the Pacific Northwest*, 61 CLIMATIC CHANGE 45 (2003).

31. *See* Philip W. Mote et al., *Declining Mountain Snowpack in Western North America*, AM. METEOROLOGICAL SOC'Y, Jan. 2005, at 39, 47–48.

32. *Id.*; *see also* Iris T. Stewart et al., *Changes Toward Earlier Streamflow Timing Across Western North America*, 18 J. CLIMATE 1136 (2004) (finding peak snowmelt runoff had shifted as much as 20 days earlier between 1948 and 2002); Philip W. Mote, *Twentieth-Century Fluctuations and Trends in Temperature, Precipitation, and Mountain Snowpack in the Georgia Basin-Puget Sound Region*, 28 CAN. WATER RESOURCES J. 567 (2003).

33. Phillip J. van Mantgem et al., *Widespread Increase of Tree Mortality Rates in the Western United States*, 323 SCI. 521, 523 (2009).

34. National Science Foundation, Winter Ice on Lakes, Rivers, Ponds: A Thing of the Past?, http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=110967&org=NSF (last visited Jan. 24, 2009).

35. Mones S. Abu-Asab et al., *Earlier Plant Flowering in Spring in Response to Global Warming in the Washington, D.C. Area*, 10 BIODIVERSITY & CONSERVATION 597, 608 (2001).

36. IPCC, *Summary for Policymakers* II, *supra* note 12, at 7–22.

already have), the climatic and associated ecosystem effects we will experience in the twenty-first century are very likely to be more significant than what we have experienced to date.[37] For example, freshwater resources will become scarcer and their management more difficult as drought affects broader areas and water supplies stored in glaciers and snow cover decrease.[38] Ecosystems will grow less resilient as the frequency of significant disturbances such as drought, wildfire, flooding, and harmful insect infestations increase.[39] Although productivity of certain crops may increase slightly at mid to high latitudes, productivity is likely to decrease elsewhere.[40] Notwithstanding potential localized increases in productivity, if global average temperatures increase by more than about 3 degrees Celsius, overall food production will decrease.[41] Coastal areas are expected to experience increased coastal erosion, sea level rise, and flooding as a result of tropical storms.[42] Climate change is expected to affect the health of millions of people. For example, there will very likely be an increase in deaths due to malnutrition, disease, heat, and injury as a result of heat waves, floods, storms, fires, and droughts.[43] There will be an increased incidence of diarrheal disease and an increase in cardio-respiratory diseases due to higher concentrations of ground level ozone related to climate change.[44] Although there may be some benefits to health as a result of climate change, these benefits will be outweighed substantially by the negative effects.[45]

This discussion, briefly summarizing the scientific community's understanding of the potential consequences of global climate change, demonstrates two important points. First, the scientific community has rigorously studied the potential consequences of increased greenhouse gas emissions, and has demonstrated empirically, time and again, that increased greenhouse gas emissions are causing substantial changes to the natural environment. Climate change science is "sound"; the assertion that the earth is warming, and that this warming will have detrimental effects, is warranted. But despite the soundness of the science, this summary demonstrates another significant point: many of the consequences of climate change are not readily apparent to the lay public,

37. *Id.*
38. *Id.* at 11.
39. *Id.*
40. *Id.*
41. *Id.*
42. IPCC, *Summary for Policymakers* II, *supra* note 12, at 12.
43. *Id.* at 13.
44. *Id.* at 10.
45. *Id.* at 13.

which must act to avoid, reduce, or mitigate its effects. There appears to be little to connect the science to the people ultimately affected by it.

III. THE AUTHORITY OF LOCAL GOVERNMENT TO ADDRESS CLIMATE CHANGE

At the beginning of the preceding section, I suggested that prior to regulating any given issue, we must first answer two questions: (1) *should* we regulate the issue, and (2) if so, *how*? These are not, of course, the only questions that must be answered. For example, before answering the "how" question, we must also consider whether we can, in fact, regulate in the particular area (and whether that regulation will have any beneficial effect). This again seems like a relatively simple question, but as a relatively brief review of both state and federal environmental or land-use case law will indicate, many of the most significant disputes continue to concern precisely this issue of regulatory authority.[46] Because climate change is a global issue, and any attempt to address climate change necessarily implicates multiple jurisdictions, as well as legal arenas long regulated by the federal government, we must seriously consider whether any local government will be able to address climate change in a meaningful fashion within the bounds of its constitutional authority (both state and federal).

A. Local Sources of Greenhouse Gas Emissions

Like any global problem, the causes of climate change often appear fairly abstract, with the sources of greenhouse gases characterized as "the transportation sector" or the somewhat more specific "burning of fossil fuels." Electricity generation from coal-fired power plants is a common villain in the climate change discussion, but it would be extremely surprising if most citizens had ever seen a coal-fired power plant or were able to describe its contribution to their power supply. But the reality is that the sources of greenhouse gases are much more personal, even if the public is largely unaware of that fact.

The three primary anthropogenic greenhouse gases are carbon dioxide, methane, and nitrous oxide.[47] Each of these gases absorbs the infrared radiation—or heat—emitted by the earth and then re-emits it back

46. *See, e.g.*, Rapanos v. United States, 547 U.S. 715 (2006) (determining that the U.S. Army Corps of Engineers' jurisdiction did not extend to certain isolated wetlands); Nat'l Ass'n of Home Builders v. Babbitt, 949 F. Supp. 1 (D.D.C. 1996) (determining that Congress's Commerce Clause authority as exercised in the Endangered Species Act extends to a species of fly endemic only to California).

47. U.S. ENVTL. PROT. AGENCY (U.S. EPA), INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2006, at ES-4 (Apr. 2008).

into the atmosphere. As the concentrations of these gases increase, the atmosphere absorbs and re-emits more heat, and global air and ocean temperatures correspondingly increase.[48] Over the last 250 years, atmospheric carbon dioxide concentrations have increased by 36 percent.[49] Fossil fuel combustion—the main source of carbon dioxide—accounted for 94.2 percent of all carbon dioxide emissions or about 84.8 percent of all greenhouse gas emissions in the United States.[50] Global carbon dioxide levels have increased from a pre-industrial value of about 280 parts per million (ppm) to 379 ppm in 2005.[51] In 2005, the United States contributed about 20 percent of the total amount of carbon dioxide released into the atmosphere worldwide.[52]

While carbon dioxide is the most widely known greenhouse gas, methane is 20 times more effective than carbon dioxide at trapping heat in the atmosphere.[53] Over the last 250 years, methane concentration in the atmosphere has increased 148 percent and accounts for about 7.9 percent of all greenhouse gas emissions.[54] Anthropogenic sources of methane include landfills, natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, and certain industrial processes.[55]

Even more significant, nitrous oxide is about 300 times more powerful than carbon dioxide at trapping heat in the atmosphere.[56] Over the last 250 years nitrous oxide concentrations in the atmosphere have increased about 18 percent and now account for 5.2 percent of all greenhouse gas emissions.[57] Anthropogenic activities that produce nitrous oxide are agricultural soil management, fuel combustion in motor vehicles, nitric acid production, stationary fuel combustion, manure management, and wastewater treatment.[58]

Despite its significance, this type of dry, scientific discussion of greenhouse gases and a fairly stale list of typical sources continues to perpetuate the conceptual wall between individual behavior and greenhouse gas emissions. In 2008, the EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks broke down greenhouse gas emissions by cate-

48. *Id.* at 7.
49. *Id.*
50. *Id.*
51. IPCC, *Summary for Policymakers* I, *supra* note 8, at 2.
52. U.S. EPA, *supra* note 47, at 7.
53. *Id.* at 10.
54. *Id.*
55. *Id.*
56. *Id.*
57. *Id.*
58. U.S. EPA, *supra* note 47, at 10–11.

gories of economic sectors, or end users.[59] Where the IPCC report groups emissions estimates into six sectors—energy; industrial processes; solvent and other product use; agriculture; land use, land-use change and forestry; and waste—the EPA inventory creates end-user categories, the most important of which, for the purposes of this article, are residential, commercial, and transportation. When electricity-related emissions are included in these end-user categories (specifically the residential and commercial categories), these three categories account for 61.3 percent of all greenhouse gas emissions in the United States.[60] The industrial category only contributes 28.5 percent, and that contribution has decreased over the past 15 years, both in absolute numbers and as a percentage of the total.[61] The lion's share of the transportation emissions—75 percent—results from the use of private vehicles, including passenger cars and light-duty trucks (e.g., mini-vans, SUVs, and pickups).[62] Consequently, well over 50 percent of greenhouse gas emissions in the United States results from individual decisions regarding transportation and housing, and community decisions about preferred development patterns.

B. Local Authority to Regulate Greenhouse Gas Emissions

The majority of the greenhouse gases emitted in the United States is connected to personal transportation and residential and commercial building activities. Each of these activities is directly connected to development patterns and the use of land. Decisions about residential land-use densities (i.e., whether to allow sprawling development patterns) affect building heating and cooling efficiencies, overall vehicle miles traveled in a community, and the efficacy of alternative transportation options, among other significant greenhouse gas emitting activities. Separating land uses—as is commonly done in traditional Euclidean zoning—similarly leads to increased greenhouse gas emissions, as even routine errands may require traveling substantial distances. Because building codes, development densities, land uses, public and alternative transportation systems, and other land-use related programs and decisions are generally created and implemented at the local level, the tools available to local governments carry the *potential* to significantly reduce the effects of global climate change.

In the United States, land-use policy is formulated largely at the local level, and the ability to formulate land-use or transportation plans resides in the hands of county commissioners, city council members, and

59. This continued the practice of previous inventories.
60. *See* U.S. EPA, *supra* note 47, at 2-21, 2-22.
61. *Id.*
62. *Id.* at 2-24.

local citizens. For citizens, lawyers, or even policymakers accustomed to the modern regulatory state, this concept might seem inconsistent with experience and expectations. After all, what are the Endangered Species Act's restrictions on destroying habitat,[63] or the Clean Water Act's regulation of development in waters of the United States,[64] but *land-use* controls? These examples and others notwithstanding, land-use regulation is traditionally left to the states, and through the states to local governments. In many cases, this authority is used specifically to address natural resource use.[65]

In the Tenth Amendment to the U.S. Constitution, the states reserved all powers not specifically granted to the new federal government—"The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."[66] Because the bounds of state authority are defined by what was not granted to the federal government, understanding state authority requires some understanding of federal authority. The primary source of the federal government's authority to implement environmental regulations—and thus, arguably, land-use regulation—lies in the Commerce Clause of the U.S. Constitution.[67] That authority is not limitless, as the Supreme Court has created an outward boundary to federal authority under the Commerce Clause. Generally,

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63. The Endangered Species Act, 16 U.S.C. §§ 1531–1544 (2000), prohibits the "take" of species listed as endangered (or threatened, pursuant to 16 U.S.C. § 1533(d) and 50 C.F.R. § 17.31 (1999)). The definition of "take" includes "harm" to listed species. "Harm" includes "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. To avoid potential civil and criminal liability under the ESA's take prohibition, landowners engaging in activities that otherwise require no federal approval or funding can implement a habitat conservation plan (HCP) and obtain an incidental take permit under 16 U.S.C. § 1539(a). The HCPs often will contain restrictions or tools similar to land-use regulations employed by local governments. For example, the Magic Carpet Woods HCP in Michigan includes, among other things, density and use restrictions, increased setbacks, limitations on accessory structures—all tools typically found in a local land-use code.

64. Section 404 of the Clean Water Act, 33 U.S.C. § 1344 (2000), regulates the discharge of dredged or fill material into waters of the United States, which include, *at least*, interstate waters (including small streams and wetlands) and wetlands and non-navigable waters that demonstrate some nexus to traditionally navigable waters. *See, e.g.*, Rapanos v. United States, 547 U.S. 715 (2006). The requirements associated with section 404 can severely limit, or even prohibit, development of large parcels of land. *See* David Sunding & David Zilberman, *The Economics of Environmental Regulation by Licensing: An Assessment of Recent Changes to the Wetland Permitting Process*, 42 NAT. RESOURCES J. 59, 74–76 (2002).

65. *See generally* John R. Nolon, *In Praise of Parochialism: The Advent of Local Environmental Law*, 26 HARV. ENVTL. L. REV. 365 (2002).

66. U.S. CONST., amend. X.

67. U.S. CONST., art. 1, § 8, cl. 3.

three categories of activities fall within the scope of congressional authority under the Commerce Clause: "First, Congress can regulate the channels of interstate commerce. Second, Congress has authority to regulate and protect the instrumentalities of interstate commerce, and persons or things in interstate commerce. Third, Congress has the power to regulate activities that substantially affect interstate commerce."[68] From these three categories of congressional Commerce Clause authority arises much of the modern environmental regulatory state, including, for example, the Endangered Species Act,[69] the Clean Water Act,[70] the Clean Air Act,[71] the Resource Conservation and Recovery Act,[72] and the Comprehensive Environmental Response, Compensation, and Liability Act,[73] among others. While significant aspects of these regulatory regimes address areas unquestionably within the scope of federal power (e.g., section 7 of the Endangered Species Act, requiring consultation between federal agencies[74]), the scope of federal authority is substantially more complicated and controversial when federal actions address what are arguably entirely private, intrastate actions.[75]

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68. Gonzales v. Raich, 545 U.S. 1, 16–17 (2005).

69. 16 U.S.C. §§ 1531–1599 (2006).

70. 33 U.S.C. §§ 1251–1387 (2006).

71. 42 U.S.C. §§ 7401–7671q (2006).

72. 42 U.S.C. §§ 6901–6992k (2006).

73. 42 U.S.C. §§ 9601–9675 (2006).

74. *See* 16 U.S.C. § 1536(a)(2) (requiring that all federal agencies, "in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification [of critical habitat].").

75. In the Clean Water Act context, the Supreme Court recently issued a decision that somewhat significantly reduced the jurisdiction of the Army Corps of Engineers over wetlands and other non navigable-in-fact waters. *See* Rapanos v. United States, 547 U.S. 715 (2006). In *Rapanos*, although the Court focused on the breadth of a congressional (rather than constitutional) grant of authority, the plurality re-emphasized that decisions regarding the use of land or waters that do not directly affect interstate commerce are generally within the province of local government, i.e., outside the scope of the Commerce Clause. The Endangered Species Act is similarly controversial, particularly with respect to species that do not cross state boundaries. To date, every circuit court that has considered a challenge to the Endangered Species Act related to solely intra-state species has upheld the Act as a valid exercise of Commerce Clause authority; however, each case has taken a different approach. *See, e.g.*, Nat'l Ass'n of Home Builders v. Babbitt, 130 F.3d 1041 (D.C. Cir. 1997) (upholding the ESA's take prohibition as applied on intrastate species, in part, where that regulation is necessary to control interstate transport of endangered species, and where the regulation is necessary to protect biodiversity, thereby protecting current and future interstate commerce); Rancho Viejo v. Norton, 323 F.3d 1062 (D.C. Cir. 2003) (upholding the ESA's take provision where the regulated commercial activity is substantially related to interstate commerce); GDF Realty Investments v. Norton, 326 F.3d 622 (5th Cir. 2003) (up-

Notwithstanding the substantial reach of the federal environmental programs, the Constitution does provide a real limit to federal authority, beyond which only the states—and through their delegation of power, towns, cities, counties, and other municipalities—can exercise control. One area generally outside of that line of federal authority is control over the use of private land. In the United States, private land-use regulation traditionally has been considered to be within the province of local governments. The U.S. Supreme Court recognized that expanding Commerce Clause authority too broadly could result in "a significant impingement of the States' traditional and primary power over land and water use."[76] In some cases, federal statutes specifically recognize that tradition; for example, the 1977 amendments to the Clean Air Act include the following provision: "Nothing in this chapter constitutes an infringement on the existing authority of counties and cities to plan or control land use, and nothing in this chapter provides or transfers authority over such land use."[77] The Clean Water Act also provides that the Act will "recognize, preserve, and protect" the rights of states to exercise the primary responsibility over "land and water resources."[78] Consistent with this approach, rather than regulating all pollution, the Clean Water Act only regulates pollution discharged from "point sources" into "waters of the United States."[79] The Clean Water Act considers non-point source pollution—pollution that results as water runs over and collects pollution from the surface of land—to be the result of land-use decisions, and consequently is better addressed by local governments that have authority to regulate the use of that land. For that reason, the Clean Water Act contains no regulatory requirements that apply to non-point source pollution.[80]

The states generally do not implement this reserved land-use authority, but rather delegate the authority to cities, towns, counties, or other local governments. In Idaho, for example, the state constitution grants this police power directly to local government: "Any county or incorporated city or town may make and enforce, within its limits, all

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holding the ESA's take provision because the entire regulatory program, when considered in the aggregate, substantially affects interstate commerce).

76. Solid Waste Agency of N. Cook County v. U. S. Army Corps of Eng'rs, 531 U.S. 159, 174 (2001). In *Rapanos*, 547 U.S. at 738, the Supreme Court restated this position ("Regulation of land use . . . is a quintessential state and local power").

77. 42 U.S.C. § 7431.

78. 33 U.S.C. § 1251(b).

79. *See* 33 U.S.C. §§ 1311, 1362.

80. Section 319 of the Clean Water Act, 33 U.S.C. § 1329, requires states to establish state management programs for non-point source pollution, but it does not authorize creation of any federal standards or effluent limitations for non-point sources.

such local police, sanitary and other regulations as are not in conflict with its charter or with the general laws."[81] Although most other states do not contain a similar grant of the police power authority in the state constitution itself, statutory grants of land-use authority in most places are similarly broad and likely would include the ability to address climate change.[82] The Standard State Zoning Enabling Act, published by the Department of Commerce in 1922 and still the primary influence of most state land-use enabling acts,[83] contains the following recommended language:

> For the purpose of promoting health, safety, morals, or the general welfare of the community, the legislative body of cities and incorporated villages is hereby empowered to regulate and restrict the height, number of stories and size of buildings and other structures, the percentage of lots that may be occupied, the size of yards, courts, and other open spaces, the density of population and the location and use of buildings, structures and land of trade, industry, residence or other purposes.[84]

These grants of authority, whether constitutional or statutory, likely include the ability to regulate land-use related greenhouse gas emissions.

Because state and local governments retain the authority to regulate land use—and consequently the structures built on land and the transportation systems connecting those structures—the efforts of local governments to mitigate and adapt to climate change will remain among the most important in a suite of efforts to address the effects of climate

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81. IDAHO CONST., art. XII, § 2.

82. *See, e.g.*, UTAH CODE ANN. § 10-9a-101 (providing that the purposes of the Utah Municipal Land Use, Development and Management Act are to "provide for the health, safety, and welfare, and promote the prosperity, improve the morals, peace and good order, comfort, convenience, and aesthetics of each municipality. . . ."); MONT. CODE ANN. § 76-2-301 (authorizing municipal zoning authority "For the purpose of promoting health, safety, morals, or the general welfare of the community. . . ."); WIS. STAT. ANN. §62.23(7)(a) (authorizing Wisconsin cities, "for the purpose of promoting health, safety, morals or the general welfare of the community," to regulate and restrict "the height, number of stories and size of buildings and other structures, the percentage of lots that may be occupied, the size of yards, courts and other open spaces, the density of population, and the location and use of buildings, structures and land for trade, industry, mining, residence or other purposes.").

83. At some point, all 50 states adopted the Standard Zoning Enabling Act, and it remains in effect in basic form in 47 states. WILLIAMS AM. LAND PLAN § 19.1 (2003).

84. ADVISORY COMM. ON ZONING, DEP'T OF COMMERCE, A STANDARD STATE ZONING ENABLING ACT: UNDER WHICH MUNICIPALITIES MAY ADOPT ZONING REGULATIONS § 1 (1926).

change.[85] For example, local governments play an important role in local or regional transportation planning and guiding the density of new development. These are two critical areas where local government might play a lead role in adapting to and mitigating climate change. As discussed earlier, over 50 percent of all CO_2 emissions result from activities either directly regulated by local governments, or which support activities directly regulated by local governments (e.g., power production for residential use). While no entirely localized effort to combat global climate change can completely address or eliminate these greenhouse gas sources—as both electricity and some means of transportation are necessary components of modern American life—land-use and transportation planning has the potential to substantially reduce greenhouse gas emissions.

As one example, New York City claims that its residents produce less than 30 percent of the annual per capita CO_2 emissions for the United States as a whole.[86] New York City is not unique, as San Diego and San Francisco share per capita CO_2 emissions similar to New York's emissions.[87] These larger cities demonstrate below average CO_2 emissions because transportation alternatives reduce resident reliance on personal vehicles, and dense commercial and residential development increases heating and cooling efficiency. While smaller communities may not reach similarly low per capita CO_2 emissions, these examples demonstrate the potential reach of land-use and transportation planning and suggest that even in small to mid-sized cities, significant reductions in CO_2 emissions are possible.

Understandably, the connection between greenhouse gas emissions and local land-use authority has increased focus on the ability of local governments to participate in the effort to address global climate change. In 2005, the U.S. Conference of Mayors[88] adopted a "Climate Protection Agreement." The agreement urged federal and state governments

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85. *See, e.g.*, John R. Nolon, *Zoning, Transportation, and Climate Change*, 8 N.Y. ZONING L. & PRAC. REP. 1 (2007).

86. *See* MAYOR'S OFF. OF OPERATIONS, OFF. OF LONG-TERM PLAN. AND SUSTAINABILITY, INVENTORY OF NEW YORK CITY GREENHOUSE GAS EMISSIONS (Apr. 10, 2007), *available at* http://www.nyc.gov/html/om/pdf/ccp_report041007.pdf.

87. *Id.*

88. The U.S. Conference of Mayors describes its mission as follows: "The U.S. Conference of Mayors (USCM) is the official nonpartisan organization of cities with populations of 30,000 or more. There are 1,200 such cities in the country today. Each city is represented in the Conference by its chief elected official, the mayor. The primary roles of The U.S. Conference of Mayors are to: Promote the development of effective national urban/suburban policy; Strengthen federal-city relationships; Ensure that federal policy meets urban needs; Provide mayors with leadership and management tools; and Create a forum in which mayors can share ideas and information." The United States Conference of Mayors,

to enact policies and programs that would meet Kyoto Protocol targets, and the U.S. Congress to pass "bipartisan greenhouse gas reduction legislation." The agreement further stated the intent to "strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and communities."[89] Later, in January 2007, the Conference released an "Energy and Environment Best Practices Guide" reporting the efforts of communities across the country to "approach complex energy issues."[90] The guide provides a description of local efforts to address seven areas related to energy or the environment: municipal buildings, facilities, and operations; air quality; climate change; energy sources; fuels, vehicles, and transit; housing; and other categories. The guide provides climate change initiatives from 10 U.S. cities.[91]

Partly as a result of the Climate Protection Agreement and Best Practices Guide, a discussion has developed in both the academic and popular literature identifying an emerging trend among both state and local governments to address climate change. In the legal literature, this trend is part of a broader discussion about the potential for local governments to address environmental or natural resource issues that are ineffectively addressed by the federal government.[92] However, the specific focus on local efforts to address climate change appears to be receiving increased attention (over the attention paid to, for example, local efforts to address non-point source pollution).[93]

About the U.S. Conference of Mayors, http://www.usmayors.org/about/overview.asp (last visited Dec. 19, 2009).

89. U.S. CONF. OF MAYORS, U.S. MAYORS CLIMATE PROTECTION AGREEMENT (2005), *available at* http://www.usmayors.org/climateprotection/documents/mcpAgreement.pdf.

90. U.S. CONF. OF MAYORS, BEST PRACTICES GUIDE 4 (2007) [hereinafter U.S. CONF. OF MAYORS, BEST PRACTICES GUIDE], *available at* http://www.usmayors.org/uscm/best_practices/EandEBP07.pdf.

91. These 10 U.S. cities are: Albuquerque, New Mexico; Chapel Hill, North Carolina; Denver, Colorado; Eugene, Oregon; Houston, Texas; Medford, Massachusetts; Portland, Oregon; Saint Paul, Minnesota; Salt Lake City, Utah; and Seattle, Washington. Participation in providing information for the guide was voluntary, and required an affirmative act on the part of the cities involved to submit information regarding their activities. Consequently, the best practices guide does not represent the best practices used across the country, but rather the best practices of those communities that participated.

92. *See, e.g.*, NEW GROUND: THE ADVENT OF LOCAL ENVIRONMENTAL LAW (John R. Nolon ed., 2003).

93. *See generally* Lara Whitely Binder, *Preparing for Climate Change in the U.S. Pacific Northwest*, 15 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 183 (2009); Irma S. Russell & Jeffrey S. Dennis, *State and Local Governments Address the Twin Challenges of Climate Change and Energy Alternatives*, 23 NAT. RESOURCES & ENV'T 9 (2008); Patrick Parenteau, *Lead, Follow, or Get out of the Way: The States Tackle Climate Change with Little Help from Washington*, 40 CONN. L. REV. 1453 (2008); Lora A. Lucero, *Climate Change Litigation and Policy—A Rapidly Shifting*

But this attention to local efforts allegedly addressing global climate change might overstate somewhat both the actual reach of the efforts undertaken as well as the potential for those efforts to have a meaningful effect on the global problem. For example, although the Best Practices Guide identifies 10 cities that are addressing climate change in some fashion, the examples are long on "plans" and short on specific ordinances or mandatory requirements.[94] For example, the entry for Houston, Texas, is limited to a discussion of an update to its emissions inventory (adding greenhouse gases) that will provide it with "detailed data from which to set emissions goals going forward."[95] Salt Lake City, Utah, has also implemented a "Local Climate Action Plan" which will "show that the City can do its part to reduce global warming and health-endangering pollution."[96] Albuquerque, New Mexico's "best practices" for climate change appear to be limited to the "leadership" and "strategic environmental and management style" of its mayor, which includes his signature on the Climate Protection Agreement and his implementation of a city ordinance that "approved Albuquerque's membership in the Cities for Climate Change Campaign."[97]

That is not to say that the efforts identified in the Best Practices Guide are wholly ineffective. Eugene, Oregon, has converted all traffic lights to LEDs, maintains an expansive bike/pedestrian transportation system, harvests methane from its wastewater treatment facility, and provides bus passes for all city employees.[98] Portland, Oregon, is implementing a project to optimize traffic signal timing to reduce transit and

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Landscape, 60 PLAN. & ENVTL. L. 3 (2008); Judi Brawer & Matthew Vespa, *Thinking Globally, Acting Locally: The Role of Local Government in Minimizing Greenhouse Gas Emissions from New Development*, 44 IDAHO L. REV. 589 (2008); Robert K. Huffman & Jonathan M. Weisgall, *Climate Change and the States: Constitutional Issues Arising From State Climate Change Protection Leadership*, 8 SUSTAINABLE DEV. L. & POL'Y 6 (2008); Lauren Morello, *Adaptation: Cities, States Work to Minimize Climate Impacts*, CLIMATE WIRE, Apr. 29, 2008, http://www.eenews.net/cw/2008/04/29; Nolon, *supra* note 85; Kirsten Engel, *State and Local Climate Change Initiatives*, 38 URB. LAW. 1015 (2007); Robert B. McKinstry, Jr., *Local Solutions for Global Problems*, 12 PENN. ST. ENVTL. L. REV. 1 (2004); Laura H. Kosloff et al., *Outcome-Oriented Leadership: How State and Local Climate Change Strategies Can Most Effectively Contribute to Global Warming Mitigation*, 14 WIDENER L.J. 173 (2004).

94. My intention with the following examples is not to belittle the efforts of these cities to address climate change in whatever fashion they find politically expedient. To the contrary, these efforts are necessary first steps toward any meaningful effort to address climate change in an effective and durable fashion, and I fully support even those efforts limited to "leadership" and "plans." Instead, my intention is to suggest, if you will, that rumors of climate change's death have been greatly exaggerated.

95. U.S. CONF. OF MAYORS, BEST PRACTICES GUIDE, *supra* note 90, at 31.

96. *Id.* at 35.

97. *Id.* at 28.

98. *Id.* at 30.

idling times.[99] And Seattle, Washington's municipally-owned electric utility purchases enough greenhouse gas offsets to equal its fossil fuel emissions from electricity generation and operational travel.[100] Each of these efforts actually reduces greenhouse gas emissions, rather than merely providing a plan or the mechanism to do so in the future should additional measures be implemented. But other than Portland's traffic signal optimization and Eugene's alternative transportation system (which, of course, is replicated in many other cities across the country), these efforts do not directly address greenhouse gas emissions arising from the uses of land directly regulated by local governments.[101]

The U.S. Conference of Mayors Best Practices Guide is, of course, just one secondary source describing the efforts of local governments to address climate change, albeit a fairly high profile secondary source. Additional evidence suggests that local governments might be moving toward more pro-active regimes intended to address climate change. Arguably the most significant attempt to *force* local governments to address climate change arose, as it must, in state law. On September 30, 2008, Governor Arnold Schwarzenegger of California signed Senate Bill 375 into law. That bill, referred to as an "anti-sprawl" bill in the California media,[102] requires each of California's 18 federally designated metropolitan planning organizations to incorporate a "sustainable communities strategy" into their regional transportation plans that includes specific measures to achieve CO_2 emission targets.[103] The bill allegedly provides one mechanism by which the California Air Resources Board can reach the aggressive goals outlined in California's far-reaching climate change legislation, Assembly Bill 32.[104]

As is the case with any controversial legislation, the bill's proponents were happy to crow about its significance. After signing the bill, Governor Schwarzenegger provided a statement in which he said, "This legislation constitutes the most sweeping revision of land-use policies

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99. *Id.* at 33.

100. *Id.* at 35.

101. Once upon a time, the Oregon cities—and Portland in particular—would have provided an excellent example of local efforts (mandated by state law) that effectively reduced sprawl (and the consequent increased energy uses associated with sprawling development). However, in 2004, Oregon citizens approved Measure 37, which dramatically limited the ability of local governments to regulate land use. Measure 49, passed in 2007, reduced some of the effect of Measure 37, but did not restore the full range of options available to Oregon municipalities before the enactment of Measure 37.

102. *E.g.*, Kevin Yamamura, *Governor Signs Anti-Sprawl Bill*, SACRAMENTO BEE, Oct. 1, 2008, at A1, *available at* http://whatsupinrealestate.com/governor.pdf.

103. S.B. 375 § 4(b)(2) (Cal. 2008) (now codified as CAL. GOV. CODE § 65080(b)(2)).

104. A discussion of AB 32 can be found on the website of the California Air Resources Board at http://www.arb.ca.gov/cc/cc.htm (last visited Dec. 19, 2009).

since Gov. Ronald Reagan signed the California Environmental Quality Act."[105] The bill's primary sponsor, Senator Darrell Steinberg, argued that the program "will be used as the national framework for fighting sprawl and transforming inevitable growth to smart growth. This is a historic day for California."[106] The bill "will mean more environmentally friendly communities, more sustainable developments, less time people spend in their cars, more alternative transportation options and neighborhoods we can safely and proudly pass on to future generations."[107]

But like the examples provided above, the sustainable communities strategy does not create any enforceable requirements of state or local law, nor does it change local government authority or discretion with respect to how it manages land use:

> Neither a sustainable communities strategy nor an alternative planning strategy regulates the use of land. . . . Nothing in a sustainable communities strategy shall be interpreted as superseding the exercise of the land use authority of cities and counties within the region. . . . Nothing in this section shall require a city's or county's land use policies and regulations, including its general plan, to be consistent with the regional transportation plan or an alternative planning strategy.[108]

The housing consultant for the California Senate's Housing and Transportation Committee provided an analysis to accompany Senate Bill 375 as that committee considered its merits. That analysis suggested that the bill was largely "going on faith":

> In general, cities and counties are not obligated to follow the [sustainable communities strategy (SCS)]. The fact that a region's [regional housing needs assessment] allocation will reflect its SCS means that cities and counties slated for growth in the SCS will be required to zone additional land for housing. This could help implement the SCS, but because cities and counties maintain discretion over how and where they zone additional land, this new capacity ultimately may or may not

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105. Yamamura, *supra* note 102 (quoting Governor Schwarzenegger). The governor's statement can be viewed on his website at http://gov.ca.gov/fact-sheet/10707/ (last visited Dec. 19, 2009).

106. Michael Gardner, *Curbing Sprawl and Global Warming at the Same Time*, SAN DIEGO UNION-TRIBUNE NEWSBLOG, Sept. 30, 2008, http://weblog.signonsandiego.com/news/breaking/2008/09/curbing_sprawl_and_global_warm.html.

107. Margot Roosevelt, *Sprawl Measure OK'd, Smog Bill Dies*, L.A. TIMES, Oct. 1, 2008, at 1, *available at* 2008 WLNR 18635341 (quoting Governor Schwarzenegger).

108. CAL. GOV. CODE § 65080(b)(2)(J).

> be consistent with the SCS. Moreover, cities and counties may continue to approve large job centers, megamalls, and other large trip generators far from residential centers. They may also continue to approve low-density subdivisions far from job centers and outside the SCS footprint. This bill is also built on faith that cities and counties will voluntarily implement the SCS or at least respond to regional political pressure to do so.[109]

Senate Bill 375 does tie state transportation funding loosely to whether a community follows the sustainable communities strategy, but it does not *necessarily* eliminate or reduce transportation funding even if a community completely ignores the sustainable communities strategy. Rather, the bill simply requires that regional transportation plans contain a "financial element" providing "recommendations for [the] allocation of funds."[110] Those recommendations apparently should prefer projects that are consistent with the transportation plan,[111] although the entity that makes the consistency determination is made up, in part, of the same local officials that both propose the projects and create the sustainable communities strategy within the regional transportation plan.[112] Rather than provide enforceable mandates, standards, or requirements, or even include a meaningful risk of the loss of transportation funding, the primary means by which the bill seeks to motivate local behavior is in *exempting* projects that comply with a sustainable communities strategy from various requirements of the California Environmental Quality Act.[113] In other words, the bill's primary substantive tool involves *reducing* environmental protections.

In short, while hailed as "the nation's most comprehensive effort to reduce sprawl,"[114] Senate Bill 375 does not institute any mandatory requirements that will necessarily reduce sprawl, vehicle miles traveled, and consequent greenhouse gas emissions. To the contrary, the bill still requires *local governments* to implement stand-alone land-use ordinances that will achieve the bill's laudatory goals on the ground.

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109. *Transportation and Land Use Planning and the California Environmental Quality Act (CEQA): Hearing on S.B. 375 Before the Sen. Transp. & Housing Comm.*, 2007–2008 Leg. Sess. (Cal. 2008) (written analysis provided to the Committee by housing consultant Mark Stivers), *available at* http://movingslower.files.wordpress.com/2009/07/sthc-analysis.pdf.

110. CAL. GOV. CODE § 65080(b)(4)(A).

111. *Id.*

112. *Id.*; *see also* CAL. GOV. CODE §§ 13000–13010.

113. *See* S.B. 375 § 15 (Cal. 2008) (codified at CAL. GOV. CODE § 21159.28(a)).

114. Felicity Barringer, *California Moves on Bill to Curb Sprawl and Emissions*, N.Y. TIMES, Aug. 29, 2008, http://www.nytimes.com/2008/08/29/us/29sprawl.html.

It is this point that is most often overlooked in the discussions about the potential for actions of local governments to address global climate change. The mere potential to reduce greenhouse gas emissions through aggressive land-use and transportation planning does not mean that local communities will accept those efforts readily. And as the California experience indicates, even those efforts characterized in one example as "the national framework for fighting sprawl and transforming inevitable growth to smart growth" still rely on the efforts of a large number of culturally, geographically, ideologically, and socially distinct communities. And in any place, local governments rely on the support of local communities to enact and implement progressive and creative land-use tools. It is perhaps unnecessary to say that the residents of Boise, Idaho, are unlikely to accept a New York City model of urban development, even if that model would allow the entire population of Idaho to fit within approximately one-third of the area currently occupied by the City of Boise[115] and would solve for generations many of Idaho's water quantity, water quality, and energy production problems. Residents of the American West would not accept a Manhattan model of development (or even the less imposing model provided by the somewhat more familiar Portland, Oregon) for two related reasons: first, it is unlikely that westerners would agree that any problem we currently face justifies that type of response; and second, and more important, that response does not fit within our expectations for what the West should be. In other words, the "Manhattan approach" is inconsistent with the future westerners imagine for their place, and they will not adopt something that does not achieve their desired vision of their future.

Westerners are not unique in this regard. For example, stepping away from climate-change-focused ordinances for a moment, there is a reason that the many books and articles on "smart growth" techniques use the same examples over and over again:[116] most cities and towns have yet to adopt those principles. It is not that "smart growth" principles are unattractive, but rather that no one really knows what they look like on the ground, which makes it difficult to imagine the consequences of adopting a smart growth approach. In fact, there is little consensus on what "smart growth" is generally and how it can achieve more sustainable development patterns. As one commentator suggests, "[smart

115. Boise has a population density of approximately 3,150 persons per square mile. The population density of Manhattan is approximately 77,000 persons per square mile.

116. A Google Scholar search (on February 6, 2009) with the terms "'smart growth' Portland Oregon" returned 1,900 hits. A Westlaw search in the "Journals and Law Reviews" database using the search terms "'smart growth' /p Portland" returned 69 articles. The search "'smart growth' and Portland" returned 272 articles.

growth] has almost come to stand for 'whatever form of growth I like best' in the opinion of whoever is speaking."[117] This lack of a coherent vision, combined with a general lack of collaborative or participatory opportunities for the people most affected by smart growth (i.e., suburban home owners),[118] prevents smart growth from overcoming a variety of difficulties inherent in the basic concept. For example, smart growth principles can require, or result in, the creation of regional approaches to land-use management (shifting power away from local governments), the shifting of both the benefits and costs of development, a potential reduction in profits for outlying landowners, an increase in housing costs and housing density, and a generally more complicated regulatory environment.[119] Again, these consequences can be, and often are, inconsistent with the future the community is trying to create, in the same way that Manhattan is not what Boise wants to be.

The problems facing implementation of smart growth principles are specifically relevant to the climate change discussion, precisely because local ordinances that might effectively address global climate change must incorporate many of the same tools and concepts. For example, a report titled, "Confronting Climate Change in the U.S. Northeast," suggests three options for reducing greenhouse gas emissions, including "[u]sing state and municipal zoning laws, building codes, and incentives to encourage energy-efficient buildings, discourage urban sprawl, provide low-emissions transportation alternatives, and avoid development in vulnerable coastal areas and floodplains."[120] But despite the ongoing propaganda regarding the current and potential efforts of local governments to address climate change and reduce its consequences, little evidence exists that meaningful regulation—i.e., regulation that actually reduces vehicle miles traveled, reduces energy consumption, mandates alternative forms of transportation, mandates development patterns that prefer walking or bicycling, etc.—is being attempted on the ground. Consequently, we are still left wondering whether any durable and effective institutional change on a local level and affecting both individual lifestyles and community development choices is achievable.

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117. Anthony Downs, *Smart Growth: Why We Discuss It More Than We Do It*, 71 J. AM. PLAN. ASS'N 367, 368 (2005).

118. *Id.*

119. *Id.*

120. PETER C. FRUMHOFF ET AL., CONFRONTING CLIMATE CHANGE IN THE U.S. NORTHEAST: SCIENCE, IMPACTS AND SOLUTIONS 10 (2007).

IV. LOCAL INSTITUTIONAL CHANGE: IMAGINING THE FUTURE AND CREATING THE TOOLS TO GET US THERE

Up to this point, this article has discussed two topics that are relatively uncontroversial: the basic concept of human-induced or human-exacerbated climate change, and the *potential* legal and scientific ability of local governments to address that issue in some fashion. In using the description "relatively uncontroversial," I do not mean to suggest that either point is without its dissenters. On the first point, the existence of climate change skeptics is well known to anyone who pays attention to the issue, even tangentially. The potential controversy about the second point—that local governments can address climate change in some fashion—might occur in a variety of ways. Even among those that support land-use regulation in a general sense, arguments continue about how to best go about it, whether at a state, local, or even regional level.[121] Perhaps more significant, many Americans prefer that local governments only exercise limited control of private land.[122]

That final point brings us nearer the primary purpose of this article. As indicated in the introduction, the specific purpose of this article is not necessarily to develop or contribute to thinking about *how* local government might develop new approaches to addressing global climate change by, for example, suggesting model ordinances or approaches that might effectively reduce greenhouse gas emissions, although the article can contribute to that discussion tangentially. Rather, this article questions *if* local governments can discover the community or political will to implement or extend any approach that might address climate change. In other words, neither the existence of good ideas about how to change our growth, development, and transportation patterns, nor the repeated and sincere expressions of "goals" or "policies" to that end, necessarily indicate that meaningful, durable, and effective local efforts to address climate change will emerge in a sufficient quantity of counties, cities, or towns to make any significant dent in this country's contribution to global climate change. A variety of impediments exist between the creation of what might be effective tools and the long-term implementation of those tools. This article considers some of the impediments, with the purpose of facilitating a discussion about how to overcome those obstacles and ultimately implement effective strategies for reducing energy

121. *See, e.g.*, FRED BOSSELMAN & DAVID CALLIES, THE QUIET REVOLUTION IN LAND USE CONTROL (1971).

122. *See generally* WHO OWNS AMERICA?: SOCIAL CONFLICT OVER PROPERTY RIGHTS (Harvey M. Jacobs ed., 1998); A WOLF IN THE GARDEN: THE LAND RIGHTS MOVEMENT AND THE NEW ENVIRONMENTAL DEBATE (Phillip D. Brick & R. McGreggor Cawley eds., 1996).

consumption, our development footprint, and our contribution to greenhouse gas emissions.

But before proceeding with the following discussion, I must make explicit two assumptions: first, that global climate change is occurring, that it will have potentially significant effects on the natural environment, and that human behavior is its primary driver; and second, that local governments have the constitutional authority to address climate change, and that those efforts have the potential to have some real effect on the emissions of greenhouse gases in this country. Given those assumptions, one apparently simple question remains: *will* local governments be able to adopt new land-use ordinances that are both durable and effective? The balance of this article explores this issue.

Our consideration of local efforts to regulate climate change does not occur in a theoretical or experiential vacuum. Addressing this issue effectively and efficiently requires pulling it apart into two related, and largely overlapping, concerns. First, we must consider *how* local land-use regimes change, and then we must consider *why* this specific change (the potentially radical revisions of local land-use regimes to address climate change) might occur.

A. The Evolution of Local Land-Use Institutions

Considering how local land-use regimes change requires us to step back a bit from our typical experience with developers and their neighbors, city councils or county commissions, and late night planning and zoning commission meetings. As that incomplete list of actors in any land-use drama indicates, land-use decisions and land-use ordinances emerge from the combined efforts of several sets of individual actors, although they are not merely the aggregate effect of atomistic decision-making. A local land-use regime is part of a broader structure of norms, working rules, and property relations that influence and guide social interactions. A city council does not create a land-use regime out of whole cloth, as even the city council itself is part of a preexisting set of norms and patterns of behavior that determines what options it might have for readjusting the community's trajectory.

Oversimplifying the point to some extent, scholars Robert Ellickson and Vicki Been suggest that land-use disputes typically involve three main sets of players: the developer, the developer's neighbors, and the "general-purpose local government."[123] Ellickson and Been do recognize that the general purpose local government consists of real people—

123. ROBERT G. ELLICKSON & VICKI L. BEEN, LAND USE CONTROLS: CASES AND MATERIALS 73 (3d ed. 2005).

"elected officials, usually advised by planners and other professionals"—who "are not simply passive arbitrators."[124] But they fail to extend that point to consider these officials as individuals with their own values and ideas about how a community should look or the proper extent of local governmental influence on development.[125] Although this point appears relatively unremarkable—that local officials are influenced by their own beliefs and ideology as much as by the desires of their constituents—it does warrant additional consideration.

Outside of the specific context of climate change, a large set of cases from a variety of subjects illustrates the efforts of courts to diminish the influence of personal tastes and values on the business of government. That is not to say personal values should play no role in government, or that courts are intent on removing those personal values entirely from local decision-making, but rather demonstrates that because personal values play such a large role in government, courts have found it necessary to adopt legal rules limiting that influence where it exceeds the bounds of the Constitution. However, even in adopting legal principles to control the influence of personal values on policymaking, courts have refused (at least most recently) to interfere substantially with the mechanisms of local government.

Perhaps the best example of this balancing between personal values and constitutional government arises in the modern (i.e., not Lochnerian) substantive due process context. Absent the violation of an explicit constitutional provision, it is only in very limited circumstances—"only the most egregious official conduct" which "shocks the conscience"[126]—that courts are willing to invalidate decisions tainted by the personal values of the local officials. In other words, viewed from the alternative perspective regarding what *is* allowed, the personal values of local officials are more or less an implicitly—and often explicitly—accepted contribution to local policy. As the Supreme Court recognized unanimously in 1954 in the Fifth Amendment takings case, *Berman v. Parker*:

> The concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled.[127]

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124. *Id.*
125. *Id.*
126. County of Sacramento v. Lewis, 523 U.S. 833, 846 (1998).
127. Berman v. Parker, 348 U.S. 26, 33 (1954).

These values, as well as the values that contribute to the public's understanding of the best means to achieve public health and safety, or how to promote economic development, are subjective and vary according to personal experience. We elect public officials, in large part, because they share our sense of personal values.

But recognizing government actors as individuals influenced by their personal values, needs, or ideas—particularly at the level where local officials are largely part-time or volunteer positions—does not require the adoption of a strict methodological individualism[128] framework for considering their behavior or the consequences of that behavior on broader social or legal structures. Nor must we assume that only the individual desires or values of government officials matter, to the exclusion of the desires or values of their constituents. To the contrary, the actions and preferences of apparently self-interested individuals (including government officials) exist within, and contribute to, a socially constructed framework—a set of institutions—that informs the actions of all individuals.[129] An early institutional economist, John R. Commons, describes institutions as collective action in control, liberation, and expansion of individual action.[130] More recently, Geoffrey Hodgson describes institutions as follows: "[w]hen habits become a common part of a group or a social culture they grow into routines or customs. Institutions are formed as durable and integrated complexes of customs and routines."[131] And Professor Daniel Bromley suggests that the study of institutions "brings us into direct contact with the socially constructed norms, working rules, and entitlements that shape and influence fields of action."[132]

Consequently, in their broadest conception, institutions define choice sets, order and structure behavior, and outline the universe of acceptable social actions. Because all human actions and interactions occur within this preexisting framework, individuals cannot act wholly independently, outside of the society and culture within which they live.[133]

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128. I use "methodological individualism" here to represent the idea that all social phenomena can be explained by examining the preferences of atomistic, utility-maximizing individuals. This is not the only appropriate use of this term, however. *See, e.g.*, Geoffrey M. Hodgson, *Meanings of Methodological Individualism*, 14 J. ECON. METHODOLOGY 211 (2007).

129. *See, e.g.*, DANIEL BROMLEY, SUFFICIENT REASON: VOLITIONAL PRAGMATISM AND THE MEANING OF ECONOMIC INSTITUTIONS 31–66 (2006).

130. *See, e.g.*, John. R. Commons, *Institutional Economics*, 21 AM. ECON. REV. 648 (1931); Bromley uses this same characterization to describe "public policy." Daniel W. Bromley, *Reconsidering Environmental Policy: Prescriptive Consequentialism and Volitional Pragmatism*, 28 ENVTL. & RESOURCE ECON. 73, 79 (2004).

131. Geoffrey M. Hodgson, *The Approach of Institutional Economics*, 36 J. ECON. LITERATURE 166, 180 (1998).

132. BROMLEY, *supra* note 129, at 31.

133. *Id.*

Instead, society or culture informs all individual action—even those actions that might be perceived superficially as purely selfish or self-interested. They are only "selfish" within the framework the culture provides. As Geoffrey Hodgson points out, "[b]y institutions, individuals are not merely constrained and influenced. Jointly with our natural environment and our biotic inheritance, as social beings we are *constituted* by institutions."[134]

Of course, the institutional framework of a community is not itself completely independent of the individual actors that it guides and influences. The relationship between institutions and the individuals living within the institutions flows in both directions. Even as individuals are formed socially by the institutional structure within which they live, that institutional structure is in turn constituted by individual and community needs and desires. So while the institutional structure influences and shapes individual needs, desires, preferences, and actions, that institutional structure is itself a function of the needs, desires, preferences, and actions of the society's individual members. In this fashion, "institutions mold, *and are molded by*, human action."[135]

Understanding how a community's needs, desires, preferences, and actions form and are formed by an institutional structure allows a greater understanding of how institutions evolve. At any given moment, the existing institutions represent a constellation of visions or ideas regarding the purpose of a given place or situation, as those visions have changed or developed up to that moment.[136] Institutions represent the community's previous agreements about the future of that place, as those agreements have been institutionalized, either formally or informally, and guide behavior at that moment. However, the community's discussion about its future continues, and existing institutions might not appear capable of creating a new future now imagined by the community. As new agreements emerge for the future of a place, or as it becomes apparent that existing institutions cannot resolve conflict—either new conflict or preexisting conflict that the existing institutions originally "sought" to remedy—the community will develop a new set of institutions, intending to implement the new imagined future.

This understanding of institutional structures suggests that institutional change might follow a three-step process.[137] First, a dissatisfac-

134. Hodgson, *supra* note 131, at 189.

135. *Id.* at 181 (emphasis added).

136. *See generally* JOHN R. COMMONS, THE LEGAL FOUNDATIONS OF CAPITALISM 147 (1923).

137. BROMLEY, *supra* note 129, at 67–84. These "steps," of course, continually overlap and interact such that it would be difficult to impossible to describe any real condition as exclusively occupying one of the boxes suggested here.

tion with the existing institutional setup emerges in the institutional community. The community either recognizes that the existing institutions have not created the situation desired by the community when the institutions arose, or the community faces a new set of circumstances or conflicts that the existing institutions cannot adequately address—for example, the local causes or consequences of climate change. As the community addresses the new set of circumstances or conflicts, it creates a new imagined future for a place that might avoid, minimize, or mitigate those conflicts or other institutional defects.[138] New expectations for what that place should "look" like emerge.[139] After the community agrees on the new collective vision for the future of its place, it develops a new set of institutions that the community believes will achieve that imagined future. With respect to our present discussion, those new institutional structures might specifically address local greenhouse gas emissions.

But identifying this three-step process for institutional change should not be read to suggest that such change happens readily or quickly. Although institutions are not immortal, they are relatively durable and self-reinforcing.[140] Institutions represent engrained habits or customs, many of which are formalized into the working rules and property relations of a society.[141] An institutional setup arises in part from the moral customs, beliefs, and expectations of a community, and subsequently serves to establish what is "moral" or "right" for that community as it carries on into the future. As long as the institutions remain consistent with the community's moral expectations—which are themselves defined by the institutional structure—the institutions remain "moral," thereby reinforcing their own moral legitimacy.[142]

The circular nature of an institution's "morality" is apparent in how a community assigns and protects rights in land, and thus the appropriate nature of land-use regulation. For example, in high scenic-amenity areas, scenic views might be desirable and could considerably increase the value of a parcel of land in much the same way that easy access to water, transportation, or minerals might increase value. Consider, however, a not entirely hypothetical system of property rights that

138. *See generally* G.L.S. SHACKLE, DECISION, ORDER AND TIME IN HUMAN AFFAIRS (1961).

139. *See, e.g., id.* at 272.

140. Hodgson, *supra* note 131, at 179–81.

141. In using the term "property relations" I follow Daniel Bromley, who formulated this term to represent the set of institutional arrangements concerning benefit streams arising from the "ownership" of certain valuable resources or circumstances. The term is not limited to "property rights," as that term is commonly understood, but also includes civil rights and other areas of human interaction protected or guaranteed by the state. *See, e.g.*, BROMLEY, *supra* note 129, at 54–55.

142. Hodgson, *supra* note 131, at 179.

"prefers" development over scenic resources. A neighbor's "right" to develop his or her own parcel likely would take precedence over the neighbor's scenic view, allowing—or better said, justifying—development that would block or otherwise diminish the view, and thus destroy that aspect of the neighbor's "property." Both the development and the view contribute to the value of each parcel and arguably should contribute to the bundle of sticks that comprise each landowner's rights in his or her land.[143] In other words, in some "pre-institutional" condition,[144] both circumstances had an equal opportunity to be designated as "rights" by the community. But in this hypothetical system, the community chose to create an institutional structure protecting the one to the detriment of the other.[145] If the view is not *legally* protected—if the landowner cannot call upon the coercive power of the state to prohibit the view-obstructing development—can it be considered properly as part of the bundle of rights associated with that parcel of land?[146] Thus when it comes to the regulation of these two potentially competing circumstances, the creation and consequent protection of a "right" in either circumstance depends on the state, locality, and court where the regulation exists and is challenged; that is to say, the circumstance that is characterized as a property "right" depends on the specific institutional structure of the place.[147] The right results from a community decision to assign a greater status to one circumstance over the other—a decision that has since been institutionalized in the formal and informal set of property relations for that place.

But how does this assignment of rights suggest a circular morality? In many cases, the reasons for the initial assignment of property

143. *See generally* RESTATEMENT OF PROP.: INTRODUCTION, FREEHOLD ESTATES §§ 14–152 (1936); DANIEL R. MANDELKER, LAND USE LAW (5th ed. 2003).

144. By "pre-institutional," I do not mean a condition without *any* institutional structure. That is impossible. The original assignment of rights could not have occurred without some preexisting set of expectations, agreements, or understandings about land itself, and the relationships between and among individuals and communities about land—that is to say, it would have been impossible without some institutional structure. Consequently, "pre-institutional" in this context means before the *current* institutional regime arose.

145. Even where efforts are made to consider the value of scenic resources, development might still be preferred. *See, e.g.*, JJR 1 v. Mt. Crested Butte, 160 P.3d. 365, 371 (Colo. App. 2007) (holding that, even where a local ordinance requires the local government to consider scenic views and ensure that they are not blocked unnecessarily, landowners "do not have any constitutionally recognized property interest in the preservation of scenic views. . . ."); *but cf.* WASH. REV. CODE ANN. § 90.58.320 (1971) (limiting building height to 35 feet if a taller building "will obstruct the view of a substantial number of residences").

146. *See, e.g.*, Daniel W. Bromley, *This Land Is Whose Land?*, 48 WISC. ACAD. REV. 60 (2002); *see also* Eric T. Freyfogle, *Private Property—Correcting the Half-Truths*, 59 PLAN. & ENVTL. L. 3 (2007).

147. *See, e.g.*, J.F. Ghent, Annotation, *Aesthetic Objectives or Considerations as Affecting Validity of Zoning Ordinance*, 21 A.L.R. 3D 1222 (1968).

rights may no longer be obvious to the community, given that the current institutional structure replaced whatever institutional structure existed at the time the rights were assigned. But whatever the initial reasons for this assignment of rights, the situation remains because the institutional structure now confirms that it was a correct assignment. The original reasons no longer matter, because the institutional regime justifies the continuing protection of the one circumstance to the detriment of the other, largely independent of the original reasons. Although arguably both circumstances in this hypothetical are equally deserving of protection, the opportunity to develop (or the opportunity to pollute in the era before modern environmental laws) remains the protected "right" because the existing institutional regime indicates that it is the greater right or that it is the only right. And the existing institutions are themselves "correct" because they serve to protect what the community understands as property rights—an understanding informed over time by the local institutional structure. The institution is moral because it protects what the community believes is moral; the community believes something is moral because its institutions define and protect that morality.[148]

For at least this reason—the circularity of institutional morality—institutions are inherently self-sustaining, often requiring significant conflict or significantly changed circumstances before a community will recognize that the existing institutions are no longer satisfactory. However, in some cases, it is just this self-sustaining, durable nature of institutions that can motivate institutional change. For early institutionalists, the changing industrialized world appeared to rapidly outpace the existing institutional structure, and institutions were forced to evolve quickly to take into account the new industrialized world.[149] A similar dynamic might seem to be apparent today as communities seek to address climate change. Individual and community expectations can change—either incrementally in response to global inputs, or more significantly due to rapidly changing local circumstances. But in either case, the inertia inherent in any established system, or the interests and defensive activities of entities that benefit from the status quo,[150] seek to prevent existing institutions from changing in a fashion that might disadvantage the interests that benefit from the existing institutional setup. Eventually, evolving community expectations might become significantly out of step with the inflexible institutional structure, leading to obvious and potentially intractable conflict if the existing institutions remain. But even this ap-

148. *See* Hodgson, *supra* note 131, at 179.

149. *See, e.g.*, Malcolm Rutherford, *Institutional Economics: Then and Now*, 15 J. ECON. PERSP. 173 (2001).

150. *See, e.g.*, Harvey L. Molotch, *The City as a Growth Machine*, 82 AM. J. SOC. 309 (1976).

proach toward institutional change, where a potentially significant disconnect exists, requires both a clearly articulated community vision for what a community should "look" like, and a community agreement that the existing institutional regime will not achieve that vision. Although the public understanding of climate change is evolving, it is not yet at that stage.[151]

Consequently, any institutional change—including something as simple as revising land-use ordinances—requires a specific set of conditions as well as a specific set of community reactions to those conditions, both of which become very complicated when viewed in the climate change context. In the abstract, to review, a community will accept institutional change when three conditions occur.[152] These conditions occur neither simultaneously nor necessarily in sequence, but rather interact and overlap as a community engages in a discussion about a desired future. First, the community recognizes that an existing institutional setup is "defective"—i.e., it is incapable of ensuring that the community's desired future will materialize. The community either determines that an institutional regime did not bring about the conditions desired when the institutions were created, or the situation desired at the time the institutions were created does not coincide with the present desires of the community. After (or while) recognizing that the existing institutional regime created, or continues to create, unsatisfactory conditions, the community begins or continues a conversation about a new imagined future. At some point, the community reaches a consensus about that imagined future sufficient to motivate change in certain legal rules and policies that are imagined to enact the community's vision.

This is perhaps an overly simplistic view of institutional change, but it does highlight three important issues when considering the ability of local government to enact ordinances intended specifically or primarily to address climate change. First, prior to accepting institutional change intended to address climate change, the regulated community—including government officials—must understand that the existing institutional regime does not "effectively" address climate change. Second, the community must consider this a *defect* in the existing institutional regime—that is to say, the community must desire to address global climate change. And third, the community must arrive at some agreement about the type of new regulation that should be enacted to implement the community's vision about how it should address climate change on the local level. Two problems arise implicitly in this analysis: the effects

151. *See* Susanne C. Moser, *In the Long Shadows of Inaction: The Quiet Building of a Climate Protection Movement in the United States*, 7 GLOBAL ENVTL. POL. 124 (2007).

152. *See, e.g.*, BROMLEY, *supra* note 129, at 67–84.

of global climate change are difficult to understand on a local level, particularly where that locality is physically removed from the more obvious consequences of climate change; and local ability to mitigate *global* climate change in a meaningful way is difficult to envision for the individuals whose local behavior is expected to change.

B. From Warranted to Valuable Belief

The adoption of effective local climate change regulation requires a community desire to regulate climate change, a recognition that the existing institutional regime will not achieve the community's climate change related goals, and the ability to imagine a future—including a new set of legal rules—where those goals can be achieved. But for many individuals, even if the community agrees about the necessity of addressing global climate change in some fashion, the perceived costs of local efforts to address climate change might appear to dramatically outweigh the potential benefits derived from those efforts. Local residents might feel that too much is being asked to solve a "problem" that is not readily apparent. And the solution or future benefit might be even less apparent, particularly given the fact that most efforts aimed at reducing greenhouse gas emissions arguably only delay or partially mitigate the effects of climate change. Put another way, the individuals in a given community understandably might respond with one of two simple questions: "how does it affect me?" and "but what can I do anyway?" The first question arises when it is difficult to recognize or understand the extent or severity of a problem because the *local* effects—or the connections between an extra-local cause and some obvious or significant local effect—are difficult to conceptualize. The "but what can I do?" question, which recognizes the severity of the problem both locally and globally, suggests doubt about the effect of any local action on the grounds that any personal efforts will be overshadowed by the failure of others in similar circumstances to act equally.[153]

On a global scale, a good example of this behavior is the reaction of the United States to the Kyoto Protocol and the more recent negotiations in Bali. One of the United States' primary objections to the Kyoto Protocol was its focus on developed countries and its lack of meaningful greenhouse gas reductions for developing countries, including most predominantly China.[154] The United States worried about taking "local"

153. *See, e.g.*, Michael Pollan, *Why Bother?*, N.Y. TIMES, Apr. 20, 2008, http://www.nytimes.com/2008/04/20/magazine/20wwln-lede-t.html.

154. *See, e.g.*, Paul Baer et al., *Equity and Greenhouse Gas Responsibility*, 289 SCI. 2287 (2000).

action that would be rendered ineffective or inefficient by the unwillingness of neighboring communities to act in a similar fashion.

As the institutional change discussion suggests, prior to enacting climate change initiatives, local communities and the individuals that comprise and govern those communities must reach a collective agreement regarding an imagined future and the potential for the existing institutional regime to achieve that future. Adopting new land-use regimes, and changing behavior consistent with new formal or informal institutional structures, requires both individual and collective *belief* regarding the ability of those behavioral changes to achieve that imagined future. The crux, therefore, of obtaining durable institutional change lies in arriving at a belief sufficient to motivate that change.

Much of the discussion regarding how local government (or any level of government) might respond to or try to prevent global climate change begins with the assumption that the science of global climate change is well settled, and that only a few marginal voices continue to question whether climate change is a fact. The IPCC's analysis of human effect on the climate has grown increasingly precise and certain, and many commentators are now comfortable stating that there is "no longer credible scientific dispute" that human activity is contributing to global climate change.[155]

I do not disagree with that assumption, as limited to the scientific community. However, the scientific community is not the only place where debate about global climate change occurs, nor is it necessarily the most important place. Particularly in the context of this discussion, which addresses the ability of local governments to address problems identified by the scientific community, another debate takes on much greater significance: the debate within the lay public about individual and community contributions to global climate change, and the ability to reduce its effects. Inherent in this debate is the threshold question of whether human-caused global climate change is even a real phenomenon. But in traveling the path toward social and legal change that might effectively address global climate change, the consensus of the scientific community is only one barrier that must be overcome. The scientific consensus must be communicated to the public in a fashion that motivates that public to act accordingly; that is to say, the public must find the information useful. Consequently, once the scientific community has reached its consensus, the science takes a back seat:

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155. Brawer & Vespa, *supra* note 93, at 592; *see also* IPCC, *Summary for Policymakers* I, *supra* note 8, at 43–45.

> [T]he warranted belief of a community of disciplinary adherents is a necessary, but not sufficient condition for the immediate acquiescence of the rest of us. Indeed, our acquiescence in its fixed belief and associated warranted assertions must rest on a separate set of arguments and reasons from those to which the discipline alone is privileged.[156]

Failing to recognize the importance of this communicative step between the community tasked with learning new things and the community for which those things are learned risks losing the benefit of new understandings for failure to explain why those new understandings *matter*.[157]

At this point it will be useful to step back for a moment and discuss a specific word that will arise repeatedly throughout the remainder of this article—"belief." In the preceding paragraph, the quoted language from Professor Bromley describes the consensus of a scientific community as a "warranted belief." As mentioned previously and within the title of this work, the issue of primary concern in this article is getting to *valuable* belief. But that leaves us with a threshold question of what constitutes "belief."

The concepts of warranted and valuable belief originate in the American pragmatic tradition found in the late nineteenth and early twentieth century work of American philosophers. Charles Sanders Peirce explained that "the essence of belief is the establishment of a habit."[158] When faced with an "irritation of doubt"[159] that causes us to hesitate or fail to act, we engage in a process of imagining various different resolutions to our doubt until, after some period of time, "we find ourselves decided as to how we should act under such circumstances as those which occasioned our hesitation. In other words, we have attained belief."[160] Thus, it is belief that allows us to act.[161] William James suggested in the alternative that we choose *not* to believe those ideas or theories that are of no use to us, i.e., that do not motivate action: "[a]s a rule we disbelieve all facts and theories for which we have no use."[162] John Dewey later provided further texture to belief by separating it into two classes: warranted belief and valuable belief (or as Dewey characterized

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156. BROMLEY, *supra* note 129, at 134.

157. *Id.*

158. Charles S. Peirce, *How to Make Our Ideas Clear*, *in* PRAGMATISM: A READER 26, 33 (Louis Menand ed., 1997) (1878).

159. *Id.* at 30.

160. *Id.* at 31.

161. Bromley, *supra* note 130, at 86 (2004).

162. WILLIAM JAMES, THE WILL TO BELIEVE AND OTHER ESSAYS IN POPULAR PHILOSOPHY 10 (1897).

it, warranted assertions and valuable assertions).[163] Whether a belief or assertion is "warranted" or "valuable" depends on the community making the assertion and that community's purpose in so doing.

Before continuing, however, it might be useful to reiterate James's point about what we choose to *dis*believe. As noted in the preceding section, institutional regimes evolve as individuals and communities create new imaginings for the future of a place. "Facts and theories" that do not help a community achieve its created imaginings are not useful, and thus there is no reason for the community to believe them. That is a crucial component of the remaining discussion.

With respect to any area of human interaction or concern about which knowledge might be useful, the affected community "assigns" a smaller community with the task of gathering and articulating that knowledge. It is that epistemic community's responsibility to provide the rest of us with enough relevant knowledge to decide what or how to believe and thus guide our own behavior.[164] For example, with respect to the interpretation or application of the law, our culture has created a small epistemic community tasked specifically with explaining to the rest of us what the law means and how it should be applied. Whether we consider that community to be the entire legal community or just the judiciary, within either option sits a much more specialized community where, in one characterization, disputes go to die—the U.S. Supreme Court. We rely on and expect the Court to provide final pronouncements regarding the nature of the law, and lesser courts are more or less obligated to follow the Supreme Court's lead, thus demonstrating the *collective* belief of that epistemic community.

Although no obvious analogue to the U.S. Supreme Court exists in the climate change context, there does exist a specific epistemic community tasked with discovering and articulating knowledge about the causes and consequences of global climate change. Broadly speaking, this community consists of the full body of scientists around the world who are researching global climate change and submitting their findings to the community for review. As that broader community reaches a consensus—or settled belief—accepting certain characterizations or assertions regarding climate change, those specific assertions contribute to the *warranted belief* emanating from the climate change community. As indicated, while the climate change epistemic community does not have a body identical to the U.S. legal community's Supreme Court, the climate

163. *See, e.g.*, Robert B. Westbrook, *Pragmatism and Democracy: Reconstructing the Logic of John Dewey's Faith*, *in* THE REVIVAL OF PRAGMATISM: NEW ESSAYS ON SOCIAL THOUGHT, LAW, AND CULTURE 128, 131 (Morris Dickstein ed., 1998).

164. *See, e.g.*, BROMLEY, *supra* note 129, at 87–91.

change community does have a single body designated with the task of identifying (but not directly contributing to) what can be characterized as that community's warranted belief—the Intergovernmental Panel on Climate Change (IPCC). In many ways, the IPCC does not go far enough in characterizing the warranted beliefs of the community of scientists creating the body of knowledge the IPCC is tasked with gathering. The primary criticism of the IPCC is that it is *too* conservative, and is thus unwilling to articulate what might in fact be the newest warranted beliefs of the scientific community.[165] But that fact notwithstanding, the IPCC is the body designed to communicate the settled belief of the scientific community regarding climate change.

The United Nations established the IPCC to provide the public and other decision-makers with an objective source of information about climate change; the IPCC does not conduct any original research nor monitor any climate change related data.[166] Rather, it collects and analyzes peer reviewed, and some non-peer reviewed, technical literature from experts all over the world to compile a single authority on the state of the global climate.[167] The IPCC has set up an arduous process to ensure the ultimate goal of consensus on objective results is met.[168] Because of the desire to achieve consensus, that process necessarily leads to conservative judgments about future impacts and consequences of climate change.[169] For example, the IPCC might be overly cautious with respect to describing sea level rise, for fear that large numbers, even if accurate, might scare the public.[170] Those fears notwithstanding, the IPCC's four

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165. *See, e.g.*, Richard A. Kerr, *Seas to Rise Faster This Century*, SCIENCENOW DAILY NEWS, Sept. 4, 2008, http://sciencenow.sciencemag.org/cgi/content/full/2008/904/1; W.T. Pfeffer et al., *Kinematic Constraints on Glacial Contributions to 21st-Century Sea-Level Rise*, 321 SCI. 1340 (2008) (finding that the most recent IPCC report underestimated potential sea level rise); Seth Borenstein, *New Climate Report Too Rosy, Experts Say*, WASH. POST, Jan. 28, 2007, http://www.washingtonpost.com/wp-dyn/content/article/2007/01/28/AR2007012800478_pf.html.

166. Intergovernmental Panel on Climate Change, About IPCC, http://www.ipcc.ch/about/index.htm (last visited Jan. 24, 2009).

167. *Id.*

168. First, about 200 countries nominate authors, of whom only a relative few are selected to be authors on each working group. Working group authors then review the technical literature related to their working group and call for more research if needed. Then, hundreds of submissions are condensed into a single report. These draft reports are reviewed by a second team of experts while individual countries are given an opportunity to comment. A third team then incorporates the comments received where possible. Finally, the Summary for Policymakers, the most widely read document synthesized by the IPCC, is written by both scientists and policymakers to ensure consensus. *See* Mark Schrope, *Consensus Science, or Consensus Politics?*, 412 NATURE 112 (2001).

169. *Id.* at 114.

170. R.A. Kerr, *Pushing the Scary Side of Global Warming*, 316 SCI. 1412 (2007).

assessments have provided substantial, objective facts about climate change and, as testament to their quality, were accepted as the scientific guide for the Kyoto Protocol negotiations.[171] Thus, it is fair to say that the assessments produced by the IPCC represent the settled and warranted belief of the scientific community regarding climate change. In fact, the IPCC is perhaps the best example of a designated community of disciplinary adherents tasked with identifying a warranted belief regarding a specific subject. The IPCC relies on the *consensus* of the world's best climate change scientists; its conclusions are precisely the *warranted* beliefs we, as the affected public, request and require of our experts.

However, the creation and communication of a warranted belief by an epistemic community is only the first step toward action on that belief. Recall that the very purpose of the epistemic community is to gather knowledge and provide it to the broader community of lay people of which the specialized community is a part and to which it was designed to contribute. Given that the purpose of the specialized community is to provide knowledge for the benefit of the broader community, it is the sole province of that broader community to decide if the warranted belief of the epistemic community is useful.[172] If the broader community finds the warranted belief insufficiently justified by the epistemic community, or if the broader community determines that the warranted belief is not useful without regard for whether it is warranted or otherwise "true," it is under no obligation to accept that warranted belief. Only those warranted beliefs that are accepted by the broader community attain the status of *valuable belief*—a belief upon which *that* community is prepared to act.

Articulating a warranted belief, therefore, does not *require* the subsequent formation of a valuable belief. Again, per James, we choose to disbelieve those theories or facts we do not find useful. Returning to the U.S. Supreme Court, we find an example of where a warranted belief did not receive the community's blessing, and thus did not rise to a valuable belief. In a story widely known by this point both inside and outside the legal community, the City of New London, Connecticut, attempted to exercise its eminent domain powers to allow a community development project.[173] Although many landowners willingly sold to the city, several chose not to. The homes were not blighted or in disrepair, but apparently

171. Schrope, *supra* note 168, at 114.

172. William James referred to this as the determination of whether a theory or belief has "cash value," that is to say, whether it has actual practical consequences in one's life. WILLIAM JAMES, PRAGMATISM: A NEW WAY FOR SOME OLD WAYS OF THINKING 125 (1982) (1907).

173. Kelo v. City of New London, 545 U.S. 469 (2005).

were rather well loved and maintained. But that fact notwithstanding, on the surface the case did not appear controversial. The City of New London's goals for the parcels at issue included the creation of high technology office space, a state-of-the-art marina training center and marina support facilities, parking and support for a state park (located across the street), and extension of a pedestrian river walk.[174]

In 1954, the U.S. Supreme Court determined, in a unanimous decision, that the Fifth Amendment's public use clause[175] could be extended to include community development even where the government immediately transferred the property to another private party.[176] In *Berman v. Parker*, the Court considered the ability of a local government (in that case, the U.S. Congress, which is responsible for governing the District of Columbia) to use its eminent domain powers to allow a redevelopment project. The question at issue was whether economic development constituted a "public use," and thus fit within the requirements of the Fifth Amendment's takings clause.[177] As noted previously, the Court suggested:

> [T]he concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled.[178]

The Fifth Amendment, of course, does not use the phrase "public welfare," providing instead that the exercise of eminent domain must be for "public use." But this distinction did not trouble the unanimous Court:

> Once the object is within the authority of Congress, the right to realize it through the exercise of eminent domain is clear. . . . Here one of the means chosen is the use of private enterprise for redevelopment of the area. Appellants argue that this makes the project a taking from one businessman for

174. *See* Joint Appendix, Vol. 1, 2004 WL 2967525, at 108–13, Kelo v. City of New London, 545 U.S. 469 (2005).

175. U.S. CONST., amend. V ("nor shall private property be taken for public use without just compensation.").

176. Berman v. Parker, 348 U.S. 26 (1954).

177. *Id.* at 31. The takings clause of the Fifth Amendment consists of the Amendment's final 12 words, and reads: "nor shall private property be taken for public use without just compensation." U.S. CONST., amend. V. In *Chicago B. & Q.R. Co. v. City of Chicago*, 166 U.S. 226 (1897), the Supreme Court determined that the Fifth Amendment, including the takings clause, applies to state governments through the Fourteenth Amendment.

178. *Berman*, 348 U.S. at 33 (internal citations omitted).

> the benefit of another businessman. But the means of executing the project are for Congress and Congress alone to determine, *once the public purpose has been established.*[179]

In other words, once a local government has articulated a legitimate public purpose—i.e., once the local government establishes that the project will promote the public health, safety, welfare, or morals—the use of the eminent domain power is appropriate. In a later case, the Court made this point more explicit. In *Hawai'i Housing Authority v. Midkiff*, Justice Sandra Day O'Connor, writing for a unanimous Court, said, "The 'public use' requirement is thus coterminous with the scope of a sovereign's police powers. . . . [W]here the exercise of the eminent domain power is rationally related to a conceivable public purpose, the Court has never held a compensated taking to be proscribed by the Public Use Clause."[180]

Given this precedent, the New London project might have been expected to cause little controversy at the Supreme Court, even if it might have caused substantial controversy locally. The city's proposed uses, including a public pathway, a publicly accessible recreation facility, and support for the adjacent state park, among other things, fit within the Court's previously broad characterization of the public use requirement. That New London would ultimately transfer some of the land to other, as yet undetermined, private individuals should not have bothered the Court, as it had voted unanimously on two previous occasions to allow precisely this type of activity. But of course, the Supreme Court's decision was extremely controversial, both within the Court itself and across the country as the public considered the potential consequences of the decision.

Many articles have already been written about the decision in *Kelo v. City of New London*,[181] such that rehashing the decision itself in substantial detail is unnecessary here. But a few points about the decision and its aftermath do warrant continued discussion. First, the Court held, in a 5-to-4 decision, that the City of New London's proposed project did satisfy the public use clause of the Fifth Amendment, and thus the exercise of eminent domain was appropriate.[182] The result was unsurprising, but the

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179. *Id.* (emphasis added). As indicated above, *Berman v. Parker* dealt with a redevelopment project in the District of Columbia. The principles discussed by the Court also apply to state or local governments, i.e., in the quotes above, the word "state" could replace "Congress" without affecting the legal effect or import of the language.

180. Haw. Hous. Auth. v. Midkiff, 467 U.S. 229, 240 (1984).

181. A Westlaw search on February 27, 2009, in the Journal and Law Reviews database (JLR) yielded 189 articles with "Kelo" in the title. Over 2,200 cases, articles, or other documents cite to the case in some fashion.

182. Kelo v. City of New London, 545 U.S. 469, 469 (2005).

5-to-4 split might have been. Both Justices Clarence Thomas and O'Connor filed dissenting opinions, with all four dissenters joining O'Connor's opinion.[183] O'Connor's dissent is fascinating given the language she used in *Midkiff* quoted above. Although she provided tepid support for both *Berman v. Parker* and her own decision in *Midkiff*, in her *Kelo* dissent, Justice O'Connor suggests that "economic development takings seriously jeopardize the security of all private property ownership."[184] As a result of the majority's decision in *Kelo*, Justice O'Connor argued, "Any property may now be taken for the benefit of another private property."[185]

This language—suggesting that no one's property is safe from the intrusive hand of government—had a predictable effect on the public. Immediately following the decision, the *New York Times* ran a front page article titled "Ruling Sets Off Tug of War Over Private Property."[186] The article identified an "intense reaction" or "backlash" among landowners in the immediate aftermath of the case as states and local communities attempted to internalize the decision. Perhaps more significant, in terms of the public's consumption of the decision and its potential consequences, the weekly newspaper insert, *Parade Magazine*, ran an issue on August 6, 2006, with the cover title "Will the Government Take Your Home?"[187] Largely the result of the public outcry after the *Kelo* decision, 34 states enacted laws in 2006 limiting the use of eminent domain for economic development.[188] But the *Kelo* backlash was actually part of a broader movement intended to eliminate arguably overbearing local land-use regulation,[189] and in fact, the *Kelo* controversy was used in several western states as something of a Trojan horse in an attempt to pass very restrictive ballot measures unrelated to eminent domain.[190]

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183. Justice Thomas wrote a separate dissent to argue that all of the Court's public use jurisprudence, including *Berman v. Parker* and *Hawaii Housing Authority v. Midkiff*, should be overruled. *Id.* at 506.

184. *Id.* at 505.

185. *Id.*

186. Timothy Egan, *Ruling Sets Off Tug of War Over Private Property*, N.Y. TIMES, July 30, 2005, http://www.nytimes.com/2005/07/30/national/30property.html.

187. *See* Sean Flynn, *Will the Government Take Your Home?*, PARADE MAGAZINE, Aug. 6, 2006, http://www.parade.com/articles/editions/2006/edition_08-06-2006/AEminent_Domain.

188. *See* Harvey Jacobs, *Social Conflict over Property Rights*, LAND LINES, Apr. 2007, at 14, *available at* https://www.lincolninst.edu/pubs/dl/1222_LLA070404%20Social%20Conflict%20Over%20Property%20Rights.pdf.

189. *Id.*; *see also* Harvey Jacobs, *The Politics of Property Rights at the National Level: Signals and Trends*, 69 J. AM. PLAN. ASS'N 181 (2003).

190. *See, e.g.*, Joni Armstrong Coffey, *High Hopes, Hollow Harvest: State Remedies for Partial Regulatory Takings*, 39 URB. LAW. 619 (2007).

What does *Kelo* have to teach about global climate change? As discussed above, the U.S. Supreme Court is the community that has been assigned the responsibility for determining what the Constitution means. In *Kelo*, as in *Berman* and *Midkiff*, the Court presented its warranted belief about the meaning of the Fifth Amendment's takings clause. However, notwithstanding the authority of the Court to make that determination, and the clear precedent, history, and logical reasoning behind it, the public that had assigned the Court to provide that belief, did not find the belief *valuable*. In fact, the public decided that it did not have to accept that warranted belief and instead articulated a separate belief that it found more valuable. In that way, of course, the Court's decision did lead to the formulation of a valuable belief, but it was nearly the opposite of the warranted belief that the Court had provided regarding the proper relationship between the government's power of eminent domain and the individual's "right" to be secure in her property.

I do not relate the *Kelo* experience to suggest that the Supreme Court's decision was somehow "wrong" as a constitutional or legal matter. To the contrary, it was *necessarily* correct, given that the Supreme Court is the entity tasked with determining the correct interpretation of constitutional provisions.[191] But the *Kelo* experience demonstrates how the specific community of individuals for which the warranted belief is created might not find the warranted belief particularly valuable, and thus might develop an alternative belief upon which it is prepared to act. It is up to the broader community to decide if the warranted belief of the Court, or any epistemic community, is useful: "so we see that the allegedly reassuring agreement of a community of disciplinary adherents—earnestly engaged in what Thomas Kuhn would call 'normal science'—is not sufficient reason for the rest of us to stop what we are doing and instantly reformulate our belief about certain matters."[192]

In the climate change context, we do not see the same revolt against the warranted belief articulated by the community of scientists studying global climate change. But we do see a disconnect between that warranted belief and the beliefs articulated by the public. The public has yet to adopt the warranted belief as its own valuable belief.

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191. Both of the normative descriptors used in this sentence and the preceding sentence—"correct" and "wrong"—should probably carry with them the caveat "at this point in time." Although this point is often controversial, the Constitution means whatever the Supreme Court says it means, but that meaning can, and does, change over time as the Court itself changes. The Supreme Court obviously can determine that a previous interpretation is no longer warranted.

192. BROMLEY, *supra* note 129, at 134.

C. I Want to Believe: Obstacles to Adopting Local Climate-Change Ordinances

The public's concern with and "backlash" to the *Kelo* decision discussed in the preceding section did not indicate the broad dissatisfaction with local government, land-use planning and regulation, or the use of eminent domain *generally* that the popular press or loudest complainers claimed. In Idaho, a generally libertarian state, particularly with respect to private property, a 2006 ballot initiative sought to reduce the ability of local governments to exercise eminent domain for economic development purposes and, more importantly, to adopt a regulatory takings regime that would require compensation or ordinance invalidation for any land-use regulation that reduced the market value of land. That initiative failed spectacularly, with over 75 percent of the state's voters opposing the initiative.[193] Although it is difficult to determine what motivates any individual voter, the initiative's opponents—comprised of a somewhat motley crew of farmers and ranchers, environmentalists, and local governments, among others[194]—successfully argued to the public that the initiative would substantially hamstring the ability of local governments to protect property values, plan for development, and ensure that valuable resources, whether economic or ecological, could be considered and protected. To be sure, Idaho had already adopted legislation limiting the reach of the *Kelo* decision,[195] but for 75 percent of the state to reject the initiative—where only 52.4 percent of more progressive California voted to reject a nearly identical initiative[196]—suggests a general acceptance of land-use regulation in the state.

But what explains the difference between Idaho's rapid legislative response to the *Kelo* decision and its overwhelming rejection of the "*Kelo*-plus" initiative the same year? Consider the apparently unrelated "essential nexus" and "rough proportionality" tests articulated by the U.S. Supreme Court in *Nollan v. California Coastal Commission*[197] and *Dolan v. City of Tigard*.[198] In *Nollan*, the Supreme Court considered whether a regulatory exaction attached to a building permit—specifically, the require-

193. Idaho Secretary of State, November 7, 2006 General Election Results, http://www.sos.idaho.gov/ELECT/RESULTS/2006/general/tot_stwd.htm (last visited Mar. 17, 2010).

194. *See, e.g.*, Rocky Barker, *Proposition 2 Opposition Is Widespread*, IDAHO STATESMAN, Oct. 8, 2006, *available at* 2006 WLNR 18436853.

195. *See* IDAHO CODE ANN. § 7-701A (effective July 1, 2006).

196. California Secretary of State, November 7, 2006 Complete Statement of Vote, *available at* http://www.sos.ca.gov/elections/sov/2006_general/complete_sov.pdf.

197. Nollan v. Cal. Coastal Comm'n, 483 U.S. 825 (1987).

198. Dolan v. City of Tigard, 512 U.S. 374 (1994).

ment for a lateral public easement across a private beach—could be justified without the payment of just compensation. Considered in isolation, a public easement across private property would be a clear taking requiring compensation under the Fifth Amendment.[199] In *Nollan*, the California Coastal Commission argued that the public harms caused by the new construction justified the public easement. The Court accepted that basic argument, recognizing that if a clearly articulated public harm would justify denying the building permit entirely, it would also justify a less demanding exercise of the police power, including the dedication of a public easement.[200]

But the discussion did not end there. In *Nollan*, the California Coastal Commission created an exaction—the lateral public easement—designed to remedy alleged public harms *that were not caused by* the activity allowed by the related building permit. As one example of the potential harms, the Commission determined that building the new structure on the Nollan property would contribute to a "psychological barrier" to accessing the beach given that the structure would decrease visibility of the beach from the street.[201] As the Court noted, however, a lateral easement connecting one beach to another only benefits those individuals already on the beach.[202] It cannot benefit individuals who cannot find the beach or do not know it is there (in the way that a required view corridor or easement from the street *to* the beach might). The court did not hold that the Commission's articulated public interest was not legitimate, but it did determine that there existed no essential nexus between that legitimate state interest and the exaction demanded of the landowner.[203] Consequently, even where there is a legitimate state interest and an identifiable public benefit, an exaction is not justified absent some clear relationship between those components.

In *Dolan v. City of Tigard*,[204] the Supreme Court considered a situation where the *Nollan* "essential nexus" did exist, but there was some question about the nature of the exaction relative to the harm caused by the regulated activity. Ms. Dolan requested permits to expand her plumbing and electrical supply store and pave her gravel parking lot. Because the city determined that the business expansion would increase vehicle traffic in its central business district, and doubling the building size and paving the parking lot would increase storm water runoff, it

199. *Nollan*, 483 U.S. at 831.
200. *Id.* at 836–37.
201. *Id.* at 838.
202. *Id.*
203. *Id.* at 836–37.
204. Dolan v. City of Tigard, 512 U.S. 374 (1994).

approved the permit conditioned on Ms. Dolan dedicating a public greenbelt, including a multiple use pathway, along neighboring Fanno Creek. The public greenbelt would help control storm water runoff, and the multiple use pathway would provide additional transportation options, thus alleviating traffic congestion.

The Court had little trouble determining that both exactions would satisfy the *Nollan* essential nexus test,[205] but then continued on from *Nollan* to consider that extent of the exaction relative to the public harm caused by the permitted activity. Although it recognized that some states adopt a stricter standard, the Court held that the U.S. Constitution requires adoption of a "rough proportionality" standard, which while not requiring a "precise mathematical calculation," does require the city to "make some sort of individualized determination that the required dedication is related both in nature and extent to the impact of the proposed development."[206] Thus, small public harms do not justify substantial private exactions, even where an essential nexus exists between the harm and the exaction.

The combined *Nollan/Dolan* test provides a useful analogy for considering both Idaho's response to the *Kelo* decision and local efforts to remedy climate change. That is not to suggest that *all* actions of local government must satisfy this legal standard (unless they entail an exaction of private land), but rather to suggest that any local action will have to satisfy a similar *political* standard. Where the regulated community can readily perceive the "essential nexus" between the legitimate public purpose and the behavioral change the new ordinance will require, and the benefit provided by that behavioral change is "roughly proportional" to the benefit that might result, that community will more readily accept the behavioral changes required by the new or continuing institutional regime. But where that connection is more attenuated, where *local* public benefits are less certain, where it remains unclear how the new requirements necessarily lead to future benefits, or where clear benefits are small relative to the demands required, the recommended institutional change will not satisfy the political essential nexus/rough proportional-

205. *Id.* at 387–88 ("Undoubtedly, the prevention of flooding along Fanno Creek and the reduction of traffic congestion in the Central Business District qualify as the type of legitimate public purposes we have upheld (citation omitted) . . . It seems equally obvious that a nexus exists between preventing flooding along Fanno Creek and limiting development within the creek's 100-year floodplain. Petitioner proposes to double the size of her retail store and to pave her now-gravel parking lot, thereby expanding the impervious surface on the property and increasing the amount of storm water runoff into Fanno Creek. . . . The same may be said for the city's attempt to reduce traffic congestion by providing for alternative means of transportation.").

206. *Id.* at 391.

ity requirement that would allow its adoption. In other words, the new approach is inconsistent with the future the community envisions.

Returning to *Kelo*, and to Idaho's response to *Kelo* and its own "*Kelo*-plus" initiative, the harms caused by exercising eminent domain to condemn a well-loved and cared for home are obvious, and potentially threaten all homeowners,[207] but the public benefits to be created by that condemnation—which must be filtered through the actions of a private party legitimately more concerned with its own welfare than the public good—are much less apparent. In contrast, the much less acute harms occasioned by basic zoning, density controls, setback requirements, or other typical land-use tools are not readily apparent to the average homeowner (though they may be more apparent to a developer). But the benefits provided by those land-use tools—protection of property values, attractive communities and neighborhoods, and safe places for children to play or walk to school—are more readily apparent on an ongoing basis.

With this in mind, we can better understand why the predominant pattern of discourse regarding climate change—specifically emphasizing the validity of climate change *science* is only the first of many necessary steps that must be taken before effective and durable climate change ordinances will arise on a sufficiently broad scale to meaningfully address the issue. This article has discussed two theoretical frameworks that, when considered together, allow an understanding of the obstacles that might prevent adoption and implementation of local ordinances addressing climate change. Beginning with the desired ultimate end—effective climate change ordinances—and working backward, we see that new land-use regimes arise in order to implement a community's created imaginings for the future of a place. The community creates new desired futures, and tools to implement that future, upon recognizing that an existing institutional regime has failed to achieve an imagined future formulated previously, or that the previously imagined future no longer satisfies the community's evolving ideas about the purpose of their place. The crucial initial step, therefore, is a recognition that the current institutional structure is defective, in that it does not appear capable of achieving what the community now desires for the future.

Implicit in each step of this process is the formulation of belief.[208] Recognizing that an existing institutional regime is defective requires the

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207. *See* Kelo v. City of New London, 545 U.S. 469, 494 (2005) (O'Connor, J., dissenting).

208. Of course, identifying "steps" in the process of institutional change necessarily oversimplifies what is a fluid process without any beginning, end, or otherwise identifiable "stage." At any moment, a community is engaged in the process of creating an imagined

acquisition of a belief about both goals and means to achieve those goals. Creating a new imagined future requires a belief about what a place should look like. And implementing local ordinances to achieve that place requires a belief about whether those tools will be successful. Again, belief is that upon which we are prepared to act, and so our beliefs and our actions are inseparable. We go to college, save for retirement, get married, and eat apples instead of doughnuts because of a belief about the outcomes of those actions. *But for* those beliefs, we would not act.

Where does climate change *science* fit in this discussion? Before any institutional change can occur, a community must have created a set of imaginings about the future, and must realize that the existing institutional structure will not achieve that imagined future. Science "happens" before, and while, we begin imagining any of a number of plausible futures. If the warranted assertions from the scientific community are useful to us as we imagine those plausible futures, we incorporate those assertions into our own beliefs, elevating them to the status of valuable beliefs. Then, and only then, does that science play a substantial role in the process of influencing institutional change.

This issue comes increasingly into focus in the climate change context. In Part II of this article, I briefly discussed a range of identified consequences of global climate change. While some of the identified consequences are extremely problematic locally—for example, sea level rise in coastal areas—many of the consequences are either fairly distant for most of us, or if not so distant, then sufficiently abstract so as to make conceptualization of the problem rather difficult. Is early flowering of plants a *problem*? What about the rise in elevation of the rain/snow boundary? Or the transition toward earlier spring runoff peaks? Many of these issues require a level of interest in and understanding of complex systems that play little obvious role in what we might call the "normal" life of most people. How often do we consider the leaf-out schedule of trees as we start our cars each morning on our commute to school or work? Because the problems of global climate change are themselves somewhat abstract, and their effect on the life of any specific place or person relatively uncertain, it can be difficult to understand why an existing institutional regime might be defective. Put another way, how does climate change influence the imagined futures of a place? Specifically where a new institutional regime attempts to adjust behavior, it is

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future, even while it tries to create the ordinances or rules to implement a previously imagined future. Breaking the process down into any number of steps removes much of the texture, but allows for some discussion of how change occurs, even if that discussion is ultimately incomplete.

often difficult for the individual whose behavior a new regime targets to understand the connection between that behavior and the goal of the ordinance—preventing, or reducing the effect of, global climate change.

In some ways more problematic, local efforts to address climate change must target behaviors that individuals will change only with some hesitancy. Generally speaking, the areas local governments can address that might positively affect the climate change issue are transportation and residential and commercial development. In other words, to have any effect on climate change, local governments must begin to regulate how people live, what their houses and yards look like, and what, how, and where they drive. These are not simple changes. One study, albeit from a time when the public might have been less inclined to consider climate change science to have reached the level of a warranted belief, demonstrates the barriers that must be overcome on the path to valuable belief. Although the study participants expressed the general desire to take steps to reduce their contributions to greenhouse gas emissions, their willingness to take those steps declined as the difficulty or cost of the efforts increased.[209] Somewhat less surprising but more significant, willingness to reduce greenhouse gas emissions declined even further if the efforts would entail *lifestyle* changes (including something as simple as driving less).[210] In answer to the question posed by the title of the article reporting the study's findings—*Who Wants to Reduce Greenhouse Gas Emissions?*—the authors suggested the following answer: "almost everyone—provided they know what is causing climate change, they perceive substantial risks from climate change if the earth warms, and they think that reducing climate change will not cost them their jobs."[211] That second point warrants some additional emphasis. The study respondents were willing to address climate change if they perceived that it presented a substantial risk. In the words of the study's authors, "what matters in terms of stimulating greenhouse gas reduction efforts is not whether people think climate change is happening, but *whether they think there is much to worry about* if the scientists are right."[212] In other words, "how does it affect me?"

Even efforts to enact *voluntary* programs allowing local governments to consider global climate change can experience substantial opposition. A recent bill enacted in the state of Washington, which would provide grant funding and guidance allowing voluntary efforts by local

209. *See, e.g.*, Robert O'Conner et al., *Who Wants to Reduce Greenhouse Gas Emissions?*, 83 Soc. Sci. Q. 1 (2002).

210. *Id.*

211. *Id.* at 15.

212. *Id.* at 13 (emphasis added).

governments to prepare for and address climate change,[213] faced significant opposition in Washington's legislature. Although the bill ultimately passed, it elicited comparisons to the Soviet Union, calls for everyone to move to Idaho where residents "can select where we want to live and how we want to get to work," and accusations that "[y]ou city slickers are going to come and tell my farmers and ranchers what size tractor they can have to till the land that produces food for all of us?"[214] An arguably more attractive bill in the Idaho Senate failed on its first vote, after arguments by legislators that in order to buy the logic that the state should prepare for climate change, "you have to have a firm belief that global warming is a fact, and I don't know that I'm all the way there yet," and "I still struggle with global warming. There's still a national discussion on this, and we're asking a committee to use their resources on something we're not even sure is going to really happen."[215] The bill at issue would have directed Idaho's Office of Energy Resources to identify potential *economic growth opportunities* associated with the regulation of greenhouse gases, identify steps to develop in-state renewable energy sources, identify other steps to reduce greenhouse gas emissions, and identify regional or national efforts in which the state might participate.[216]

Admittedly, the examples provided in the preceding paragraph originate in areas of the country that might not be expected to readily adopt progressive land-use policies, but that is precisely the problem, given that even these places must adopt climate change initiatives if we are to achieve a holistic approach to the issue. Nationally, some authors suggest that a "social movement" to address global climate change might be in its early stages, but that "movement" still must overcome substantial barriers before it can have a meaningful effect on the legal regimes that affect climate-change-relevant human behavior.[217] The barriers facing the creation of that social movement may include:

> [T]he legacy of science having been so dominant in framing the climate debate; the complexity, uncertainty, and (for now)

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213. S.B. 6580-2007-08, 60th Leg., 2008 Reg. Sess. (Wash. 2008) (now codified at WASH. REV. CODE §§ 36.70A.580, 36.70A.5801 (effective June 12, 2008)).

214. Richard Roesler, *Greenhouse Emissions Measure Hits a Nerve*, SPOKESMAN REV., Feb. 20, 2008, at B1, *available at* http://www.spokesman.com/stories/2008/feb/20/greenhouse-emissions-measure-hits-nerve/.

215. Jill Kuraitis, *Partial Thaw on Global Warming in Idaho Senate*, NEWWEST.NET, Feb. 11, 2008, http://www.newwest.net/city/article/partial_thaw_on_global_warming_in_idaho_senate/C108/L108/.

216. Idaho S. Concurrent Resol. No. 128, 59th Leg., 2d Reg. Sess. (Idaho 2008), *available at* http://www3.state.id.us/oasis/2008/SCR128.html.

217. *See, e.g.*, Moser, *supra* note 151.

> invisibility of climate change; the global nature of the problem; and maybe even the taboos of consumerism and population growth that even progressive forces in the [United States] are shy to name.[218]

Each of the elements in the above list demonstrates the concern/problem identified in this article. First, climate change, because of its complexity, uncertainty (with respect to the actual effects it will have), and "invisibility," and because of the density of the science involved, is difficult for many individuals to understand and connect to their own lives in a meaningful way. And even if that connection were relatively simple, the behavioral changes that we must contemplate to address the problem effectively are rarely discussed in the United States.

I recently spent a fair amount of time interviewing land-use officials in a few rural western counties. While my interviews were not about climate change, they were about what circumstances must exist before a community is willing to adopt more restrictive land-use regimes.[219] Across much of the Intermountain West, small towns and communities experienced fairly rapid population growth and second home development during the 1990s and early parts of the first decade of the 2000s.[220] Although in many places local sentiment about this growth is shifting toward the idea that it should be controlled or managed in some way, so as to protect the social and natural amenities that originally drew these "new westerners" to the rural West, new land-use regimes arise only with difficulty and controversy.[221] In some cases, the local officials I met were required to expend significant amounts of political capital to enact, or simply propose, prudent efforts to get a handle on a level

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218. *Id.* at 140.

219. *See* Jerrold A. Long, New West or Same West?: Evolving Land-Use Institutions in the Rural American West (2008) (unpublished Ph.D. dissertation, University of Wisconsin–Madison) (on file with author).

220. *See generally* John I. Carruthers & Alexander C. Vias, *Urban, Suburban, and Exurban Sprawl in the Rocky Mountain West: Evidence from Regional Adjustment Models*, 45 J. REGIONAL SCI. 21 (2005); William B. Beyers & Peter B. Nelson, *Contemporary Development Forces in the Non-Metropolitan West: New Insights from Rapidly Growing Communities*, 16 J. RURAL STUD. 459 (2000); John B. Cromartie & John M. Wardwell, *Migrants Settling Far and Wide in the Rural West*, 14 RURAL DEV. PERSP. 2 (1999).

221. *See generally* Rina Ghose, *Big Sky or Big Sprawl? Rural Gentrification and the Changing Cultural Landscape of Missoula, Montana*, 25 URB. GEOGRAPHY 528 (2004); Paul Lorah & Rob Southwick, *Environmental Protection, Population Change, and Economic Development in the Rural Western United States*, 24 POPULATION & ENV'T 255 (2003); Peter B. Nelson, *Rural Restructuring in the American West: Land Use, Family and Class Discourses*, 17 J. RURAL STUD. 395 (2001).

of growth that can overwhelm rural areas.[222] What do their experiences suggest about efforts to address climate change on a local level?

When speaking with local government officials about how they address growth and maintain the amenities that make a particular place "special," one theme emerged.[223] To paraphrase one planning official, only *fear of change* will motivate a move toward more aggressive, or even simply more appropriate, land-use policies. Another rural resident and county commissioner made the same argument in a slightly different fashion, noting that support for new land-use ordinances only arose when local residents began witnessing change *on the ground* in a way that directly affected them, their property values, or the things they enjoyed about a place. In other words, support for new growth management tools arose only after it became obvious to the regulated community that such tools would directly benefit each of them individually. A new institutional regime (one that might control growth) could only arise after the community recognized that the existing pro-growth regime would not realize their expectations for the place.

If that assessment of local ordinance change is accurate, or at least partially so, it suggests that local efforts *focused directly* on global climate change are unlikely to find significant support in a regulated community, absent some other more palpable goal or purpose. As discussed above, while many parts of the country might face dramatic cultural and economic upheaval as a result of global climate change, it remains difficult for *any* community to make the connection between the cause and effect of climate change. Even the things we experience directly in the Intermountain West—for example, dwindling snow packs, reduced water availability, more frequent and severe droughts, and bigger and hotter fires—remain distinct in our minds from the actions of county commissioners and city council members. When the problem is rising sea levels, ocean acidification, increased frequency of hurricanes or typhoons, the loss of biodiversity, or any of the wide range of potential

222. In Teton County, two county commissioners faced a recall election after voting for a 180-day moratorium on new development. While development moratoria are inherently controversial, the conditions in Teton County at the time suggested no other reasonable approach. At the time the commissioners paused development, there were 75 subdivision proposals, with 4,224 lots, pending before the county's planning department. *See* Ben Cannon, *A Valley Split*, PLANET JACKSON HOLE ONLINE WEEKLY, Apr. 4, 2007, http://www.planetjh.com/news/A_100871.aspx. In 2000, the county contained 2,632 total housing units. *See* U.S. CENSUS BUREAU, U.S. CENSUS (2000). By August, the number of pending development proposals had increased to 86 subdivisions with approximately 7,800 lots. *See* Ben Cannon, *A Rift Remains*, PLANET JACKSON HOLE ONLINE WEEKLY, Aug. 8, 2007, http://www.planetjh.com/news/A_101724.aspx.

223. *See* Long, *supra* note 219.

consequences of climate change that are not readily apparent to most U.S. citizens, the connection between those consequences and our local government becomes even more attenuated. But all residents expect and deserve that any increased regulation, perceived reduction in property rights, or limitations on certain lifestyle choices will correspond with an equally important and readily understood social justification. It is in making that connection that any local effort to address global climate change faces the greatest challenge.

This discussion suggests that much of the contemporary climate change "debate" has focused on the wrong issue. The scientific community has understandably focused most of its public outreach effort, for lack of a better description, on explaining the causes of climate change and justifying predictions about the effect of increasing greenhouse gases in the atmosphere on global average temperatures. But what efforts have been made to connect those facts to individual lives? A recent study demonstrates the potential significance of this failure: "the more information a person has about global warming, the *less responsible* he or she feel [sic] for it; and indirectly, the more information a person has about global warming, the *less concerned* he or she is for it."[224] The level of "information" possessed by the study respondents was self reported, which might explain partly the result of this study, although the results are consistent with other studies about other environmental issues.[225] What this suggests is that the information presented to the public might not be considered "useful" by that public, in that it does not serve to assuage any existing irritation of doubt; in other words, it does not motivate the public consuming the information to act in any particular way—the public has not formulated a belief.

Peirce advised that "sole function of thought" is to remove the "irritation of doubt" and allow for the formulation of belief.[226] Absent this irritation of doubt—absent any reason to be concerned about global climate change, or to be concerned about the ability of existing institutional regimes to address global climate change—no reason exists to accept the ideas or theories of climate change scientists, and thus formulate a new belief on which to act. Thus, absent direct and personal experience with the consequences of climate change, no new beliefs will arise.

Supporting this idea is a recent study suggesting, perhaps unremarkably, that individuals at apparently higher risk to suffer personal

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224. Paul M. Kellstedt et al., *Personal Efficacy, the Information Environment, and Attitudes Toward Global Warming and Climate Change in the United States*, 28 RISK ANALYSIS 113, 122 (2008).

225. *Id.*

226. Peirce, *supra* note 158, at 30.

injury as a result of climate change are more likely to recognize that they are personally at risk due to climate change.[227] The individuals at higher risk who are more likely to perceive that risk are people who live close to the coast, who live at low elevations, or who live within one mile of the coast and below sea level (and thus might be inundated should sea level rise).[228] However, in a multivariate regression analysis comparing all natural hazard vulnerability factors to perceptions of risk, those factors explained only 4 percent of the variation in risk perception.[229] In other words, although there is a statistically significant relationship between actual vulnerability and perception of vulnerability, even those people most at risk perceive very little of that increased risk and thus are not finding a reason to act.

As a final point, I began this discussion by stating the assumption that the climate change community has reached a settled belief—which can be characterized as a warranted belief—regarding the causes and consequences of global climate change. The discussion then proceeds from that assumption directly to the question of whether the public considers that warranted belief to be valuable, and the consequences of that determination. This article, and the arguments contained herein, are thus organized in an "even if" structure, that is to say, even if the public accepts that there exists a warranted belief regarding climate change, we still must consider the next step toward valuable belief. But, as should be unsurprising, the assumption regarding the public's perception of the community of scientists' belief on the subject cannot be so easily assumed away. As one project reviewing 20 years of public opinion data determined, "the public remains relatively uncertain about whether the majority of scientists agree on the matter."[230] While this point could lead into a worthwhile, but potentially frustrating, discussion about the content provided by and behavior expected of the contemporary media, the reasons behind that uncertainty are less important than the fact of the uncertainty. Again, even as we properly assume or accept that the scientific community has reached a relative consensus on much of the science related to climate change—and thus is providing the rest of us with a warranted assertion about climate change—it remains for us, the rest of the global community that is not part of the scientific community that is considering climate change, to determine whether that warranted asser-

227. *See* Samuel D. Brody et al., *Examining the Relationship Between Physical Vulnerability and Public Perceptions of Global Climate Change in the United States*, 40 ENV'T & BEHAVIOR 72 (2008).

228. *Id.* at 84–85.

229. *Id.* at 86.

230. Nisbet & Myers, *supra* note 4, at 450.

tion is *valuable*. The suggestion that many people are unsure whether the assertion is in fact *warranted* demonstrates the difficulty that remains in turning that warranted assertion into valuable belief upon which we are prepared to act.

V. CONCLUSION

The structure of this discussion emerged as I attended a number of presentations about climate change over the past few years. What ultimately struck me about the presentations was that all of them, regardless of location or purpose, were focused in large part on justifying the science of climate change, as if to say to an apparently hesitant public, "we're really serious about this." My own thoughts continually returned to the questions addressed in this article: I accept your science, but how will it affect me? What can I do about it? Do I have to give up my pickup truck?[231] Why?

But at this point, after having spent over 20,000 words articulating what I envision as potential obstacles to achieving durable and effective climate change regulation at the local government level, I must confess that I cannot now provide many useful suggestions for overcoming those obstacles. However, I do believe this discussion recognizes several insights that might lead toward effective greenhouse gas regulation, even if that regulation does not directly address climate change. In fact, it might be better said that those insights might lead toward effective greenhouse gas regulation *only if* that regulation does not directly address climate change.

As suggested in Part II, the American contribution to global climate change is largely the result of specific lifestyle choices about how we should live and travel. There already exists a vast literature regarding our transition to a sprawling development habit after World War II,[232] and my intent is not to rehash, discuss, or contribute to that discussion. For my purposes, it is sufficient to recognize that *substantial* institutional and cultural inertia exists resisting any move toward more compact development patterns that could reduce vehicle miles traveled and allow for more efficient uses of scarce, or CO_2-producing, energy sources. Of course, this is to say nothing of the *type* of vehicles we choose to cover those additional miles that sprawl requires we travel.

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231. I do in fact own a pickup—a 1991 Toyota with a seriously underpowered four-cylinder engine that has accompanied me for nearly two decades to and through three universities and across more than 150,000 miles of the country.

232. *See generally* JANE HOLTZ KAY, ASPHALT NATION: HOW THE AUTOMOBILE TOOK OVER AMERICA, AND HOW WE CAN TAKE IT BACK (1998); MICHAEL SOUTHWORTH & ERAN BENS-JOSEPH, STREETS AND THE SHAPING OF TOWNS AND CITIES (2003).

Given that inertia, any effort to revise local land-use regimes in a meaningful way with respect to these specific issues must be able to articulate a clear justification for the sacrifices that will be required. The reason for the behavioral change must be readily apparent to those individuals who are asked to change their behavior. But what does this suggest about local efforts to combat climate change? I do not think it too cynical, or even disrespectful, to suggest that, borrowing from the title of this article, it is only with some difficulty that the average driver of a Ford F-150 will willingly trade his or her pickup for a Toyota Prius, with the sole end of making an apparently infinitesimal contribution to the well-being of Bangladeshis. Truth be told, I am not certain there is *any* end that would cause most pickup truck owners (or even, Volvo owners) to relinquish their rides voluntarily.[233] But that is not to say there are not other ends that would motivate other, less drastic, behavioral changes.

In articulating the reasons for adopting institutional change intended to address global climate change, the emphasis must be on the *local* benefits to be achieved (or harms avoided) by the effort, even if those benefits or harms are not directly or obviously related to climate change. Reducing sprawl, creating pedestrian-friendly communities, promoting traditional neighborhood development, and supporting alternative modes of transportation, among many other planning and land-use tools or goals, provide a wide range of real and demonstrable *local* effects. These local beneficial effects are sufficiently obvious that it is unnecessary to tie those efforts to sea level rise, even if the efforts might also benefit that problem.

If we return to Peirce for a moment we might make this point a bit more clear. Peirce, in articulating how we might understand the meaning of a concept, suggested, "Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object."[234] With this assistance, we see that a land-use ordinance can only "mean" whatever the regulated community perceives to be the practical effects of that ordinance—e.g., its costs and benefits. Considering those practical effects, a community can determine—i.e., formulate a belief about—whether a given approach might achieve that specific community's vision for itself. If the costs are local, but the benefits are en-

233. Except, perhaps, the price of gasoline. *See* Josh Levin, *Monster Truck: Is the Ford F-Series' 27-Year Reign at the Top of America's Sales Charts About to End?*, SLATE.COM, Feb. 2, 2009, http://www.slate.com/id/2210311/; *see also* Jonathan Weber, *The Rise and Fall of the Pickup Truck*, NEWWEST.NET, Feb. 3, 2009, http://www.newwest.net/topic/article/the_rise_and_fall_of_the_pickup_truck/C559/L559/.

234. Peirce, *supra* note 158, at 36.

joyed somewhere else, that understanding of the land-use ordinance will constitute the community's entire conception of the effort. Is it then surprising that the community might prefer some alternative approach that better matches local costs with local benefits?

This does not mean there is no role for local government in addressing climate change, or more directly, creating a sustainable place. Individuals and communities act based on certain beliefs about the potential for those acts to achieve desired future outcomes. Communities create institutional regimes by first envisioning or imagining a future set of conditions, reaching an agreement about the community's preferred future, and then devising or revising norms, working rules, and property relations to achieve that imagined future. A durable institutional regime, therefore, must incorporate the visions of the *community*, which is, of course, comprised of a set of individuals, each with his or her own desires for the future and ideas about the best way to achieve that desired future. Community decision-making processes often understandably reach out to the individuals in the community with the thought that an appropriate vision will emerge from the expressions and stated desires of the community's individual residents. This process assumes, incorrectly, that those individuals already know what future they should and can imagine. But it is the process of *articulating* an individual vision, communicating that vision, and then participating in the creation of a broader *community* vision that allows the individual vision to evolve: "we do not know what we want until we begin the task of determining—learning about—what we might plausibly have."[235] In other words, a community, including a local government, can play a significant role in articulating plausible futures for a community, thus helping *individuals* create desired imaginings that contribute to a community vision. It is a failure in this effort to create and articulate an attractive plausible future that dooms most interesting, creative, and potentially effective (in terms of creating a sustainable place) proposed new land-use regimes.

But in articulating plausible outcomes, a community must take care not to impose a specific outcome or foreclose alternative approaches. For John Dewey, a significant benefit (if not the primary benefit) of democratic systems is their ability to ensure that all members of a community qualified to speak on a given subject do in fact get the opportunity to contribute their individual experiences and ideas to the community discussion about that subject. As philosopher Hilary Putnam describes Dewey's argument for democracy, "Democracy is not just a form of social life among other workable forms of social life; it is the precondition for the full application of intelligence to the solution of so-

235. BROMLEY, *supra* note 129, at 136.

cial problems."[236] Only if every member of the community participates in the discussion can that community be sure that all plausible futures have been considered and that it has settled on the best belief regarding that particular issue. With respect to the present area of concern, the decision to regulate "global climate change" as such forecloses much of the potential legitimate input into how a specific community might achieve a truly sustainable community. Narrowing the purpose in such a fashion necessarily narrows the field of qualified participants, just as it narrows the list of meaningful purposes for local action. A *local* end or purpose, in contrast, allows more complete participation and allows for the possibility of uncovering a locally sustainable or useful approach that tangentially, but meaningfully, addresses global climate change. Many of the tools used to protect a specific place also achieve the end of reducing greenhouse gas emissions. But greenhouse gas-focused local ordinances do not necessarily protect the place valued by the local community, and thus are unlikely to find sufficient support among the regulated community to be both durable and effective. Communities are willing to act to achieve their own ideas of sustainable place, and it is from those local efforts and local benefits—the local visions for place—that sustainable climate change institutions will emerge.

236. Hilary Putnam, *A Reconsideration of Deweyan Democracy*, 63 S. CAL. L. REV. 1671, 1671 (1990).