

# A Cooling Climate for Change? Party Polarization and the Politics of Global Warming

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## Abstract

Analysis of three cross-sectional polls administered by the Gallup Organization at 10-year intervals—in 1990, 2000, and 2010—demonstrates that partisan identification has become an increasingly important determinant of environmental concern within the American mass public. Polarization on global warming is especially clear, even when compared to a variety of other social, economic, and political problems, but party sorting seems to occur only as citizens acquire information and become familiar with elite cues. The implications of this for the U.S. environmental movement and the strategies it employs are discussed.

## Keywords

climate change, public opinion, political parties, polarization

In February 2010, journalists in North America were busy covering two very different news stories simultaneously. On one hand, a shortage of snow at the Winter Olympic Games in Vancouver, Canada, was forcing organizers to haul snow down from higher elevations for the freestyle skiing and snowboarding events taking place at Cypress Mountain. With temperatures in the city and at surrounding venues hovering just above freezing, the games were scheduled to open following the warmest January on record, in the middle of what the head of the organizing committee had called—in a phrase that likely conveyed frustration—a “1-in-100 winter” (Branch, 2010, p. D5).

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Meanwhile, the East Coast of the United States was experiencing an equally unusual excess of snow. In mid-February, as work crews in Vancouver were engaged in spreading white powder onto a sodden base of hay and synthetic fertilizer, two major storms battered the Mid-Atlantic. Depositing more than 2 feet of snow on the nation's capital, the blizzards felled trees and cut power lines to hundreds of thousands of homes (Beard, 2010). When a falling branch struck a press vehicle in president Barack Obama's motorcade on the way to a Democratic National Committee (DNC) event, even the commander-in-chief had to concede that "Snowmageddon" had struck with a vengeance (Gresko, 2010).

By the end of the long, strange winter of 2010, snow might have been in short supply in certain parts of Canada, but meteorologists were virtually certain that there had been at least some accumulation in all 50 American states, from the mountaintops of Hawaii to west Texas and the Florida panhandle—an outcome so astonishing that it seemed beyond both the boundaries of record keeping and human memory (Jonsson, 2010; Lem, 2010). While others were at a loss for words to describe the unexpected extremes of weather witnessed around the world, Thomas L. Friedman, a columnist for *The New York Times*, reached back to a phrase he had coined some years before. He simply called it "global weirding" (Friedman, 2010, p. A23).

Friedman's preference notwithstanding, both events were interpreted—often indulgently and irresistibly—through the lens of what has been variously termed the "greenhouse effect," "global warming," or more inclusively, "climate change."<sup>1</sup> To observe, then, that political discourse on the issue has become as changeable as the weather is not a mere metaphor. Politicians and activists on both sides have tended to communicate climate science to the lay public in narrative form through a series of anecdotal weather events, beginning with the famously hot summer of 1988 and continuing well beyond former vice president Al Gore's documentary film, *An Inconvenient Truth*, in 2007 (Wald, 1988).

With that in mind, it was hardly a stretch for some to refer to the mild weather in Vancouver as an early warning sign and a wake-up call to the Olympics movement. It even prompted a former speed skater from Canada to plead with the International Olympic Committee to "do their part in protecting winter" (Reid, 2010). Yet back in Washington, the snowstorms that buried the city in February 2010 inspired skeptics to go on the attack. Senator James Inhofe (R-OK) encouraged his grandchildren to build an igloo on Capitol Hill, christening it "Al Gore's new home," and on the social networking site Twitter, senator Jim De Mint (R-SC) posted, "It's going to keep snowing in DC until Al Gore cries 'uncle'" (Milbank, 2010, A21).

Although such arguments strain scientific credibility—in truth, no single weather event can be tied to long-term climate trends—the winter of 2010, and the nearly hysterical reaction to it, underscores something fundamental about the issue of global warming and its evolution over time: It is no longer a question of science. A report filed by the UN Intergovernmental Panel on Climate Change (IPCC) in 2007 confirmed that evidence of warming was "unequivocal" (IPCC, 2007; Rosenthal & Revkin, 2007, p. 30). Instead, it is now a battle fought on malleable political ground

over the way in which causal arguments are constructed and policy is formed. In short, global warming has become an intensely partisan issue (Guber & Bosso, 2009).

This article examines party polarization and the politics of global warming, drawing data from three cross-sectional polls administered by the Gallup Organization at 10-year intervals—in 1990, 2000, and 2010. The goal is not to demonstrate that a partisan divide in mass attitudes exists, *per se*. In other work, scholars have already done so convincingly (Dunlap & McCright, 2008; Dunlap, Xiao & McCright, 2001; McCright & Dunlap, 2011). Rather, it is my intent to place the issue of global warming within a broader context, one that until now has been almost entirely overlooked.

First, I compare the level of concern Americans express for global warming to the concern they express for a variety of other environmental problems. Although media attention has focused largely on climate change, I uncover similar patterns that divide Democrats, Independents, and Republicans on a range of issues, including air pollution and the loss of tropical rainforests. Today, political ideology and partisan identification are important determinants of a general environmental concern and are not exclusive to global warming.

Second, I situate environmental issues within the context of U.S. national politics. When paired with nearly a dozen different social, economic, and foreign policy topics—from health care and the economy to terrorism and illegal immigration—the distance between Democrats and Republicans on the environment is unusually, and comparatively, large. Average Americans are now more polarized on the environment than at any other point in time or than on any other topic of political relevance included within Gallup's surveys.

Finally, prompted by the work of scholars who study the link between elite polarization and mass attitudes, I disaggregate concern for global warming among partisan identifiers by the level of understanding of the issue they claim to possess. I find that party sorting occurs only as people acquire information and become familiar with elite cues. It is this conclusion, in particular, that is of the greatest consequence for the U.S. environmental movement and the strategies it employs. Although activists, such as former vice president Al Gore, have drawn media attention to the dangers of climate change, it is tempting to suggest that they have also emboldened the opposition and helped to politicize the issue in unintended and truly unhelpful ways.

## Politics, the Polls, and Global Warming

Before the terms *global warming* and *greenhouse effect* emerged out of the pages of scientific journals and congressional hearing rooms during the sweltering summer of 1988, few Americans had heard or read anything about it. By 2006, when most major polling organizations had stopped asking the question altogether, 91% of those interviewed by the Pew Research Center said that they had.<sup>2</sup>

Today, Americans are not only aware of global warming; they are increasingly confident in their understanding of it. In 1992, when asked how well they grasped the concept, 22% of those interviewed by the Gallup Organization said “not at all” (Nisbet

& Myers, 2007, p. 448). By the spring of 2010, that number had fallen to just 3%.<sup>3</sup> After several decades of political debate, public relations campaigns, media attention, and popular culture—where the message of global warming was related through communication campaigns as well as best-selling novels and mass-marketed movies—most felt that they knew the issue either “fairly well” (56%) or “very well” (26%).<sup>4</sup>

It came, then, as a disappointment—if not quite a surprise—when the headline announcing the results of Gallup’s annual survey in 2010 drew attention to an altogether different and more troubling trend. It read, “Americans’ Global Warming Concerns Continue to Drop” (Newport, 2010). In one tantalizing fragment of a sentence, Gallup had confirmed what many observers already suspected: The more people know about global warming, the less they seem to care.

Since 1989, Gallup has used the same question to gauge public concern for a variety of environmental problems, the bundle of which shifts slightly from one year to the next. When asked in March 2010 how much they personally worried about eight different issues, the participants placed global warming in last place, well below various forms of air and water pollution, soil contamination, and the extinction of plant and animal species. Just 28% of those polled said that they worried “a great deal” about global warming, which amounted to a decline of 13 percentage points compared with the previous 3 years (J. Jones, 2010).<sup>5</sup>

Yet Gallup’s headline did more than put a single statistic into stark relief. Mired in a long and painful economic recession, it was understandable, perhaps, that Americans had grown weary of global warming with so much else on “their worry plate,” as Bob Deans of the Natural Resources Defense Council put it (Koch, 2010, p. A3). But it was disconcerting nevertheless to see that people were more likely to believe, by the spring of 2010, that the seriousness of the issue was “generally exaggerated.” They were less likely to think that the effects of global warming had “already begun,” less likely to believe that “human activities” were the dominant cause, less likely to fear its threat to their way of life within their own lifetimes, and less convinced that there was consensus among scientists on the matter.<sup>6</sup> Whereas once scholars had observed a positive “sea change” in public attitudes toward global warming, it was now obvious to Frank Newport, Gallup’s editor in chief, that those same attitudes were in retreat and oddly out of step with “what one might have expected given the high level of publicity on the topic” (Newport, 2010).

In searching for an explanation, scholars haggled openly among themselves and on the pages of academic journals about variations in question wording (Kohut, 2010; Krosnick, 2010; Schuldt, Konrath, & Schwarz, 2011; Villar & Krosnick, 2011). Some environmental activists condemned oil and gas companies for misleading the public, whereas others wondered aloud whether the scientists themselves were to blame for being “lousy communicators” in what amounted to a public relations war (Begley, 2010; Koch, 2010, p. A3). For their part, the skeptics of climate change insisted that the world had awakened at last to a proven hoax and found fuel for the fire when a series of leaked e-mails from the research labs at the University of East Anglia in December 2009 seemed to suggest that some at the IPCC had manipulated data and

attempted to silence opposition (Fahrenheit & Eilperin, 2009). But in a fevered and competitive atmosphere, driven by images of igloos and melting ski runs, in the winter of 2010, there was one thing on which everyone could agree. Concern was flagging and not just because of the economy. Global warming had become deeply and irretrievably politicized and, with it, the environment itself. It was no longer a valance issue, uniformly embraced, if at times apathetically applied (Guber, 2003). As those at Gallup already knew, the numbers were shifting in the aggregate because public opinion was splintering into two opposing camps.

### *The Partisan Divide on Global Warming*

In 1997, after carefully tracking shifts in public attitudes for a course of months, both before and after the Kyoto Protocol, Jon Krosnick and a team of researchers at Ohio State and Princeton University found that sentiment had changed little overall but that “beneath this apparently calm surface,” there was the hint of a partisan divide caused by citizens who largely took their cues from the elites they trusted most—an effect that was most pronounced among those who had little knowledge of global warming to begin with (Krosnick, Holbrook, & Visser, 2000, pp. 239, 254; also Malka, Krosnick, & Langer, 2009). At the time, this was a new and important observation to make. Roll call votes in Congress on environmental issues had always split along party lines (Dunlap & Gale, 1974; Dunlap & Allen, 1976), a tendency that has grown only more entrenched in recent years in both the U.S. House of Representatives and the Senate (Kamieniecki, 1995; Shipan & Lowry, 2001). But despite the partisan vitriol in Washington, the public’s response to the climate change debate had been far more restrained, connected as much to ideological considerations as to the issue itself (Guber, 2003).

Thus it was for many years, as scholars who poured over polls in search of the social determinants of environmental concern found. Although political ideology and partisan identification were consistent predictors, with coefficients that were “virtually always in the expected direction,” the size of those coefficients was modest at best. According to two pioneers in the field, Kent Van Liere and Riley Dunlap, the “political hypothesis” largely fell flat.<sup>7</sup> Despite the behavior of elites, party was “not a crucial variable in explaining variation in environmental concern among the general public,” a conclusion that was later confirmed by many others (Van Liere & Dunlap, 1980, p. 191; also Buttel & Flinn, 1976, 1978; Constantini & Hanf, 1972; Dietz, Stern, & Guagnano, 1998; Dillman & Christenson, 1972; Dunlap, 1975; R. Jones & Dunlap, 1992; Samdahl & Robertson, 1989; Tognacci, Weigel, Wideen, & Vernon, 1972).

There were times when measures of political ideology fared better than partisanship (Dunlap et al., 2001), but even then, scholars were quick to point out the methodological caveats. As one group explained when writing for *Social Science Quarterly* in 1998, it is common for pollsters to use policy-driven questions that ask respondents whether they support increased environmental spending by the government or whether they would be willing to pay higher taxes to fund environmental protection (Klineberg,

McKeever, & Rothenbach, 1998).<sup>8</sup> Another common strategy is to push respondents to consider paired comparisons in the form of trade-offs between competing goals. A version of the latter approach, used by Gallup since 1984, asks respondents to choose between these two statements: “Protection of the environment should be given priority, even at the risk of curbing economic growth,” or “Economic growth should be given priority, even if the environment suffers to some extent” (Newport, 2009).<sup>9</sup>

For Stephen Klineberg, Matthew McKeever, and Bert Rothenbach, it was obvious that although environmental concern could be dissected in a multitude of ways, those measures were not neutral, nor were they interchangeable, especially when question wording entangled the environment with common ideological considerations and long-standing beliefs about the proper role of the government sector. When asked how much they worried about environmental problems, liberals and conservatives looked very much alike. That they differed more in their policy preferences meant only that “the phrasing of these questions” was driving the relationship (Klineberg et al., 1998, p. 737).

Until recently, then, it seems fair to say that although political differences occasionally emerged in public opinion polls, those distinctions were dwarfed by an overall image that was steady—and even stubborn. Ironically, no single issue demonstrated this better than global warming. As Ted Nordhaus and Michael Shellenberger (2009) explain,

what is arguably most remarkable about U.S. public opinion on global warming has been both its stability and its inelasticity in response to new developments, greater scientific understanding of the problem, and greater attention from both the media and politicians. Public opinion about global warming has remained largely unchanged through periods of intensive media attention and periods of neglect, good economic times and bad, the relatively activist Clinton years and the skeptical Bush years.

That inelasticity, however, has apparently come to an end (Dunlap, 2010; Dunlap et al., 2001; Dunlap & McCright, 2008; McCright & Dunlap, 2011). In recent years, party polarization has deepened at every level and now extends far beyond policy preferences into virtually every aspect of popular environmental thought. Between 1998 and 2008, the percentage of Democrats who told Gallup that global warming had “already begun” increased by 30 percentage points, from 46% to 76%. Meanwhile, the number of Republicans who thought the same fell by 6 percentage points, from 47% to 41%. Over time, Republicans have also been increasingly inclined to believe that the seriousness of global warming is “exaggerated” by the media and that warming trends are the result of natural causes rather than human activity. In fact, in 2010 the Pew Research Center found that since the release of *An Inconvenient Truth*, the number of Americans who believe that there is “solid evidence” of global warming has declined from 77% to 59% overall, mainly attributable to the increased skepticism of Republicans (Pew Research Center, 2010).

In this sense, it matters not that public attitudes toward global warming—in the aggregate—are typically “inelastic” or that some measures have recently declined. The Gallup headline “Americans’ Global Warming Concerns Continue to Drop” is an accurate characterization of something, but what is far more interesting, and more consequential to the future of U.S. environmental politics, is what Krosnick and his colleagues found lurking below an “apparently calm surface” some years ago (Krosnick et al., 2000, p. 239). A true partisan divide has finally emerged, bringing with it a host of empirical questions.

## Data Analysis

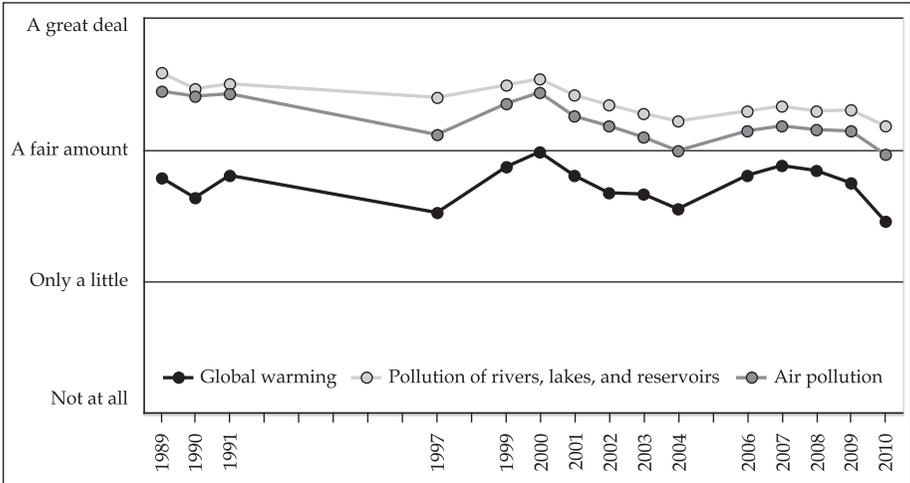
Arguably, the most important question asked by scholars in all of the social sciences is one that is also deceptively simple: “Compared to what?” In the pursuit of knowledge, nearly every inference is based on comparison (Horowitz, 2003). Whether the ultimate goal is one of “describing” or “explaining” a given set of observations, comparison is the essential conduit to both, for it allows one to make judgments about which of those phenomena are more or less alike in time, space, or degree and, in so doing, permits the isolation of cause and effect (King, Keohane, & Verba, 1994).

Without a means of comparison, there is no context in which to understand the magnitude of a shift in public opinion, aside from the narrow metric of statistical significance. Is the decline in concern for global warming since 2007 more or less severe than other periods of change across a given span of time? How do shifts in public attitudes on global warming compare to other environmental issues, such as air and water pollution? And finally, if a growing partisan divide now helps to explain aggregate trends, is this limited to global warming and the environment, or is it part of a broader movement toward greater polarization in American politics at large? All of these questions will be addressed below.

### *The Decline of Environmental Concern*

As Frank Newport announced on the Gallup Organization’s website in March 2010, the American public has become “less worried about the threat of global warming,” a conclusion confirmed not only through comparison over time but through multiple indicators that press respondents to consider the science of global warming, the pace and likelihood of its effects, and its dominant cause. Recently, the trajectory changed on all of these questions, according to Newport, “in some cases reverting to the levels recorded when Gallup began tracking global warming measures more than a decade ago” (Newport, 2010).

It would be a mistake, however, to frame the investigation into causes and consequences too narrowly. Recall that since 1989, the Gallup Organization has asked respondents on a yearly basis—save a few gaps—how much they “personally worry” about a variety of environmental issues. Figure 1 summarizes that data visually, and in a fairly comprehensive way.



**Figure 1.** Public concern for global warming, 1989 to 2010. “I’m going to read you a list of environmental problems. As I read each one, please tell me if you personally worry about this problem a great deal, a fair amount, only a little, or not at all. First, how much do you worry about . . .”

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Note: The data above have been weighted, using variables provided by Gallup, to ensure a representative sample of the American adult population. Among the variables included in Gallup’s battery of questions, only trends in personal worry for “air pollution” and the “pollution of rivers, lakes, and reservoirs” are displayed because they provide a direct comparison to global warming. Those three measures alone were repeated in every battery between 1989 and 2010.

First, the entire trend line from 1989 through 2010 is plotted to place recent results in an appropriate context.

Second, in contrast to McCright and Dunlap (2011), who opt to recode Gallup’s “personal worry” questions into dichotomous variables, the full array of response categories is considered here when creating an arithmetic mean, not just shifts among those who worry “a great deal.”

Finally, even though other scholars have considered global warming in depth, they tend to do so in isolation, even though Gallup’s extensive database provides an ample opportunity to explore further (Dunlap & McCright, 2008; McCright & Dunlap 2011). In Figure 1, I place the trend in concern for global warming alongside trends for “air pollution” and the “pollution of rivers, lakes, and reservoirs,” providing some basis for comparison.<sup>10</sup>

A number of important observations can be drawn from Figure 1. First, personal worry for global warming declined sharply between 2007 and 2010; yet the full range of data points demonstrates that interest in the issue has always been relatively low, wavering up and down within a narrow band, midway between the response categories *only a little* and *a fair amount*. This means that although the recent decline in public

concern for global warming is genuine, it was never particularly high to begin with, especially when compared to the concern respondents express for other environmental problems. Anxiety may well have softened, but it was never particularly hard (Nisbet & Myers, 2007).

From this perspective—at least at first glance—the movement we see between the years 2007 and 2010 also appears less ominous. Once the full range of responses to the question are averaged, recent results do not look altogether different from other low points in what appears to be either a cyclical or episodic trend (Smith, 1979; Taylor, 1980). The years following the September 11, 2001, terrorist attacks look similar, after which concern gradually rebounded. Here, it is important to remember that since 1972, when Anthony Downs first published his seminal article “Up and Down With Ecology,” environmental issues have moved through what he termed “the issue-attention cycle” multiple times. Unexpected events and disasters reported by the news media, as well as the continued discovery of new sources of environmental degradation by scientists, has helped to sustain long-term interest by recharging public attention and enthusiasm time and again. Despite current economic circumstances, it seems reasonable to suppose that it may once more, especially given two even more recent events: a massive oil spill along the Gulf Coast of the United States in the spring of 2010 and damage done to a nuclear power plant in Japan following a major earthquake and tsunami in early 2011.

Finally, public concern for global warming runs closely parallel to air and water pollution in Figure 1, which suggests that movement in all three lines is rooted in a common cause, a suspicion that is well grounded by scholarship in the field. As James Stimson (1989) explains in *Public Opinion in America: Moods, Cycles and Swings*, shifting policy preferences on a wide variety of issues tend to move together over time, closely following the undulations observed here. Whatever has happened to the public’s views on climate change, it would appear that it is not unique to that issue, which means that it stems from more than issue-specific events, whether it be a backlash against Gore and the IPCC or the release of the so-called Climategate memos in late 2009. Likewise, the peaks and troughs observed in Figure 1 prove that environmental concern—like most other social problems—is, and has always been, contingent, rising and falling in response to economic conditions, policy costs, media attention, or even outright public boredom (Downs, 1972; Durr, 1993; Guber, 2003; Stimson, 1989). Surely, our expectations for global warming should be no different.

### *Partisanship and the Environment*

Even if recent trends in the aggregate appear less worrisome when plotted in Figure 1, there is still movement under the surface to consider (Krosnick et al., 2000). As scholars have increasingly observed, the gap between Democrats and Republicans on the issue of global warming has widened over time (Dunlap, 2010; Dunlap et al., 2001; Dunlap & McCright, 2008; McCright & Dunlap, 2011), and yet the question “Compared to what?” is an important one. Are partisan differences exclusive to the issue of global warming? Do Democrats and Republicans divide across the board on

environmental issues or on this subject alone? And what role might Independents play as ideological moderates? Although some scholars prefer to “ignore middle-of-the-road and Independent categories to make it easier to identify polarization trends” (McCright & Dunlap, 2011, p. 175), those respondents are represented fully here.

Figure 2 compares attitudes toward global warming to five other environmental issues that were repeated in identical wording and format by Gallup in the years 1990, 2000, and 2010. Regardless of the issues respondents were prompted to consider, there was virtually no difference between self-identified Democrats, Independents, and Republicans in the amount of “personal worry” they expressed in 1990. By 2000, Republicans had begun to fall out of step, and by 2010, Independents—and in some cases, Democrats—had followed.<sup>11</sup> This is a general pattern, to be sure, but one that is more pronounced when the subject turns to global warming. The media’s preoccupation with that development, at least, seems well deserved.

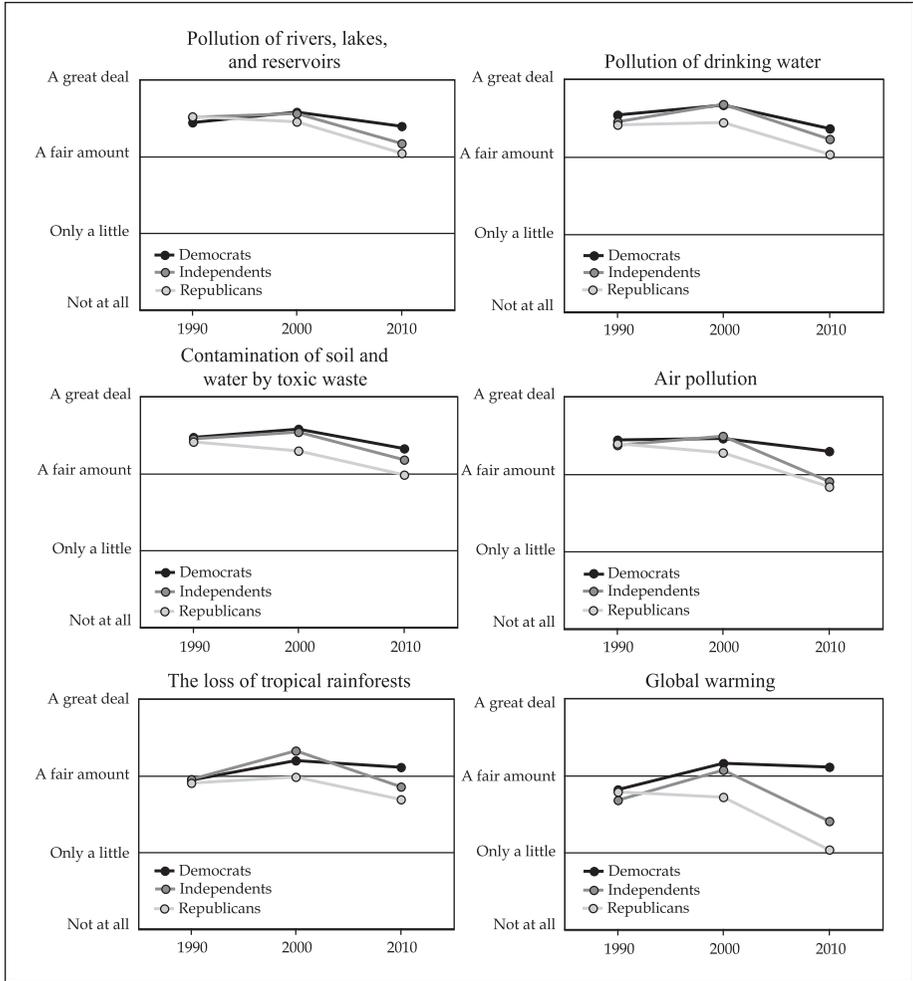
The widening gap between partisan groups across the board is, therefore, a novel and significant finding and one that merits a closer look. Whereas Figure 2 disaggregates the environment into several constituent parts to demonstrate its variability, the three regression models in Table 1—which represent the social determinants of environmental concern in 1990, 2000, and 2010—instead employ an additive scale as the dependent variable. Ranging in value from 0 to 18, this scale was constructed by summing together all six of the issues that Gallup repeated in those years, a choice that is more than reasonable given previous work demonstrating the near unidimensionality of Gallup’s environmental battery (Guber, 1996; Guber, 2003).

The three models that are reported in Table 1 confirm that partisanship and ideology have become increasingly important ingredients in the creation of environmental attitudes. Even after controlling for a variety of social and demographic traits, including age, education, income, race, and gender, the size and statistical significance of both political variables increases dramatically over time. So, too, does the overall fit of the model and the proportion of the variance in environmental concern that it explains. The  $R^2$  alone increases from just 0.02 in 1990, to 0.05 in 2000, and finally, to a more robust 0.16 in 2010.

To put those numbers into a more substantive context, in 1990, a shift in both partisan identification and ideology from “conservative Republican” to “liberal Democrat”—holding all other social and demographic variables constant at their arithmetic means—predicted an increase in environmental concern of roughly 1 point (1.03), a small if not inconsequential shift on a scale that may range in value from 0 to 18 but that is skewed heavily toward the higher end. Indeed, half of those polled by Gallup in 1990 had scores of 15 or above. By 2000, however, the distance between those categories had doubled to 2.13 points, and by 2010, it had doubled again to 4.46. The “political hypothesis” proposed by Van Liere and Dunlap (1980) so many years ago now appears fulfilled.

### *National Politics and the Environment*

Even if environmental politics is more polarized today than at any other point in the measurable past, it may be part of a broader trend in national politics for which no



**Figure 2.** Environmental concern by partisan identification. “I’m going to read you a list of environmental problems. As I read each one, please tell me if you personally worry about this problem a great deal, a fair amount, only a little, or not at all. First, how much do you worry about . . .”

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Note: The data above have been weighted, using a variable provided by Gallup, to ensure a representative sample of the American adult population.

particular group or event is to blame. Indeed, a cottage industry has sprung up on both sides of the red state–blue state debate, represented by books such as Morris Fiorina, Samuel Abrams, and Jeremy Pope’s (2005) *Culture War? The Myth of a Polarized America* at one extreme and Ronald Brownstein’s (2007) *The Second Civil*

**Table 1.** The Demographic Correlates of Environmental Concern

Independent Variable	1990		2000		2010	
	Slope Coefficient	Standard Error	Slope Coefficient	Standard Error	Slope Coefficient	Standard Error
Age <sup>a</sup>	0.00	0.006	0.01	0.008	-0.01	0.008
Education <sup>b</sup>	0.01	0.087	-0.24**	0.093	0.06	0.115
Income <sup>c</sup>	-0.09	0.087	-0.06	0.083	-0.21**	0.069
Race <sup>d</sup>	-0.55	0.392	0.26	0.353	1.29***	0.358
Gender <sup>e</sup>	-0.46	0.246	-0.36	0.248	-0.91**	0.285
Party identification <sup>f</sup>	0.37*	0.156	0.51**	0.170	0.96***	0.205
Political ideology <sup>g</sup>	0.15	0.140	0.55**	0.176	1.27***	0.207
Constant	13.22	0.767	13.91	0.836	9.14	1.015
Mean on additive scale	13.75		14.25		11.84	
Number of cases	895		915		894	
R <sup>2</sup>	.021		.052		.159	

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Note: All estimates were obtained using ordinary least squares, and the slope estimates are reported as unstandardized. The dependent variable was an additive scale of environmental concerns ranging in value from 0 to 18 summed across the items below using this question, recoded as follows: "I'm going to read you a list of environmental problems. As I read each one, please tell me if you personally worry about this problem a great deal (3), a fair amount (2), only a little (1), or not at all (0). First, how much do you worry about . . ."

- Pollution of rivers, lakes, and reservoirs
- Air pollution
- The loss of tropical rainforests
- Global warming
- Contamination of soil and water by toxic waste
- Pollution of drinking water

These six items were selected from a broader battery of questions because they alone were used in identical wording and format in all three years: 1990, 2000, and 2010.

<sup>a</sup>Respondent's age in years.

<sup>b</sup>Respondent's level of education, coded into categories as follows: (1) none or Grades 1 to 4; (2) Grades 5, 6, 7; (3)

Grade 8; (4) high school incomplete (Grades 9 to 11); (5) high school graduate; (6) technical, trade, or business after high school; (7) college or university incomplete; (8) college or university graduate or more.

<sup>c</sup>Respondent's total annual household income before taxes, coded into categories in ascending order. The number of categories used by Gallup varies by year and changes (in part) because of inflation. For instance, in 1990, the highest income category was \$50,000 and above, whereas in 2010, it was \$500,000 and above. Since maintaining absolute comparability here is impossible, I used Gallup's original coding in each case. As result, the measurement of this variable is slightly—but probably not substantively—different in 1990, 2000, and 2010.

<sup>d</sup>Respondent's race: (0) White, non-Hispanic; (1) non-White.

<sup>e</sup>Respondent's gender: (0) female; (1) male.

<sup>f</sup>"In politics, as of today, do you consider yourself a Republican, a Democrat, or an Independent?" Coded as (1) Republican, (2) Independent, (3) Democrat. In 1990, the only available question coded responses into three simple categories. In 2000 and 2010, a more detailed set of questions was used to identify self-described Independents who "leaned" toward either of the major parties. To maintain comparability, however, I have elected to use the original 3-point scale in each of the models above.

<sup>g</sup>"How would you describe your political views?" Coded as (1) conservative, (2) moderate, (3) liberal. In 1990, the only available question coded responses into three simple categories. In 2000 and 2010, a more detailed, 5-point scale was used. To maintain comparability, however, I have elected to use the original 3-point scale in each of the models above.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

*War: How Extreme Partisanship Has Paralyzed Washington and Polarized America* on the other, just to name a few. As Nolan McCarty (2004, 2007) says in summarizing the literature, demonstrating polarization among elites is a relatively simple and empirical task. “By almost all measures of partisan polarization, the divide between Democratic and Republican members of Congress has widened deeply over the past twenty-five years, reaching levels of partisan conflict not witnessed since the 1920s” (McCarty, 2004, p. 1). What is far less clear is whether that trend has trickled down to the masses (Levendusky, 2009).

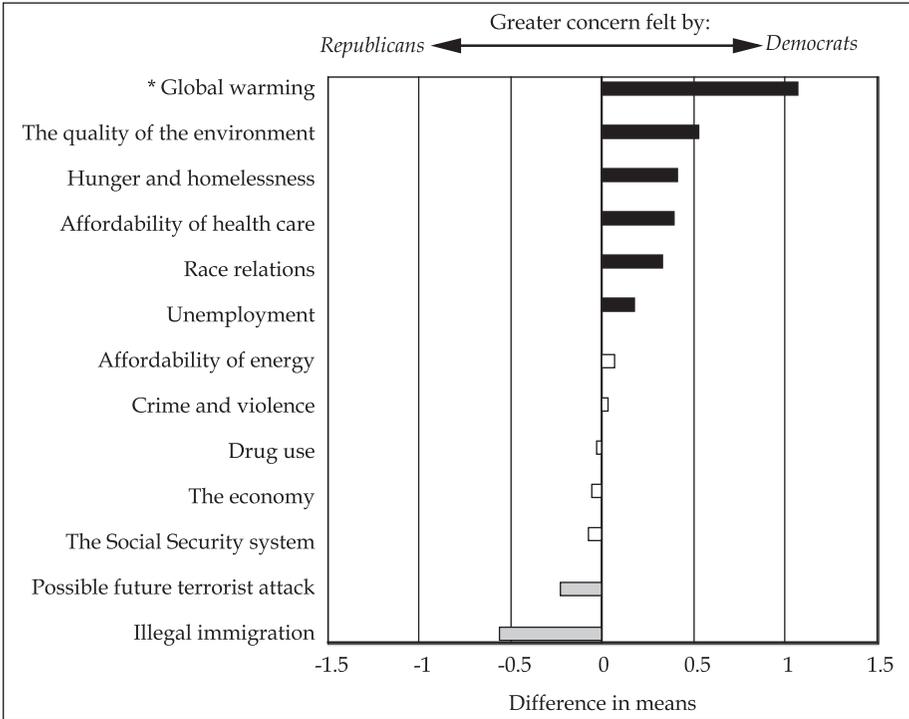
Although there is no consensus on the matter, some scholars believe that it has had at least some impact. In an article published in the *American Political Science Review*, Marc Hetherington (2001) finds that “greater partisan polarization in Congress has clarified the parties’ ideological positions for ordinary Americans,” which in turn has “produced a more partisan electorate” (pp. 619, 629). Similarly, in a recent piece in *Political Behavior*, Matthew Levendusky (2010) argues that elite polarization generates clearer cues for voters, which in turn allows them to adopt more consistent positions.

Although the Gallup data are limited and do not allow for a full and convincing test, the extent of mass polarization can be explored in a preliminary way. In addition to its standard environmental battery, Gallup asked its respondents in 2010 to consider a range of social, economic, and foreign policy problems, ranging from unemployment and the economy to illegal immigration and the affordability of health care. In Figure 3, the average response to each of these questions is plotted visually as a difference in means. On issues where Democrats were more concerned than Republicans, the bars fall to the right; when Republicans expressed greater concern, the bars fall to the left. The rank order that is so easily observed demonstrates that although the distance between partisans is greater on “the quality of the environment” than on any other issue on Gallup’s extensive list—only illegal immigration comes close—the divide on global warming is deepest of all.<sup>12</sup>

### *Issue Awareness and Elite Cues*

If Hetherington (2001), Levendusky (2009, 2010), and others are correct, and the relationship between elite polarization and mass response hinges on the giving and taking of cues, then surely issue awareness and knowledge matter, but how? When it comes to global warming, the results have been mixed. In 2000, Krosnick and his colleagues found that party sorting was more likely to occur among those who said they knew little about global warming. Eight years later, Dunlap and McCright (2008) found the opposite to be the case. They argued that partisan polarization was “more pronounced among those individuals reporting *greater* understanding of global warming” (p. 33).

In Figure 4, I compare mean levels of concern for global warming among partisan groups, disaggregated by a self-reported measure of knowledge. Democrats who said they understood the issue well were far more concerned than those who did not. For

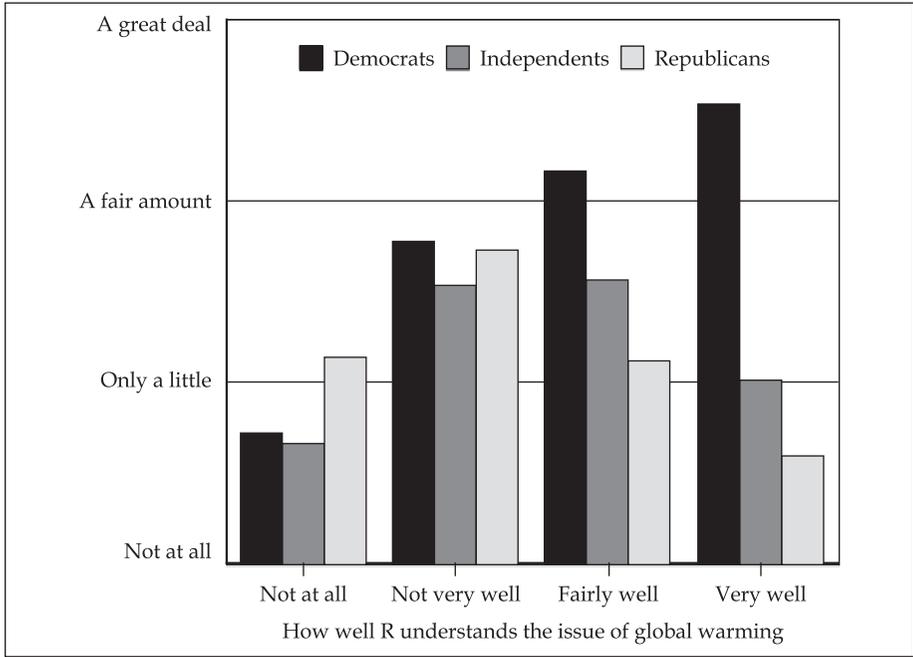


**Figure 3.** Distance between party identifiers on concern for various national problems, 2010. “Next, I’m going to read you a list of problems facing the country. For each one, please tell me if you personally worry about this problem a great deal (3), a fair amount (2), only a little (1), or not at all (0)?”

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Note: Weighted data are reported. Color coding is used to indicate the direction of difference as well as the result of ANOVA tests. Bars in white are not statistically significant; bars in black or gray are statistically significant at the  $p < .01$  level. The means for global warming were taken from a different battery of questions on the same questionnaire; however, the question wording and response categories used were identical.

Republicans—and to some extent, for Independents as well—the reverse was true. Those who reported a good grasp of global warming were markedly less worried about its effects than those who knew comparatively little. It appears, then, that partisan polarization is not inherent in the issue itself but that it occurs through the acquisition of information. As respondents become familiar with the partisan cues that are cognitively associated with global warming, they retreat into opposing camps. This pattern, which also has been observed by others scholars using multiple data sets, suggests that the relationship between issue awareness, understanding, and concern is far more daunting and complex than climate communicators would like to believe (Hamilton, 2011; Malka et al., 2009; McCright, 2011; McCright & Dunlap, 2011).



**Figure 4.** Concern for global warming among partisan identifiers, by level of understanding. “I’m going to read you a list of environmental problems. As I read each one, please tell me if you personally worry about this problem a great deal, a fair amount, only a little, or not at all. First, how much do you worry about global warming?”  
 Source: Copyright 2010 by Gallup, Inc. All rights reserved. Reprinted with permission.  
 Note: The data above have been weighted, using a variable provided by Gallup, to ensure a representative sample of the American adult population.

### Summary and Discussion

The history of global warming as a political issue is at least as interesting as its evolution as a scientific one. In the past 30 years, what began as an ill-defined condition has gradually emerged as a public problem worthy of attention on the national policy agenda. Yet it is increasingly apparent that those gains have come at a cost. Whereas once, the issue had been bolstered by majority support among average Americans—although never prominently or enthusiastically, to be sure—it is now characterized by a growing partisan divide. In a variety of ways, this article has explored the shifting terrain beneath the public’s views on climate change. Its most important conclusions can be summarized as follows.

First, concern for global warming has declined sharply, but so, too, has concern for all other environmental problems. The comparison is an important one because it hints at a complex cause. Some of the ingredients likely relate to poor economic conditions;

others, to issue-specific events and even to a broader political climate strained by partisan rancor among elites. The results found here must be understood, and to some extent softened, by these facts. Not every number associated with global warming in a poll relates to global warming alone. As students of political psychology have long recognized, public attitudes are created and sustained through a complex web of schema, within which the subject of global warming is but a single thread (Conover & Feldman, 1984).

Second, whether we call them “influentials,” “legitimizers,” or “opinion leaders,” elites and the cues they provide to members of the mass public undoubtedly matter (Katz & Lazarsfeld, 1955; Stewart, Smith, & Denton, 1994). In *The Nature and Origins of Mass Opinion*, John Zaller (1992) argues that “public attitudes toward major issues are a response to the relative intensity of competing political communications.” When elites unite, the public’s response is relatively nonideological. However, “when elites come to disagree along partisan or ideological lines,” as they did for Zaller during the latter stages of the Vietnam War, and as they did on global warming in the years following the release of the documentary film *An Inconvenient Truth* in 2007, “the public’s response will become ideological as well” (Zaller, 1992, p. 210).

Surely, the efforts of Gore and others at the IPCC succeeded in capturing public and media attention, but strategies to increase issue salience often, and unwittingly, invite political opposition. The timing on climate change could not have been worse, since its opponents were already emboldened by a series of events virtually guaranteed to reorder the public’s priorities, ranging from 9/11 to soaring energy prices and a deep and prolonged economic recession (Guber & Bosso, 2009). In short, as Zaller would have predicted, party polarization among elites has now trickled down to the masses. Like the unraveling of a thread, opposing sides on global warming are now evident within the American mass public and, to a lesser extent, on a host of other more innocuous subjects ranging from air pollution to soil contamination by toxic waste and the loss of tropical rainforests. These differences are robust, even after controlling for demographic traits, such as age, education, income, race, and gender.

Now that disagreements extend beyond policy preferences into virtually every aspect of environmental thought, it will be harder to sustain what had been called “the politics of consensus”—a fragile (if at times unproductive) equilibrium that for many years allowed discourse on the environment to focus on shared values while muting cleavages along ideological lines (Guber, 2003). For better or for worse, partisanship has now moved front and center in the debate on global warming.

For the better, Levendusky (2010) offers an optimistic assessment. He believes that elite polarization can have a positive impact because it clarifies “where the parties stand on the issues of the day,” and thus “causes ordinary voters to adopt more consistent attitudes” (Levendusky, 2010, p. 111). On a subject that has rarely moved voters to action in the past (Guber, 2003), this could lead to an increase in green voting behavior in the future, although the net effect, both for and against, remains unpredictable. For this reason, activists are increasingly divided as to whether to pursue partisan or bipartisan strategies. A partisan approach might articulate differences in policy that

could be used as a wedge to attract some votes, but it would likely sacrifice others by triggering opposing predispositions. In contrast, a bipartisan plan might actively seek and find middle ground and yet lock advocates into a far slower and more incremental process of policy change (Abbasi, 2006).

Yet either way, there are significant dangers to consider, too. On global warming, in particular, there is troubling contrast between “hard policy” on one hand and admittedly “soft thinking” on the other (Wagner & Zeckhauser, 2012). As Walter Lippmann (1922, p. 273) famously wrote, people respond not to an objective reality but rather to the “pictures in their heads,” a metaphor that seems particularly well suited to issues where there is an obvious disconnect between scientific understanding and mass competence. As Levendusky (2010) admits, consistency is “more about the power of party cues than the presence of ideological thinking in the electorate” (p. 126). Allowing political parties and other players to frame the debate over climate change, “opens the door to elite manipulation of mass behavior, a troubling implication to say the least” (Levendusky, 2010, p. 126; see also Kinder & Herzog, 1993; Sniderman & Theriault, 2004). The infamous Luntz memo, written in 2002 to help Republican candidates reassure voters that they were committed to preserving and protecting the environment, despite a platform of policies to the contrary, underscores the importance of language and reminds us that rhetoric, classically understood, is key to winning policy debates (Luntz Research Companies, 2002; McCright & Dunlap, 2000).

Finally, the work presented here suggests that partisan conflicts are not inherent in the subject of climate change. Party sorting seems to occur only as citizens acquire information and become familiar with elite cues. Unfortunately, it also means that the well-intentioned efforts of Gore and others on initiatives such as WeCanSolveIt.org and the Climate Reality Project—which are predicated on the assumption that awareness generates concern—may ultimately fall flat (Malka et al., 2009). Edward Maibach, director of the Center for Climate Change Communication at George Mason University, says, hopefully, “The erosion in both public concern and public trust about global warming should be a clarion call for people and organizations trying to educate the public about this important issue” (George Mason University, 2010). This article suggests, in a number of ways and for a multitude of reasons, that succeeding at such a task will not be easy.

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### **Notes**

1. Throughout this article, I use the terms *greenhouse effect*, *global warming*, and *climate change* interchangeably. I recognize that it is not entirely accurate to do so—*climate*

*change* is preferred in the scientific community, as the term encompasses a wider range of effects in addition to rising global temperatures. However, the Gallup Organization has always used the phrase *global warming* in its surveys, so I do the same here for sake of consistency and precision.

2. The question wording used by Pew was as follows:

Now I will read a list of some things that have happened in the world recently. For each one, please tell me if you've heard of it or not. . . . The environmental problem of global warming . . . Have you heard of it or not?

Ninety-one percent had heard of it; 9% had not. Survey by Pew Global Attitudes Project and Princeton Survey Research Associates International, May 2 to May 14, 2006. Retrieved August 27, 2008, from the iPOLL Databank, Roper Center for Public Opinion Research, University of Connecticut (<http://www.ropercenter.uconn.edu.ezproxy.uvm.edu/ipoll.html>). For more on this trend, and others related to global warming, refer to Nisbet and Myers (2007).

3. Gallup Organization, March 6 to 9, 2008. Retrieved August 27, 2008, from <http://www.ropercenter.uconn.edu.ezproxy.uvm.edu/ipoll.html>. The 2006 General Social Survey records a similar result. See National Opinion Research Center, University of Chicago, March 10 to August 7, 2006. Retrieved September 11, 2008, from <http://www.ropercenter.uconn.edu.ezproxy.uvm.edu/ipoll.html>.
4. Gallup Poll, March 4 to 7, 2010. Retrieved July 24, 2010, from the iPOLL Databank, Roper Center for Public Opinion Research, University of Connecticut ([http://www.ropercenter.uconn.edu/data\\_access/ipoll/ipoll.html](http://www.ropercenter.uconn.edu/data_access/ipoll/ipoll.html)).
5. Gallup is not the only polling organization to record a decline in concern for environmental issues. See also a January 2010 study administered jointly by the Yale Project on Climate Change and the George Mason University Center for Climate Change Communication ([http://www.climatechangecommunication.org/images/files/CC\\_in\\_the\\_American\\_Mind\\_Jan\\_2010.pdf](http://www.climatechangecommunication.org/images/files/CC_in_the_American_Mind_Jan_2010.pdf)) and an October 2009 report from the Pew Research Center for the People and the Press: (<http://people-press.org/report/556/global-warming>).
6. Gallup Poll, March 4 to 7, 2010. Retrieved July 24, 2010, from the iPOLL Databank, Roper Center for Public Opinion Research, University of Connecticut ([http://www.ropercenter.uconn.edu/data\\_access/ipoll/ipoll.html](http://www.ropercenter.uconn.edu/data_access/ipoll/ipoll.html)).
7. In *The Grassroots of a Green Revolution* (Guber, 2003), I argued that on the subject of environmental concern, differences between Democrats and Republicans were usually statistically significant but substantively unimportant. When actual disagreement among respondents was distinguished from artificial variance introduced through question wording and survey design, the results were largely unimpressive. Even when taken as a whole, social and demographics models rarely accounted for more than a small fraction of the variance observed.
8. The question about spending on the environment continues to be popular because it has been used in virtually identical wording and format by the General Social Survey since 1973. See <http://www.norc.org/GSS+Website/>.

9. Over time, other polling organizations have developed similar questions. In the American National Election Study, for instance, respondents are asked to place themselves on a scale that pits “protecting the environment” against “maintaining jobs and our standard of living” or “tougher government regulations on business in order to protect the environment” against regulations that “are already too much of a burden on business.” See American National Election Studies (2010).
10. Originally, for Figure 1, I constructed a variable labeled “all other environmental issues,” made by averaging the responses to the remaining items in the battery. However, the number and composition of those items shifts slightly from one year to the next as new issues are added by Gallup (e.g., “the extinction of plant and animal species” and “the pollution of drinking water” in 2000) and other issues dropped (e.g., “ocean and beach pollution” in 2002). As a result, this introduced an unacceptable amount of artificial variance. For instance, the average amount of concern expressed on “all other environmental issues” *increased* between 2008 and 2009 but only because of the composition of the questions that were used. In that year, two low-ranked issues were dropped from the study entirely: “damage to the earth’s ozone layer” and “acid rain.” In the end, Figure 1 displays “air pollution” and the “pollution of rivers, lakes, and reservoirs” because they provide the only direct comparison to global warming. Those three measures alone were repeated in every battery between 1989 and 2010.
11. Although there is honest debate in the discipline of political science on partisan identification and the treatment of “leaners,” I am unable to make such fine-grain distinctions here. In 1990, the only available question on the Gallup survey coded responses into three categories: Democrat, Independent, and Republican. In 2000 and 2010, a more detailed set of questions was added to identify self-described Independents who “leaned” toward either of the major parties. To maintain comparability, however, I have elected to use the original 3-point scale throughout. The same is true of political ideology. In 1990, the categories conservative, moderate, and liberal were used. In 2000 and 2010, a more detailed, 5-point scale was added. Again, to maintain comparability, I chose to maintain the original 3-point scale.
12. Granted, this particular measure was not included in the same battery of questions, but it was drawn from the same questionnaire and asked the same set of respondents using an identical response format. Applying the “apples-and-oranges” standard of comparison, it is more akin, perhaps, to oranges and tangerines, but the juxtaposition is provocative nevertheless.

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## Bio

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