The Impact of Candidates' Statements about Climate Change on Electoral Success

in 2008 and 2010: Evidence Using Three Methodologies

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<u>Abstract</u>

More than a decade of national surveys suggest that the vast majority of Americans who attach personal importance to the issue of climate change take what might be called "green" positions on that issue – endorsing the existence of warming, human causation, and the need for ameliorative action. This finding suggests that candidates running for office can gain votes by taking green positions and might lose votes by expressing skepticism about climate change. This paper describes tests of these hypotheses using three methodologies: (1) experiments embedded in a national survey and in three state surveys, (2) an analysis relating statement on climate change made by 2010 Congressional candidates with their victory rates, and (3) an analysis of the relation of climate change issue positions with votes during the 2008 Presidential election. All three methodologies yield evidence consistent with the notion that a candidate gained votes by taking a green position and lost votes by taking a not-green position. The effects of taking green and not green positions were larger among people who believed in anthropogenic warming than among people who did not, and the effects were stronger among people who attached more personal importance to the issue. These results are consistent with the notion of a climate change issue public and illustrate how the impact of an issue on candidate choice can be illuminated by the coordinated application of multiple methods of investigation.

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According to surveys conducted since the late 1990s, large majorities of Americans have believed that the earth's temperature has been gradually increasing over the last 100 years, have believed that such warming is at least partly human-caused, and support government action to reduce future emissions of greenhouse gasses (what might be called a set of "green" opinions). For example, in a national survey in June 2010, 74 percent of respondents said they believed climate change had been occurring, 76 percent favored federal government limitations on greenhouse gas emissions generated by businesses, and 84 percent favored the federal government offering tax breaks to encourage utilities to make more electricity from water, wind, and solar power.[1]

These large majorities might seem to suggest that political candidates could gain votes by staking out green positions on climate change and that taking not-green positions could cause candidates to lose votes. But according to the issue publics literature, that may not be how voting works. A policy issue like climate change is unlikely to influence the votes of all citizens. Instead, only people who pay close attention to the issue and consider it to be highly important to them personally are likely to base their votes on this issue (e.g., Anand & Krosnick, 2003; Krosnick, 1990). Among the 108 million American members of the climate change issue public, gigantic majorities take green positions, according to our past surveys. And this does in fact suggest that candidates may be able to win votes by taking green positions on climate and may lose votes by taking non-green positions.

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[1] http://woods.stanford.edu/research/americans-support-govt-solutions-global-warming.html

This paper describes four studies carried out to test these hypotheses. In the first two, we conducted experiments embedded in surveys of representative samples of all American adults in November, 2010 and of American adults in three states (Florida, Maine, and Massachusetts) in July, 2010. In both experiments, telephone interviewers read quotes from a hypothetical candidate running for Senate in the respondent's state, and the respondent indicated the likelihood that he or she would vote for the candidate. All respondents heard the candidate take positions on a series of issues other than climate change. For some respondents, the candidate took no position on climate. Other respondents heard the candidate take a green position on climate. And, in the national survey only, some respondents heard the candidate take a non-green position on climate. This experimental design allowed us to assess the impact of adding a statement on climate change to a candidate's utterances.

In Study 3, we focused on actual votes cast during the 2010 Congressional elections. There was no shortage of speculation after the 2010 elections about the impact that climate change may have had on victories and losses, and none of that speculation was in line with the above argument. Some observers claimed that supporting legislation to address climate change cost Democrats seats, as evidenced by this headline: "Democrats who took risk and voted for climate bill pay price" (Hughes, 2010). Other headlines denied any such impact: "Cap-and-trade didn't kill the Democrats" (Levi, 2010), "It's not the climate bill, stupid" (Taylor-Miesle, 2010), and "Ignoring evidence, Politico spins climate vote as electoral loser." (Johnson, 2010).

In order to explore which set of claims is correct, we conducted a content analysis of Congressional candidates' campaign websites and Congressional websites (for incumbents running for reelection) and determined whether each candidate took a green position on climate

change, took no position, or took a not-green position. Then we explored whether these groups of candidates differed in their electoral success controlling for some potential confounding factors.

Based on existing survey data, we expected that a candidate would have enhanced his/her chance of victory by taking a green position over remaining silent. And we suspected that taking a not-green position might reduce a candidate's chance of victory over remaining silent. Furthermore, we suspected that taking a green position might pay off more when a candidate's opponent took a not-green position than when the opponent was silent. Conversely, we thought that taking a not-green position might hurt more when a candidate's opponent took a green position than when the opponent remained silent.

Our fourth study turned attention to the 2008 U.S. Presidential election. A great deal of literature over the years has explored whether voters based their candidate choices on policy issues by predicting the former with the latter in regression-type analyses. An assumption underlying this approach is that citizens are more likely to vote for the candidate whose issue position is closer to their own. This literature has involved no small share of controversy about whether proximity to candidates are best represented in terms of the directional theory of voting or the spatial theory (which can involve multiple representations; see Lewis & King, 1999). We used data from a survey of a representative national sample interviewed before and after the 2008 election to explore whether proximity to candidates on climate change policy influenced candidate choice, particularly among the climate change issue public. We did these analyses using the three leading analytic approaches to quantifying proximity, to gauge the robustness of our finding.

Study 1 – National Survey

Experimental methods are routinely employed in the social sciences to generate evidence of causal influence. The ideal research design in this context would be an experiment in which

real candidates are randomly assigned to take a green position, a not-green position, or no position on climate change. The difference between the votes received by the three groups of candidates could then be interpreted as the causal effect on Americans' voting of candidate's position-taking. Such an experiment could never be conducted in a real election (because candidates would no doubt resist having their positions on climate be randomly assigned to them), but experiments with hypothetical elections can be embedded in national surveys, as we have done.

We used the experimental data to answer two principal questions. First, we assessed the impact of taking green and not-green positions on voting likelihood. Second, we assessed whether the impact of taking green or not-green positions on climate varied across Democratic, Independent, and Republican respondents. Past surveys of ours and other investigators suggest that in recent years, Democrats and Independents have been more likely to take green positions on climate than have Republicans. Although majorities of Republicans have expressed green positions, those are slight majorities rather than the huge majorities apparent among Democrats and Independents. We therefore expected that taking a green position would attract votes for a candidate among Democrats and Independents and that taking a not-green position would reduce votes gained from Democrats and Independents. But, *a priori*, we were uncertain about the impact that taking green and not-green positions would have on Republicans.

Data

Data Collection During telephone interviews with a representative sample of American adults, respondents heard quotes from a hypothetical candidate running for Senate and then reported how likely they were to vote for or against the candidate. Each respondent was randomly assigned to hear the candidate take a green position on climate, take a not-green position on climate, or take no position on climate.

The survey interviews were conducted by Abt SRBI, who spoke with 1,001 U.S. adults, including 671 respondents interviewed on a landline telephone and 330 interviewed on a cell phone. Interviews were conducted between November 1 and November 14, 2010, and were administrated in English and Spanish.

Samples were drawn from both landline and cellular random digit dial (RDD) frames to represent people with access to either a landline or cell phone. Both samples were provided by Survey Sampling International, LLC, according to specifications from Abt SRBI. Numbers for the landline sample were drawn with equal probabilities from active blocks (area code + exchange + two-digit block number) that contained one or more residential directory listings. The cellular sample was drawn through a systematic sampling from 1000-blocks dedicated to cellular service according to the Telcordia database.

A maximum of seven call attempts were made to each sampled telephone number. Refusal conversion was attempted on soft refusal cases in the landline sample. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. The sample was released for interviewing in replicates, which are representative subsamples of the full sample.

For the landline sample, the respondent was randomly selected from among all of the adults living in the household. In households with two adults, one adult was randomly selected. In households with three or more adults, a first random selection was made to choose between the adult who answered the phone and the rest of the adults, and if the remaining adults were selected, one was randomly chosen using the last or next birthday method (whereby the adult with the most recent or the upcoming birthday was selected for interviewing; the use of next vs. last birthday for each household was determined randomly). For the cell phone sample,

interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey. Cell phone sample respondents were offered a post-paid reimbursement of $10 for their participation.

Abt SRBI created a base weight that adjusts for differential probabilities of selection due to the number of adults in the household, the number of voice-use landlines, and the number of cell phones. The base weight also adjusts for overlap of the landline and cell phone RDD frames. We computed a final weight using a raking algorithm[2] that accounted for unequal probabilities of selection and post-stratified to population proportions of age, sex, education, ethnicity, race, and Census region, using targets from the September 2010 Current Population Survey conducted by the U.S. Census Bureau. The weighting combined the interviews done on landlines and cell phones taking into account the rates of landline and cell phone usage documented by the 2009 National Health Interview Survey. The AAPOR Response Rate 3 was 17%.

Table 1 displays distributions of unweighted and weighted demographics from the survey and national benchmarks from the 2010 March supplement of the Current Population Survey. These distributions show that the sample was similar to the American population before the weights were applied and, as expected, was more similar after the data were weighted. The weighted sample slightly over-represented females and people with some college or college graduates or more education and slightly under-represented Hispanics and people with some high school education but no high school degree, as well as high school graduates.

We report weighted results of the experiment, though unweighted data produced

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[2] DeBell, Matthew, and Jon A. Krosnick. 2009. Computing Weights for American National Election Study Survey Data. ANES Technical Report series, no. nes012427. Ann Arbor, MI, and Palo Alto, CA: American National Election Studies. Available at http://www.electionstudies.org

Pasek, J. (2010). anesrake: ANES Raking Implementation. Comprehensive R Archive Network. Version 0.4 [July 12, 2010]. Available from: http://cran.r-project.org/web/packages/anesrake/index.html.

comparable findings.

<u>Experimental Conditions</u> In this experiment, all the respondents heard two or three issue statements made by the hypothetical Senate candidate and then answered this question: "Now based on all these things that you have heard the candidate say, how likely do you think you would be to vote for this candidate in an election for U.S. Senate? Do you think you definitely would vote for this candidate, probably would vote for this candidate, probably would not vote for this candidate, or definitely would not vote for this candidate?"

Respondents were randomly assigned to one of three groups: control, green, and not-green. Respondents in each group heard two "control" issue statements, which were randomly selected from six issue statements that are listed in Appendix A. After hearing each statement, respondents were asked, "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it?"

Respondents who were randomly assigned to be in the green group heard an additional statement in which the candidate took a green position on climate change, with a random half of these green group respondents hearing the green statement prior to, and the other half hearing it after the two control issue statements. After hearing the green statement, respondents indicated whether they mostly agreed, mostly disagreed, or neither agreed nor disagreed with the statement. The green statement was:

> "Like most Americans and most of the residents of our great State, I believe that global warming has been happening for the last 100 years, mainly because we have been burning fossil fuels and putting out greenhouse gasses. Now is the time for us to stop this by ending our dependence on imported oil and coal to run our cars and heat our houses. We need to begin using new forms of energy that are made in America and will be

renewable forever. We can build better cars that use less gasoline. We can build better appliances that use less electricity. And we can make power from the sun and from wind. We don't have to change our lifestyles, but we do need to reshape the way our country does business. We need to end our long-term addiction to polluting the environment and instead let American genius do what it does best – transform our outdated ways of generating energy into new ones that create jobs and entire industries, and stop the damage we've been doing to the environment."

Respondents in the not-green group heard the candidate take a not-green position on climate change, with a random half of them hearing the not-green statement prior to, and the other half hearing it after the two control issue statements. After hearing the not-green statement, respondents indicated whether they mostly agreed, mostly disagreed, or neither agreed nor disagreed with the statement. The not-green statement was:

"There isn't any real science to say we are changing the climate of the earth. The science on global warming is a hoax and is an attempt to perpetrate a fraud on the American people. Climate science is junk science, and global warming is a manufactured controversy. I don't buy into the whole man-caused global warming, man-caused climate change mantra, and I believe that there's not sound science to back that up. We must spend no effort to deal with something that is not a problem at all. Yet that's exactly what's happening with the cap and trade bill that Congress has considered. I oppose the cap and trade bill. Cap and trade is a job killer and damages our economy. We should not invest in windmills and solar panels as alternative energy sources. Instead we should continue to focus on our traditional sources of energy: coal, oil, and natural gas. We should expand energy production in our country, including by continuing to mine our

coal, doing more drilling for oil here at home."[3]

Results

The Effects of Green and Not-Green Statements In the full sample, taking a green

position on climate won votes for the candidate, and taking a not-green position lost votes (see

row 1 of Table 2). 65% of respondents said they would vote for the candidate who was silent on

climate change, whereas 77% said they would vote for the candidate who took a green position

on climate change. This 12 percentage point increase was statistically significant ($p = .01$).

Among respondents who heard the candidate take a not-green position on climate, only 48% said

they would vote for him/her. The 17 percentage point difference between this number and the

control group's number was also statistically significant ($p < .01$).

Moderation by Party Identification As expected, the same impact of the green and not-

green statements was apparent among Democratic respondents (see row 2 of Table 2).[45] 53% of

Democrats said they would vote for the candidate who was silent about climate change, whereas

74% said so when the candidate took a green position, a 21 percentage point increase ($p = .03$).

In contrast, 37% of Democrats said they would vote for the candidate who took a not-green

position, a decline of 16 percentage points from the silent candidate ($p = .07$).

Independents closely resembled Democrats. 63% of Independents said they would vote

for the candidate who was silent about climate change, and 79% said so about the candidate who

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[3] Due to a communication error, there was a revision of the list of non-climate related issue statements. This change was introduced after 193 interviews had been completed between November 1 and 3, 2010. These 193 interviews were excluded from the analysis, resulting in a sample size of N = 808.

[4] The question for party identification, with identical wording for the national and state surveys, is "Do you consider yourself a Democrat, a Republican, an Independent, or none of these?" Respondents who answered with "Democrat" and "Republican:" were coded as "Democrats" and "Republicans", respectively, and the remaining respondents were coded as "Independents".

[5] We report one-tailed tests for the effects among Democrats and Independents given our strong expectations of the directions of effects. We report two-tailed tests for the Republicans because we had no such expectations.

took a green position, an increase of 15 percentage points ($p = .02$). When the candidate took a not-green position, 44% of Independents said they would vote for him/her, a decrease of 19 percentage points ($p = .01$).

Among Republicans, taking a green position caused a small and non-significant decline in intentions to vote for the candidate (83% for the candidate silent on climate vs. 78% for the candidate who took a green position, $\Delta=6\%$, $p =.43$). Taking a not green position also caused a small and non-significant decline in the intentions to vote for the candidate (83% vs. 76%, $\Delta=7\%$, $p =.38$).

Study 2 –Surveys in Florida, Maine and Massachusetts

Our second study used a similar experimental approach to assess the impact of only green statements on vote intentions among residents of Florida, Maine, and Massachusetts.

Data

Data Collection   During telephone interviews with representative samples of adults in Florida (N=600), Massachusetts (N=600), and Maine (N=600), interviewers read quotes from a hypothetical candidate running for Senate and then asked respondents how likely they were to vote for or against the candidate. Each respondent was randomly assigned to hear the candidate take no position on climate or to take a green position on climate.

The interviews were conducted by Abt SRBI between July 9 and July 18, 2010. In each state, approximately 400 respondents were interviewed on a landline telephone, and approximately 200 were interviewed on a cell phone. Interviews were conducted in English and Spanish.

The target population for the study is non-institutionalized persons age 18 and over, living in Florida, Massachusetts, and Maine. Samples were drawn from both the landline and cellular random digit dial (RDD) frames provided by Survey Sampling International, LLC

according to Abt SRBI specifications. Numbers for the landline sample were drawn with equal probabilities from active blocks (area code + exchange + two-digit block number) that contained one or more residential directory listings. The cellular sample was drawn through a systematic sampling from 1000-blocks dedicated to cellular service according to the Telcordia database.

A maximum of seven call attempts were made to numbers in the landline and cell phone samples. Refusal conversion was attempted on soft refusal cases in the landline sample. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. The sample was released for interviewing in replicates.

For the landline sample, the respondent was randomly selected from all of the adults in the household. For the cell phone sample, interviews were conducted with the person who answered the phone. Interviewers verified that the person was an adult and in a safe place before administering the survey. Cell sample respondents were offered a post-paid reimbursement of $5 for their participation.

Weights for the July 2010 surveys done in Florida, Maine, and Massachusetts account for unequal probabilities of selection, and post-stratify to population proportions of age, sex, education, ethnicity and race, using targets from the 2006-2008 American Community Survey for Florida, Maine, and Massachusetts. The weighting was also designed to combine interviews done on landlines and cell phones taking into account the rates of landline and cell phone usage from the NHIS. More details about the methodology about the survey and the experiment are available elsewhere[6].

AAPOR Response Rate 3 was 15% for the landline samples in the three states combined, and 14%, 14% and 19% for the landline samples of the state of Florida, Massachusetts, and

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[6] http://woods.stanford.edu/research/state-surveys.html

Maine, respectively. AAPOR Response Rate 3 was 10% for the cell phone samples in the three

states combined, and 10%, 9% and 12% for the landline samples of the state of Florida,

Massachusetts, and Maine, respectively.

Tables 3-5 display distributions of unweighted and weighted demographics of each of the

three states' survey samples along with a state-level benchmark computed using data from the

2006-2008 American Community Survey for the three states. The unweighted samples under-

represented younger adults, under-represented whites, and under-represented people with

relatively little formal education. After weighting, the three samples closely resembled their

corresponding populations.

Experimental Conditions In this survey experiment, all the respondents heard two or

three issue statements made by the hypothetical candidate running for Senate and then answered

this question: "Now based on all these things that you have heard the candidate say, how likely

do you think you would be to vote for this candidate in an election for U.S. Senate? Do you

think you definitely would vote for this candidate, probably would vote for this candidate,

probably would not vote for this candidate, or definitely would not vote for this candidate?"

Respondents were randomly assigned to one of the two groups: control and green.

Respondents first heard two issue statements, listed in Appendix B, which were identical in the

two groups. The respondents in Florida heard one statement on Cuba and one on terrorism. The

respondents in Massachusetts heard one statement on terrorism and one on health care. The

respondents in Maine heard one statement on terrorism and one on the economy. After hearing

each of the two statements, respondents were asked, "Overall, do you mostly agree with what I

just read, mostly disagree with it, or neither agree nor disagree with it?"

Respondents who were randomly assigned to the green group heard an additional

statement in which the candidate took a green position about climate change. After the statement was read, these respondents indicated whether they mostly agreed with it, mostly disagreed, or neither agreed nor disagreed with the statement. The green statement is identical to that used in Study 1.

Results

  <u>The Effect of the Green Statement</u> In each state, taking a green position on climate change won votes for the candidate (see Table 6). In Florida, 49% of respondents said they would vote for the candidate who was silent on climate, whereas 73% said they would vote for the candidate who took a green position on climate. This 24 percentage point increase was statistically significant ($p < .01$). The same effect was apparent among respondents in Maine and Massachusetts but with smaller magnitudes. In Maine, 64% of respondents said they would vote for the candidate who took no position on climate, but 71% said so for the candidate who took a green position on climate, an increase of 7 percentage points ($p = .08$). In Massachusetts, the effect was about 10 percentage points ($p = .02$); 67% and 77% of respondents said they would vote for the candidate who took no position on climate change and a green position climate change, respectively. IS

  <u>Moderation by Party Identification</u> As expected, the impact of the green statement was apparent among Democratic respondents (see row 4 of Table 6). 58% of Democrats said they would vote for the candidate who was silent about climate, whereas 83% said so about the candidate who took a green position, a 25 percentage point increase ($p < .01$). Likewise, 57% of Independents said they would vote for a candidate who was silent about climate change, whereas 71% said so about the candidate who took a green position, an increase of 14 percentage points ($p < .01$). Among Republicans, taking a green position caused a small and non-significant decline in intentions to vote for the candidate (71% for the candidate silent on climate vs. 63%

for the candidate who took a green position, $\Delta=8\%$, $p = .34$).

Studies 1 and 2: Moderation by Belief in Anthropogenic Warming

and by Personal Importance

We expected that the gains and losses of votes resulting from taking a green position or a not-green position, respectively, would be more pronounced among respondents who believed that climate change was real and human-caused than among Americans who denied the existence of anthropogenic warming. Furthermore, the attitude strength literature suggests that these gains and losses should have been more pronounced among people who attached more personal importance to the issue (Visser, Bizer, & Krosnick, 2006). To test these hypotheses, we pooled the data from the national survey and the state surveys to yield sufficiently large samples (see Appendix C for the measures of belief in anthropogenic warming and of issue public membership).

Moderators of the Green and Not-Green Statement Effects

Belief in Anthropogenic Warming As expected, the impacts of the green and not-green statements were much more pronounced among respondents who believed that the Earth's temperature has been rising and that the temperature increase has been due to things people did than among respondents who did not hold these beliefs (see rows 1-2 of Table 7). 63% of respondents who believed in anthropogenic warming said they would vote for the candidate who was silent about climate, whereas 80% said so about the candidate who took a green position, a 17 percentage point increase ($p < .00$). Among respondents who did not believe in anthropogenic warming, taking a green position caused a small and non-significant increase in intentions to vote for the candidate (57% for the candidate silent on climate vs. 64% for the candidate who took a green position, $\Delta=7\%$, $p = .11$). Likewise, 40% of respondents who believed in

anthropogenic warming said they would vote for the candidate who made a not-green statement, a 24 percentage point decline as compared to the silent candidate (p <.00), whereas making a not-green statement caused a small and insignificant increase in intentions to vote for the candidate among respondents who did not believe in anthropogenic warming (62% for the candidate who took a not-green position, Δ=5%, p = .53).

Personal Importance As expected, the impact of the green and not-green statements was greater among respondents who attached more personal importance to the issue (see rows 3-4 of Table 7). 60% of high importance respondents said they would vote for the candidate who was silent about climate change, whereas 78% said so about the candidate who took a green position, an 18 percentage point increase (p < .00). Among respondents low in personal importance, taking a green position caused a much smaller increase in intentions to vote for the candidate (62% for the candidate silent on climate vs. 71% for the candidate who took a green position, Δ=9%, p <.00). Likewise, 38% of the high personal importance group said they would vote for the candidate who made a not-green statement, a 22 percentage point decline as compared to the candidate who was silent (p <.00). In contrast, making a not-green statement caused a small and insignificant decrease in intentions to vote for the candidate among respondents who were low in personal importance (58% for the candidate who took a not-green position, Δ=-4%, p = .45).

Evaluations of the Candidate's Green and Not-Green Statements

Consistent with earlier research indicating that a large majority of Americans believed in anthropogenic warming and supported ameliorative government action, 78% of respondents said they mostly agreed with the candidate's green statement. Also consistent with earlier surveys, this proportion varied significant by party identification (p < .00). It was 86% among Democrats, 64% among Republicans, and 79% among Independents. And as expected, even a

majority of Republicans mostly agreed with the green statement.

Consistent with past surveys, a small minority, 22%, of respondents said that they mostly agreed with the candidate's not-green statement, and this proportion varied by party identification: 44% of Republicans and 23% of Independent respondents said they mostly agreed with the not-green statement, whereas only 10% of Democrats said so ($p < .00$). Thus, disagreement with the not-green statement was more common than agreement, even among Republicans.

As expected, evaluations of the candidate's climate change statement varied according to the respondents' beliefs about global warming. 89% of people who believed in anthropogenic warming agreed with the green statement, whereas 59% of people who did not believe in anthropogenic warming did so ($p < .00$). 14% of people who believed in anthropogenic warming agreed with the not-green statement, whereas 37% did so among people who did not believe in anthropogenic warming ($p < .00$). Thus, even among people who thought that gradual warming probably has not been occurring or that warming is not due to human action, a majority disagreed with the candidate's not-green statement.

Study 3

Our third study shifted gears to the observational mode and sought to assess the relation between what candidates in the 2010 Congressional elections said about climate change and their victory rates.

Data and Methods

Content Analysis

A list of the names and campaign website addresses of all the candidates from Democratic and Republican Party in the 50 states and District of Columbia in the 2010 House

and Senate elections was obtained from a directory created by Project Vote Smart, where the

candidates registered their campaign information (www.votesmart.org). The campaign websites

of incumbents were downloaded in October, 2010. All the Congressional websites for the

incumbent candidates were downloaded in December, 2010.

All the webpages with text content were indexed, from which a list of webpages that

contained any of four key terms ("climate", "global warming", "energy", or "cap") was

generated for each candidate. Two coders (who were not aware of the research hypotheses being

tested) independently read each website and answered a dozen yes/no questions following a set

of detailed coding instructions (see Appendix D). Coders were able to answer "ambiguous" as

well.   The 12 coding questions asked coders to decide whether the candidate said each of the

following ("GW/CC" below means global warming or climate change):

1) "GW/CC has been happening"
   - Global warming or climate change has been happening or will happen.
   - There is scientific evidence indicating that GW/CC has been happening or will happen.

2) "GW/CC has not been happening"
   - Global warming or climate change has not been happening or will not happen.
   - The candidate is not sure whether GW/CC has been happening or will happen.
   - There is no, or little, or insufficient amount of scientific evidence indicating that GW/CC has been happening or will happen.
   - The candidate is not sure whether there is (sufficient) scientific evidence that GW/CC has been happening or will happen.

3) "GW/CC is man-made"
   - Human actions, such as burning fossil fuels, are a cause of GW/CC.

4) "GW/CC is not man-made"
   - Human actions are not a cause of GW/CC.
   - The candidate is not sure whether human actions cause GW/CC.

5) "GW/CC is bad"
   - Global warming or climate change will have one or more undesirable consequences.
   - GW/CC is a serious problem.

- GW/CC is an important issue.

6) "GW/CC is not bad"
   - Global warming or climate change will not have undesirable consequences.
   - The candidate is not sure whether GW/CC will have any undesirable consequences.
   - GW/CC is NOT a serious problem.
   - The candidate is not sure whether GW/CC is a (serious) problem.
   - GW/CC is NOT an important issue
   - The candidate is not sure whether GW/CC is an important issue.

7) Producing Energy by "Green" Methods is Good
   - Passing laws that would encourage producing more energy from "clean" sources, such as wind, solar power, water, or nuclear power plants, would be a good idea.

8) Producing Energy by "Green" Methods is Not Good
   - Passing laws that would encourage producing more energy from "clean" sources, such as wind, solar power, water, or nuclear power plants, would NOT be a good idea.
   - The candidate is not sure whether passing laws that would encourage producing more energy from "clean" sources, such as wind, solar power, water, or nuclear power plants, would be a good idea.

9) "Actions should be taken"
   - Actions should be taken to reduce climate change or the effects of climate change.
   - We should limit the amount of greenhouse gasses (carbon dioxide, CO_2) in the future.

10) "NO actions should be taken"
   - No actions should be taken about global warming or climate change.
   - No actions should be taken to limit the amount of greenhouse gasses in the future.
   - The candidate is not sure whether we should take actions about GW/CC.
   - The candidate is not sure whether we should limit carbon emissions.

11) "Support cap-and-trade"
   - The candidate supports cap-and-trade.

12) "Oppose cap-and-trade"
   - The candidate opposes cap-and-trade.
   - The candidate is not sure, where cap-and-trade is a good idea.

Agreement between the two coders was excellent: the coders agreed for 90% of candidates for question (1), 96% for question (2), 94% for question (3), 98% for questions (4) 92% for question (5), 98% for question (6), 76% for question (7), 97% for question (8) 85% for question (9), 96% for question (10), 96% for question (11), and 88% for question (12). When the first two coders disagreed when answering a question, a third coder performed another round of independent coding of the candidate's entire website. The discrepancies in coding answers among the three coders were resolved by majority rule. The investigators resolved remaining discrepancies that arose when two coders answered a question with "ambiguous" and performed quality checks to confirm the accuracy of all final coding decisions.

A candidate was considered to have made "green statements" on climate change if he/she said any of the following: that global warming has been happening, that human activities are at least partly responsible for global warming, that global warming would be bad, that ameliorative actions about climate change should be taken; that he/she supported the cap and trade policy (i.e., a "yes" answer to question (1), (3), (5), (9) or (11)). A candidate was considered to have made "not-green statements" on climate change if he/she said any of the following: that global warming has not been happening, that human activities are not responsible for global warming, that global warming would not be bad, and that no ameliorative actions about climate change should be taken (i.e., a "yes" answer to question (2), (4), (6) or (10)).

Each candidate was assigned to one of the four categories. A candidate was categorized as "green" if he/she made one or more "green" statements and did not make any "not-green" statements. A candidate was categorized as "not-green" if he/she made one or more "not-green" statements and did not make any "green" statements. A candidate was categorized as "mixed" if

he/she made "green" statements and "not-green" statements. A candidate was categorized as "silent" if he/she did not make any "green" statements or "not-green" statements.

Analysis Predicting Electoral Victory

One might imagine that a candidate's decision about what to say, if anything, about climate change might have been influenced by his or her perception of his or her chances of electoral success. For example, perhaps only "safe" candidates took positions on climate change if they felt that doing so was risky. We addressed this issue by controlling for what we call the "party margin". For the House candidates, party margin was the difference between the percent of votes cast for the Democratic candidate and the percent of votes cast for the Republican candidate in the same district during the 2008 elections. For the Senate candidates, party margin was the difference between the percent of votes cast for Barak Obama and the percent of votes for John McCain in the 2008 Presidential election in the State.

To explore whether a candidate's electoral success depended on his/her own climate position and that of his or her opponent, we estimated the parameters of logisitic regression equations predicting victory by the Democratic candidate. Among the predictors were:

- Two dummy variables for taking a green position and taking a not-green position by the Democratic candidate; being silent or mixed was the omitted category.

- Two dummy variables for taking a green position and taking a not-green position by the Republicans candidate; being silent or mixed was again the omitted category

- An interaction term, coded 1 when the Democrat took a green position and the Republican took a not-green position.

- Two dummy variables indicating whether the Democrat or the Republican was an incumbent running for reelection.

- The party margin in the 2008 Congressional elections.

Results

Candidates' Positions on Climate Change

Among the Democratic Senate candidates, more than half (57%) took a green position on climate change, the remaining (43%) were silent or mixed, and none took a not-green position (see Table 8).[7] Among the Republican Senate candidates, a large majority (83%) were silent/mixed; half of the remaining took a green position (9%) and half took a not-green position (9%). The Democratic and Republican Senate candidates differed significantly from one another in their patterns of green, not-green, and silent/mixed stances (Pearson $\chi^2(2) = 20.56$, $p = .000$).

Majorities of House candidates were also silent/mixed on climate change.[8] Among the Democratic House candidates, more than half (60%) took a green position on climate change, almost all of the remaining candidates (40%) were silent/mixed, and a tiny proportion (1%) took a not-green position. Among the Republican House candidates, a large majority (78%) were silent/mixed, 6% took a green position, and 16% took a not-green position. The Democratic and

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[7] 35 Democratic Senate candidates and 35 Republican Senate candidates were included in the analysis. Among the 37 Senate races run in 2010, two races were excluded: the Nevada race, because the campaign website of Sharron Angle was not downloaded prior to the Election Day, and the South Dakota race, because only one candidate ran. Additionally, in Alaska, we treated the race as having just two candidates, Scott T. McAdams and Lisa Murkowski, and excluded Joe Miller so that the race could be included in the analyses that presumed only two major party candidates competed.

[8] 408 Democratic and 424 Republican House candidates were included in the analysis. A total of 412 Democratic candidates and 431 Republican candidates ran in the 2010 House races. A total of 11 House candidates—4 Democratic candidates and 7 Republicans candidates—were excluded from the analysis because their campaign websites were not downloaded.

Republican House candidates differed significantly from one another in their patterns of green, not-green, and silent/mixed stances (Pearson $\chi^2(2) = 291.56$, $p = .000$).

Combing the House and Senate candidates, more than half of the Democrats (59%) took a green position on climate change, almost all of the remaining candidates (40%) were silent/mixed, and a tiny proportion (1%) took a not-green position. A large majority of the Republicans (79%) were silent/mixed, 6% took a green position, and 15% took a not green position. The Democratic and Republican House candidates differed significantly from one another in their patterns of green, not-green, and silent/mixed stances (Pearson $\chi^2(2) = 311.99$, $p = .000$).

The Candidate's and the Opponent's Climate Positions

Among the 430 two-candidate House and Senate races we examined (see Table 9):

- 49% involved a Democrat who took a green position and a Republican who was silent/mixed.

- In 31% of the races, both candidates were silent/mixed.

- In 6% of the races, the Democrat was silent/mixed, and the Republican took a not-green position.

- In 7% of the races, the Democrat took a green position, and the Republican took a not-green position.

- In 4% of the races, the Democrat was silent/mixed, and the Republican took a green position.

- In 3% of the races, the Democrat and Republican both took green positions.

- In less than 1% of the races, the Democrat took a not-green position, and the Republican was silent/mixed.

- In less than 1% of the races, both candidates took a not-green position.

- In none of the races, the Democrat took a not-green position, and the Republican took a green position.

Predictors of Electoral Success

Among the 430 two-candidate House and Senate races we examined[9] (see Table 10):

- Democrats won 69% of the races in which the Democrat took a green position and the Republican was silent/mixed.

- Democrats won 68% of the races in which the Democrat took a green position and the Republican took a not-green position.

- Democrats won 18% of the races in which the Democrat took a green position and the Republican also took a green position.

- Democrats won 17% of the races in which both candidates were silent/mixed.

- Democrats won 4% of the races in which the Democrat was silent/mixed and the Republican took a not-green position.

- Democrats won 0% of the races in which the Democrat was silent/mixed and the Republican took a green position.

These results indicate that when Republican opponents were silent/mixed or took a not-green position, Democrats were more likely to win if they took a green position than if they were silent/mixed. When Democratic opponents were silent/mixed, Republicans were more likely to win if they took a green or not-green position than if they were silent/mixed.

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[9] A small proportion (4%) of the Congressional races was excluded from these analyses because their campaign websites were not downloaded, or because there was no contender from either the Democratic or Republican Party. Democrats won more often in these excluded races than in the included races (64% vs. 45%, $p = .12$).

As expected, in a logistic regression predicting victory by the Democrat, the more the 2008 party margin favored the Democratic candidate, the more likely the Democrat was to win in 2010 (see row 10 of Table 11). A one percentage point increase in the 2008 party margin favoring the Democrat was associated with a significant one percentage point increase in the likelihood of the Democrat winning in 2010 in the same Congressional race. Also as expected, Democrats were more likely to win if they were incumbents than if they were not (see row 8 of Table 11). Being an incumbent increased the Democrat's chance of victory by 42 percentage points. But surprisingly, Republican candidates were not more likely to win if they were incumbents than if they were not[10] (see row 9 of Table 11).

After accounting for the influences of the party margin and of incumbency, the Democrat's position on climate change and his/her opponent's position on climate change were significant predictors of the election outcome. The Democrat had a significant 17 percentage point greater probability of winning when he/she took a green position climate change compared to being silent/mixed (see row 1 of Table 11). The Democrat was (a significant) 34 percentage points less likely to win when his/her Republican opponent took a not-green position, as compared to when his/her Republican opponent was silent/mixed (see row 5 of Table 4). And the Democrat was 75 percentage points more likely to win when he/she took a green position and his/her Republican opponent took a not-green position, as compared to when the Democrat candidate did not take a green position or when the Republican opponent did not take a not-green position (see row 7 of Table 11).

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[10] One might imagine this occurred because the two incumbency predictors were nearly perfectly collinear, so their effects could not be separated. But in fact, 13% of the races we examined involved no incumbent at all, so statistical separation was possible.

There was no significant difference in the Democrat's probability of winning depending upon whether he/she took a not-green position or was silent/mixed (row 2 of Table 11). There was also no significant difference in the Democrat's probability of winning depending on whether the Republican opponent took a green position or was silent/mixed (row 2 of Table 11).

Predictors of Margin of Victory

Similar conclusions were supported by an OLS regression predicting the Democrat's margin of victory in races in which at least one candidate's vote share was within 10 percentage points of 50% (and are therefore races whose outcomes could easily have been changed). Margin of victory was defined as the share of the votes cast for the Democrat minus the share of votes cast for the Republican[11]. As expected, the more the party margin in 2008 favored the Democrat, the larger the margin of victory for the Democrat in 2010 (see row 10 of Table 12). A one percentage point increase in the 2008 party margin favoring the Democrat was associated with a significant .2% increase in the margin of victory of the Democrat in 2010 in the same Congressional race. Also as expected, Democrats had a larger 2010 margin of victory if they were incumbents than if they were not (see row 8 of Table 12). Being an incumbent increased the Democrat's 2010 margin of victory by 10%. But Republicans did not manifest a larger margin of victory if they were incumbents than if they were not (see row 9 of Table 12).

After accounting for the influences of the party margin and of incumbency, the candidate's own position on climate change and his/her opponent's position on climate change were significant predictors of the candidates' margin of victory. The Democrat's margin of

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[11] The margin of victory was subjected to a natural log transformation after adding 1 because a Box-Cox analysis rejected the linear form of the dependent variable (likelihood ratio test statistic $\chi^2 = 94.76$, $p = .00$) but failed to reject the natural log form (likelihood ratio test statistic $\chi^2 = 0.79$, $p = .37$).

victory increased significantly by 3% when he/she took a green position climate change compared to being silent/mixed (see row 1 of Table 12). The Democrat's margin of victory increased significantly by 9% when his/her Republican opponent took a not-green position, as compared to when his/her Republican opponent was silent/mixed (see row 5 of Table 12). And the Democrat's margin of victory increased significantly by 10% when he/she took a green position and his/her Republican opponent took a not-green position, as compared to when the Democrat did not take a green position or when the Republican opponent did not take a not-green position (see row 7 of Table 12).

There was no significant difference in the Democrat's margin of victory depending upon whether his/her opponent took a not-green position or was silent/mixed (row 2 of Table 12). There was also no significant difference in the Democrat's margin of victory depending upon whether the Republican opponent took a green position or was silent/mixed (row 4 of Table 12).

Simulation

To gauge the changes in the Democrats' electoral successes that might have occurred if the candidates had taken different positions on climate change, we conducted a simulation using the parameter estimates reported in Table 12. We focused the simulation on four types of races. In two types of races, we assessed how many seats Democrats would have gained if they had expressed different positions on climate change, maintaining the positions that their opponents expressed. In two other types of races, we assessed how many seats Republicans would have gained if they had expressed different positions on climate change, maintaining the positions that their opponents expressed. The four types are:

- Races in which the Democrat lost by a small margin, and both he/she and his/her Republican opponent were silent/mixed. The positive coefficient for the

Democrat taking a green position indicates that the Democrat's margin of victory would have increased if the Democrat had taken a green position instead of being silent/mixed. Therefore, the Democrats might have won seats if they had expressed green positions in these races.

- Races in which the Democrat lost by a small margin, and he/she was silent/mixed while his/her Republican opponent was not-green. The positive interaction between the Democrat expressing a green position and the Republican expressing a not-green position indicates that the Democrat's margin of victory would have increased if the Democrat had taken a green position instead of being silent/mixed. Therefore, the Democrats might have won seats if they had expressed green positions in these races.

- Races in which the Republican lost by a small margin, and both he/she and his/her Republican opponent were silent/mixed. The negative coefficient for the Republican taking a not-green position indicates that the Republican's margin of victory would have increased if the Republican had taken a not-green position instead of being silent/mixed position. Therefore the Republicans might have won seats if they had taken a not-green position in these races.

- Races in which the Republican lost by a small margin, and he/she took a not-green position while his/her Democratic opponent took a green position. The negative coefficient for the Republican taking a not-green position was smaller in magnitude than the positive coefficient of the interaction between the Democrat taking a green position and the Republican taking a not-green position.

Therefore, the Republicans might have won seats if they had been silent/mixed in these races.

We estimated how many election outcomes might have changed in two ways. First, we used the coefficients presented in Table 12 to conduct a simulation. These are the analytic approach's best guess. Using this methodology, Democrats would have won 6 additional House races if the Democratic had taken a green position instead of being silent/mixed. Republicans would have won 7 additional House seats if the Republican had taken a not-green position instead of being silent/mixed.

Because the coefficient estimates in Table 12 are all estimated with uncertainty, and they each have a standard error, it is possible to generate a second set of simulation results treating each effect as being at the end of its 95% confidence interval that would yield the maximum plausible number of seat changes. Using this methodology, Democrats would have won a maximum of 15 additional seats (14 in the House and 1 in the Senate) if the Democrat had taken a green position instead of being silent/mixed. Republicans would have won a maximum of 26 additional Congressional seats if the Republican had been silent/ mixed instead of being not-green or if the Republican had been not-green instead of being silent/mixed. Among these 26 seat gains, 10 (all in House) would have been gained by the Republican taking a silent/mixed position instead of taking a not-green position, and 16 (2 in the Senate and 14 in the House) would have been gained if the Republican had taken a not-green position instead of being silent/mixed.

Study 4

Our final study employed traditional analytic methods to assess the impact of voter proximity to candidates on climate change policy on candidate choice in the 2008 U.S. Presidential Election.

Data

      The data used in this study is Face-to-Face Recruited Internet Survey Platform (FFRISP).

The FFRISP respondents were recruited via face-to-face area probability sampling and were all

given a free laptop (or its equivalent value in cash), high-speed Internet access at home (if they

didn't have it already), and regular cash payments in exchange for completing monthly

questionnaires for a year. The FFRISP began with 1,000 panelists, who were recruited between

June and October of 2008. The current study is based on data collected during the first, second,

fifth and seventh waves, initiated in October 2008, November 2008, February 2009 and July

2009, respectively. The response rate for panel enrollment was 47% (AAPOR RR4), and 989,

978, 970, 955 individuals completed the first, second, fifth and seventh wave questionnaire,

respectively, yielding a cumulative response rate of 45%.

      Following the guidelines by DeBell and Krosnick (2009), weights were constructed to

adjust for unequal probability of household selection, household listing interview nonresponse,

within-household selection of potential panel member, and noncoverage and nonresponse

through post-stratification. In post-stratification, an iterative raking procedure implemented by

Pasek (2010) was performed to closely match the FFRISP data to the population benchmarks of

age, gender, educational attainment, race, Hispanic ethnicity, marital status, presence of children

in household, household size, whether a language other than English was spoken in the

household, region, type of housing unit, and whether internet connection had been available in

the household in the previous two months. These benchmarks were the population estimates of

noninstitutionalized adults aged 18 years or older in American Community Survey in 2008,

except that the benchmark of households with internet connection was based on the supplement

on Computer and Internet Use in Current Population Survey in 2009. The raking procedure was

programmed to ensure the maximum discrepancy not to exceed 5 percentage points between the

weighted FFRISP data and the benchmark for any of the variables and to cap the weights to 5.

Table 13 displays unweighted and weighted distributions of demographics as well as

national benchmarks computed using the data from the 2008 American Community Survey.

Before the weights were applied, respondents in the FFRISP were similar to the American

population, with a slight under-representation of males, people ages 65 and older, and people

without a high school degree and high school graduates, and with a slight over-presentation of

people aged 25-34, people with some college, and college graduates. After the weights were

applied, respondents in the FFRISP were nearly identical to the population.

Measures

Turnout and Candidate Choice The dependent measure is a four-category variable: voting

for Obama, voting for McCain, voting for a non-major party candidate, or not voting at all. This

measure was constructed using responses to questions asked of respondents in November, 2008,

about whether they voted in the Presidential Election and for whom they voted. Respondents

who said they definitely or probably voted and said they voted for Obama, McCain, or someone

else were coded "voting for Obama", "voting for McCain", "voting for a non-major party

candidate", respectively. All respondents who said they definitely or probably did not vote in the

Presidential Election were coded as "not voting at all". Detailed question wordings and coding of

this dependent variable and all other variables are described in Appendix E.

Proximity on Climate Change Policy Proximity to the candidates on climate change

policy was measured using three methods: Euclidean distance, and city block distance (Downs

1957; Enelow and Hinich 1984), and directional similarity (Rabinowitz 1978; Rabinowitz and

Macdonald 1989). Let V_i and C_j denote voter i's own and his/her perception of candidate j's

placement on the issue where the neutral point is represented as 0 and favoring and opposing with intensity are represented in a positive and negative integer, respectively, $-(V_i - C_j)^2$, $-/V_i - C_j/$, $V_i * C_j$ are the Euclidean distance, city block, and directional measures of voter-candidate issue congruence, respectively.

Measures of C_j on climate change were based respondent reports of whether Barack Obama and John McCain favored, opposed, or neither favored nor opposed the federal government lowering the amount of greenhouse gases that power plants were allowed to put into the air to reduce future global warming. Respondents who answered either "favor" or "oppose" then reported whether Mr. Obama and Mr. McCain favored or opposed a great deal, moderately, or a little. This allowed us to place each candidate perception on a 7-point scale.

Measures of V_i on climate change were constructed in a similar way. Respondents were asked whether they favored, opposed, or neither favored nor opposed the same government policy, and the same follow-up question was asked, allowing placement on the same 7-point scale.

Ideological Proximity. A measure of political ideological congruence between the respondent and the candidates was computed in a similar way. Respondents were asked whether they would describe Barack Obama and John McCain as liberal, conservative, or neither liberal or conservative. Respondents who said "liberal" or "conservative" were asked a follow-up question about whether the candidate was very liberal/conservative or somewhat liberal/conservative. Respondents who said "neither liberal nor conservative" were asked whether they thought the candidate was closer to liberals, closer to conservatives, or neither. This again allowed for placement on a 7-point scale, and respondents answered a pair of questions to place themselves on the same 7-point scale.

Personal Importance. Respondents were asked how important the issue of climate change was to them personally. People who said it was extremely or very important were treated as the high importance group, and all others were treated as the low importance group.

Belief in Anthropogenic Warming. Respondents who believed that the earth has been gradually warming over the last 100 years due to human activity were categorized as "green".

Control Variables Respondents reported their political party affiliation, interest in politics, overall approval of President Bush's performance of his job, and perception of the health of the national economy. Demographics included sex, race, Hispanic ethnicity, age, education, income, and region.

Analysis

Multinomial logistic regression predicting polychromous outcome is based on the assumption of Independence of Irreverent Alternative (IIA). The Hausman specification test revealed no evidence that this assumption was violated in our data. An alternative model in predicting polychromous outcomes would be the multinomial probit specification, which makes an untestable modeling assumption that the error terms in determining each category outcome are jointly normally distributed. Our results were identical whether conducted in multinomial logisitic or multinomial probit regressions.

Another analytic approach we could take is modeling an individual fixed effect to capture all the factors that may have impacted each citizen's behavior, including variables that are observable and measured in the survey (e.g., the voter's political party affiliation), variables that are observable but were not measured in the survey (e.g., the citizen's positions on many other policy issues), and unobservable attributes of individuals. All these factors could have influenced voter's self-placements as well as candidate placements, so an appropriate estimation method

would be conditional or individual fixed effect logistic regression, with a first-difference estimator. When we carried this out, we observed the same results as shown below.

Results

The Impact of Climate Change Issue Congruence on Voting Behavior

Climate change issue proximity influenced voting behavior in the expected way after controlling for party identification, favorable perception of the national economy, overall approval of President Bush, interest in politics, and demographics (see Table 14, which displays the coefficient estimates from multinomial logistic regressions using voting for Obama as the omitted base category). The influence of climate change issue proximity on voting behavior was significant and in the expected direction in all three analyses. Matching Mr. Obama's position on climate change more closely than Mr. McCain's led people to be less likely to vote for Mr. McCain than for Mr. Obama ($b = -.196$, $p = .002$ with the city block measure; see row 1 in columns (1) in Table 14). This was equally apparent using all three analytic methods for representing proximity (see row 1 in column (4) and (7) in Table 14 for the measures of Euclidian distance and directional models, respectively).

Other factors thought to influence candidate choice also had significant effects in the expected directions. People who matched Mr. Obama's ideology more closely than Mr. McCain's were less likely to be vote for Mr. McCain ($b = -.392$, $p = .000$ with the city block measure; see row 2 in columns (1) in Table 14). Using the city block measures (see column (1) in Table 14), Democrats were less likely to vote for Mr. McCain than for Mr. Obama ($b = -.959$, $p = .008$). Republicans were more likely to do so ($b = 1.599$, $p = .000$. People who approved of President Bush's performance were more likely to vote for Mr. McCain than to vote for Mr. Obama ($b = 2.385$, $p = .000$). Blacks were less likely to vote for Mr. Obama than for Mr.

McCain (b = -2.862, p = .000), and people in South were more likely to vote for Mr. McCain than for Mr. Obama (b = 1.095, p = .006). These effects were equally significant and in the expected directions when employing other measures of issue proximity (see column (4) and (7) in Table 14 for measures of Euclidian distance and directional models, respectively).

Also as expected, many factors thought to influence turnout had significant effects in the expected directions. Using the city block measures (see column (3) in Table 14), people who did not vote were less likely to be Democrats (b = -.700, p = .016), more likely to females (b = .832, p = .001) and more likely to be from the South (b = 1.306, p = .000). People who did not vote also had a more favorable job approval of President Bush (b = 1.795, p = .000), had lower level of interest in politics (b = -2.076, p = .000), were younger (b = -.023, p = .016) and had lower income (b = -1.206, p = .008) (Holbrook, et al. 2001). Contrary to the literature which consistently found blacks were less likely to vote than non-blacks, but unique to the 2008 Presidential election was that people who did not vote at all were less likely to be blacks (b = -1.990, p = .000) compared to those who voted for Obama. These effects were equally significant and in the expected directions in all other measures of issue congruence (see column (6) and (9) in Table 14 for measures of Euclidian distance and directional models, respectively).

Moderation by Personal Importance

Based on the attitude strength literature, we expected that the positive effect of climate change issue congruence on candidate choice would be more pronounced among people who attached more personal importance to the issue (Visser, Bizer, & Krosnick, 2006). Among the high importance group, a huge majority was "green": 86% of them believed that the earth has been heating up gradually over the past 100 years due to human activity.

As expected, the impact of climate change issue proximity on candidate choice was

strong and significant among respondents in the high importance group. With the city block measure, people who were closer to Mr. Obama than to Mr. McCain were much less likely to vote for Mr. McCain. The interaction of personal importance with climate change issue proximity was highly significant, $b = -.336$, $p = .005$. The main effect for climate change issue proximity was not ($b = -.011$, $p = .893$). Thus, issue proximity only predicted voting behavior among the high importance group. The moderating effect by high personal importance was equally significant in Euclidian distance and directional measures.

Discussion

Studies 1 and 2 yielded experimental evidence from representative national and regional samples of American adults suggesting that Congressional candidates' climate positions influence Americans' voting behavior. Candidates who took a green position gained votes, and candidates who took a not-green position lost votes. Confidence in these conclusions is justified by the fact that supportive results were obtained in four separate tests.

These findings lend credibility to earlier surveys that used different methods to ascertain the attitudes and beliefs of Americans and to gauge the likely impact of these attitudes and beliefs on voting. We concluded from many studies that the vast majority of climate change issue public members took green positions on the issue. This led us to expect exactly the effects shown in the present study. Had these effects not been observed, we would have had reason to doubt the validity of our past surveys' measurements. Therefore, the confirmation here of expected effects reinforces the portrait of public opinion that those past surveys painted.

The present findings have interesting implications for candidates' campaign strategies. If we first assume that elections will be won and lost mostly by attracting the votes of Independent citizens whose votes cannot be predicted by their party affiliations, our results suggest that candidates would do best to take green positions and would hurt their electoral

chances by taking not-green positions. Furthermore, the pattern of effects we observed among Democratic citizens suggests that candidates trying to capture a Democratic Party nomination or to inspire Democratic citizens to vote for them in general elections would be best off expressing a green position on climate. Interestingly, Democratic candidates wishing to woo Republican voters during general elections apparently have nothing to gain or lose by the positions they take on climate, leaving them free to take green positions in order to attract Independents and perhaps to inspire Democrats to participate in the election.

According to our results, Republican candidates have even more to gain by taking green positions on climate. In addition to helping to attract Independent voters, Republican candidates who take green positions may have some success wooing Democratic citizens in general elections, especially if their Democratic opponents remain silent on climate. Furthermore, taking a green position on climate will apparently not hurt a Republican's standing with Republican voters, so this seems like a cost-free strategy. Consequently, Republican candidates are apparently free to take green positions even during primaries, perhaps thereby attracting early attention from Independent and Democratic citizens. Thus, according to our results, Republican candidates stand a good chance of gaining votes by taking green positions and should certainly not take not-green positions.

It is important to note that Studies 1 and 2 have some limitations. First, because our analyses did not focus on the opinions of only likely voters, caution about generalizing our results on all citizens to voters in particular is merited. Furthermore, we measured stated intentions to vote rather than observing actual voting behavior, though stated voting intentions are excellent predictors of actual voting behavior (e.g., Visser, Krosnick, Marquette & Curtin, 1996). Another caution involves the fact that the hypothetical candidates took positions on just a

few issues during a short period of time. Since real candidates take positions on many more issues, and because voters learn many other types of information about candidates, different influence might be observed in the course of a real election. We tested two specific versions of a green and not-green statement – different results might be obtained with other statements.

And in our simulated election, we only described a single candidate, whereas contests normally involve competing candidates. Perhaps most importantly, we did not examine what would happen in voters' minds if a candidate took a green or not green position and was then attacked by his or her opponent for doing so, which could certainly be studied in future experiments. It is conceivable that a candidate who takes a not-green position and is then attacked for doing so by his or her opponent would fare even worse with voters than a candidate who simply takes a not-green position that goes unchallenged. And perhaps a candidate who takes a green position would gain even more votes if his or her opponent attacked that position by taking a not-green position. We look forward to future studies exploring these possibilities.

In the meantime, these results suggest what might be winning strategies for candidates running for office.

Study 3 provides observational evidence suggesting that Congressional candidates' positions on climate change in 2010 might have influenced their electoral success. The results can be summarized as follows:

- The Democrat expressing a green position instead of being silent/mixed helped him/her win, regardless of whether his/her Republican was silent/mixed or not-green.

- When the Democrat was silent/mixed, the Republican expressing a not-green position instead of being silent/mixed helped him/her win.

- When the Democrat expressed a green position, the Republican expressing a not-green position instead of being silent/mixed reduced his/her chances of victory.

Put another way, when an opponent was silent/mixed, a candidate taking a position on climate change that was consistent with his/her political party's general tendency (a green position for Democrats, a not-green position for Republicans) won more often than if he/she was silent/mixed. However, in the face of a Democrat expressing a green position (in line with his/her party's general tendency), Republicans hurt their electoral changes by expressing a not-green position (in line with their party's general tendency) instead of being silent/mixed.

Simulations of possible election results if the candidates had taken different positions suggest that each party could have gained seats if they had taken different positions on climate change. But according to these simulations, control of the House most likely would not have flipped to the Democrats, even if the Democrats had all expressed strategically wise positions and the Republicans maintained the positions they expressed. Likewise, control of the Senate most likely would not have flipped to the Republicans if the Republicans had all expressed strategically wise positions while the Democrats maintained the positions they expressed.

It is interesting to note that these findings have simple implications for Democratic campaign strategies but tricky ones for Republicans. It appears that Democrats enhanced their chances of victory by taking a green position, regardless of what their Republican opponents said on the issue. But the optimal strategy for Republicans appears to have hinged on what their opponents said. If a Republican could be confident that his/her Democratic opponent would remain silent on climate change, then the Republican would have gained by expressing a not-green position. But once a Democrat expressed a green position, the Republican would have

been wisest to remain silent/mixed, because expressing a not-green position appears to have hurt his/her chances of victory.

It is important to note that we were not able to examine the impact on electoral victory of some strategies that candidates could have adopted, because too few people actually adopted them. Specifically, there were very few or no instances in which the Democrat expressed a not-green position, so we cannot offer speculations about the impact of them doing so.

Study 3 also has other limitations. First, our content analysis of campaign rhetoric was limited in some ways. For example, we ascertained candidates' positions on climate change via text on their websites. Some websites also included candidate expressions of their positions on issues via audio or video recordings, and we did not code these. Furthermore, candidates expressed positions on many issues during the course of their campaigns in ways that were not captured on their websites at all, such as in news interviews, at campaign rallies, in town hall meetings, and during debates. We assume here that the website analysis captures reasonably well what the candidates chose to articulate most often in these other settings, but we cannot know the plausibility of this assumption without further data collection and analysis.

It seems unlikely that a candidate expressed a green position on his/her website and expressed a not-green position regularly in other forums. And it seems unlikely that a candidate expressed a not-green position on his/her website and expressed a green position regularly in other forums. But it seems more possible that some candidates might have been silent about climate change on their websites but took green or not-green positions in other campaign settings. Thus, we may be overestimating the number of candidates who were silent. And if these candidates were to be re-coded in the analyses reported here, the results might change in ways we cannot anticipate.

Although we are inclined to look at the websites as indicators of what the candidates said throughout their campaigns, it is possible to view the websites differently: as the very medium of potential influence. When viewed in this way, the websites might be best analyzed taking into account the layout and accessibility of pieces of information there. For example, a candidate may have taken a green position on climate change on his/her website but done so on a page that citizens rarely saw when visiting the website due to the structure of links to it. Thus, although the information may have been publicly available, it may have been less influential in people's thinking than would have been the case if the information were easier to access. Our analysis did not take into account ease of accessing information on the candidates' websites, and doing so might have changed our findings.

A third limitation of Study 3 involves the coding of candidates' positions. We categorized each individual as being green, not-green, or silent/mixed. This approach ignores the fact that candidates differed in the intensity of their expressions on the issue. Some candidates were vociferous, whereas others were not. Perhaps we would have obtained different results if we had taken steps to take intensity of expression into account.

Fourth, because the results reported here are correlational, we cannot make strong statements about causal influence based on these results alone. That is, we cannot rule out spuriousness (e.g., candidates' decisions about what to say about climate change were influenced by factors that also independently influenced their electoral victories) or reverse causality (e.g., candidates' decisions about what to say about climate change were influenced by their apparent standing in pre-election polls). For example, a Democrat who thought she was leading in the polls might have chosen to express a green position on the grounds that doing so would be a safe way to increase enthusiasm among supporters. But that same candidate might have chosen to

remain silent on climate change if she perceived herself to be at risk for losing the race and feared turning off potential supporters who were not-green.

With regard to this issue of causality, it is worthwhile to note that a prior investigation of ours did yield stronger evidence of causal influence of candidates' statements (Krosnick, MacInnis, & Villar, 2011). In this investigation, survey respondents heard a hypothetical Senate candidate make statements on a series of policy issues and then reported their likelihood of voting for the candidate. Some respondents (selected randomly) heard the candidate express a green position on climate change. Other respondents heard the candidate express a not-green position. And other respondents heard the candidate say nothing about climate change. Experiments run with a representative national sample and with representative samples of the residents of Florida, Maine, and Massachusetts indicated that the hypothetical candidate received the most votes when taking a green position, received fewer when being silent, and receiving the least votes when taking a not-green position. Because the hypothetical candidate did not face a hypothetical challenger, those experiments are limited in their generalizability. But they do suggest that candidate statements on climate change may have influenced voting in 2010.

Study 3's analyses did not take into account what the candidates said on issues other than climate change. Of course, the candidates said a great deal on a wide range of other policy matters during the campaign, and these statements may have been influential. If a candidate's expressed position on climate change was correlated with whether and what he/she said on other policy issues, then what might appear here to be an effect of climate change communications might instead be the result of statements on these other issues. Needless to say, a comprehensive analysis of all statements made by all candidates on all issues would be extremely challenging to implement for reasons of practicality. Nonetheless, future research might explore whether taking

into account candidate utterances (or silence) on specific other, related policy issues might alter the findings reported above.

Another limitation of the present study is that the websites were downloaded just before the election and just after, but their content may have changed during the course of the primaries and the general election season. Therefore, we may not have fully captured what candidates said about climate change during this entire period.

Lastly, Study 3 is focused specifically on the 2010 Congressional elections, and there is good reason to be cautious before generalizing these findings to prior or subsequent elections. Nonetheless, the results reported here are consistent with the conclusion that candidates may influence electoral outcomes via their statements or silence on climate change. Being strategically wise on this issue would require taking into account what both candidates say and could say, rather than simply examining one candidate's behavior at a time, ignoring the statements of his/her opponent.

Study 3 is predicted on the assumption that candidates make choices about what to say and what not to say during campaigns. A candidate can choose to share his/her position on an issue with voters, or the candidate can choose to focus his/her public comments and website on other issues instead. Such decisions may be made in order to signal a candidate's priorities to voters – why talk about an issue that is not important to the candidate and on which the candidate is unlikely to take the initiative if elected? But candidates may also decide to be silent on issues in order to reduce voter focus on his/her positions on those issues, because the candidate believes that these positions would be unappealing to voters. However, if candidates' assumptions about what would be unappealing to voters are incorrect, then the decision to remain silent may actually lose some votes. The research reported here was designed to explore whether the

decision to be silent on climate change was indeed advantageous to the many Democrats and Republicans who chose to do so in 2010. Our results suggest that doing so may not have been wise.

Study 4 used methodologies well-established in political science for exploring whether citizens might have used a policy issue as a basis for their candidate choice. As expected, greater relative proximity to Mr. Obama increased the likelihood of voting for him instead of for Mr. McCain. This held true in a wide range of analyses, using various different ways to represent issue proximity, and using various estimation techniques making various different types of assumptions. Thus, the finding appears to be robust.

Conclusion

The data from all four studies seem to make a compelling package, using various quite different methods, to make the case that Americans in 2008 and 2010 may have voted at least partly based on the candidates' positions on climate change. And the evidence of moderation of such behavior by the personal importance that citizens attached to the issue is consistent with and reinforces the notions that issue publics are alive and well in contemporary American politics and that any given policy issue is likely to have impact on votes among a relatively small group.

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Table 1: Demographics of the GW National Survey and Current Population Survey

	GW National Survey Nov 2010 (unweighted)	GW National Survey Nov 2010 (weighted)	CPS March 2010	Difference: GW National Survey (weighted) – CPS
Gender				
Male	45.9%	46.7%	48.5%	-1.8%
Female	54.1	53.3	51.5	1.8
Total	100.0%	100.0%	100.0%	
	(N = 808)	(N = 808)	(N = 149,071)	
Age				
18-24	9.9%	11.9%	12.8%	-0.9%
25-34	11.3	18.7	17.9	0.8
35-44	13.4	17.4	17.6	-0.2
45-54	21.2	19.0	19.4	-0.4
55-64	18.0	16.0	15.4	0.6
65+	26.3	16.9	16.8	0.1
Total	100.0%	100.0%	100.0%	
	(N = 769)	(N = 769)	(N = 149,071)	
Ethnicity				
Hispanic	11.0%	12.6%	13.9%	-1.3%
Non-Hispanic	89.0	87.4	86.1	1.3
Total	100.0%	100.0%	100.0%	
	(N = 779)	(N = 779)	(N = 149,071)	
Race				
White only	74.0%	81.6%	81.0%	0.6%
Black only	9.9	12.1	11.9	0.2
Other race	16.1	6.3	7.1	-0.8
Total	100.0%	100.0%	100.0%	
	(N = 808)	(N = 808)	(N = 149,071)	
Education				
HS but no degree	6.9%	10.5%	13.7%	-3.2%
HS graduates	25.9	29.8	31.1	-1.7
Some college	24.9	30.2	27.9	2.3
College or higher	42.4	29.5	27.3	2.2
Total	100.0%	100.0%	100.0%	
	(N = 788)	(N = 788)	(N = 149,071)	
Region				
Northeast	18.3%	17.8%	18.4%	-0.6%
Midwest	23.9	22.8	21.8	1.0
South	36.5	35.2	36.7	-1.5
West	21.3	24.2	23.1	0.8
Total	100.0%	100.0%	100.0%	
	(N = 808)	(N = 808)	(N = 149,071)	

Table 2: Effects of Green and Not-Green Statements on Predicted Voting for the Candidate in the National Survey

	Percent of Respondents Who Would Vote for the Candidate				
	Respondents who heard no statement on climate change (1)	Respondents who heard the green statement (2)	Respondents who heard the not-green statement (3)	Effect of the green statement (2) - (1)	Effect of the not-green statement (3) - (1)
Full sample	65.2% (N=266)	77.4% (N=266)	47.9% (N=276)	12.2%**	-17.4%***
Democrats	53.0% (N=77)	74.3% (N=76)	37.4% (N=97)	21.3%**	-15.5%*
Republicans	83.4% (N=71)	77.8% (N=68)	76.4% (N=59)	-5.6%	-7.1%
Independents	63.3% (N=118)	78.8% (N=122)	43.9% (N=120)	15.4%**	-19.5%**

Note: Ns appear in parentheses under the percentages.

***: $p < .01$, **: $p < .05$, *: $p < .10$.

Table 3: Demographics of the GW State Survey and American Community Survey: Florida

	Florida State Survey July 2010 (unweighted)	Florida State Survey July 2010 (weighted)	Florida ACS 2006-8	Difference: Florida State Survey (weighted) – ACS
Gender				
Male	48.8%	49.4%	48.5%	0.9%
Female	51.2	50.6	51.5	-0.9
Total	100.0%	100.0%	100.0%	
	(N = 600)	(N=600)	(N=150,777)	
Age				
18-24	6.8%	11.3%	11.3%	0.0%
25-34	10.0	15.9	15.9	0.0
35-44	13.0	17.9	17.9	0.0
45-54	20.7	18.2	18.2	0.0
55-64	20.8	14.9	14.9	0.0
65+	28.7	21.9	21.9	0.0
Total	100.0%	100.0%	100.0%	
	(N = 571)	(N=571)	(N=150,777)	
Ethnicity				
Hispanic	13.3%	19.4%	19.4%	0.0%
Non-Hispanic	86.7	80.6	80.6	0.0
Total	100.0%	100.0%	100.0%	
	(N = 579)	(N=579)	(N=150,777)	
Race				
White only	77.2%	80.2%	80.2%	0.0%
Black only	11.2	14.3	14.3	0.0
Other race	11.7	5.5	5.5	0.0
Total	100.0%	100.0%	100.0%	
	(N = 574)	(N=574)	(N=150,777)	
Education				
HS but no degree	5.5%	15.5%	15.5%	0.0%
HS graduates	28.0	31.3	31.3	0.0
Some college	21.2	29.6	29.6	0.0
College or higher	45.3	23.6	23.6	0.0
Total	100.0%	100.0%	100.0%	
	(N = 579)	(N=579)	(N=150,777)	

Table 4: Demographics of the GW State Survey and American Community Survey:
Massachusetts

	Massachusetts State Survey July 2010 (unweighted)	Massachusetts State Survey July 2010 (weighted)	Massachusetts ACS 2006-8	Difference: Massachusetts State Survey (weighted) – ACS
Gender				
Male	48.3%	49.5%	47.7%	1.7%
Female	51.7	50.6	52.3	-1.7
Total	100.0%	100.0%	100.0%	
	(N = 600)	(N=600)	(N=442,524)	
Age				
18-24	8.2%	13.1%	13.1%	0.0%
25-34	10.3	16.3	16.3	0.0
35-44	14.3	19.4	19.4	0.0
45-54	22.4	19.7	19.7	0.0
55-64	22.8	14.4	14.4	0.0
65+	22.1	17.1	17.1	0.0
Total	100.0%	100.0%	100.0%	
	(N = 575)	(N=575)	(N=442,524)	
Ethnicity				
Hispanic	6.2%	7.1%	7.1%	0.0%
Non-Hispanic	93.8	92.9	92.9	0.0
Total	100.0%	100.0%	100.0%	
	(N = 579)	(N=579)	(N=442,524)	
Race				
White only	85.4%	85.4%	85.4%	0.0%
Black only	6.2	6.6	6.3	0.3
Other race	8.4	8.0	8.3	-0.3
Total	100.0%	100.0%	100.0%	
	(N = 577)	(N=577)	(N=442,524)	
Education				
HS but no degree	4.6%	11.7%	11.7%	0.0%
HS graduates	22.6	27.8	27.8	0.0
Some college	18.1	25.7	25.7	0.0
College or higher	54.7	34.8	34.8	0.0
Total	100.0%	100.0%	100.0%	
	(N = 592)	(N=592)	(N=442,524)	

Table 5: Demographics of the GW State Survey and American Community Survey: Maine

	Maine State Survey July 2010 (unweighted)	Maine State Survey July 2010 (weighted)	Maine ACS 2006-8	Difference: Maine State Survey (weighted) – ACS
Gender				
Male	45.2%	47.8%	47.8%	0.0%
Female	54.8	52.2	52.2	0.0
Total	100.0%	100.0%	100.0%	
	(N = 600)	(N=600)	(N=30,153)	
Age				
18-24	6.4%	10.7%	10.7%	0.0%
25-34	9.5	14.5	14.5	0.0
35-44	13.9	18.1	18.1	0.0
45-54	22.5	21.2	21.2	0.0
55-64	24.2	16.7	16.7	0.0
65+	23.5	18.9	18.9	0.0
Total	100.0%	100.0%	100.0%	
	(N = 582)	(N=582)	(N=30,153)	
Ethnicity				
Hispanic	1.4%	2.0%	1.0%	1.0%
Non-Hispanic	98.6	98.0	99.0	-1.0
Total	100.0%	100.0%	100.0%	
	(N = 583)	(N=583)	(N=30,153)	
Race				
White only	94.9%	97.5%	97.5%	0.0%
Black only	1.0	.7	.9	-0.2
Other race	4.1	1.8	1.6	0.2
Total	100.0%	100.0%	100.0%	
	(N = 582)	(N=582)	(N=30,153)	
Education				
HS but no degree	6.7%	11.1%	11.1%	0.0%
HS graduates	26.3	36.1	36.1	0.0
Some college	21.0	29.2	29.2	0.0
College or higher	46.1	23.7	23.7	0.0
Total	100.0%	100.0%	100.0%	
	(N = 586)	(N=586)	(N=30,153)	

Table 6: Estimations of the Green Effects and the Moderation of Party Affiliation in the States Survey

	Percent of Respondents Who Would Vote for the Candidate		
	Respondents who heard no statement on climate change (1)	Respondents who heard the green statement (2)	Effect of the green statement (2) - (1)
All respondents by state			
Florida	49.1% (N=297)	72.7% (N=302)	23.6%***
Maine	63.8% (N=278)	70.5% (N=318)	6.8%*
Massachusetts	67.2% (N=288)	76.9% (N=306)	9.7%**
Respondents from three states by party affiliation			
Democrats	58.18% (N=257)	83.03% (N=283)	24.9%***
Republicans	70.9% (N=157)	62.7% (N=162)	-8.1%
Independents	57.0% (N=449)	71.2% (N=481)	14.2%***

Note: Presented in columns (1)-(2) are the percent of who would vote for the candidates among respondents who did not hear any climate statement and who heard a green statement on climate, respectively, with Ns in parentheses indicating the number of observations in each cell.

***: $p < .01$, **: $p < .05$, *: $p < .10$.

Table 7: Moderators of the Effects of Green and Not-Green Statements on Predicted Voting for the Candidate

| | Percent of Respondents Who Would Vote for the Candidate | | | | |
	Respondents who heard no statement on climate (1)	Respondents who heard the green statement on climate (2)	Respondents who heard the not-green statement on climate (3)	Effect of the green statement (2) - (1)	Effect of the not-green statement (3) - (1)
Believed in Anthropogenic Warming	63.1% (N=778)	79.7% (N=775)	39.6% (N=176)	16.6%***	-23.5%***
Did not Believe in Anthropogenic Warming	57.1% (N=369)	64.3% (N=410)	61.9% (N=100)	7.2%	4.8%
High Personal Importance	60.0% (N=559)	78.3% (N=528)	37.7% (N=125)	18.3%***	-22.3%***
Low Personal Importance	62.2% (N=588)	71.2% (N=657)	57.9% (N=151)	9.0%***	-4.3%

Note: Ns appear in parentheses under the percentages.

***: $p < .01$, **: $p < .05$, *: $p < .10$.

Table 8: Congressional Candidates' Positions on Climate Change Expressed on their 2010
Websites

Position Expressed	Democratic Candidates	Republican Candidates
Senate Races		
Green	57.14%	8.57%
Silent/Mixed	42.86%	82.86%
Not-Green	0.00%	8.57%
Total	100.00%	100.00%
N	35	35
House Races		
Green	59.56%	6.13%
Silent/Mixed	39.71%	78.30%
Not-Green	0.74%	15.57%
Total	100.00%	100.00%
N	408	424
Senate and House Races		
Green	59.37%	6.32%
Silent/Mixed	39.95%	78.65%
Not-Green	0.68%	15.03%
Total	100.00%	100.00%
N	443	459

Table 9: Co-Occurrence of Positions on Climate Change Expressed by Democrats and Republicans

Democrat's Climate Change Position	Republican's Climate Change Position			Total
	Green	Silent/Mixed	Not-Green	
Green	2.56%	49.07%	7.21%	58.84%
Silent/Mixed	3.95%	30.70%	5.81%	40.47%
Not-Green	0.00%	0.47%	0.23%	0.70%
Total	6.51%	80.23%	13.26%	100.00%

Note: The total number of the races is 430.

Table 10: Victory Rates for Democrats According to the Positions Expressed on Climate Change by the Democrat and the Republican

Democrat's Climate Change Position	Republican's Climate Change Position		
	Green	Silent/Mixed	Not-Green
Green	18.18% (11)	69.19% (211)	67.74% (31)
Silent/Mixed	0.00% (17)	17.42% (132)	4.00% (25)
Not-Green	N/A	N/A	N/A

Notes: Numbers in parenthesis are numbers of races. N/A indicates that the number of races was 0, 1 or 2 and therefore too small to yield reliable numbers. The total number of the races is 430.

Table 11: Logistic Regressions Predicting Victory by the Democratic Candidate in the 2010 House and Senate Races

Predictor	Coefficient	Marginal Effect
Democrat: green	1.03**	.17**
	(.45)	(.08)
Democrat: not-green	-.46	-.07
	(1.45)	(.20)
Democrat: silent/mixed (Base category, omitted)		
Republican: green	-.29	-.05
	(1.36)	(.21)
Republican: not-green	-4.27***	-.34***
	(1.58)	(.07)
Republican: silent/mixed (Base category, omitted)		
Democrat: green x Republican: not-green	4.08**	.75***
	(1.67)	(.13)
Democratic: Incumbent	2.60***	.42***
	(.71)	(.11)
Republican: Incumbent	.42	.08
	(1.09)	(.21)
2008 Party Margin	.06***	.01***
	(.01)	(.00)
N	430	
R^2	.62	

Note: Standard errors appear in parentheses. ***: $p < .01$; **: $p < .05$.

Table 12: OLS Regression Predicting the Democratic Candidate's Margin of Victory in Races in which the Democrat's or Republican's Vote Share Was Between 40% and 60%

Predictor	Coefficient
Democrat: green	.03*
	(.02)
Democrat: not-green	.01
	(.06)
Democrat: silent/mixed (Base category, omitted)	
Republican: green	-.03
	(.04)
Republican: not-green	-.09**
	(.04)
Republican: silent/mixed (Base category, omitted)	
Democrat: green x Republican: not-green	.10**
	(.05)
Democratic: Incumbent	.10***
	(.02)
Republican: Incumbent	.00
	(.03)
2008 Party Margin	.00***
	(.00)
N	195
R^2	.47

Note: Standard errors appear in parentheses.   ***: $p < .01$; **: $p < .05$; *: $p < .10$.

Table 13: Demographics of FFRISP and American Community Survey

	FFRISP (unweighted)	FFRISP (weighted)	ACS 2008	Difference: FFRISP (weighted) - ACS
Gender				
Male	41.6%	48.3%	48.3%	.0%
Female	58.5	51.7	51.7	.0
Total	100.0%	100.0%	100.0%	
	(N = 970)	(N=970)	(N=222,146,343)	
Age				
18-24	10.4%	12.2%	12.2%	.0%
25-34	22.4	17.7	17.7	.0
35-44	21.7	18.9	18.9	.0
45-54	22.0	19.7	19.7	.0
55-64	15.1	15.0	15.0	.0
65+	8.6	16.6	16.6	.0
Total	100.0%	100.0%	100.0%	
	(N = 970)	(N=970)	(N=222,146,343)	
Ethnicity				
Hispanic	13.5%	14.0%	13.5%	.5%
Non-Hispanic	86.5	86.0	86.5	-.5
Total	100.0%	100.0%	100.0%	
	(N = 970)	(N=970)	(N=222,146,343)	
Race				
Black	12.0%	12.8%	11.9%	.9%
Nonblack	88.0	87.3	88.1	-.8
Total	100.0%	100.0%	100.0%	
	(N = 970)	(N=970)	(N=222,146,343)	
Education				
HS but no degree	8.4%	14.9%	14.9%	.0%
HS graduates	24.7	28.6	28.6	.0
Some college	27.9	23.3	23.3	.0
College or higher	39.0	33.2	33.2	.0
Total	100.0%	100.0%	100.0%	
	(N = 970)	(N=970)	(N=222,146,343)	
Region				
Northwest	16.6%	18.4%	18.4%	.0%
Midwest	20.3	21.9	21.9	.0
South	38.5	36.6	36.6	.0
West	24.6	23.1	23.1	.0
Total	100.0%	100.0%	100.0%	
	(N = 970)	(N=970)	(N=222,146,343)	

Table 14: Impact of Climate Change Issue Congruence on Voting Behavior

Predictor	City Block Measures			Euclidian Measures			Directional Measures		
	Voting for McCain	Voting for Other	Not Voting	Voting for McCain	Voting for Other	Not Voting	Voting for McCain	Voting for Other	Not Voting
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
GW Issue	-0.196***	-0.096	-0.061	-0.029**	-0.012	-0.012	-0.064***	-0.028	-0.028
	(0.064)	(0.079)	(0.061)	(0.012)	(0.014)	(0.012)	(0.024)	(0.023)	(0.023)
Ideology	-0.392***	-0.191***	-0.161***	-0.070***	-0.042***	-0.024**	-0.144***	-0.086***	-0.045*
	(0.061)	(0.069)	(0.056)	(0.012)	(0.014)	(0.011)	(0.028)	(0.032)	(0.024)
Democrat	-0.959***	-1.150**	-0.700**	-0.987***	-1.096**	-0.719**	-0.998***	-1.090**	-0.719**
	(0.360)	(0.515)	(0.289)	(0.359)	(0.507)	(0.286)	(0.350)	(0.514)	(0.283)
Republican	1.599***	-0.863	0.224	1.592***	-0.905	0.310	1.590***	-0.884	0.312
	(0.422)	(0.781)	(0.430)	(0.420)	(0.789)	(0.423)	(0.438)	(0.802)	(0.431)
Bush Approval	2.385***	0.463	1.795***	2.469***	0.370	1.866***	2.632***	0.515	1.968***
	(0.576)	(0.735)	(0.468)	(0.565)	(0.751)	(0.457)	(0.557)	(0.715)	(0.459)
Perc. of Economy	0.029	2.636***	-0.313	0.044	2.686***	-0.265	0.195	2.757***	-0.243
	(0.793)	(0.939)	(0.638)	(0.798)	(0.939)	(0.629)	(0.772)	(0.944)	(0.629)
Interest in Politics	0.825	0.946	-2.076***	0.762	0.953	-2.079***	0.889	1.018	-2.037***
	(0.639)	(0.866)	(0.496)	(0.623)	(0.863)	(0.493)	(0.620)	(0.854)	(0.491)
Female	0.149	-0.618	0.832***	0.169	-0.650	0.859***	0.164	-0.631	0.863***
	(0.308)	(0.480)	(0.258)	(0.306)	(0.480)	(0.256)	(0.307)	(0.479)	(0.256)
Hispanic	-0.661	-0.469	0.114	-0.729	-0.459	0.110	-0.781	-0.480	0.069
	(0.562)	(0.810)	(0.359)	(0.588)	(0.806)	(0.358)	(0.584)	(0.796)	(0.356)
Black	-2.862***	-1.713**	-1.990***	-2.877***	-1.691**	-2.004***	-2.797***	-1.641**	-1.982***
	(0.716)	(0.766)	(0.527)	(0.724)	(0.799)	(0.531)	(0.698)	(0.755)	(0.528)
Age	0.008	-0.010	-0.023**	0.008	-0.011	-0.023**	0.007	-0.012	-0.023**
	(0.010)	(0.014)	(0.009)	(0.010)	(0.014)	(0.009)	(0.010)	(0.013)	(0.009)
Region - Midwest	0.769*	0.395	0.458	0.737	0.396	0.432	0.684	0.343	0.386
	(0.463)	(0.587)	(0.392)	(0.455)	(0.593)	(0.391)	(0.456)	(0.594)	(0.392)
Region - South	1.095***	0.518	1.306***	1.093***	0.515	1.300***	1.064***	0.471	1.270***
	(0.397)	(0.580)	(0.343)	(0.395)	(0.585)	(0.344)	(0.406)	(0.585)	(0.346)
Region - West	0.458	-0.670	0.418	0.461	-0.639	0.417	0.427	-0.686	0.382
	(0.397)	(0.753)	(0.344)	(0.390)	(0.761)	(0.342)	(0.393)	(0.763)	(0.344)
Education	1.617	3.821**	-1.216	1.335	3.713**	-1.302	1.592	3.834**	-1.332
	(1.294)	(1.591)	(0.960)	(1.262)	(1.595)	(0.962)	(1.330)	(1.607)	(0.981)
Income	-0.325	-0.957	-1.206***	-0.267	-0.975	-1.187***	-0.161	-0.935	-1.169***
	(0.563)	(0.960)	(0.453)	(0.571)	(0.971)	(0.452)	(0.573)	(0.962)	(0.452)
Constant	-3.483***	-4.167***	2.359***	-3.329***	-4.104**	2.346***	-3.549***	-4.188***	2.385***
	(1.017)	(1.607)	(0.775)	(0.968)	(1.609)	(0.778)	(1.045)	(1.619)	(0.790)

Notes: N = 912. *** p<0.01, ** p<0.05, * p<0.1

Appendix A: Issue Statements Used in Study 1

The follow questions were asked of all respondents when the issue statements unrelated to climate change were read to them. Respondents were asked "I'd like to read you a few things that a person running for U.S. Senate in your State might say. After you listen to each one, I'll ask you whether you mostly agree with it, mostly disagree with it, or neither agree nor disagree with it. First, what if the candidate said the following:"

A first issue statement, randomly selected from six non-climate statements, (the wording of these six statements is described below) was read to the respondent. Respondents were asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

Respondents were then asked "Next, what if the candidate said this:" A second issue statement, randomly selected from six non-climate statements, (the wording of these six statements is described below) was read to the respondent. Respondents were asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

Below are the six issues statements, from which two were randomly selected for each respondent:

1. Our nation remains a target for terrorists. Terrorists are unrelenting in their desire to kill Americans. We cannot let down our guard, and we must continue to meet this ongoing threat with strength and resilience. During the past eight years, significant resources have been devoted to the prevention of a terrorist attack using a biological, chemical, or nuclear weapon. But the improvised explosive device remains the weapon of choice for terrorists. And terrorists can also choose to use firearms. For many Americans, including many families

in our state, the right to own guns is part of their heritage and way of life. This right is protected by the Second Amendment. And so our government confronts a difficult issue today: how do we protect the constitutional right of Americans to bear arms, while preventing terrorists from using guns to carry out their murderous plans? None of us wants a terrorist to be able to purchase a gun. But neither should we want to infringe upon a constitutional right of law-abiding Americans.

2. It makes no sense that the capital and risk standards for our nation's largest financial institutions are more lenient than those that apply to smaller depository banks, when the failure of larger institutions is much more likely to have a broad economic impact. Yet that is currently the case. We must give the regulators the tools and the direction to address this problem. I have proposed an amendment that will strengthen the economic foundation of these firms, increase oversight and accountability, and help prevent the excesses that contributed to the deep recession that has cost millions of Americans their jobs. Increasing capital requirements as firms grow provides a disincentive to their becoming "too big to fail" and ensures an adequate capital cushion in difficult economic times.

3. When we are dealing with foreign-born suspects with known ties to terrorist organizations, and these people are carrying out plans to indiscriminately kill Americans, we need to NOT treat them like they're common criminals. Treating these people like common criminals is dangerous, and it limits the intelligence information that we can gather from suspects. The suspected Christmas Day bomber could have provided valuable information about potential terror plots. Instead, he was charged in the civilian court system where he got a lawyer and stopped talking. When someone is given Miranda rights and access to a lawyer, gathering valuable information about possible terrorist plots is greatly diminished.

4. I believe that all Americans deserve quality, affordable health care, and that we must address the issues of rising health care costs and accessibility. Unfortunately, the recently enacted Federal health care legislation does not accomplish these goals and instead raises taxes on individuals and businesses, increases government spending, and will result in higher costs for consumers. I believe we must focus on fixing and replacing this law with common-sense health care reforms that drive down costs, make it easier for people to purchase affordable insurance, and strengthen the existing private market system.

5. I believe that terrorism is not a political issue; it is a national security issue. To win the war against terrorism, we must be able to quickly adapt to ever-changing terrorist tactics. Congress and the Administration must work together in a bipartisan fashion to continue support for all elements of national security, to increase information sharing and collective security efforts around the globe, and to expand vital law enforcement partnerships. Our Constitution and laws exist to protect this nation — they do not grant rights and privileges to enemies in wartime. In dealing with terrorists, our tax dollars should pay for weapons to stop them, not lawyers to defend them.

6. I am an unwavering proponent of the Second Amendment to the United States Constitution and the right it confers on the people to keep and bear arms. As such, any attempts to deny this right violate both the letter and spirit of our Constitution. Enforcement, not new gun control laws, is the answer. To address concerns of gun crimes and criminal possession of firearms, the answer is not to create laws that deny law abiding citizens the ability to defend themselves. Criminals will not be deterred by any such laws. Rather, the answer is proper and robust enforcement of appropriate gun laws now on the books. Furthermore, the proper way to combat crimes in our communities is to ensure that those who commit them are properly

arrested, convicted and incarcerated for their crimes.

Appendix B: Issue Statements Used in Study 2

The follow questions were asked of all respondents in the state of Florida when the issue statements unrelated to climate change were read to them. The respondent was asked "I'd like to read you a few things that a person running for U.S. Senate in your State might say. After you listen to each one, I'll ask you whether you mostly agree with it, mostly disagree with it, or neither agree nor disagree with it. First, what if the candidate said the following: When we are dealing with foreign-born suspects with known ties to terrorist organizations, and these people are carrying out plans to indiscriminately kill Americans, we need to NOT treat them like they're common criminals. Treating these people like common criminals is dangerous, and it limits the intelligence information that we can gather from suspects. The suspected Christmas Day bomber could have provided valuable information about potential terror plots. Instead, he was charged in the civilian court system where he got a lawyer and stopped talking. When someone is given Miranda rights and access to a lawyer, gathering valuable information about possible terrorist plots is greatly diminished." The respondents was asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

The respondent was asked "Next, what if the candidate said this: Lifting the Cuba travel ban represents a blatant disregard of the human rights violations that the Castro regime commits against the Cuban people. This attempt to appease the Cuban dictatorship is wholly inconsistent with the United States' role as a beacon of freedom in this hemisphere, and around the world. This effort puts narrow corporate interests ahead of the need to protect the Cuban people from the Castro regime's brutal oppression. Canadian and European tourists have long made their way to Cuba, despite the fact that the Cuban regime has grown more repressive and living conditions for a majority of Cubans have declined to unprecedented low levels. The money they spend there

is handed over to the Castro regime's desperate totalitarian machine. Americans cannot allow themselves to be caught in the same trap of funding brutality." The respondent was asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

The follow questions were asked of all respondents in the state of Massachusetts when the issue statements unrelated to climate change were read to them. The respondent was asked: "I'd like to read you a few things that a person running for U.S. Senate in your State might say. After you listen to each one, I'll ask you whether you mostly agree with it, mostly disagree with it, or neither agree nor disagree with it. First, what if the candidate said the following: I believe that all Americans deserve quality, affordable health care, and that we must address the issues of rising health care costs and accessibility. Unfortunately, the recently enacted Federal health care legislation does not accomplish these goals and instead raises taxes on individuals and businesses, increases government spending, and will result in higher costs for consumers. I believe we must focus on fixing and replacing this law with common-sense health care reforms that drive down costs, make it easier for people to purchase affordable insurance, and strengthen the existing private market system." The respondent was asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

The respondent was then asked "Next, what if the candidate said this: I believe that terrorism is not a political issue; it is a national security issue. To win the war against terrorism, we must be able to quickly adapt to ever-changing terrorist tactics. Congress and the Administration must work together in a bipartisan fashion to continue support for all elements of national security, to increase information sharing and collective security efforts around the globe, and to expand vital law enforcement partnerships. Our Constitution and laws exist to protect this

nation — they do not grant rights and privileges to enemies in wartime. In dealing with terrorists, our tax dollars should pay for weapons to stop them, not lawyers to defend them." The respondent was asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

The follow questions were asked of all respondents in the state of Maine when the issue statements unrelated to climate change were read to them. The respondent was asked: "I'd like to read you a few things that a person running for U.S. Senate in your State might say. After you listen to each one, I'll ask you whether you mostly agree with it, mostly disagree with it, or neither agree nor disagree with it. First, what if the candidate said the following: Our nation remains a target for terrorists. Terrorists are unrelenting in their desire to kill Americans. We cannot let down our guard, and we must continue to meet this ongoing threat with strength and resilience. During the past eight years, significant resources have been devoted to the prevention of a terrorist attack using a biological, chemical, or nuclear weapon. But the improvised explosive device remains the weapon of choice for terrorists. And terrorists can also choose to use firearms. For many Americans, including many Maine families, the right to own guns is part of their heritage and way of life. This right is protected by the Second Amendment. And so our government confronts a difficult issue today: how do we protect the constitutional right of Americans to bear arms, while preventing terrorists from using guns to carry out their murderous plans? None of us wants a terrorist to be able to purchase a gun. But neither should we want to infringe upon a constitutional right of law-abiding Americans. " The respondent was asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

The respondent was then asked "Next, what if the candidate said this: It makes no sense

that the capital and risk standards for our nation's largest financial institutions are more lenient than those that apply to smaller depository banks, when the failure of larger institutions is much more likely to have a broad economic impact. Yet that is currently the case. We must give the regulators the tools and the direction to address this problem. I have proposed an amendment that will strengthen the economic foundation of these firms, increase oversight and accountability, and help prevent the excesses that contributed to the deep recession that has cost millions of Americans their jobs. Increasing capital requirements as firms grow provides a disincentive to their becoming "too big to fail" and ensures an adequate capital cushion in difficult economic times. "The respondent was asked "Overall, do you mostly agree with what I just read, mostly disagree with it, or neither agree nor disagree with it? "

Appendix C: Measures of Global Warming Beliefs and Personal Importance

Measure	Survey Question	Coding of the Measure
The Earth's temperature has been rising.	You may have heard about the idea that the world's temperature may have been going up slowly over the past 100 years. What is your personal opinion on this - do you think this has probably been happening, or do you think it probably has not been happening? Probably has been happening Probably has not been happening	1 if "Probably has been happening"; 0 if "Probably has not been happening", or Don't Know or Refused
The temperature increase is due to things people do.	[Added "Assuming it's happening" among those who were coded 0 in "The Earth's temperature has been rising,] do you think a rise in the world's temperature (is being/would be) caused mostly by things people do, mostly by natural causes, or about equally by things people do and by natural causes? Things people do Natural causes Both equally	1 if "Things people do" or "Both equally"; 0 if "Natural causes", or Don't Know or Refused
Climate change issue public	How important is the issue of global warming to you personally – extremely important, very important, somewhat important, not too important, or not at all important? Extremely important Very important Somewhat important Not too important Not at all important	1 if "Extremely important" or "Very important"; 0 if "Somewhat important", or "Not too important", or "Not at all important", or Don't Know or Refused

Appendix D: Instructions to Coders in Study 3

You will answer <u>12</u> questions listed below for each candidate. Please answer each question based on the text in the spreadsheet for the candidate.

Type your answer to each question in the column with the question's number at the top. Type "y" to answer a question yes, and type "n" to answer a question no. Type "a" for ambiguous if you are uncertain about whether to answer a question yes or no.

<u>General notes</u>

1. It is important that your coding be accurate, objective, and consistent. Please read and code at the pace that allows you to code accurately.

2. Please do NOT discuss the coding task AT ALL with anyone else besides the investigators of the study, especially the other coders. You must make your decisions completely independently – you must not influence or be influenced by others.

3. Please do NOT use information that you have learned about the candidates from other sources. Please rely only on what the candidate's website said and nothing else when making coding decisions.

<u>Coding Questions</u>

IMPORTANT: Please copy and paste the quote or quotes that form the basis for your answer "y" or "a" to EACH question about a candidate into the appropriate cell on that candidate's row.

12 Coding Questions

1.   <u>"GW/CC has been happening"</u>

Type "y" if the candidate said something like:

(1a) Global warming or climate change has been happening or will happen.

OR

(1b) There is scientific evidence indicating that GW/CC has been happening or will happen.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (1a) or (1b).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

2. "GW/CC has not been happening"

Type "y" if the candidate said something like:

(1c) Global warming or climate change has not been happening or will not happen.

OR

(1d) The candidate is not sure whether global warming or climate change has been happening or will happen.

OR

(1e) There is no, or little, or insufficient amount of scientific evidence indicating that GW/CC has been happening or will happen.

OR

(1f) The candidate is not sure whether there is (sufficient) scientific evidence that GW/CC has been happening or will happen.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (1c), (1d), (1e), or (1f).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

3. "GW/CC is man-made"

Type "y" if the candidate said something like

(2a) Human actions, such as burning fossil fuels, are a cause of GW/CC.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (2a).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

4. <u>"GW/CC is not man-made"</u>

Type "y" if the candidate said something like:

>   (2d) Human actions are not a cause of GW/CC.
>
>   OR
>
>   (2e) The candidate is not sure whether human actions cause GW/CC.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (2d) or (2e).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

5. <u>"GW/CC is bad"</u>

Type "y" if the candidate said something like:

>   (3a) Global warming or climate change will have one or more undesirable consequences.
>
>   OR
>
>   (3b) GW/CC is a serious problem.
>
>   OR
>
>   (3c) GW/CC is an important issue.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (3a), (3b) or (3c).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

6. <u>"GW/CC is not bad"</u>

Type "y" if the candidate said something like:

(3d) Global warming or climate change will not have undesirable consequences.

OR

(3e) The candidate is not sure whether GW/CC will have any undesirable consequences.

OR

(3f) GW/CC is NOT a serious problem.

OR

(3g) The candidate is not sure whether GW/CC is a (serious) problem.

OR

(3h) GW/CC is NOT an important issue

OR

(3i) The candidate is not sure whether GW/CC is an important issue.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (3d), (3e), (3f), (3g), (3h), or (3i).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

7. Producing Energy by "Green" Methods is Good

Type "y" if the candidate said something like:

> (4a) Passing laws that would encourage producing more energy from "clean" sources, such as wind, solar power, water, or nuclear power plants, would be a good idea.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (4a).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

8. Producing Energy by "Green" Methods is Not Good

Type "y" if the candidate said something like:

(4b) Passing laws that would encourage producing more energy from "clean" sources, such as wind, solar power, water, or nuclear power plants, would NOT be a good idea.

OR

(4c) The candidate is not sure whether Passing laws that would encourage producing more energy from "clean" sources, such as wind, solar power, water, or nuclear power plants, would be a good idea.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (4b) or (4c).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

9. "Actions should be taken"

Type "y" if the candidate said something like:

(5a) Actions should be taken to reduce climate change or the effects of climate change.

OR

(5b) We should limit the amount of greenhouse gasses (carbon dioxide, CO2) in the future.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (5a) or (5b).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

10. "NO actions should be taken"

Type "y" if the candidate said something like:

(5c) No actions should be taken about global warming or climate change.

OR

(5d) No actions should be taken to limit the amount of greenhouse gasses in the future.

OR

(5e) The candidate is not sure whether we should take actions about GW/CC.

OR

(5f) The candidate is not sure whether we should limit carbon emissions.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (5c), (5d), (5e), or (5f).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

11. "support cap-and-trade"

Type "y" if the candidate said something like:

(6a) The candidate supports cap-and-trade.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (6a).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

12. "oppose cap-and-trade"

Type "y" if the candidate said something like:

(6b) The candidate opposes cap-and-trade.

OR

(6c) The candidate is not sure, where cap-and-trade is a good idea.

and paste all the quotes (in sentences, or parts of sentences) that are the basis for your code "y".

Type "n" if the candidate did not anything like (6b) or (6c).

Type "a" if you are not sure and paste all the quotes that are the basic for your code "a".

Appendix E: Question Wording, Response Options, and Coding

Dependent Variable Measure: Turnout and Candidate Choice

Turnout and Candidate Choice. In the November 2008 wave of FFRISP survey, all respondents were asked: "In the election held on November 4, Barack Obama ran on the Democratic ticket and John McCain ran on the Republican ticket. During the months leading up to the election for President, did you ever plan to vote in that election, or didn't you plan to do that?" and then asked: "Which one of the following best describes what you did in this election? Definitely did not vote; definitely voted in person at a polling place on Election Day; definitely voted in person at a polling place before Election Day; definitely voted by mailing a ballot to elections officials before election day; definitely voted in some other way; not completely sure whether you voted or not".

Respondents who answered with "definitely did not vote" and the respondents who answered "not completely sure whether you voted or not" and answered "Probably did not vote" to the follow-up with question "If you had to guess, would you say that you probably did vote in the election, or probably did not vote in the election?" were coded as "not voting at all" in the dependent variable.

Respondents who answered with any of the "definitely voted" options and the respondents who answered "not completely sure whether you voted or not" and answered with "probably voted" to the follow-up with question "If you had to guess, would you say that you probably did vote in the election, or probably did not vote in the election?" were coded as voters. These respondents were asked in which state they voted, and then asked of their candidate choice through the following question "For whom did you vote for President and Vice President of the United States?" A complete list of candidates that was specific to the state they said they voted in

was displayed that included "BARACK OBAMA for President and JOE BIDEN for Vice President, Democrat", "JOHN MCCAIN for President and SARAH PALIN for Vice President, Republican", and some other candidates who were listed on the ballot of a specific state, e.g. "CHUCK BALDWIN for President and DARRELL L. CASTLE for Vice President, Independent" which was displayed to the respondents who reported that they voted in the state of Alabama. Respondents who chose "BARACK OBAMA for President and JOE BIDEN for Vice President, Democrat" were coded as "voting for Obama", Respondents who chose "JOHN MCCAIN for President and SARAH PALIN for Vice President, Republican" were coded as "voting for McCain", and the respondents who chose others were coded as "voting for a nonmajor party candidate".

Issue Congruence as the Key Independent Measures

Respondent's Self and Candidate Placement of Climate Change. In the November 2008 wave of FFRISP survey, all respondents were asked "Next, we'd like to ask whether Barack Obama favors, opposes, or neither favors nor opposes a series of ways that the federal government might try to reduce future global warming. Power plants put gases into the air that could cause global warming. Does Barack Obama favor, oppose, or neither favor nor oppose the federal government lowering the amount of these gases that power plants are allowed to put into the air?" Respondents who answered with "Favor" or "Oppose" were asked of a follow-up question "Does Barack Obama favor (oppose) that a great deal, moderately, or a little?" (Favor a great deal = 3, Favor moderately = 2, Favor a little = 1, Neither favor nor oppose = 0, Oppose a little = -1, Oppose moderately = -2, Oppose a great deal = -3). The identical questions were asked of McCain, and the coding of the issue placement of climate change of McCain was done in the identical way.

Respondents were asked of the identically worded questions (except that the questions were asked of their own placement) (a randomly selected half of the respondents were asked these questions in October 2008 and the other were asked in February 2009): "Next, we'd like to ask whether you favor, oppose, or neither favor nor oppose a series of ways that the federal government might try to reduce future global warming. Power plants put gases into the air that could cause global warming. Do you favor, oppose, or neither favor nor oppose the federal government lowering the amount of these gases that power plants are allowed to put into the air?" The follow-up intensity questions were identically worded, and the coding of issue placement of climate change of the respondent himself/herself was done in the identical way.

Respondent's Self and Candidate Placement of Political Ideology. In the October 2008 wave of FFRISP survey, all respondents were asked "When it comes to politics, would you describe Barack Obama as liberal, conservative, or neither liberal nor conservative?" Respondents who chose "Liberal" ("Conservative") were then asked "Would you call Barack Obama very liberal (conservative) or somewhat liberal (conservative)?" Respondents who chose "Neither liberal nor conservative" were then asked "Do you think of Barack Obama as closer to liberals, or conservatives, or neither of these?" (Very liberal = 3, Somewhat liberal = 2, Neither liberal nor conservative but closer to liberals = 1, Neither liberal nor conservative but closer to neither liberals nor conservatives = 0, Neither liberal nor conservative but closer to conservatives= -1, Somewhat conservative = -2, Very conservative = -3). The identical questions were asked of McCain, and the coding of the political ideology placement of McCain was done in the identical way.

Respondents were asked of the identically worded questions (except that the questions were asked of their own placement) in October 2008: "When it comes to politics, would you

describe yourself as liberal, conservative or neither liberal nor conservative?" The follow-up intensity questions were identically worded, and the coding of political ideology placement of the respondent himself/herself was done in the identical way.

Party Identification and Other Political Variables Measures

Party Identification. In the October 2008 wave of FFRISP survey, all respondents were asked: "Do you consider yourself a Democrat, Republican, an Independent, or what?" A Democrat dummy variable was coded 1 for Democrats and 0 for all others. A Republican dummy variable was coded 1 for Republicans and 0 for all others.

Bush Job Approval. In the November 2008 wave of FFRISP survey, all respondents were asked: "Overall, do you approve, disapprove, or neither approve nor disapprove about the way George W. Bush is handling his job as President?" Respondents who chose "Approve" or "Disapprove" were then asked "Do you approve (disapprove) extremely strongly, moderately strongly, or slightly strongly?" (Coding: Strongly disapprove = 0.00, Somewhat disapprove = .17, Slightly disapprove = .33, neither approve nor disapprove = .50, Slightly approve = .67, Somewhat approve = .7583 Strongly approve =1.00).

Perception of the Economy. Respondents were asked: "Now thinking about the economy in the country as a whole, would you say that as compared to one year ago, the nation's economy is now better, about the same, or worse?" and then followed up with "Much better or somewhat better?" among respondents who choose "Better" and "Much worse or somewhat worse" among respondents who choose "Worse". (Coding: Much worse = 0.00, Somewhat worse = .25, About the same = .50, Somewhat better = .75, Much better = 1.00).

Interest in Politics. In November 2008 wave of FFRISP survey, all respondents were asked "How interested are you in information about what's going on in government and politics?"

(Coding: Not interested at all = 0.00, Slightly interested = .25, Moderately interested = .50, Very interested = .75, Extremely interested = 1.00)

High Personal Importance of Climate Change as the Moderator

High Personal Importance of Climate Change. In the April 2009 wave of FFRISP survey, all respondents were asked: "How important is the issue of global warming to you personally - not at all important, not too important, somewhat important, very important, or extremely important?" High personal importance dummy variable was coded to 1 if the respondents choose "Very important" or "Extremely important" and 0 otherwise.

"Green" in Believing in Anthropogenic Warming. A randomly selected half of the respondents were asked in October 2008 and the other half were asked in February 2009: "You may have heard about the idea that the world's temperature may have been going up slowly over the past 100 years. What is your personal opinion on this? Do you think this has probably been happening, or do you think it probably hasn't been happening?" Respondents who choose "Has probably been happening" were asked "Do you think a rise in the world's temperatures is being caused mostly by things people do, mostly by natural causes, or about equally by things people do and by natural causes?" A dummy variable of "Green" in Believing in Anthropogenic Warming was set to 1 for the respondents who answered with "Things people do" or "About equally by things people do and by natural causes" and 0 for the rest.

Demographic Variables as Controls

Female. Respondents were asked: "Please enter whether you are male or female." A Female dummy variable was coded 1 for females and 0 for males.

Age. Respondents were asked: "Please enter your age." Age was measured in years.

Hispanic Ethnicity. Respondents were asked: "Are you of Spanish, Hispanic, or Latino descent?"

A Hispanic dummy variable was coded 1 for those reporting Hispanic ethnicity and 0 for others.

Race. Respondents were asked to "check one or more categories" from a list and were told to

select what race(s) they considered themselves to be. A Black dummy variable was coded for 1

for individuals who selected "Black or African-American" and 0 for others.

Education. Respondents were asked: "What is the highest degree or level of school that

you have completed?" (Coding: No schooling completed = 0.00, Nursery school to 4th

grade = .07, 5th or 6th grade = .14, 7th or 8th grade = .23, 9th grade = .30, 11th grade = .38,

12th grade no diploma = .46, High school graduate = .54, High school diploma or the

equivalent (GED) = .62, Some college, no degree = .69, Associate degree = .77,

Bachelor's degree = .85, Master's degree = .92, Professional or Doctorate degree = 1.00).

Income. Respondents were asked "The next question is about the total income of your household

for the past 12 months. Please include your income plus the income of all members living in

your household (including cohabiting partners and armed forces members living at home).

Please count income before taxes, including income from all sources (such as wages, salaries,

tips, net income from a business, interest, dividends, child support, alimony, and Social Security,

public assistance, pensions, or retirement benefits). Was your total household income in the past

12 months?" (Coding: Less than $20,000 = 0.00, $20,000 to $34,999 = .20, $35,000 to $49,999

= .40, $50,000 to $74,999 = .60, $75,000 to $99,999, $100,000 or more = 1.00).

Region. Was coded using a set of dummy variables representing three different census regions in

the United States: Midwest, South, and West. Respondents living in the Northeast region

constituted the omitted, base category.