WHAT ARE AMERICANS THINKING AND
DOING ABOUT GLOBAL WARMING?

RESULTS OF A NATIONAL HOUSEHOLD SURVEY

Porter Novelli - Washington, DC
Center of Excellence in Climate Change Communication Research
George Mason University, Fairfax, VA

GEORGE MASON UNIVERSITY

PORTER NOVELLI

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EXECUTIVE SUMMARY

To gain a better understanding of what American adults are thinking, feeling and doing about global warming (also called climate change), in May and June 2007 we surveyed a nationally representative sample of approximately 12,000 adults. In July and August of that year we surveyed approximately 1,000 of their children, giving us what we believe to be the first-ever American *household* survey (i.e., parent and child) on global warming. The margin of error for the adult data is +/- 1% and for the children's data +/- 4%.

The surveys focused on four primary aspects of people's thoughts, feelings and actions regarding global warming:

- The amount of danger or threat they associate with global warming;

- Their feelings of efficacy – that is, their belief that people in general and they personally can take steps to effectively reduce future warming;

- Their perceptions about the importance of specific individual actions that might help to protect the environment; and

- Whether or not they themselves perform those behaviors.

In brief, we found:

- A majority of American adults viewed climate change as a serious problem that threatens future generations and all life on earth, while only 14% believed it is not a problem.

- Roughly a third of American adults were still undecided as to the dangers posed by global warming and our ability to combat it.

- American adults who believed that global warming is a dangerous threat also tended to express confidence that we are able to make the changes needed to combat its effects.

- People who believed that climate change is a danger, and who had a strong sense of our ability to combat it, were engaging in more activities to protect the environment and were more likely to see those actions as being important.

- While Republicans and Democrats viewed climate change quite differently, they did not differ much in terms of their actual behavior. People on both ends of the political spectrum were engaged in about the same number of environmental actions.

- Roughly 7 of 10 children felt personally threatened by global warming, but they also expressed considerable confidence that new technologies can solve the problem.

- When children and their parents agreed that global warming poses a great danger and shared a strong sense of our ability to combat it, the family engaged in more environmental activities, as compared to families where parents and children disagreed.

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PART 1: ADULT ANALYSES

Adults' Thoughts and Feelings about Global Warming

The Dangers of Global Warming:

We asked our respondents a number of questions to ascertain their sense of the risk or danger posed by global warming. Most – almost 2 out of every 3 – had come to see global warming as "a very serious problem." Only a small minority (14%) indicated that the reverse was true, that global warming was not a very serious problem. Many, however, were essentially uncertain: 23% of the people we interviewed "neither disagreed nor agreed" that global warming is a very serious problem.

This same pattern of findings – a majority (or near majority) of people who saw global warming as a threat, a small minority who did not, and a larger minority who were uncertain – is seen in response to all of the questions we asked about the potential dangers of global warming (see Table 1). Almost half of the people we surveyed (48%) felt they are personally at risk from global warming, and even more believed it is a threat to all life on the planet (57%) and to future generations (60%). Somewhat fewer (43%) felt "afraid of what might happen" when they think about global warming.

Ability to Respond to the Danger:

We also asked a series of questions to assess people's sense of their individual ability, and our collective ability, to stop global warming. Most had a sense of optimism that we can limit global warming. Specifically, close to 6 in 10 people believed that "the actions we take can prevent global warming from becoming more severe" and that the actions of a single person can make a difference; nearly half (44%) believed that they themselves "can take actions that will help reduce global warming." Fewer than 2 in 10 people gave answers that expressed doubt about our individual and collective abilities to reduce global warming, and about 3 in 10 people expressed uncertainty.

Other Beliefs:

We asked several other questions to get a better sense of priority. At the time, people were more or less equally divided in their beliefs about the importance of global warming relative to other issues currently facing our nation. About 4 in 10 believed it is among the most important issues we face, while 3 in 10 felt it is not, and another 3 in 10 weren't sure. Similarly, about 4 in 10 felt that the media do not exaggerate the dangers of global warming, while 3 in 10 felt they do, and another 3 in 10 were uncertain.

The High Degree of Uncertainty:

Perhaps the most striking finding about the adults' perceptions of danger associated with global warming, and our ability to respond, was the large number who simply weren't certain one way or the other. At least 1 out of every 4 people answered, essentially, that they did not have an opinion one way or the other in response to each of our questions. Thus, at the time of our survey last summer, a large group of American adults appear to have been undecided about global warming and how we should respond.

Table 1
Beliefs About Global Warming

	Percent Who Agree	Percent Who Neither Agree Nor Disagree	Percent Who Disagree
Threat Assessment: The Danger of Global Warming			
Global warming is a very serious problem.	62	23	14
Global warming is a threat to my future well-being and safety.	48	33	18
Global warming is a threat to future generations' well-being and safety.	60	26	14
Global warming is a threat to all life on the planet.	57	27	16
When I think about global warming, I feel afraid of what might happen.	43	32	25
Efficacy: Our Ability to Respond to the Danger			
I can take actions that will help reduce global warming.	44	36	19
The actions of a single person like me won't make any difference in reducing global warming.	16	27	58
There is nothing we can do to stop global warming.	12	26	62
The actions we take can prevent global warming from becoming more severe.	56	30	13
Other Beliefs & Attitudes: Causes, Solutions and Priorities			
Global warming is not as important as other issues now facing our nation.	30	30	39
The media exaggerates the dangers of global warming.	31	32	37
It is not clear whether humans are causing global warming.	20	32	48
New technologies can solve global warming, without individuals having to make big changes in their lives.	16	35	49

Note: The number of respondents to the questions ranged from 11,354 to 11,612.

Adults' Beliefs about the Importance of Environmental Actions and their Performance of Those Actions

The Importance of Actions to Protect the Environment

We asked our respondents to tell us how important – or not – 14 different actions were in terms of their value in "protecting the environment." Certain actions were deemed to be important by most people – as many as 4 out of 5 – while other actions were deemed important by only a small minority (as few as 1 out of 4). The actions most likely to be seen as important were using less energy at home, buying energy-efficient appliances and insulation, recycling at home and using less gasoline. Conversely, the actions least likely to be seen as important were buying organic food, taking fewer trips by airplane, donating to environmental organizations and voting for candidates with a strong environmental record. On average, people felt that nearly 8 of the 14 actions were important, a number we consider to be notably large (see Table 2).

Actions Taken to Protect the Environment

We also asked our respondents to tell us if they were currently taking these actions, or not. Although hardly a surprise, we found that people actually take fewer actions than they feel are important. The average number of actions taken was slightly more than 5, as compared to the nearly 8 actions that people rated as being important. The average difference between the proportion of people who felt the action is important and the proportion who were performing the action was 18 percentage points.

The discrepancy notwithstanding, it is well worth noting that some of the actions – specifically, using less energy at home, recycling at home, buying energy-efficient appliances and buying products made from recycled materials – were, in fact, performed by a majority of people. Moreover, most of the people we surveyed indicated they were willing to try additional actions – an average of over 3. Among those who were not currently practicing each of the environmentally friendly actions, a fifth to more than one half said they were willing to give it a try. The actions they were most willing to try involved changing their patterns of consumption to more benign practices – buying products with less packaging, avoiding products from companies with poor environmental records and buying fewer products overall. In total, we see this as a rather strong willingness to perform – or at least try – actions that are perceived to be beneficial to the environment.

Table 2
Believing vs. Doing: Comparison of the Perceived Importance and Performance of Environmental Actions

	Percent who believe the action is important	Percent who currently engage in the action	Of those who do not engage in the action, the percent who are willing to try it
Use less energy at home (lights, AC, heat)	81	68	37
Buy energy-efficient appliances/insulation	80	52	42
Recycle at home	75	62	40
Use less gas (by driving less or getting a more fuel-efficient car)	72	47	46
Buy products made from recycled paper/plastic	64	52	38
Buy environmentally friendly products	63	44	52
Buy products that use less packaging	60	37	54
Have a simpler lifestyle that uses less products	55	33	45
Punish companies with bad environmental records by not buying their products	49	20	38
Remind others to be environmentally conscious	49	31	30
Vote for candidates with the best environmental records	39	19	34
Donate to organizations that support environmental causes	38	20	32
Take fewer trips by airplane	27	27	22
Buy organic food	25	19	36
Average Number of Actions Believed to Be Important	7.7		
Average Number of Actions Currently Engaged In		5.3	
Average Number of Actions Willing to Try			3.3

Note: The number of respondents to the questions ranged from 10,099 to 11,758.

Taking a Deeper Look: How Are Different Segments of American Adults Responding?

Perceived Danger vs. Perceived Efficacy

Some commentators have questioned the wisdom of using "fear appeals" in communication about climate change. Their concern is that the media (and advocacy groups) have placed too much focus on the dangers of global warming and not enough focus on conveying hope and solutions. We decided to examine this concern in our data.

To begin, people were divided into two equally sized groups: those who perceived the most danger associated with global warming, and those who perceived the least danger. They were also divided them into two equal sized groups based on their beliefs about our ability to respond to the dangers of global warming (which we call "perceived efficacy"): those who felt most confident that we can successfully address the problem, and those who felt least confident. These two scores – "high" or "low" on "perceived danger" and on "perceived efficacy" – were used to classify every person into one of four audience segments: "high danger/high efficacy," "high danger/low efficacy," "low danger/high efficacy" and "low danger/low efficacy."

A striking finding was immediately obvious: the vast majority of people had either high perceptions of danger and high perceptions of efficacy (39%) or low perceptions of danger and low perceptions of efficacy (39%). Conversely, fewer than 1 in 4 people had either high perceptions of danger with low perceptions of efficacy, or low perceptions of danger with high perceptions of efficacy. As the statisticians say, people's perceptions of global warming danger and global warming efficacy are clearly "highly correlated."

To better understand who these four groups of people are, we examined their demographic and background characteristics, including their gender, marital status, age, education, race/ethnicity, household income, geographic location and tendency to attend church. There were some differences between the four groups, but on the whole we found their demographic similarities to be more striking than their differences. (These data are presented, in detail, in the appendix; Table 13).

But there are many other interesting differences between the members of these four audience segments. Perhaps most importantly, the people in the "high danger/high efficacy" group felt that many more of the environmental actions were beneficial, and they were actually performing many more of these actions than were people in the "low danger/low efficacy" group. The other two audience segments – the "high danger/low efficacy" and the "low danger/high efficacy" folks – fell somewhere in the middle both in terms of how many environmental actions they saw as important, and in terms of how many actions they were actually performing.

What do these differences mean? Both types of perceptions – believing that global warming is a threat to human well-being, and believing that it is within our power to limit global warming – are important motivators of actions that may help limit global warming. People who have high scores on *either one* of these beliefs perform more beneficial actions that people who have low scores on both, and people who have high scores on *both* beliefs perform the largest number of beneficial actions. In other words, for those of us who are interested in engaging people to become part of the solution to global warming, it appears helpful to convince them both that *global warming is a threat,* and that *there is much we can do through our actions to stop it.*

Table 3
The Environmental Actions of Four "Danger/Efficacy" Audience Segments

		High Danger/ High Efficacy	High Danger/ Low Efficacy	Low Danger/ High Efficacy	Low Danger/ Low Efficacy
Number		4,086	1,163	1,259	4,057
Percent of Population*		(39)	(11)	(12)	(38)
Total number of actions currently doing (out of 14 possible)		6.8	4.7	5.6	4.2
Number of actions willing to try		4.0	4.0	3.7	3.1
Number of actions believed to be important		9.9	7.9	7.7	5.6
Percent Performing Each Action	**(Population %)**				
Use less energy at home (lights, AC, heat)	(69)	77	64	72	62
Recycle at home	(63)	72	55	65	55
Buy energy-efficient appliances/insulation	(53)	59	46	59	48
Buy products made from recycled paper/plastic	(53)	65	46	56	42
Use less gas (by driving less or getting a more fuel-efficient car)	(47)	52	44	50	43
Buy environmentally friendly products	(45)	60	38	48	31
Buy products that use less packaging	(38)	48	32	41	29
Have a simpler lifestyle that uses less products	(34)	42	28	36	27
Remind others to be environmentally conscious	(32)	47	27	31	19
Take fewer trips by airplane	(28)	34	25	29	22
Punish companies with bad environmental records by not buying their products	(20)	29	17	21	12
Vote for candidates with the best environmental records	(20)	32	17	14	10
Donate to organizations that support environmental causes	(20)	30	18	16	11
Buy organic food	(19)	26	18	19	13

Note: The differences between the four groups are statistically significant at p ≤ .001 for every comparison in this table.
* Respondents who did not answer one or more of the danger and efficacy items were excluded from this analysis.

The Partisan Divide: Republicans vs. Democrats

Global warming is often characterized as being politically divisive. Our data allowed us to take a fresh look at this issue, not through the lens of the media or through the rhetoric of politicians, but rather through the beliefs and actions of a large number of ordinary Americans.*

What we found confirmed that people along different points of the political spectrum do indeed tend to have different perceptions about global warming. Democrats were much more likely than Republicans to perceive global warming as a danger to themselves, their children, and to future generations (see Table 4). They expressed more fear and regarded climate change as a more serious problem. They were, on average, over twice as likely to agree with each of the assertions regarding the dangers of global warming. Democrats were also much more likely to believe that we have the power to combat climate change. Again, about twice as many Democrats as Republicans agreed that our actions can reduce the impact of climate change. And looking at our danger/efficacy audience segments, we found that Democrats were about three times as likely as Republicans to belong to the high danger/high efficacy segment, while Republicans were more likely to belong to the low danger/low efficacy group (see Table 5). Democrats were also more likely to feel that more of the possible environmental actions were beneficial (see Table 6).

No big surprises thus far, but here's where it gets interesting. While Democrats were performing more of the environmental actions, *on average they were only performing less than one more behavior than Republicans* (see Table 6). The only environmental activities that Democrats were much more likely to engage in were voting for candidates based on their environmental records and donating to environmental organizations – actions that were fairly unusual in the population, even among Democrats. On other more common activities, such as conserving energy at home and recycling, the political groups were indistinguishable. Moreover, Democrats, on average, were willing to try only about one more new behavior than were Republicans. *Thus, while there was a clear partisan divide with regard to beliefs about global warming, the environmental actions of people across the political spectrum were far more similar.*

We think this is an important – and previously unnoticed – area of commonality across the partisan divide. What it means, however, is very much open to question. We don't yet have answer to that question, but hope to explore this issue more carefully in future research.

* The specific question on our survey asked: "When you vote, which party do you usually choose?" People were given six options: Always vote Republican; Usually vote Republican; Equally likely to vote Republican or Democrat; Usually vote Democrat; Always vote Democrat; and Neither Republican nor Democrat.

Table 4
Political Party Identification and Global Warming Attitudes

	Always Republican	Usually Republican	Equally Republican Or Democrat	Usually Democrat	Always Democrat	Neither Republican Nor Democrat
The Danger of Global Warming	**Percent Agreement with Each Assertion**					
Global warming is a very serious problem.	36	41	64	77	78	62
Global warming is a threat to my future well-being and safety.	26	33	49	62	61	48
Global warming is a threat to future generations' well-being and safety.	34	46	63	75	71	58
Global warming is a threat to all life on the planet.	33	39	59	71	73	57
When I think about global warming, I feel afraid of what might happen.	24	25	42	56	58	46
Ability to Respond to the Danger						
I can take actions that will help reduce global warming.	27	36	45	55	51	41
The actions of a single person like me won't make any difference in reducing global warming.	28	20	14	10	12	16
There is nothing we can do to stop global warming.	24	16	9	7	11	12
The actions we take can prevent global warming from becoming more severe.	34	44	58	70	67	53
Causes, Solutions and Priorities						
It is not clear whether humans are causing global warming.	35	32	18	13	14	14
New technologies can solve global warming, without individuals having to make big changes in their lives.	18	17	15	14	19	16
Global warming is not as important as other issues now facing our nation.	52	45	28	20	23	26
The media exaggerates the dangers of global warming.	54	47	29	19	23	27
N in each group	838	2,107	2,759	2,406	1,485	1,649
Percent of Population	8	19	24	21	13	15

Note: Party identification is significantly related to every attitudinal measure in this table, $p \leq .001$.

Table 5
Political Party Affiliation for Four "Danger/Efficacy" Audience Segments

		High Danger/ High Efficacy	High Danger/ Low Efficacy	Low Danger/ High Efficacy	Low Danger/ Low Efficacy
Number	Total	4,086	1,163	1,259	4,057
Percent of Population	%	(39)	(11)	(12)	(38)
Always vote Republican	(8)	4	6	10	12
Usually vote Republican	(19)	12	13	26	27
Equally likely Republican or Democrat	(25)	25	26	27	24
Usually vote Democrat	(22)	30	22	17	13
Always vote Democrat	(13)	17	16	8	9
Neither Republican nor Democrat	(16)	13	18	12	16

Note: $p \leq .001$, for the relationship of political orientation and audience segment.

Table 6
Political Party Identification and Environmental Beliefs and Actions

	Always Vote Republican	Usually Vote Republican	Equally Likely Republican Or Democrat	Usually Vote Democrat	Always Vote Democrat	Neither Republican Nor Democrat
Number of actions believed to be important (0-14 possible)	6.2	7.1	7.9	8.7	8.7	7.0
Number of actions currently doing (0-14 possible)	4.5	5.3	5.7	5.9	5.3	4.7
Number of actions willing to try, if not currently doing (0-14 possible)	2.8	3.0	3.3	3.5	3.9	3.5
Percent Performing Each Action						
Use less energy at home (lights, AC, heat)	65	72	70	71	65	64
Recycle at home	55	66	66	68	56	52
Buy energy-efficient appliances/insulation	50	58	56	53	48	44
Buy products made from recycled paper/plastic	44	52	55	56	51	47
Use less gas (by driving less or getting a more fuel-efficient car)	41	48	49	49	46	46
Buy environmentally friendly products	35	45	48	49	43	38
Buy products that use less packaging	30	37	41	40	36	34
Have a simpler lifestyle that uses less products	33	33	38	34	32	31
Remind others to be environmentally conscious	22	29	33	37	32	29
Take fewer trips by airplane	22	25	31	30	25	25
Punish companies with bad environmental records by not buying their products	15	17	21	25	23	16
Vote for candidates with the best environmental records	12	12	20	29	31	10
Donate to organizations that support environmental causes	14	13	22	27	23	16
Buy organic food	18	17	19	22	20	17
N in each group	838	2,107	2,759	2,406	1,485	1,649
Percent of Population	8	19	24	21	13	15

Note: Party identification is significantly related to every measure in this table, p ≤ .001.

PART 2: YOUTH AND FAMILY ANALYSES

Kids' Beliefs about the Importance of Environmental Actions and their Performance of Those Actions

We asked kids (ages 9-18) most of the same questions that we had asked the adults (some of whom were their parents). Unlike the adults, however, we did not give our young respondents the option of answering questions with "neither agree nor disagree." This effectively prevented them from being "fence sitters" on the issue of global warming. On the whole, however, young people's answers were surprising similar to those of the adults (see Table 7).

Kids were more likely than adults to express a sense of danger associated with global warming, but this may have been due, in part or in whole, to the fact that they were not given the option of a neutral answer. Nearly 4 in 5 kids saw global warming as "a very serious problem," 3 in 4 saw it as "a threat to all life on the planet" and about 2 in 3 felt global warming is "a threat to my future well-being and safety," and "feel afraid of what might happen."

Kids were also more likely than adults to express a sense of optimism about our ability to respond to global warming, but again, this may have been due their lack of a neutral response option. About 2 in 3 young people expressed a sense that individuals – and they themselves – can take actions that will make a difference, and nearly 4 in 5 disagreed that "there is nothing we can do to stop global warming."

Slightly more than half of our young respondents indicated that global warming is one of the most important issues facing our country, while just under half felt it is not. This apparent lack of alarm on the part of many young people may be due to the fact that they appear to have a strong belief that new technologies will solve the problem – an opinion expressed by half of the young people (and only 16% of adults).

Interesting, if not a bit hard to fathom, is the fact that kids were less likely than adults to see the value in each of the 14 environmental actions we asked them about (see Table 8). On average, young people felt that 6 of the actions were important while adults felt that nearly 8 actions were important. There was little difference, however, in terms of the number of actions that kids and adults report they – or perhaps more accurately in the case of the kids, their families – were taking. Kids and adults reported taking more or less the same number of actions: 5.7 and 5.3, respectively.

To look more closely at young people's beliefs and actions, we segmented them into four "danger/efficacy" groups, using the approach described previously for adults. Like adults, young people in the "high danger/high efficacy" group were performing many more environmental actions than were those in the "low danger/low efficacy" group, with members of the other two audience segments falling in between (these data are presented in the Appendix in Table 14).

* Adults were asked which actions *they* were taking, while young people were asked which actions *they and their families* were taking. Most of these actions could not be performed by kids without parental support, if at all.

Table 7
Young People's Beliefs About Global Warming

The Danger of Global Warming	Percent Who Agree	Percent Who Disagree
Global warming is a very serious problem.	79	21
Global warming is a threat to my future well-being and safety.	69	31
Global warming is a threat to all life on the planet.	74	26
When I think about global warming, I feel afraid of what might happen.	63	37
Ability to Respond to the Threat		
I can take actions that will reduce global warming.	67	33
The actions of a single person like me won't make any difference in reducing global warming.	35	65
There is nothing people can do to stop global warming.	21	79
Other Beliefs and Attitudes: Causes, Solutions, and Priorities		
New technologies can solve global warming, without people having to make big changes in their lives.	50	50
Global warming is not as important as other issues facing our country.	44	56
Television and movies make problems with the environment sound worse than they really are.	49	51

Note: *Ns* range from 865 through 896.

Table 8
Kids' Believing vs. Doing:
Comparison of the Perceived Importance and Performance
of Environmental Actions

	Percent who believe the action is important	Percent whose families currently engage in the action
Recycle at home	68	72
Use less gas (by driving less or getting a more fuel-efficient car)	62	50
Use less energy at home (lights, AC, heat)	59	74
Buy energy-efficient appliances/insulation	54	56
Buy products made from recycled paper/plastic	53	49
Buy environmentally friendly products	44	42
Remind others to be environmentally conscious	42	27
Punish companies with bad environmental records by not buying their products	38	18
Buy products that use less packaging	37	32
Have a simpler lifestyle that uses less products	36	31
Donate to organizations that support environmental causes	36	23
Vote for candidates with the best environmental records	35	20
Take fewer trips by airplane	21	48
Buy organic food	17	24
Average number of actions believed to be important	6.1	
Average number of actions currently engaged in		5.7

Family Dynamics Matter: The Interaction of Parents' and Children's Beliefs and Actions

Our survey allowed us to look at what adults and kids in America are thinking and doing with regard to global warming, but it also allowed us to do something more: to examine the role of family dynamics. Namely, do parents and children tend to share similar beliefs? And when they do, does it influence their actions?

To answer the first question, we must re-introduce readers to a statistical term that we briefly referred to earlier: correlation. In this context, a correlation – a number between zero and 1.0 – is a measure of shared beliefs between parents and their children. If the correlation is zero, on average, there is no overlap in parents' beliefs and their children's beliefs. Conversely, if the correlation is 1.0, parents' beliefs and children's beliefs are identical. A correlation in the middle of the range, say 0.5, indicates a moderate degree of overlap in parents' and their children's beliefs.

The parents and their children in our survey, on average, did share global warming beliefs and behaviors, but only to a modest to moderate degree (see Table 9). Parents and their kids agreed most on the dangers of global warming, and agreed least on our ability to respond to those dangers.

The psychological literature on adolescent development indicates that when kids feel close to at least one of their parents, they tend to behave more according to their parents' wishes. Therefore, we decided to see if the quality of the relationship between parent and child influenced the degree to which they shared global warming beliefs and behaviors. As it turns out, it does, but only slightly (see Table 9). When there's a more positive relationship between parent and child, they are more likely to share the same global warming beliefs and perform the same actions.

To answer the final question – whether sharing similar beliefs influences families' actions – we looked at parents' and kids' beliefs about the dangers of global warming and our ability to respond to that danger. These data show very clearly that when parent and child agree that global warming poses relatively little danger (Table 10) – and when they agree that there is relatively little that can be done about global warming (Table 11) – they are least likely to see benefit in the environmental actions we asked them about, and are least likely to be performing those actions. The converse is also true: when parent and child agree that global warming does pose a real danger – and when they agree there is much that can be done to stop it – they are most likely to see the value in, and to take, environmental actions. Incongruent global warming beliefs between parent and child lead to perceptions and rates of action that are between those of the parent-child dyads who agree positively or negatively. Shared efficacy beliefs had the greatest impact on the environmental actions taken, while shared danger perceptions had a greater impact on beliefs regarding the importance of these actions.

Table 9
The Impact of Parent-Youth Relationship on Environmental Beliefs and Actions

Correlations Between Parents & Kids:	All Families	Parent-Youth Relationship*	
		Weaker	Stronger
Environmental Actions	.39	.37	.42
Beliefs about the Importance of Environmental Actions	.39	.37	.45
Beliefs about the Dangers of Global Warming	.51	.44	.57
Beliefs about Global Warming Efficacy	.32	.25	.39
(N pairs)	(872-920)	(462-477)	(392-416)

*Parent-Youth relation strength is measured by three statements:
  "My parents respect my ideas and opinions."
  "My parents don't really understand me."
  "My parents don't really trust me."
Agreement with the first statement and disagreement with the second and third statements indicate the strength of the relationship ($\alpha = .70$).

Table 10
The Impact of Parent-Child Congruence about Global Warming Danger on Environmental Actions and Beliefs

	Low Perceived Danger	Incongruent	Incongruent	High Perceived Danger
Parent Danger Perceptions	Low	Low	High	High
Child Danger Perceptions	Low	High	Low	High
Number of parent-child pairs	308	122	156	234
Percent	(38)	(15)	(19)	(28)
Average number of adult actions performed*	4.4	5.1	5.3	6.4
Average number of family actions performed**	4.9	6.6	5.0	7.1
Average number of actions parent believes are important*	5.6	7.2	8.5	9.7
Average number of actions child believes are important**	4.5	7.3	4.9	8.9

Note: All group differences statistically significant, p ≤ .001.
 *Parent report; range = 0 to 14.
**Child report; range = 0 to 14.

Table 11
The Impact of Parent-Child Congruence about Global Warming Efficacy on Environmental Behaviors and Beliefs

	Low Perceived Efficacy	Incongruent	Incongruent	High Perceived Efficacy
Parent Efficacy Perceptions	Low	Low	High	High
Child Efficacy Perceptions	Low	High	Low	High
Number of parent-child pairs	213	159	152	298
Percent	(26)	(19)	(18)	(36)
Average number of adult actions performed*	3.9	4.7	5.7	6.3
Average number of family actions performed**	4.3	5.9	5.6	6.7
Average number of actions parent believes are important*	5.7	6.6	8.4	9.1
Average number of actions child believes are important**	4.3	6.5	5.2	7.7

Note: All group differences statistically significant, p ≤ .001.
 *Parent report; range = 0 to 14.
**Child report; range = 0 to 14.

CONCLUSIONS

Our results echo other recent poll data showing that Americans are growing more concerned about climate change, but they also highlight an important aspect of public opinion other surveys have not identified: *Many Americans are uncertain about the dangers posed by global warming.* Given the high level of media coverage about climate change over the past year, this expressed uncertainty may be capturing a shift in process – a movement of opinion from disbelief toward belief, and a waning partisan divide – at least among those who are only weakly identified with the Republican party. The people who expressed the most uncertainty were those in the middle of the political spectrum and those who said they usually vote for Republican candidates. The people who said they always vote Republican showed less uncertainty and lower risk perceptions, but they represent a much smaller proportion of the public; those with weaker partisanship were less sure, and this uncertainty offers an opening to those seeking to motivate the public to action on climate change.

Our family data show that within households, parents' and children's beliefs *both* influence the family's environmental activities. We don't know from these data to what extent parents are shaping their children's attitudes, as opposed to children influencing their parents. But given the strong affection children demonstrate for animals, and the widespread media images of drowning polar bears, we think it likely that influence is flowing in both directions: children arousing their parents' concern and action, as well as the reverse. It is, after all, a world these children will inherit. Their high level of concern, and their confidence that global warming can be successfully addressed, pose a challenge and a responsibility that we adults must accept and assume. The high sense of efficacy expressed by the adults who recognize the dangers of global warming is cause for optimism.

PART III: APPENDICES

Styles 2007 Survey Methodology

Styles 2007 is based on the results of three consumer mail panel surveys administered in two waves. The sampling and data collection are conducted by Synovate, Inc. The Synovate, Inc. consumer mail panel contains approximately 380,000 potential respondents. Respondents are recruited to join the mail panel through a four-page recruitment survey. In return for their participation, respondents are given a $2 incentive and are entered into a sweepstakes with a first place prize of $1000 and twenty second-place prizes of $50.

The initial wave – *ConsumerStyles* – was fielded May through June 2007. Stratified random-sampling was used to generate a list of 20,000 potential respondents who received the *ConsumerStyles* survey. The main sample (N=11,000) was stratified (or balanced) on region, household income, population density, age and household size in order to create a nationally representative sample. A low income/minority supplement (N=3,000) was used to ensure adequate representation of these groups. A households-with-children supplement (N=6,000) was used to ensure adequate numbers of potential respondents for the *YouthStyles* survey during the second wave. In 2007, a total of 11,758 people completed the *ConsumerStyles* survey, yielding a response rate of 58.8%.[†]

Two data weighting variables are available in the *ConsumerStyles* dataset. "Cswt1" is the weight applied to the nationally balanced sample and the low-income/minority sample. This weight is calculated using four factors (gender, age, income, and race) and in effect removes the households with children supplement from the analyses. "Cswt2" is the weight applied to the total sample. This weight is calculated using 5 factors (gender, age, income, race, and household size).

The second wave, administered July through August 2007, consisted of the *HealthStyles* and *YouthStyles* surveys.[††] A total of 6,600 *HealthStyles* surveys and 2,566 *YouthStyles* surveys were sent to half of the mail panel households that returned the *ConsumerStyles* survey. Separate postage-paid return envelopes were provided for the adult and youth surveys. Responses were received from 4,398 *HealthStyles* participants and 1,357 *YouthStyles* participants, yielding response rates of 66.6% and 52.8%, respectively.

[†] The response rate for the nationally balanced sample was 58.8%. The response rates for the minority/low income and households with children supplements were 55.5% and 58.1%, respectively.

[††] Specific data weights are provided to be used when the *YouthStyles* data is analyzed independently. The five factors are age/gender of child, household size, household income, head of household age, and race/ethnicity of adult in study.

Table 12
Comparison of the *ConsumerStyles* 2007 Sample and the *HealthStyles* 2007 Sample to the 2006 Census Estimates on Selected Demographic Variables

	2006 CPS*	CS 2007 Weighted (wt2)	CS 2007 Unweighted	HS 2007 Weighted (wt2)	HS 2007 Unweighted
Gender					
Male	46.4%	48.4%	46.5%	48.4%	45.8%
Female	53.6	51.6	53.5	51.6	54.2
Age					
18-24	12.6	12.7	3.2	12.7	2.4
25-34	18.0	18.0	13.8	18.0	12.3
35-44	19.5	19.6	24.9	19.6	23.3
45-54	19.5	19.5	25.5	19.5	25.4
55-64	14.1	14.1	15.5	14.1	16.0
65+	16.3	16.2	17.1	16.2	20.5
Education					
Not HS graduate	15.4	5.8	6.8	6.0	7.0
HS graduate	31.5	26.1	26.2	26.3	26.7
Attended college	27.6	37.8	36.7	36.4	35.8
Grad from college	17.0	18.2	18.2	19.0	17.8
Post-grad education	8.5	12.1	12.1	12.4	12.7
Race/Ethnicity					
White	81.6	68.8	66.2	68.8	68.2
Black	11.8	11.8	13.0	11.8	12.6
Hispanic	12.8	12.8	14.1	12.8	12.8
Other	6.5	6.6	6.7	6.6	6.3
Marital Status					
Married	54.2	58.0	69.9	58.9	68.6
Widowed	6.3	6.0	5.2	5.7	6.2
Divorced	10.3	9.9	8.9	9.6	9.3
Separated	3.9	1.5	1.6	1.3	1.4
Never Married	25.2	19.9	10.7	20.1	11.4
Domestic partner		4.7	3.7	4.4	3.2

Table 12 (continued)
Comparison of the *ConsumerStyles* 2007 Sample and the *HealthStyles* 2007 Sample to the 2006 Census Estimates on Selected Demographic Variables

Household Income	2006 CPS*	CS 2007 Weighted (wt2)	CS 2007 Unweighted	HS 2007 Weighted (wt2)	HS 2007 Unweighted
Less than $10,000	8.3%	9.8%	10.1%	9.9%	11.3%
$10,000 to $14,999	6.4	4.8	6.0	4.8	6.6
$15,000 to 24,999	12.3	12.4	9.4	12.2	8.9
$25,000 to $34,999	11.3	11.9	10.2	12.0	10.5
$35,000 to 49,999	14.8	13.6	12.0	13.7	12.5
$50,000 or more	46.9	47.8	52.1	47.4	50.0
Region					
New England	4.9	4.7	4.8	4.7	4.9
Mid-Atlantic	13.5	13.3	13.8	13.3	13.8
E. North Central	16.0	16.3	16.2	17.9	17.0
W. North Central	7.0	7.2	6.9	7.2	7.1
S. Atlantic	19.5	19.4	19.1	18.8	19.2
E. South Central	6.1	6.8	6.8	6.7	7.1
W. South Central	11.0	11.1	11.3	10.9	11.4
Mountain	6.9	7.4	7.3	7.3	6.9
Pacific	15.1	13.6	13.8	13.2	12.6

The data are taken from the Current Population Survey, which interviews a sample of the population annually. The sample consists of 98,664 households and 218,939 persons. Weights are then provided to project the data to the U.S. total 113,971 million households and 292,393 million people.

Notes on the Data Analysis Methods

General Notes

All analyses in this report have been calculated weighting the data for gender, age, income, race and household size.

Percentages ending in .5 have been rounded to even numbers (e.g., 13.5% is reported as 14%).

Adult Risk and Efficacy Measurement

Adult risk perception was assessed by summing the responses to five items to create a risk index. All five items had 5-point Likert response scales from "strongly disagree" to "strongly agree."

- Global warming is a very serious problem.
- Global warming is a threat to my future well-being and safety.
- Global warming is a threat to future generations' well-being and safety.
- Global warming is a threat to all life on the planet.
- When I think about global warming, I feel afraid of what might happen.

The risk perception index has a range from 5 to 25; a mean of 17.9; a standard error of .05; and a median of 18. Cronbach's alpha for the five-item index is .93.

The risk index was split at the median to create two groups. The low risk group contains 5,551 respondents and 50.3 % of the adult sample. Mean risk for this group = 13.5; standard error = .05. The high risk group contains 5,490 respondents, with mean = 22.4; standard error = .03.

Adult efficacy was assessed by summing the responses to four items to create an efficacy index. All four items had 5-point Likert response scales.

- I can take actions that will help reduce global warming.
- The actions of a single person like me won't make any difference in reducing global warming.
- There is nothing we can do to stop global warming.
- The actions we take can prevent global warming from becoming more severe.

The efficacy index has a range of 4 to 20; a mean of 14.5; a standard error of .03; and a median of 15. Cronbach's alpha for the four-item index is .78.

The index was split at the median to create two groups. The low efficacy group contains 5,447 respondents and 49.7% of the adult sample. Mean efficacy for this group = 11.5; standard error = .03. The high efficacy group contains 5,516 respondents, with mean = 17.4; standard error = .02.

Environmental Actions

The instrument listed 14 different environmental behaviors and asked respondents (1) how much they perceived this behavior to be important for protecting the environment; (2) whether they were currently engaging in this behavior; and (3) whether they were willing to try the behavior if they were not already doing it. Three indices were created from these measures.

The number of behaviors the respondent believes are important for protecting the environment was assessed by summing the number of agreement responses on the 14 measures. Cronbach's alpha for the index = .87.

The number of behaviors the respondent is currently engaged in was assessed by summing the "yes" responses to the 14 measures. Cronbach's alpha for the index = .84.

The number of behaviors the respondent is willing to try was assessed by summing the "yes" responses to these 14 measures. A few respondents said they were engaged in an action, and that they were also willing to try the action (disregarding the instructions accompanying the measures). These were eliminated from the index. Cronbach's alpha = .84.

Youth Risk and Efficacy Measurement

The youth questionnaire included four of the five risk perception measures from the adult questionnaire, and three of the four efficacy measures. The youth questionnaire used 4-point response scales, in contrast to the 5-point scales on the adult instrument. Hence, separate indices were created for the youth respondents.

Youth risk perceptions were assessed by summing responses to four items to create a youth risk index:

- Global warming is a very serious problem.
- Global warming is a threat to my future well-being and safety.
- Global warming is a threat to all life on the planet.
- When I think about global warming, I feel afraid of what might happen.

The youth risk index has a range from 4 to 16; a mean of 11.8; a standard error of .11; and a median of 12. The index was split at the median to create two groups. The low risk group contains 480 respondents and 56.1% of the youth sample. Mean risk for this group = 9.6; standard error = .11. The high risk group contains 376 respondents, with mean = 14.6; standard error = .06. Cronbach's alpha for the four-item index is .87.

Youth efficacy groups were created by summing responses to three items to create a youth efficacy index:

- I can take actions that will help reduce global warming.
- There is nothing we can do to stop global warming.
- The actions we take can prevent global warming from becoming more severe.

The youth efficacy index has a range of 3 to 12; a mean of 8.75; a standard error of .07; and a median of 9. The index was split at the median to create two groups. The low efficacy group contains 377 respondents and 44.6% of the youth sample. Mean efficacy for this group = 7.0; standard error = .06. The high efficacy group contains 468 respondents, with mean = 10.2; standard error = .05. Cronbach's alpha for the three-item index is .55.

Family Measures

Parent-Youth relation strength was measured by responses to three statements, all of which had 4-point response scales:

- My parents respect my ideas and opinions.
- My parents don't really understand me.
- My parents don't really trust me.

Agreement with the first statement and disagreement with the second and third statements indicate the strength of the relationship; Cronbach's alpha for the three-item index = .70.

Family Risk Congruency was assessed according to whether the adult and youth fell into the same or different risk perceptions groups.

Similarly, Family Efficacy Congruency was assessed according to whether the adult and youth fell into the same or different efficacy perceptions groups.

Table 13
Demographic and Background Characteristics of Adult Danger and Efficacy Groups

		High Danger High Efficacy	High Danger Low Efficacy	Low Danger High Efficacy	Low Danger Low Efficacy
Number		4,086	1,163	1,259	4,057
	(% of Population)	(39)	(11)	(12)	(39)
Gender*					
Female	(51)	55	52	51	47
Male	(49)	45	48	49	53
Marital Status*					
Unmarried	(37)	39	39	35	34
Married	(63)	61	61	65	66
Have a Child*					
No	(65)	66	65	62	64
Yes	(35)	34	35	38	36
Age*					
18-24	(13)	11	19	14	13
25-34	(18)	19	17	19	18
35-44	(20)	20	18	22	20
45-54	(20)	21	17	19	20
55-64	(14)	14	14	14	14
65+	(15)	14	14	12	16
Education*					
Less than high school	(5)	4	9	5	6
High school grad	(25)	22	33	22	27
1-3 years College	(38)	40	37	37	36
College grad	(19)	19	14	24	19
Post-grad	(12)	14	8	12	12

Note: These are column percents.
* $p \leq .05$
*** $p \leq .001$

Table 13 (continued)
Demographic and Background Characteristics Of
Adult Danger and Efficacy Groups

		High Danger High Efficacy	High Danger Low Efficacy	Low Danger High Efficacy	Low Danger Low Efficacy
Number		4,086	1,163	1,259	4,057
	(% of Population)	(39)	(11)	(12)	(39)
Race*					
White	(70)	67	63	76	73
Black	(11)	10	16	10	10
Hispanic	(13)	15	13	10	10
Other	(7)	8	7	4	6
Income*					
< $25K	(25)	25	35	20	24
$25k - $49.9K	(26)	26	26	26	26
$50K - $84.9K	(26)	26	21	30	26
$85K +	(23)	23	18	25	24
Residence*					
Own	(74)	72	68	80	76
Rent	(22)	24	27	17	20
Neither	(3)	3	3	3	3
Population Density*					
Rural (≤250,000)	(31)	28	33	32	33
Mid-Size (250-999,999)	(20)	19	20	20	20
Urban (1 million +)	(50)	53	47	48	48
Attend Church:*					
Daily	(2)	2	3	3	3
Weekly	(36)	32	33	36	39
Monthly	(9)	8	10	9	9
Few times per year	(17)	19	19	18	14
Yearly	(5)	6	4	6	5
Less often/ never	(31)	33	31	28	30

Note: These are **column** percents.
*** $p \leq .001$

Table 14
Pro-Environmental Actions among Youth Danger and Efficacy Groups

		High Danger High Efficacy	High Danger Low Efficacy	Low Danger High Efficacy	Low Danger Low Efficacy
Use less energy at home***	(74)	84	70	72	67
Recycle at home	(72)	76	72	70	69
Buy energy-efficient appliances/insulation	(56)	62	55	54	53
Buy products made from recycled paper/plastic***	(50)	62	51	50	38
Use less gas**	(50)	59	46	46	45
Take fewer trips by airplane**	(49)	58	46	44	45
Buy environmentally friendly products***	(43)	60	41	40	30
Buy products that use less packaging***	(33)	42	35	32	23
Have a simpler lifestyle that uses fewer products	(31)	34	34	32	26
Remind others to be environmentally conscious***	(28)	44	29	25	13
Buy organic food***	(25)	35	29	21	16
Donate to organizations that support the environment***	(22)	33	27	20	12
Vote for candidates with the best environmental records***	(21)	32	19	18	12
Punish companies with bad environmental records***	(18)	27	21	17	10
Average number of environmental actions youth and family currently do***	(5.7)	7.1	5.7	5.4	4.6

  * p ≤ .05
 ** p ≤ .01
*** p ≤ .001