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Global Warming or Climate Change: Is There a Difference?

Guest commentary

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In recent years, there has been debate over whether the public responds to the terms "global warming" and "climate change" similarly, seeing them as essentially equivalent or regarding them as separate phenomena. The former refers to the overall warming of the Earth's atmosphere, which most scientists attribute to increased concentrations of greenhouse gases in the atmosphere that stem from human actions such as burning fossil fuels. The latter refers to the changing climatic conditions and their effects that result from this warming -- including major changes in temperature, precipitation, or wind patterns that occur over several decades or longer.*

While global warming seems the more readily understood term, the public may interpret it narrowly as referring to warmer temperatures on the Earth's surface. In contrast, climate scientists view warmer atmospheric conditions as producing instability (including abnormal cooling as well as warming, atypical precipitation patterns, and so forth) in "normal" weather patterns. While the scientific use of "climate change" captures these changing patterns, to laypeople, the term may convey natural variations in weather patterns that are unrelated to human-induced global warming.

Some have argued that global warming, which more strongly conveys the notion of human causation, is a politically charged term that generates political polarization, while climate change is less polarizing. A few studies find a greater degree of political polarization over global warming than over climate change. Specifically, they find that Republicans are more likely to be skeptical about global warming than about climate change -- although they express far more skeptical views toward both terms than do Democrats. However, this pattern is not well established, and the public's interpretations of the two terms may be evolving.

In this year's Environment poll, Gallup included both "global warming" and "climate change" in a list of eight environmental problems, and asked respondents the degree to which they personally worry about each. Seven problems, including all items except climate change, were presented to respondents in random order, while climate change was presented last. Presenting it this way maintained the standard rotational environment for the global warming item and preserved the context for its long-term trend, while achieving moderate spacing between global warming and climate change when items are read to most respondents.

The results suggest that the public responds to global warming and climate change in a similar fashion. Thirty-four percent say they worry "a great deal" about global warming, 22% worry "a fair amount," 19% "only a little" and 24% "not at all." The comparable figures for climate change are 35%, 25%, 19%, and 20%, respectively. Even when one looks at the combined percentages worried a great deal or a fair amount -- 60% for climate change and 56% for global warming -- the difference is not statistically significant.

Worry About Global Warming vs. Climate Change

I'm going to read you a list of environmental problems. As I read each one, please tell me if you personally worry about this problem a great deal, a fair amount, only a little, or not at all. First, how much do you personally worry about -- ?

	Great deal	Fair amount	Only a little	Not at all	No opinion
	%	%	%	%	%
Global warming	34	22	19	24	*
Climate change	35	25	19	20	*

March 6-9, 2014

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The crucial issue, though, is whether various sectors of the public respond differently to the two terms. Because it is now well documented that political orientation (partisan and ideological identification) best predicts views of global warming/climate change, the key is to see if there are differences in responses to the two terms across the partisan and ideological spectrums. Again, some studies have reported that Republicans are significantly more likely to express skeptical views toward global warming than toward climate change, but none has examined political ideology as well as party identification.

The 2014 Environment poll data show only modest differences in responses to the two terms across the partisan and ideological spectrums. For both terms, there are substantial differences in the responses of Republicans versus Democrats and conservatives versus liberals, but the crucial issue is whether levels of partisan and ideological divergence vary between global warming and climate change.

First, in terms of party identification, self-identified Democrats are 40 percentage points more likely than Republicans (56% vs. 16%) to report worrying a great deal about global warming, and 34 points less likely to report worrying not at all (7% vs. 41%). Partisan differences in responses to climate change are similar. The percentage worried a great deal about climate change is 37 points greater among self-identified Democrats than Republicans (54% vs. 17%), while Democrats are 30 points less likely not to worry at all (4% vs. 34%).

The comparable levels of partisan divergence for both terms are even clearer when one focuses on the percentages of respondents worried either a great deal **or** a fair amount. For global warming, Democrats are 47 points more likely to worry than are Republicans (83% vs. 36%), while for climate change they are 44 points more likely to worry (83% vs. 39%).

Independents fall in between on all comparisons, but are consistently closer to Republicans in their responses to both terms.

Worry About Global Warming vs. Climate Change -- by Party ID

March 6-9, 2014

	Republicans	Independents	Democrats
Number of respondents	293	435	295
	%	%	%
GLOBAL WARMING			
A great deal	16	30	56
A fair amount	20	19	27
Only a little	23	23	11
Not at all	41	28	7
CLIMATE CHANGE			
A great deal	17	32	54
A fair amount	22	24	29
Only a little	27	19	14
Not at all	34	25	4
TOTAL WORRIED A GREAT DEAL/ FAIR AMOUNT			
Global warming	36	49	83
Climate change	39	56	83

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The patterns by political ideology are similar to those seen by partisan identification. For global warming, 53% of self-identified liberals worry a great deal, 34 points higher than the 19% among conservatives. There is a corresponding 34-point gap in those not worrying at all: 42% of conservatives vs. 8% of liberals. The ideological cleavage is similar for climate change, with 50% of liberals vs. 19% of conservatives worrying a great deal, a 31-point difference. Conversely, only 7% of liberals worry not at all, compared with 39% of conservatives, a 32-point difference.

When a great deal **and** fair amount of worry are combined, a somewhat larger (but not statistically significant) difference emerges, as liberals are 42 points more likely than conservatives to worry about global warming (79% vs. 37%) and 36 points more likely (78% vs. 42%) to worry about climate change.

Moderates consistently fall in between the other two groups on both wordings, but overall are closer to liberals in their levels of worry about climate change.

Worry About Global Warming vs. Climate Change -- by Political Ideology

March 6-9, 2014

	Conservatives	Moderates	Liberals
Number of respondents	401	361	247
	%	%	%
GLOBAL WARMING			
A great deal	19	35	53
A fair amount	18	23	26
Only a little	21	22	13
Not at all	42	20	8
CLIMATE CHANGE			
A great deal	19	38	50
A fair amount	23	26	28
Only a little	19	23	14
Not at all	39	12	7
TOTAL WORRIED A GREAT DEAL/ FAIR AMOUNT			
Global warming	37	58	79
Climate change	42	64	78

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In sum, while there are slight differences in the degree of partisan and ideological divergence in responses to global warming versus climate change, they are not statistically significant, and modest compared with the huge gaps in views of both terms held by Americans at the two ends of the political spectrum. For both terms, Republicans and conservatives are much more likely to report limited levels of worry than are Democrats and liberals.

To further probe the public's similar reaction to the two terms found in this year's Environment poll conducted in March, a new item employing a split-sample method to experimentally investigate potential differences in reaction to global warming and climate change was included in Gallup's Daily tracking poll during mid-April. Respondents were randomly assigned to two groups, roughly equal in size. One half-sample was asked the question using the term global warming, and the other using the term climate change.

Once again, the results reveal a similar reaction to both terms, although in this case global warming elicits a slightly higher level of concern (but the difference is not statistically significant) from the American public. Fifteen percent see global warming as "a crisis," 36% as "a major problem that will become a crisis if it is not adequately addressed," 16% as "a problem, but not likely to become a crisis," and 28% say it is "not a real problem." The comparable figures for climate change are 13%, 35%, 17%, and 32%, respectively.

Perceived Seriousness of Global Warming vs. Climate Change

Turning now to the environment, in your view, is the issue of [global warming/climate change] -- a crisis, a major problem that will become a crisis if it is not adequately addressed, a problem, but not likely to become a crisis, or not a real problem?

	Crisis	Major problem	Problem	Not a problem	No opinion
	%	%	%	%	%
Global warming (Form A)	15	36	16	28	4
Climate change (Form B)	13	35	17	32	4

April 10-15, 2014

Form A asked of 1,564 U.S. adults, aged 18 and older

Form B asked of 1,478 U.S. adults, aged 18 and older

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Again, the interesting question is whether there are differences in responses to the two terms across the partisan and ideological spectrums. In general, the results are fairly consistent with those from the Environment poll, although the percentage differences are more muted when one compares responses to the two extreme categories ("a crisis" and "not a real problem") because relatively small portions of the public fall into those categories.

First, in terms of partisan differences, Democrats are 16 percentage points more likely than Republicans to view global warming as a crisis (24%, vs. 8% of Republicans), and 32 points less likely to see it as not a real problem (15% vs. 47%). For climate change, Democrats are 13 points more likely than Republicans to see it as a crisis (18% vs. 5%) and 28 points less likely to see it as not a real problem (20% vs. 48%).

When the two categories reflecting concern are combined (a crisis **and** a major problem that could become a crisis), partisan differences are more obvious for both terms: Democrats are 40 points more likely than Republicans to see global warming as highly problematic (71% vs. 31%) and 37 points more likely to see climate change in the same fashion (65% vs. 28%).

Interestingly, while Republicans' responses to both terms are similar (31% viewing global warming as highly problematic and 28% seeing climate change the same way), Democrats are somewhat more likely to view global warming than climate change as highly problematic (71% vs. 65%). The latter difference approaches statistical significance.

Independents consistently fall between the party identifiers, and overall near the midpoint between Republicans and Democrats.

Perceived Seriousness of Global Warming vs. Climate Change -- by Party ID

Turning now to the environment, in your view, is the issue of [global warming/climate change] -- a crisis, a major problem that will become a crisis if it is not adequately addressed, a problem, but not likely to become a crisis, or not a real problem?

	Republicans	Independents	Democrats
	%	%	%
GLOBAL WARMING (Form A)			
A crisis	8	15	24
A major problem -- could become a crisis	23	35	47
A problem -- not likely to become a crisis	19	19	12
Not a real problem	47	27	15
CLIMATE CHANGE (Form B)			
A crisis	5	13	18
A major problem -- could become a crisis	23	34	47
A problem -- not likely to become a crisis	22	18	12
Not a real problem	48	32	20
TOTAL CRISIS/MAJOR PROBLEM			
Global warming	31	50	71
Climate change	28	47	65

April 10-15, 2014

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Similar patterns emerge for political ideology. Liberals are 22 points more likely than conservatives to see global warming as a crisis (29% vs. 7%). Conversely, 49% of conservatives see global warming as not a problem, compared with 13% of liberals, for a difference of 36 points. For climate change, liberals are 19 points more likely than conservatives (25% vs. 6%) to see it as a crisis, and 35 points less likely than conservatives (14% vs. 49%) to see it as not a problem.

When the categories of crisis **and** major problem are combined, liberals are 42 points more likely than conservatives to see global warming as highly problematic (73% vs. 31%) and 44 points more likely to view climate change in the same fashion (73% vs. 29%).

While the views of moderates fall between those of the other groups in all cases, they lie closer to liberals for a majority of the responses. Especially notable are the relatively low percentages of both moderates and liberals who see either global warming or climate change as not being a real problem.

Perceived Seriousness of Global Warming vs. Climate Change -- by Political Ideology

Turning now to the environment, in your view, is the issue of [global warming/climate change] -- a crisis, a major problem that will become a crisis if it is not adequately addressed, a problem, but not likely to become a crisis, or not a real problem?

	Conservatives	Moderates	Liberals
	%	%	%
GLOBAL WARMING (Form A)			
A crisis	7	15	29
A major problem -- could become a crisis	24	44	44
A problem -- not likely to become a crisis	15	19	12
Not a real problem	49	20	13
CLIMATE CHANGE (Form B)			
A crisis	6	13	25
A major problem -- could become a crisis	23	42	48
A problem -- not likely to become a crisis	19	19	9
Not a real problem	49	24	14
TOTAL CRISIS/MAJOR PROBLEM			
Global warming	31	59	73
Climate change	29	55	73

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Compared with studies suggesting that Republicans (and, by extension, conservatives) are more likely to express skeptical views about global warming than about climate change, data from the split-sample experiment show that Democrats and liberals are somewhat more likely to view global warming as more problematic than climate change. Thus, 24% of Democrats view global warming as a crisis, compared with 18% seeing climate change in the same light, a six-point difference verging on statistical significance. For ideology, 29% of liberals view global warming as a crisis compared to 25% for climate change, a four-point difference.

These results suggest that those who argue that campaigns to promote action to reduce greenhouse gas emissions should employ the term climate change rather than global warming may be mistaken. The two sets of Gallup data indicate that Republicans and conservatives are currently reacting to the two terms in a relatively similar manner, but the experimental data suggest that Democrats and, to a lesser degree, liberals express more concern over global warming.

But the big picture is that the Gallup Daily tracking and Environment poll data indicate that both terms have become politically polarized. Consequently, the trend toward increasing use of the term climate change over global warming by the scientific community is unlikely to lower the current high level of political divergence in reaction to the findings of climate science.

*Source: U.S. Environmental Protection Agency: <http://www.epa.gov/climatechange/basics/>

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