

**Frequent Viewers of Fox News Are Less Likely to Accept  
Scientists' Views of Global Warming**

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## **Frequent Viewers of Fox News Are Less Likely to Accept Scientists' Views of Global Warming**

On December 8, 2009, Fox News Washington managing editor Bill Sammon sent an email to the network's reporters instructing them always to follow reports of worldwide temperature changes with a note that theories about planetary warming "are based upon data that critics have called into question." (MediaMatters for America, 2010; <http://mediamatters.org/blog/201012150004>).

Previous content monitoring of Fox News by MediaMatters for America has identified a regular flow of skeptical comments about climate change. ([http://mediamatters.org/search/tag/environment\\_and\\_science](http://mediamatters.org/search/tag/environment_and_science)).

This report explores whether the flow of doubt-arousing messaging might have persuaded Americans who watch Fox News to reject the views espoused by many mainstream natural scientists on the issue.

To find out, we analyzed data from a Random Digit Dial telephone survey of a nationally representative sample of American adults conducted by Abt SRBI between Nov. 1 and Nov. 14, 2010. A total of 1,001 interviews were conducted, 671 respondents on landlines and 330 on cell phones.

The survey included a series of questions that can be viewed as tapping acceptance of the viewpoint of many mainstream natural scientists about global warming, including:

- Whether the earth's temperature has been rising gradually during the last 100 years
- Whether any temperature increase is due to things people have done
- Whether a 5 degree Fahrenheit rise in world temperature during the next 75 years would be good, bad, or neither good nor bad
- How serious of a problem global warming will be for the U.S. in the future if nothing is done to stop it.

In addition, the survey asked about two possible undesirable effects of efforts to ameliorate global warming.

- Whether addressing global warming would increase unemployment in the U.S.
- Whether addressing global warming would hurt the U.S. economy

Lastly, the survey asked respondents about how much they trust the things that scientists say about the environment.

We explored whether people who were more frequently exposed to Fox News were more likely to say the earth's temperature has not been rising, to say that any temperature increase is not due to human activities, that a 5 degree increase in world temperature would not be bad, and that global warming will not be a serious problem for the world. We also looked at whether more frequent exposure to Fox News was associated with a greater probability of believing that efforts to ameliorate global warming will have undesirable economic consequences. And we explored whether people who were exposed more often to Fox News were less likely to express trust in scientists.

The survey question wordings and codings of the variables used are listed in the Appendix.

### **Analytic Methods**

To gauge the relation of exposure to Fox News on attitudes and beliefs, we conducted ordinary least squares (OLS) regressions predicting a series of outcome measures using the number of days in the last month that the respondent watched Fox News.<sup>1</sup> These analyses were done using weights to account for the complex survey design.

Respondents who said "Don't know" or declined to report the number of days watching Fox News were not used in the regression analysis, so the N for this analysis was 890.

### **Results**

About two-thirds of Americans reported watching Fox News between 0 and 15 days during the last 30 days, including 38% of people who had no exposure to Fox News. About one-third of Americans were frequent Fox viewers, including 15% of the population who watched Fox News every day.

As shown in Table 1, more exposure to Fox News was associated with more rejection of many mainstream scientists' claims about global warming, with less trust in scientists, and with more belief that ameliorating global warming would hurt the U.S. economy. This is evidenced by the statistically significant and negative coefficients from the first five regressions and positive, significant coefficients from the last two. The coefficients estimate the number of percentage points change in endorsement of each attitude and belief that results from an additional day of Fox News viewing.

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<sup>1</sup> Logistic regression produced results nearly identical to those reported here.

Table 1: Regressions Using Days of Fox News Exposure to Predict Beliefs and Attitudes

Outcome measure	Coefficient
The earth's temperature has been rising	-0.27 **
The temperature increase is due to things people do	-0.81 ***
A 5 degree rise over 75 years would be bad	-0.88 ***
Global warming will be a serious problem for the U.S.	-0.82 ***
Trust what scientists say about the environment	-1.05 ***
Addressing global warming would increase unemployment in the U.S.	0.48 ***
Addressing global warming would hurt the U.S. economy	0.93 ***

*Note:* Each row represents a separate regression.

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

To generate Figure 1, we used (1) the observed percent of people who did not watch Fox News at all who gave a particular answer to the outcome measure, and (2) the coefficient from the regression in Table 1 predicting that outcome measure to generate percentages of people holding that opinion at each level of exposure to Fox News (between 1 and 30 days).<sup>2</sup> The percentages displayed in Figure 1 are close to the actual percentages of respondents at each level of exposure who gave each answer.

Figure 1 shows how more exposure to Fox News was associated with less endorsement of the views of mainstream scientists about global warming.

For example, among Americans who watched no Fox News, 82% believed that the Earth's temperature has been rising, and 85% of them believed that any temperature increase is caused mostly by things people do or about equally by things people do and natural causes. Among the most frequent viewers of Fox News, 63% believed that the Earth's temperature has been rising, and 60% of the most frequent Fox News viewers believed that the temperature increase is caused mostly by things people do or about equally by things people do and natural causes.

It is interesting to note that even among the heaviest Fox News viewers, about 50% or more endorsed the views of mainstream scientists. In no instance do we see a sizable majority of

<sup>2</sup> Exploration of the shapes of these relations revealed that they were approximately linear.

Fox News viewers disagreeing with most mainstream scientists or expressing little trust in scientists.

More frequent viewers of Fox News were more likely to believe that addressing global warming would have deleterious impact on the economy: 13% of respondents who did not watch Fox News said addressing global warming would hurt the U.S. economy, and this number increased to 27% among people who watched Fox News every day. Likewise, about 14% of Americans who did not watch Fox News said addressing global warming would increase unemployment in the United States, and this number increased to 42% among people who watched Fox News everyday.

Again, even among the heaviest Fox News viewers, a majority of respondents said they thought addressing global warming would not harm the economy.

One possible interpretation of the above evidence is that more exposure to television news causes skepticism about global warming and environmental scientists. To explore this possibility, we assessed the relation of exposure to other non-Fox News television programs and the outcome measures examined above.

We did so using the same methodology and obtained the regression coefficients in Table 2. Frequency of exposure to non-Fox News was computed by subtracting the total number of days of exposure to Fox News from the total number of days of exposure to all types of TV news.

Table 2: Regressions Using Days of Non-Fox News Exposure to Predict Beliefs and Attitudes

Outcome measures	Coefficient
The earth's temperature has been rising	0.63 ***
The temperature increase is due to things people do	0.85 ***
A 5 degree rise over 75 years would be bad	0.74 ***
Global warming will be a serious problem for the U.S.	0.87 ***
Trust what scientists say about the environment	0.91 ***
Addressing global warming would increase unemployment in the U.S.	-0.58 ***
Addressing global warming would hurt the U.S. economy	-0.72 ***

*Note:* Each row represents a separate regression.

\*\*\*:  $p < .01$ .

As shown in Table 2, all coefficients are of the opposite sign of the corresponding coefficients in Table 1, and all are statistically significant. This means that more exposure to non-Fox News sources is associated with more endorsement of the views of many mainstream scientists on global warming, more trust in scientists, and less endorsement of the notion that ameliorating global warming will have undesirable economic impact.

Figure 2, which was generated using the same methods as were used to generate Figure 1, reinforce these same conclusions and illustrate the magnitudes of the relations.

Among Americans who had no exposure to non-Fox News television news, 62% believed that the Earth's temperature has been rising, and 60% believed that the temperature increase is caused mostly by things people do or about equally by things people do and natural causes. Among the most frequent viewers of non-Fox News, 81% believed that the Earth's temperature has been rising, and 86% of them believed that the temperature increase is caused mostly by things people do or about equally by things people do and natural causes.

Even among the least exposed to media other than Fox News, about 50% or more endorsed the views of mainstream scientists.

More frequent viewers of non-Fox News were less likely to believe that addressing global warming would have detrimental effects on the economy: 17% of respondents who had daily exposure to non-Fox News television news said addressing global warming would hurt the U.S. economy, and this number increased to 39% among people without any exposure to non-Fox News television news. Likewise, about 10% of Americans who were daily viewers of non-Fox News television news said addressing global warming would increase unemployment in the United States, and this number increased to 27% among people with no exposure to non-Fox News television news.

Even among the least exposed to non-Fox News, majorities of respondents said they thought addressing global warming would not harm the economy.

## Conclusions

It is impossible to discern from these results what causal processes produced the observed relations. One possibility is that exposure to frequent skeptical messages about global warming on Fox News caused viewers to adopt those opinions. A second possibility is that viewers who hold those opinions *a priori* choose to watch Fox News, because it frequently expresses views that agree with their own.

This latter effect is known in social psychology as a tendency toward "selective exposure" to congenial information. Some past research has shown that people who identify themselves as Republicans and political conservatives are especially likely to manifest such

selective exposure (see, e.g., Iyengar, S., Hahn, K. S., Krosnick, J. A., & Walker, J. (2008). Selective exposure to campaign communication: The role of anticipated agreement and issue public membership. *Journal of Politics*, *70*, 186-200).

Other research has shown that exposure to skeptical views about global warming can be effective at changing the opinions of viewers (see, e.g., <http://woods.stanford.edu/research/global-warming-skeptics.html>). We therefore suspect that the relations documented in Figure 1 are likely to result from a combination of persuasion by Fox News coverage and of selective exposure by Republicans and conservative viewers to Fox News.

Likewise, the relations observed between exposure to non-Fox news and the outcomes measures examined here may be the result of both persuasion and selective exposure (for evidence of the impact of the sorts of mainstream scientists who are frequently covered on non-Fox news television programs, see <http://woods.stanford.edu/research/global-warming-skeptics.html>).

We look forward to future studies exploring these issues.

### **Additional Information**

Additional research on climate, energy and public opinion is available on the Woods Institute website at: <http://woods.stanford.edu/research/surveys.html>

### Appendix: Survey Questions and Coding

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 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
A 5 degree rise over 75 years would be bad.	Scientists use the term "global warming" to refer to the idea that the world's average temperature may be about five degrees Fahrenheit higher in 75 years than it is now. Overall, would you say that if the world's average temperature is five degrees Fahrenheit higher in 75 years than it is now, would that be good, bad, or neither good nor bad?  Good Bad Neither good nor bad	1 if "Bad"  0 if "Good", or "Neither good nor bad", or Don't Know or Refused
Global warming will be a serious problem for the U.S.	[Added "Assuming it's happening" among those who were coded 0 in "The Earth's temperature has been rising,] if nothing is done to reduce global warming in the future, how serious of a problem do you think it would be for THE UNITED STATES – very serious, somewhat serious, not so serious or not serious at all?  Very serious Somewhat serious Not so serious Not serious at all	1 if "Very serious" or "Somewhat serious";  0 if "Not so serious", or Not serious at all", or Don't Know or Refused
Trust what scientists say about the environment.	How much do you trust the things that scientists say about the environment - completely, a lot, a moderate amount, a little	1 if "Completely" or "A lot", or "A moderate amount";



	<p>or not at all?</p> <p>Completely A lot A moderate amount A little Not at all</p>	<p>0 if "A little" or "Not at all", or Don't Know or Refused</p>
<p>Addressing global warming would increase unemployment in the U.S.</p>	<p>Do you think that the United States doing things to reduce global warming in the future would cause there to be more jobs for people around the country, would cause there to be fewer jobs, or wouldn't affect the number of jobs for people around the country?</p> <p>More jobs Fewer jobs Would not affect</p>	<p>1 if "Fewer jobs";</p> <p>0 if "More jobs", or "Would not affect", or Don't Know or Refused</p>
<p>Addressing global warming would hurt the U.S. economy.</p>	<p>A random quarter of the sample was asked each of the following four questions.</p> <p>A. Do you think that the United States doing things to reduce global warming in the future would hurt the U.S. economy, would help the economy, or would have no effect on the U.S. economy?</p> <p>Hurt U.S. economy Help U.S. economy Would not affect</p> <p>B. Do you think that the United States doing things to reduce global warming in the future would help the U.S. economy, would hurt the economy, or would have no effect on the U.S. economy?</p> <p>Help U.S. economy Hurt U.S. economy Would not affect</p> <p>C. Do you believe that new environmental and energy laws designed to reduce global warming will ...</p> <p>Definitely hurt the economy Probably hurt the economy Have no effect either way on the economy Probably help the economy or Definitely help the economy</p>	<p>1 if "Hurt U.S. economy" in questions A or B, "Definitely hurt the economy", or "Probably hurt the economy" in questions C or D.</p> <p>0 if "Help U.S. economy", or "Would not affect", or Don't Know or Refused in questions A or B; "Definitely help the economy", or "Probably help the economy", or "Have no effect either way on the economy", or Don't know or Refused in questions C and D.</p>

	<p>D. Do you believe that new environmental and energy laws designed to reduce global warming will ...</p> <p>Definitely help the economy Probably help the economy (or) Have no effect either way on the economy Probably hurt the economy Definitely hurt the economy</p>	
Days watching TV news.	<p>During the last 30 days, on about how many days did you watch a news program on television?</p> <p>_____ days (range 0-30)</p>	Number as respondent reported
Days watching Fox News.	<p>[Asked if days of watching TV news is not zero] During the last 30 days, on about how many days did you watch Fox News on television?</p> <p>_____ days (range 0-30)</p>	Number respondent reported, and "0" for people who said they did not watch TV news at all during the 30 days.

Figure 1: Frequent Viewers of Fox News are Less Likely to Accept Scientists' Views of Global Warming

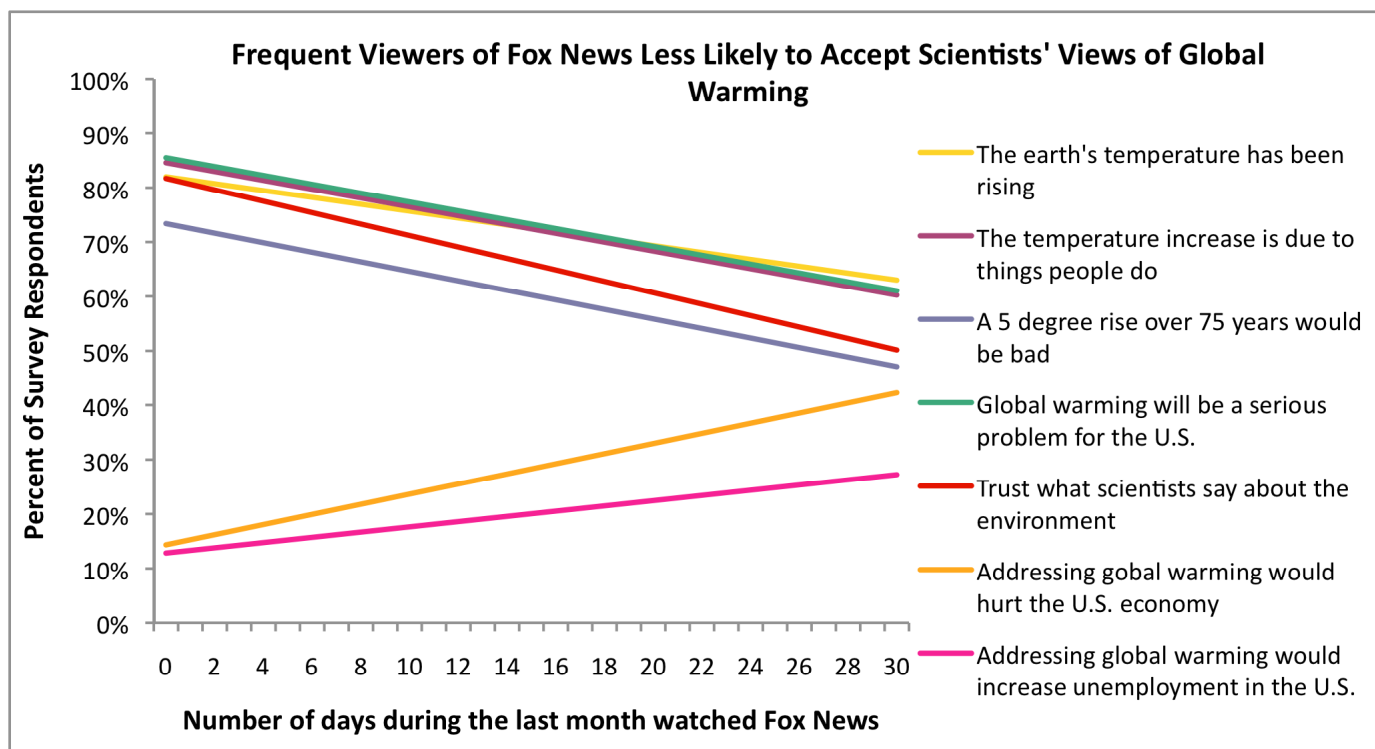


Figure 2: Frequent Viewers of Non-Fox News Are More Likely to Accept Scientists' Views of Global Warming

