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Fox and Not-Fox Television News Impact on Opinions on Global Warming *Selective Exposure, Not Motivated Reasoning*

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The influence of the mass media on political beliefs and attitudes has been of interest to scholars for many years, spurred seven decades ago by radio broadcasts reaching mass audiences for the first time. Half a century ago, landmark publications proclaimed that the news media have “minimal effects” (Hovland, Lumsdaine, & Sheffield, 1949; Klapper, 1960), and this conclusion has been supported by much work since then (Bennett & Iyengar, 2008).

One possible explanation for minimal effects in real world settings is that people’s opinions are solidly grounded and highly resistant to change. Another possible explanation is that people rarely pay enough attention to news content in order to be influenced by it. But a third possibility is that exposure to different media sources might cause opinion changes in opposite directions that cancel out in the aggregate. Specifically, people may choose to expose themselves to media with which they generally agree (“selective exposure”) and may be especially influenced by messages that align with their more general political orientations, a process that could appropriately be called “motivated reasoning.” “Minimal effects” documented in past research may therefore be an illusion, attributable to the failure to account for the varying content of news coverage and variation across people in their media exposure diets and acceptance proclivities (Zaller, 1996).



We tested these hypotheses with regard to global warming, using two national probability-sample surveys of American adults. Specifically, we explored (1) whether “minimal effects” are observed when lumping all news media exposure together, (2) whether differentiating Fox News from not-Fox news exposure yields evidence of attitude change in opposite directions and canceling out in the aggregate, (3) whether there is a dose–response relation between exposure and opinions, (4) whether Republicans were more likely to acquire information from Fox News, whereas Democrats were more likely to acquire information from other television news sources, and (5) whether motivated reasoning is observed, whereby Republicans were more persuaded by Fox News and Democrats were more persuaded by not-Fox television news.

We begin below by reviewing theoretical frameworks and past studies relevant to the hypotheses we tested. We report a content analysis demonstrating that the issue of global warming offers a suitable context for such testing, because Fox News coverage of the issue has differed notably from coverage by other mainstream television news organizations. We then describe our methods and results and conclude by outlining the implications of the findings for the political psychology of news media persuasion, as well as for public debate about global warming.

MINIMAL EFFECTS

The “minimal effects” conclusion was articulated in canonical form by Klapper (1960), who proclaimed that broadcast news exerted no direct persuasive effect on public opinion. Instead, he said, media exposure reinforced preexisting opinions, so television news might be politically consequential to the extent that it preserves divisions between people rather than creating pathways toward compromise and cooperation. In the 1970s and 1980s, scholars turned their attention from more testing of the “minimal effects” hypothesis and focused on more subtle effects, including agenda setting (whereby media attention to an issue makes it seem more important to people), priming (whereby media attention to an issue causes it to have more impact on evaluations of the president and other political actors), and framing (whereby thematic emphasis in the presentation of an issue changes how people think about it; Iyengar & Kinder, 1987; Iyengar, Peters, & Kinder, 1982; Kinder & Sears, 1985).

However, since the 1990s, theoretical advances and new empirical evidence have challenged the “minimal effects” thesis by demonstrating that the media sometimes influenced public opinion powerfully, but the detection of the effects was only possible under particular conditions (Bartels, 1993; Zaller, 1992, 1996). The key innovation of these studies was to recognize and model the effects of multiple competing messages to which people have been exposed. The news media often carry contradictory messages, most obviously during election campaigns and when controversial issues are hotly debated. Zaller (1996) demonstrated strong media effects among people who were exposed exclusively to messages from one candidate (for a related argument, see Chapter 16,

this volume). Other studies found evidence of similarly large media effects by exploring cross-media variation or temporal variation in the intensity or salience of message dissemination (Dalton, Beck, & Huckfeldt, 1998; Johnston, Hagen, & Jamieson, 2004; Zaller, 1992, 1996).

Very recent changes in the news media environment ushered in a new era in which the “minimal effects” notion may no longer apply. Bennett and Iyengar (2008) suggested that technological advances in the information ecology have enabled and enhanced the propensity for self-selection into exposure to particular news media messages. If now more than ever, people are able to choose which streams of news coverage to digest, then such exposure may reinforce people’s existing preferences and attitudes, yielding little or no opinion change at the individual level and perhaps even inhibiting opinion change. But other scholars have challenged such claims, arguing that influence is still possible if not likely in today’s new media environment (Holbert, Garrett, & Gleason, 2010).

In the new era of greater competition among information sources, many of which are not regulated by the federal government the way on-air television news once was, media outlets may be incentivized to stray from some of the core tenets of good journalism in order to gain market share. One such tenet is the notion of balance: according attention to all sides of a dispute. The neutrality conveyed by such balance also has contributed to relatively little media-induced opinion change years ago. Hovland, Lumsdaine, and Sheffield (1949) found that following a persuasive message with a counter-argument muted the impact of the initial message. So news stories saying “On the one hand ... On the other hand ...” might have attenuated any impact that the initially offered viewpoint might have had if presented without the counter-argument (see also Crowley & Hoyer, 1994; Eisend, 2007; Pechmann, 1992). If news coverage has shifted more toward one-sided stories that do not accord attention to dissenting viewpoints, this, too, might have enhanced the potential for media-induced opinion change in recent years.

MOTIVATED REASONING

Motivated reasoning is the notion that people’s processing of incoming information is directed by their motivations and goals to preserve or advance particular viewpoints. Motivated reasoning can be manifested in the form of the implementation of specific strategies when using information to form and update beliefs and attitudes (see Chapter 3, this volume). Kunda (1990) proposed that reasoning can be driven by accuracy goals (which would not be what we refer to as motivated reasoning), and that reasoning can be driven by directional goals, the process we call “motivated reasoning.”¹ When motivated by accuracy goals, people want to maintain a correct belief about a given issue, and are likely to consider both confirming and disconfirming information. When motivated by directional goals, people want to maintain a desired conclusion and focus their information processing in ways that do so. Thus, to the extent that directional

goals are at work, we might expect to see the most persuasion by a message among people who are predisposed to agree with it or its implications. Much research in the area of political cognition reinforces this expectation (Lodge & Taber, 2000, 2005; Redlawsk, 2002; Rudolph, 2006; Taber & Lodge, 2006).

FOX NEWS AND NOT-FOX TELEVISION NEWS

One opportunity to study motivated reasoning in the context of political news coverage is afforded by Fox News, a network widely thought to provide content biased in a conservative direction when compared with what we call mainstream, “not-Fox” news sources, such as ABC, CBS, NBC, CNN, and MSNBC (Chan-Olmsted, 2007; Conway, Grabe, & Grieves, 2007; Groseclose & Milyo, 2005; Morris, 2005, 2007). Since West (2001) described the heterogenous news environment in which media coverage of the same issue or event often differs substantially across sources, differences between Fox News and not-Fox news have been documented on various political matters, ranging from the Iraq War to U.S. presidential campaigns (Aday, Livingston, & Hebert, 2005).

As on many other issues, Fox News has distinguished itself from other news outlets in its coverage of global warming. Many mainstream news media have portrayed global warming in a way that is consistent with the views of many natural scientists: that it has been happening, has been caused by humans, and poses a threat to current and future populations on earth (Boykoff, 2007; Boykoff & Boykoff, 2004). However, some news outlets accorded time to those views while also devoting time and ascribing credibility to skeptics who expressed views opposite to those of many mainstream scientists (Antilla, 2005; Boykoff & Boykoff, 2004; Boykoff & Roberts, 2007; Jacques, Dunlap, & Freeman, 2008; McCright & Dunlap, 2003; Pawa & Krass, 2006; Zehr, 2000). Some past studies suggest that Fox News and not-Fox news differed in this way in their coverage of global warming. Hart (2008) found that between 1998 and 2014, Fox News stories were notably more skeptical than CNN’s. Likewise, Feldman et al. (2011) found that in 2007 and 2008, Fox News took a more dismissive tone toward global warming than did CNN or MSNBC.

To supplement these investigations, we conducted a content analysis of all television news coverage of global warming between 2001 and 2010 on Fox News and ABC (the latter being treated as a representative example of mainstream news outlets; for evidence of homogeneity of news coverage across mainstream outlets, see Baumgartner & Jones, 1993; Trumbo, 1995). For each network, we focused on their flagship evening news program: *Special Report with Brit Hume* and *Special Report with Bret Baier* on Fox News, and *ABC World News*.

Multiple independent coders who were blind to the issues being investigated in this research read all these news stories and evaluated all quotes in the stories of people we called “external sources,” who were not the news personnel themselves. The coders determined the presence of external quotes expressing a “green” viewpoint or a “not-green” viewpoint. Green viewpoints include:

global warming has been happening; human activity has caused warming; global warming has or will have effects on the environment that will be bad for people; ameliorative actions about global warming should be taken. Not-green viewpoints include: global warming has not been happening; human activities have not caused warming; global warming has not or will not have effects on the environment that will be bad for people; no ameliorative actions about global warming should be taken (descriptions of various aspects of the methodology of the study described here are provided in online appendices located at this address: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>).

According to this content analysis, ABC News and Fox News aired about the same total number of stories about global warming, 111 and 105, respectively. A majority of these stories cited an individual or organization expressing a “green” viewpoint on global warming: 69% by ABC News and 86% by Fox News. But skepticism was more common on Fox than ABC: 33% of stories on Fox contained a “not-green” viewpoint, in contrast to 5% on ABC. This may be a lower bound characterization of Fox News content of global warming, because opinion shows broadcast at other times on Fox tend to endorse more conservative viewpoints, which are often skeptical about global warming (Hart, 2003).

Republicans and conservatives tend to prefer Fox News over not-Fox news, and Democrats and liberals tend to manifest a reverse preference (Coe et al., 2008; Iyengar & Hahn, 2009; Stroud, 2008). Furthermore, Republican leaders have expressed skepticism about global warming more often than have Democratic leaders in recent years (e.g., Rosenthal, 2011). And in the American public, Republicans are more likely than Democrats to express skepticism (McCright & Dunlap, 2011). Therefore, we might imagine that Republicans might be more open to being influenced by Fox News stories on global warming than might Democrats, and Democrats might be more open to being influenced by mainstream news stories on global warming than might Republicans. If this is true, the skepticism-infused coverage of global warming on Fox News and the greener coverage of the issue on mainstream media outlets might be an important driver of the growing division between Republicans and Democrats on the issue of global warming during recent decades (Kahan et al., 2012; McCright & Dunlap, 2011).

PAST STUDIES

Some research suggests that Fox and not-Fox news influenced political attitudes in opposite directions. For example, DellaVigna and Kaplan (2007) exploited the geographical variation in the introduction of Fox News across cable systems to measure the effects of the channel’s news coverage on voter turnout and on the Republican Party’s vote share in presidential elections and Senate races. According to their analysis, Fox News exposure caused about one-half of one percentage point shift toward George W. Bush in the 2000 presidential election.

NEW EXPLORATIONS OF THESE ISSUES

Zaller (1996) suggested that failure to detect persuasive effects of mass media during the past few decades is mostly attributable to methodological shortcomings of the investigations. He set forth the empirical conditions under which sizable media effects can be detected: good measurement of individual-level variation in reception of communication from the mass media, and substantial variance in the content of the mass communication to which individuals are exposed. Having established the latter with our content analysis, we set out to accomplish the former by eliciting numeric measurements of media consumption from survey respondents that allowed assessment of a dose–response relation: days in the past 30 days people viewed Fox News and viewed not-Fox television news.

Using such measures, we conducted two studies exploring (1) whether “minimal effects” are observed when lumping all news media exposure together, (2) whether differentiating Fox News from not-Fox news yields evidence of opinion change in opposite directions, cancelling out in the aggregate, (3) whether a dose–response relation appears between exposure and opinions, (4) whether Republicans manifest a preference for Fox News, whereas Democrats manifest a preference for not-Fox News, and (5) whether motivated reasoning is observed: more persuasion of Republicans than Democrats and Independents by Fox News, and more persuasion of Democrats than Republicans and Independents by not-Fox news.

In Study 1, we tested for a dose–response relation of global warming opinions with total television news consumption to explore whether we replicate the expected minimal effect, and then we explored the relations of global warming opinions with days of Fox News exposure and days of television news exposure on which a person did not watch Fox News. This measurement approach counts days on which both Fox news exposure and not-Fox television news exposure occurred as Fox News days, so those days did not increase the count of not-Fox News days for a person. Study 2 measured exposure differently to avoid ignoring exposure to not-Fox News on days when Fox News exposure occurred.

INITIAL INVESTIGATION

The first dataset we analyzed was collected via a random digit dial telephone survey of 1,001 American adults age 18 or older on November 1–14, 2010. Respondents reported the number of days they watched television news during the last 30 days, and the number of days on which they watched Fox News during that time period. Respondents also reported five so-called “fundamental” opinions about global warming: has global warming been occurring, has global warming been caused by human activity, would 5 degrees Fahrenheit of global warming over the next 75 years be bad, will global warming be a serious problem for the nation if nothing is done to address it, and will global warming be a serious problem for the world if nothing is done to address it (which we refer to as: existence, cause, bad, national seriousness, and global seriousness,

respectively). Respondents also reported their attitudes toward government effort to attenuate global warming in general (gauged by the amount of government action desired to address global warming and support for government effort to limit greenhouse gas emissions by businesses), attitudes toward 11 specific government policies that might attenuate global warming: a national cap and trade program, tax incentives for renewable energy production, carbon storage and sequestration, building nuclear power plants, consumption taxes on electricity and gasoline, and using regulations or tax incentives to reduce greenhouse gases emissions by power plants, to tighten CAFE standards, the manufacturing of electric vehicles, and energy efficiency in appliances and buildings), and trust in the statements that scientists make about the environment.

All four index measures were coded to range from 0 to 1, with larger values indicating more endorsement of fundamental beliefs, more support for government action in general, more support for specific policies, and more trust in scientists (descriptions of various aspects of the methodology of the study described here are provided in online appendices located at this address: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>).

Consistent with the minimal effects perspective, total days of television news exposure was not associated with any of the global warming fundamental beliefs ($b = -0.01, n.s.$; $b = -0.01, n.s.$; $b = 0.00, n.s.$; $b = 0.00, n.s.$; $b = 0.00, n.s.$; for existence, cause, bad, national, and global seriousness, respectively), attitude toward government action ($b = -0.00, n.s.$), attitudes toward specific policies ($b = 0.00, n.s.$), and trust in scientists ($b = 0.01, n.s.$; see the top row of Table 5.1 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>).

Separating Fox News exposure from not-Fox news exposure yielded very different results: parameters suggesting the possibility of plenty of media-induced opinion change. More Fox News exposure was associated with more skepticism about global warming (see the middle row in Table 5.1 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). Specifically, days of viewing Fox News were significantly negatively associated with each of the global warming fundamental beliefs ($b = -0.05, p < 0.01$; $b = -0.06, p < 0.01$; $b = -0.02, p = 0.03$; $b = -0.04, p < 0.01$; $b = -0.04, p < 0.01$; for existence, cause, bad, national seriousness, and global seriousness, respectively), attitude toward government action ($b = -0.05, p < 0.01$), attitudes toward specific policies ($b = -0.03, p < 0.01$), and trust in scientists ($b = -0.05, p < 0.01$). Likewise, days of watching not-Fox news were significantly positively associated with each of the global warming fundamental beliefs ($b = 0.04, p < 0.01$; $b = 0.08, p < 0.01$; $b = 0.02, p = 0.02$; $b = 0.05, p < 0.01$; $b = 0.05, p < 0.01$; for existence, cause, bad, national seriousness, and global seriousness, respectively), attitude toward government action ($b = 0.05, p < 0.01$) and attitudes toward specific policies ($b = 0.03, p < 0.01$), and trust in scientists ($b = 0.06, p < 0.01$; see the bottom row in Table 5.1 of online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>).

Consumption of Fox News and not-Fox television news only were weakly negatively correlated with one another, $r = -0.26$. In fact, a considerable number of people had non-trivial exposure to both Fox News and not-Fox News

television news only (see Table 5.2 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). 10% of respondents did not watch any television news programs, 27% watched only Fox News, 34% watched only not-Fox television news, and about one-third watched both Fox News and not-Fox television news programs.

As expected, Republicans watched significantly more Fox News than did Independents, and Democrats watched significantly less Fox News than did Independents (see Table 5.3 in online Appendix D, which displays full regression results. The online appendices are located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). Fox News exposure was significantly higher among Hispanics than non-Hispanic, higher among blacks than among whites, and lower among people younger than 65 than people 65 or older.

Republicans watched significantly less not-Fox television news than did Independents, and Democrats watched significantly more not-Fox news than did Independents. Not-Fox television news exposure was significantly lower among Hispanics than among non-Hispanics, lower among people younger than 35 than among people 65 or older, and higher among people with a high school degree or more education than among people who did not graduate from high school.

As expected, Republicans were generally more skeptical about global warming than were Independents, and Democrats were more likely than Independents to endorse the fundamental beliefs, more supportive of government action in general and of specific policies, and were more trusting of scientists. This divergence of Republicans and Democrats in terms of their opinions on global warming could be attributable to the influence of Fox and not-Fox news on the issue.

We tested the motivated reasoning hypothesis in multiple ways and found only very weak evidence of it, at best. First, contrary to expectations, the relation of Fox News exposure with opinions was equally strong among Republicans as among Democrats/Independents on each of the global warming fundamental beliefs, attitudes toward government effort, and attitudes toward specific policies. Interactions between Fox News exposure and the dummy variable identifying Republicans were near-zero and insignificant (for the regression results, see Table 5.4 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). The only exception was that trust in scientists was more negatively associated with Fox News exposure among Republicans than among Democrats/Independents, the only result consistent with the motivated reasoning hypothesis.

Even less support for motivated reasoning was observed in the associations involving not-Fox news exposure. The positive association of not-Fox news exposure with opinions was equally strong among Democrats as among Republicans/Independents in terms of the fundamentals, attitudes toward government action, and attitudes toward specific policies. The interactions of a dummy variable identifying Democrats with not-Fox news exposure were near-zero and insignificant. Interestingly, the associations of not-Fox news exposure with national seriousness judgments and with trust in scientists were weaker among Democrats than among Republicans/Independents (the interactions of

the Democrat dummy variable with not-Fox news exposure were negative and significant). This is opposite to what would be expected based on the motivated reasoning hypothesis.

Study 1's results are consistent with a dose–response relation of opinions on global warming with Fox News exposure and with not-Fox television news consumption. And whereas exposure patterns are consistent with the notion of selective exposure, the observed results are not consistent with the notion of motivated reasoning. However, one limitation in Study 1 is the measurement of exposure to not-Fox television news – the survey questions allowed us to gauge the number of days on which a respondent was exposed to not-Fox news and was not exposed to Fox News. But that total omitted the number of days on which a respondent watched not-Fox news in addition to watching Fox News. Therefore, Study 2 employed a more comprehensive measure of exposure to not-Fox news.

SECOND INVESTIGATION: REPLICATION WITH A NEW MEDIA EXPOSURE MEASURE

Our second study's data were collected via the Internet from a nationally representative probability sample of 887 American adults who were members of the American Life Panel (which was created by RAND Corporation) between November 2 and December 12, 2012 (see online Appendix B for a description of the survey methodology, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). Respondents reported the number of days they watched Fox News on television during the last 30 days and the number of days on which they watched not-Fox news on television during the last 30 days, and the same opinions about global warming that were used in Study 1.

Consistent with the minimal effects perspective, total days of television news exposure (which was constructed by adding days watching Fox News and days watching not-Fox television news, capped at the maximum of 30 days) was not associated with any of the global warming fundamental beliefs ($b = 0.01, n.s.$; $b = -0.02, n.s.$; $b = -0.01, n.s.$; $b = 0.00, n.s.$; $b = -0.00, n.s.$; for existence, cause, bad, national, and global seriousness, respectively), attitude toward government action ($b = -0.01, n.s.$), attitudes toward specific policies ($b = 0.01, n.s.$), or trust in scientists ($b = 0.01, n.s.$; see Table 5.5 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>).

More Fox News exposure was associated with more skepticism about global warming. Specifically, days of viewing Fox News were significantly negatively associated with the global fundamental beliefs ($b = -0.04, p < 0.01$; $b = -0.06, p < 0.01$; $b = -0.04, p < 0.01$; $b = -0.03, p < 0.01$; $b = -0.05, p < 0.01$; for existence, cause, bad, national seriousness, and global seriousness, respectively), attitudes toward government action ($b = -0.05, p < 0.01$), attitudes toward specific policies ($b = -0.03, p < 0.01$), and trust in scientists ($b = -0.03, p < 0.01$). Likewise, days of watching not-Fox news were significantly positively associated with all but one of the global warming fundamental beliefs ($b = 0.02, p = 0.22$;

$b = 0.03, p = 0.08$; $b = 0.02, p = 0.08$; $b = 0.03, p < 0.01$; $b = 0.03, p < 0.01$; for existence, cause, bad, national seriousness, global seriousness, respectively), attitudes toward government action ($b = 0.02, p = 0.03$), attitudes toward specific policies ($b = 0.02, p < 0.01$), and trust in scientists ($b = 0.02, p < 0.01$).

Consumption of Fox News and not-Fox television news were weakly positively correlated with one another, $r = 0.11$. As in Study 1, a considerable number of people had non-trivial exposure to both Fox News and not-Fox news (see Table 5.6 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). Of the respondents, 8% did not watch any television news programs, about one-third (28%) watched not-Fox news only, a small portion (5%) watched Fox News only, and two-thirds (59%) watched both Fox News and not-Fox television news programs.²

As expected, Republicans watched significantly more Fox News than did Independents, whose consumption of Fox News did not differ from that of Democrats (see Table 5.7 in online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). Blacks and Hispanics watched more Fox News than did whites. Fox News exposure was significantly lower among people younger than 65 than among people aged 65 or older. People with at least some college or education watched significantly less Fox News than did people who did not attend college.

Republicans, Independents, and Democrats did not differ significantly from one another in terms of their exposure to not-Fox news. Not-Fox news exposure was significantly lower among people younger than 65 than among people 65 or older. People in the northeast watched more not-Fox news than did people in the west.

Republicans were generally more skeptical about global warming than were Independents, and Democrats were more likely than Independents to endorse the fundamental beliefs, more supportive of government action in general and of specific policies, and were more trusting of scientists (see Table 5.8 of online Appendix D, located at: <https://pprg.stanford.edu/wp-content/uploads/FoxApp.pdf>). Again, the divergence of Republicans and Democrats in terms of their opinions on global warming could be due to motivated reasoning.

Contrary to a motivated-reasoning account, though, the negative association of Fox News exposure with opinions was equally strong among Republicans as among Democrats/Independents on most of the fundamentals, attitudes toward specific policies and trust in scientists; interactions between Fox News exposure and the Republican dummy variable were insignificant. Only judgments of national seriousness and global seriousness and attitudes toward government action were more negatively associated with Fox News exposure among Republicans than among Democrats/Independents, a few results consistent with motivated reasoning.

An even weaker pattern was observed in the associations involving not-Fox news exposure. The positive association of not-Fox news exposure with opinions was equally strong among Democrats as among Republicans/Independents on all but one of the fundamental beliefs, attitudes toward government action, attitudes toward specific policies, and trust in scientists. Interactions of a Democrat

dummy variable with not-Fox news exposure were insignificant. Belief that global warming has been caused by humans was more positively correlated with not-Fox news exposure among Democrats than among Republicans/Independents, a lone result consistent with motivated reasoning.

DISCUSSION

Taken together, these results are consistent with the conclusions that Americans may have been influenced by Fox News and not-Fox television news exposure and that this influence was not regulated by motivated reasoning. Instead, it appears that Republicans and Democrats diverge in their opinions about global warming due to selective exposure to different news sources. Because opinions manifested dose–response relations with consumption, these results are consistent with the notion of media influence.

These findings have several implications. One pertains to the persuasion literature. Much social psychological research has employed the one-message-one-source modality of communication. That is, individuals participating in an experiment were exposed to one message from a single communication source. However, in the real world, people are constantly exposed to competing messages. Decades ago, different news media tended to portray the news in very similar ways, so they function much like a single source. With the launch of the Fox News Channel in 1996, its ideologically tilted coverage created new variation in news media content that viewers could anticipate.

As a result, and because Fox News is relatively popular, ignoring the opposing messages of Fox versus not-Fox television news and using traditional methods yielded no evidence of persuasion. But this is the result of the mutually canceling effects of Fox News and not-Fox news exposure. Because the former is so popular, its dissemination was sufficient to cancel out the latter in the aggregate. But after disaggregation, we saw results consistent with the notion that Fox News exposure enhanced skepticism about global warming, while exposure to not-Fox television news enhanced the degree to which people adopted green attitudes and beliefs.

One way to describe this finding is that people are persuaded by the news sources from which they choose to gain information. Thus, this might seem to be evidence of motivated reasoning. That is, people may be motivated to trust the news organizations to which they are exposed, and this motivated trust might breed persuasion. But we found limited evidence of the type of motivated reasoning that many scholars would expect. Specifically, we saw little evidence that Republicans were more persuaded by Fox News than were Democrats and Independents. And we saw little evidence that Democrats were more persuaded by not-Fox news than were Republicans and Independents. Thus, our evidence challenges the notion that the growing gap between Republican and Democratic citizens in terms of their beliefs and attitudes on global warming can be attributed to motivated reasoning. Instead, it seems that Republicans choose more exposure to Fox News than do Democrats, and Republicans'

opinions about global warming moved in a not-green direction as the result of that selective exposure.

A second implication is pertinent to public understanding of science. In recent years, some politicians and activists expressed frustration that the American public has not yet embraced the reality of global warming, despite what they claim to be an overwhelming consensus among climate scientists. Politicians and activists have also announced a need to devise new strategies to increase information flow to the public to remedy this situation, which they perceive to be a problem. This line of thought has often been rooted in the information deficit model of scientific communication. According to this model, disseminating more accurate information will close the gap between the scientific consensus and the public's views. Our data suggest that the purported gap between the opinions of natural scientists and the opinions of the general public is not the result of motivated reasoning and instead may be the result of selective exposure to news sources that have different biases. If so, then, more information dissemination and more exposure would not shrink the partisan gap.

The present study has limitations, which call for future research to address them. First, we treated all not-Fox news media as homogenous. A desirable future research pursuit would be to relax this homogeneity assumption of not-Fox television news and employ a more disaggregated measure of television news content. Second, Americans are able to get news from many non-television sources, including the Internet, print media, and radio broadcasting, and these sources were excluded from consideration in the present investigation. Extension of this study to encompass print and Internet news media merits further investigation. Third, the present study did not illuminate the process by which Fox News exposure leads to more skepticism about global warming. Fourth, the present study examined only the issue of global warming. Extension to other issues merits pursuit. Finally, we have presumed that if selective exposure to Fox News or not-Fox television news occurred, the selective exposure may have been driven by general political loyalties (as indicated by political party affiliations) but not by opinions on global warming in particular. We look forward to future research attempting to disentangle these two causal processes.

This study contributes to the current public debate on the issue of global warming by providing evidence suggesting that Fox News exposure may have induced some individuals to adopt attitudes and beliefs skeptical about global warming and that not-Fox television news exposure has increased prevalence of "green" attitudes and beliefs on the issue. Thus, public opinion on this issue appears to have been shifting, but in cross-cutting ways not so easy to see when the nation as a whole is examined. We look forward to more disaggregated investigations.

Perhaps most importantly, some of our results stand in contrast to those of other investigators, who apparently found more compelling evidence of party-based motivated reasoning (see also Chapters 6 and 7, this volume). Budescu et al. (2012) found that after exposure to information from the Intergovernmental Panel on Climate Change, Republicans interpreted specific

words as communicating more risk from global warming than did Democrats. Hart and Nisbet (2012) found that exposure to news about health impacts of global warming caused an increase in support for mitigation policies among Democrats and a reduction among Republicans. And Leiserowitz et al. (2013) found that according to Republicans, news of “Climategate” reduced their trust in scientists more than Democrats said they were influenced.

However, most of Budescu et al.’s (2012) participants were college students, and Hart and Nisbet’s (2012) participants were people recruited non-randomly in a shopping mall. So our results may hold in the general public, whereas their results reflect relatively unusual population subgroups. And it is well-known that people’s assessments of how much they were influenced by particular pieces of information are fatally flawed (see Nisbett & Wilson, 1977), so Leiserowitz et al.’s (2013) evidence should probably be viewed as revealing how people think they were influenced rather than how they were truly influenced.

In line with our findings are those reported by Feldman et al. (2011), who uncovered results different from ours but equally refuting of the notion of motivated reasoning. Those investigators found that Fox News exposure in the general U.S. public was negatively correlated with belief in the existence of global warming, and CNN and MSNBC exposure were positively correlated with that belief (results in line with ours), and both relations were stronger among Republicans than among Democrats (a pattern also inconsistent with the notion of motivated reasoning).

In conclusion, we hope that this investigation serves to spur more studies of motivated reasoning in the general public on important and controversial issues, taking into account possibilities of selective exposure and cross-cutting patterns of persuasion. Such studies will no doubt enhance our understanding of how information flows shape opinions and political outcomes.

NOTES

1. In this chapter, we define motivated reasoning as a style of processing acquired information, not the process of selectively seeking exposure to particular types of information from particular sources.
2. This pattern, which is quite different from that observed in Study 1, could be attributable to the 2012 presidential election campaign.

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