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Effects of Conspiracy Rhetoric on Views About the Consequences of Climate Change and Support for Direct Carbon Capture

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Abstract:
We implemented two survey-experiments to test the impact of conspiracy rhetoric on the views of US residents about the consequences of climate change and support for direct carbon capture. The first study focused on how receptive respondents were to a scientific report on the impacts of climate change when they were also presented with conspiracy-based criticism of the report's conclusions. The second study explored how conspiracy rhetoric criticizing a report recommending the consideration of direct carbon capture influences support for the technology. We assess the effects of exposure to the conspiracy claims both in isolation and in contexts where scientific evidence contradicts the conspiratorial attack. We include a partisan source cue to test whether its presence enhances the impact of the messages on in-group partisans. The results accentuate the conditional nature of conspiracy rhetoric on views about the consequences of climate change and support for a novel climate geoengineering technology.

Keywords: public opinion, climate change, conspiracy rhetoric, science

Conspiracy theories surrounding science have proliferated in recent years. A *conspiracy* is a "plan carried out in secret by small groups of powerful people that do harm to the public good" (Uscinski et al., 2017; also see, Douglas et al., 2019 Sunstein & Vermeule 2009, p. 205). *Conspiracy theories*, on the other hand, are "unsubstantiated explanations of events or circumstances that accuse powerful malevolent groups of plotting in secret for their own benefit against the common good" (Uscinski et al., 2017). These narratives often entail claims that governments, large corporations, and/or scientists are deceiving the public for selfish and nefarious purposes (Goertzel, 2010). People who espouse conspiracy theories sometimes claim simply to be critical thinkers or skeptics asking rational questions (van Prooijen, 2019). Simple skepticism, however, differs from belief in conspiracy in that the latter tends "to focus on the alleged wrongdoings of institutions, elites, and authorities, which include science and scientists" (Rutjens et al., 2021, p. 79). Conspiracy theories are often attractive explanations because they help people interpret confusing or otherwise ambiguous events and may give people more of a feeling of control in an uncertain situation (Haltinner & Sarathchandra, 2017; Oliver & Wood, 2014; Uscinski et al., 2017; Uscinski & Olivella, 2017).

When it comes to climate change, the most prevalent conspiracy theory is that it is a "hoax", or malicious deception, perpetuated largely by scientists for financial or ideological reasons (Lewandowsky, Oberauer, and Gignac, 2013, p.630). Other climate conspiracy theories affirm the existence of global warming but accuse carbon-emitting industries of, at the very least, stalling polices that might help remedy its impacts in order to ensure continued profits (Hofmeister, 2010; MacKay & Munro, 2012), and even violations of the Racketeer Influenced and Corrupt Organizations (RICO) Act through the propagation of misinformation (Baxendale,

2018). A person believing in a specific conspiracy theory is said to possess a "conspiracy belief." This belief is not necessarily false given that some conspiracy theories ultimately are proven to be real events (Douglas et al., 2019). *Conspiracy rhetoric* refers to "public discourse, spoken, written, or otherwise expressed which seeks to discuss or spread conspiracy theories" (Uscinski et al., 2017). We define a *conspiracy theory effect* as having occurred when exposure to conspiracy rhetoric increases the prevalence of a conspiracy belief (e.g., Einstein & Glick, 2015; Uscinski et al., 2016; van der Linden, 2015). While it is often assumed that the rapid dissemination of conspiracy theories about climate change (and other scientific issues) present a grave threat to humans and societies, relatively few studies have examined this in settings where general information about the underlying science is more or less familiar, as well as in competitive and politicized information environments.

This paper seeks to fill gaps in the existing literature by: (1) investigating two climate-change-related conspiracy theories to evaluate the existence and robustness of the *conspiracy theory effect*; (2) assessing the degree to which scientific consensus information can combat this effect; and (3) evaluating the impact of attribution of conspiracy rhetoric to partisan sources to determine if this affects people's receptivity to the information. We implemented two large survey-experiments: one that measured U.S. residents' views about the impacts of climate change and a second measuring support for a relatively novel and unfamiliar geoengineering technology. The first study focused on the influence of conspiracy rhetoric attacking a scientific report describing the negative effects that will occur in the U.S. due to climate change. The second study focused on how conspiracy rhetoric surrounding a scientific report that emphasized the benefits of direct carbon capture influences support for the technology. We find that the effects of scientific consensus information and conspiracy rhetoric are conditional on the specific

contexts in which they are communicated. These findings have significant implications for researchers and practitioners.

What do we know about conspiracy rhetoric and climate change beliefs?

Exposure to conspiracy rhetoric associated with climate change has been shown to weaken belief in climate change and willingness to engage in pro-social environmental actions. In one study, van der Linden (2015) investigated the conspiracy effect by exposing survey respondents to a 2-minute video that either promoted the idea that climate change was a hoax (clip from a popular conspiracy movie, "The Great Global Warming Swindle"), or emphasized the importance of taking action on climate change (UN 2009 video clip, "Raise Your Voice About Climate Change"). Relative to a control group that did not see either video, respondents who were exposed to the conspiracy rhetoric were more likely to believe that "global warming is a hoax", less likely to personally sign an online petition to "stop global warming", and less likely to donate or volunteer their time with a charitable organization. In another study, Jolley and Douglas (2014a) asked people to read a paragraph about climate change that either supported or refuted a conspiracy claim that climate scientists are manipulating data about the amount of global warming that has occurred. They found that exposure to the conspiracy theory reduced people's intentions to lower their carbon footprint by purchasing energy-efficient light bulbs or to use more carbon-friendly modes of transportation.

Based on the studies that have demonstrated a *conspiracy theory effect* following exposure to climate conspiracy theories, we offer the following prediction:

> *Exposure to conspiracy rhetoric will: (a) reduce perceptions about the negative effects and fundamental risks of climate change and increase beliefs that climate change is a hoax (study 1); and (b) reduce support for direct carbon capture and increase beliefs that carbon capture is a deception (study 2).* (*Hypothesis 1a and 1b*).

What do we know about response to the science of climate change?

Exposure to credible scientific information has been found to have a powerful impact on people's beliefs about climate change. The Gateway-Belief-Model (GBM) (Lewandowsky et al., 2013; van der Linden et al., 2015) theorizes that presenting individuals with a message that "97% of climate scientists believe in human-caused climate change" will increase people's accuracy in their estimate of the level of scientific agreement, and that this shift in perception of the expert consensus will have "cascading changes in other key beliefs about the issue, such as the belief that climate change is happening, human-caused, and a worrisome risk that requires international coordination" (van der Linden et al., 2019, p. 50; van der Linden, 2021). The GBM describes a process of attitude formation and change in which the public's perception of the certainty of a scientific consensus indirectly influences beliefs about the degree to which is it human-caused and support for policy action. Many empirical studies have investigated and found support for the GBM's core theoretical mechanisms (e.g., Cook et al., 2017; Goldberg et al., 2020; Lewandowsky et al., 2013; van der Linden et al., 2015); however, the impact of scientific consensus information on climate change can be reduced when it is contested with politicization or other forms of scientific misinformation (Bayes, Druckman, et al., 2020; Bolsen & Druckman, 2018a; van der Linden et al., 2017).

A growing number of studies have investigated the bases of public support for carbon capture and storage technologies (Arning et al., 2020; Brunsting et al., 2011; Kahan et al., 2015; Kahlor et al., 2020; Klaus et al., 2021; Moon et al., 2020; Sun et al., 2020). Carbon capture and storage (CCS) is a process that involves separating carbon dioxide from the exhaust or waste at sources, such as power plants or factories, and transporting it and storing it underground (Gibbins & Chalmers, 2008). A consistent finding from surveys that measure the public's perceptions about CCS is that there are generally low levels of awareness about this emergent

technology (Raimi, 2021; Bellamy et al., 2019; Carlisle et al., 2020). Several studies have also examined how exposing individuals to different types of information about CCS can influence public opinion (Broecks et al., 2016; Corner & Pidgeon, 2015; Klaus et al., 2021; Pianta et al., 2021; Jones et al., 2017; Raimi et al., 2019; Tcvetkov et al., 2019; Whitmarsh et al., 2019).

Based on research demonstrating the general impact of scientific information on the beliefs and attitudes of individuals related to climate change, we offer the following prediction:

> *Exposure to scientific information from a consensus report about the effects of climate change or the benefits of direct carbon capture will: (a) increase perceptions about the negative effects and fundamental risks of climate change (study 1); and, (b) increase support for direct carbon capture (study 2). (Hypothesis 2a and 2b).*

What do we know about competitive framing and climate change beliefs?

A *frame* refers to words, phrases, or images that make salient a particular aspect of any attitude-object, such as a candidate, policy, or issue (Druckman, 2001). Numerous studies demonstrate that exposure to framed messages emphasizing different aspects of climate change, such as its national security, economic or environmental implications, can increase people's concern for addressing the problem (for a review, see Bolsen & Shapiro, 2018; Nisbet, 2009). To our knowledge, however, no published studies to date have explored how presenting individuals with conspiracy rhetoric in competition with conclusions from a consensus scientific report shapes climate change beliefs.

Several studies have tested the impact of communicating scientific consensus messages about climate change in contexts where "competing frames" are present, such as messages that politicize the scientific consensus on climate change (Bolsen & Druckman, 2018a; Bolsen et al., 2019a). Framing theory posits that when individuals are exposed to competing messages of equal strength, the independent effects of each frame will cancel out and lead to no opinion change (Chong & Druckman, 2007). Based on this literature, we offer the following prediction:

Exposure to conspiracy rhetoric and scientific information refuting the conspiracy will eliminate the "conspiracy theory effect" and result in no belief change. (Hypothesis 3).

What do we know about partisan source cues and climate change beliefs?

In the U.S., climate change is an issue defined by extreme levels of partisan polarization (Egan & Mullin, 2017). One explanation for this polarization is the role that *motivated reasoning* can play when people evaluate new information and form beliefs (Bolsen & Palm, 2019; Taber & Lodge, 2006). For example, Republicans who doubt anthropogenic climate change may reject scientific messages about climate change as a way to conform their beliefs with an in-group, protect an existing oppositional view or as a result evaluating any new scientific information as "less credible" than alternative sources of "truth" – even in the presence of "accuracy-driven" motivated reasoning (Bayes & Druckman, 2021; Bayes, Bolsen, & Druckman, 2020; Druckman & McGrath, 2019).

Several studies that have explored how the presence of partisan sources linked with messages about climate change affect their impact (Benegal & Scruggs, 2018; Bolsen et al., 2019b; Tesler, 2018). In one study, Republicans were more likely to support a state ballot proposal on climate change when it was endorsed by in-group party elites (Ehret et al., 2018). In another study, Republicans were more likely to reject misinformation about climate change and express beliefs consistent with the fundamental science on climate change when the message they received was supported by a Republican Senator (Bengal & Scruggs, 2018). Based on the research showing in-group/out-group partisan source effects when linked with different messages about climate change, we test the following prediction:

The presence of an in-partisan source cue will enhance the impact of climate conspiracy rhetoric, and scientific evidence, on partisans' perceptions about: (a) the negative effects and fundamental risks of climate change (study 1); and (b) support for direct carbon capture (study 2). (Hypothesis 4).

Materials and Methods: Study 1

Study 1 focused on the presence of a conspiracy theory regarding response to the effects of climate change laid out in the NCA4 report. This report, required by law since 1990 and released by the Trump administration on November 23, 2018, found that without substantial mitigation and adaptation efforts the level of damage to the U.S. economy, human health, and the environment would intensify and that climate change would lead to sea-level rise and more intense hurricanes and storm surges that will damage coastal communities and force many to abandon their homes. The NCA4 was released over the Thanksgiving holiday in 2018, and critics accused the Trump administration of trying to "bury" the report's conclusions. The President stated, "I don't believe it," when asked about the findings and suggested its conclusions were based on the most extreme scenarios and "fake science" promoted by a left-wing media as a way to scare people into supporting a radical "political agenda." The release of the NCA4 and the Trump administration's own remarks on the report's findings provided an ideal context to assess the impact of presenting individuals with conspiracy rhetoric – with or without a partisan source cue – attacking its conclusions.

To evaluate our hypotheses, we implemented a survey experiment in which we randomly assigned 2,973 participants to one of six experimental conditions that varied the headline and content in a short news article or to a pure control condition (Table 1). Respondents were recruited by Qualtrics in August 2019 and included quotas for party identification, gender, age, and region.[1] Respondents randomly assigned to the *scientific report* condition, were presented with the headline, "New Federal Climate Assessment Report Released," followed by details such as, "The scientific report predicts that climate change will cause hundreds of billions in damages

[1] The full sample demographics are reported in the Supplementary Materials.

by the end of this century. Rising temperatures and extreme heat will cause severe drought and wildfires throughout the country. This will degrade air quality, decrease crop yields, and reduce the amount of freshwater available in many places… [T]he report also predicts that climate change will cause the level of the ocean to rise, flooding many coastal areas in the U.S. Many people who live in flood-prone locations will have to leave their homes. Storm surges that happen because of more intense hurricanes will cause salt-water intrusion, contaminating drinking water and destroying property and ecosystems in the Atlantic and Gulf coasts."[2]

[*Insert Table 1 here*]

Respondents randomly assigned to the *conspiracy* condition were presented with the headline, "Global Warming: Fake Science Again Serves Far-Left Political Agenda," followed by details calling into question the conclusions from the scientific consensus report, by dismissing it as 'fake science' being promoted by the left-wing media as a way to scare people into supporting a radical 'political agenda'… [and that its conclusions] 'border on the absurd' and "are supported by socialist bureaucrats whose goals are to justify sweeping changes in lifestyle and the global economy." Another conspiracy condition was a variant of the previous one, but with the criticism of the report attributed to President Trump (*Conspiracy with source cue*).

Respondents randomly assigned to the competitive framing condition (*Conspiracy and Scientific Report*), were presented with a headline which stated, "Debated Federal Climate Assessment Report Released," followed by the consensus information from the NCA4 and then information from the conspiracy condition, that is the assertion that the report is the result of a political agenda of "socialist bureaucrats" to "justify sweeping changes in lifestyle and the global economy." We varied the presence of a reference to President Trump linked with both the

[2] The complete wording of the treatments for all conditions is in the Supplementary Materials.

consensus scientific report and the conspiracy rhetoric – that is the headline in the consensus information only with a Trump source cue stated, "Trump releases Federal Climate Assessment Report", while the conspiracy rhetoric only with a Trump source cue stated, "Trump Argues Fake Science Again Serves Far-Left Political Agenda" – to test our prediction about in-partisan sources enhancing the impact of any message (see Table 1).

Participants, except those in the control condition, read a version of the "short article" and then reported their perception of the extent to which climate change will lead to increased droughts, wildfires and coastal flooding, intensified hurricanes, limited freshwater availability, decreased agricultural production, intensified heatwaves, and harm to the U.S. economy.[3] Responses to these 8 items formed an index (α= *.96*), which we labeled *effects scale* and coded so that higher scores were associated with increasingly negative perceptions about the effects that climate change would have on the U.S. (7-point composite scale index). We also asked respondents if they "think that climate change is happening" on a 7-point response scale (1= definitely not happening; 7=definitely happening), the extent to which they disagreed or agreed with the statement "climate change is occurring faster now because of human activity" (1= strongly disagree; 7= strongly agree), and how concerned they were about "the effects that climate change will have on you, your family, and your community" (1= extremely unconcerned; 7= extremely concerned). Responses to these items formed an index (α= *.86*), which we labeled *climate change beliefs* and coded so that higher scores are associated with increased belief in and concern regarding the fundamental science of climate change. These items collectively encompass the key beliefs theorized by the GBM to be impacted by scientific consensus

[3] The full question wording for all items that comprised each outcome measure is reported in the Supplementary Materials.

messages about climate change (van der Linden et al., 2019, p. 50). Respondents also reported the extent to which they disagreed or agreed with the statement, "the idea that climate change is primarily due to human activities is a hoax or a conspiracy", on a 7-point scale with higher values indicating increased hoax beliefs.

Results: Study 1

To test our hypotheses, we estimate OLS regression models with robust standard errors. For each dependent variable, we regress the outcome measure on our condition indicators, omitting the *Control* condition as our reference group, using the entire sample, followed by separate models restricted to respondents identifying as Republican, Independent, and Democrat. We present the results in a series of figures containing the plotted point estimates, and error bars representing the 95% confidence interval. We also include the coefficient estimate and associated *p*-value as marker labels to provide additional clarity. The Supplemental Material contains the full models corresponding to each dependent variable in a traditional table format.

[*Insert Figure 1 here*]

Our first hypothesis was not supported by our findings. We did not find that (H1a) conspiracy rhetoric affected on average views about the negative consequences that would result from climate change, with or without a Trump source cue (Figure 1). Nor did we find that the conspiracy rhetoric, with or without the Trump source cue, influenced respondents' *climate change beliefs* (Figure 2). However, there is some evidence of a conditional conspiracy theory effect: when the conspiracy rhetoric was linked to President Trump in the absence of the scientific evidence, Republicans had significantly lower scores for belief in climate change (p=.02). This conditional conspiracy effect only manifested in the presence of an in-partisan source cue and in the absence of competing information from the scientific report. In general,

we found little impact of exposure to a conspiracy theory attacking the scientific conclusions in the NCA4 report.

[*Insert Figure 2 here*]

We find only marginal support for our second prediction (H2a): respondents who had received the scientific information in the NCA4 reported greater expected negative effects from climate change than those in the control condition (p = .08, two-tailed test). However, the inclusion of President Trump as a source cue (H4), did not increase its impact on Republicans. In fact, the scientific report *with no source* had a greater impact among Republican respondents relative to their counterparts in the control condition (p=.03) (Figure 1). We also predicted reading the scientific report's conclusions would lead to higher levels of belief in and concern about climate change (Figure 2). There was no support for this prediction.

Perhaps surprisingly, respondents who were presented with the NCA4 report alongside conspiracy rhetoric attacking its conclusions (H3a) had significantly higher scores for negative effects resulting from climate change (see Figure 1). This finding held both for respondents randomly assigned to the *Conspiracy and Scientific Report* condition (p=.01) and for the *Conspiracy with source cue and Scientific Report* condition (p=.04). The effects of the consensus report in competition with conspiracy rhetoric were *most pronounced among Republican respondents*, who displayed the largest increase relative to their counterparts in the control condition that climate change will have negative effects (p = .02), even in the presence of a source cue linking President Trump with the conspiracy rhetoric attacking the NCA4's conclusions (p =.01). Thus, in competition, the report's conclusions overpowered the conspiracy rhetoric. In support of H3, the scientific report presented in competition with conspiracy rhetoric largely resulted in no impact on respondents' *climate change beliefs* (see Figure 2), except

among Independents whose scores for the combined scientific report with the conspiracy rhetoric and no source were higher than those of the control group (p=.04). The powerful impact of consensus scientific information in competitive rhetorical settings and among Republicans is particularly noteworthy and supports the GBM's argument regarding the desirable effects that communicating scientific consensus information can exert skeptical audiences. In our study, scientific information from the NCA4 report is perceived as "stronger" – *even among Republicans in the presence of in-group sources promoting a conspiracy theory attacking the science* – than a conspiracy theory that climate change is a hoax.

We also tested the extent to which respondents who read the conspiracy rhetoric associated with the report's conclusions would be more likely to express the general belief that climate change itself is a hoax or conspiracy. We found that the conspiracy rhetoric in isolation, with or without a Trump source cue, had no effect on respondents' beliefs about the degree to which the idea of climate change was a conspiracy.[4]

Materials and Methods: Study 2

Study 2 was designed to focus on a technological solution to climate change: carbon capture and storage, a process involving separating carbon dioxide from the exhaust or waste at sources such as power plants or factories, transporting it and storing it underground (Gibbins & Chalmers, 2008). We investigated the impact of exposure to consensus scientific information from a 2018 report issued by the Intergovernmental Panel on Climate Change (IPCC) wherein carbon capture technology was highlighted as a necessary complement to other activities needed to mitigate increased concentrations of carbon dioxide in the atmosphere (IPCC 2018). In the

[4] We omit the model estimates from the main text in the interest of space. The full model estimates and associated figure for *Hoax* are available in the Supplemental Appendix.

same year a consensus report from the National Academies also noted the necessity of promoting a research initiative to advance "negative emissions technologies," including direct air capture and mineralization of carbon (National Academy of Sciences, Engineering and Medicine, 2018). The two reports both recommending carbon capture and storage are an indication that this technology has become accepted by world scientists as a necessary tool in the arsenal used to combat climate change. At the same time that the IPCC report was released, geoengineering technologies addressing climate change were being greeted in some quarters with skepticism from scientists and also from some of the very people that liberals viewed as leaders in promoting climate change awareness and concern. For example, in a December 2018 interview with Axios, Vice President Al Gore criticized a reliance on carbon capture technology as "nonsense", and comparable to believing "in the tooth fairy" (Harder, 2018).

To evaluate our hypotheses about the effects of conspiracy rhetoric associated with the technology on support for its development, we implemented a survey experiment in which we randomly assigned 2,745 respondents to one of six treatment conditions and a control condition. Respondents were recruited by Qualtrics in December 2019 and included quotas for party identification, gender, age, and region.[5] As in study 1, each condition contained a headline and content in a short news article (Table 2). Those randomly assigned to the *scientific report* about carbon capture were presented with the headline, "Carbon Capture Technology May Be a Silver Bullet to Stop Climate Change", with a statement that "a major report produced by more than 800 experts working together" on this technology had been released, and "a growing consensus of scientists recommends adopting these carbon removal technologies".[6] The stimuli (short

[5] As in study 1, the sample included quotas for party identification, gender, age, and region. We report the full breakdown of all demographics for respondents in the Supplemental Materials.
[6] The complete wording of the treatments for all conditions is in the Supplemental Materials.

article) describes how carbon capture takes the carbon dioxide from the air at the source (such as a power plant), turns it into a liquid that "can be safely stored, or re-used to create a low-carbon fuel that can power airplanes and trucks", in the process reducing greenhouse gases and slowing climate change.

[*Insert Table 2 here*]

Respondents randomly assigned to the *conspiracy* condition were presented with the headline, "Carbon Capture is Turning Out to Be Just Another Scam", followed by the assertion that "companies producing these fossil fuels such as ExxonMobil, Chevron, BP, Royal Dutch Shell and Saudi Aramco are secretly promoting this engineering solution because they could both turn carbon dioxide capture into a profitable business while continuing to benefit from the sale of increasing amounts of carbon fuels such as coal and oil." The treatment (news article) concluded that "these climate altering strategies are unproven, poorly understood, and based on the false hope that addressing climate change simply involves a technological 'fix'".

Those randomly assigned to the "competitive information" conditions saw a headline that stated: "Debated Technology May be a Silver Bullet to Stop Climate Change", with a statement describing carbon capture, a description of the consensus of experts recommending this technology, and also the criticism that this is a conspiracy by the fossil fuel companies. The study also varied the presence of a reference to former Vice President Al Gore linked with the scientific report, the conspiracy frame, or the competitive framing conditions which quote actual statements from Gore: "Vice President Al Gore criticized carbon capture and storage as "nonsense" and "an extremely improbable solution."

Following exposure to one of the experimental treatments, respondents were asked, "Do you oppose or support using carbon capture technologies as a way to fight climate change" (1=

strongly oppose; 7= strongly support). Respondents were also asked if they "believe the United States' government should decrease or increase investments into 'carbon capture' technologies as a way to slow the effects expected to occur due to climate change" (1= decrease a great deal; 7= increase a great deal). Respondents also reported the extent to which they disagreed or agreed with the statement, "The idea that carbon capture technologies can slow or reverse the effects of climate change is a deception promoted by carbon producing industries" (1= strongly disagree; 7= strongly agree).

Results: Study 2

To test our hypotheses, we follow the same approach discussed in Study 1 and estimate a series of OLS models for each dependent variable. We present the results in a series of figures containing the plotted point estimates, confidence intervals, coefficient estimates and associated *p*-values. The Supplementary Materials contains the full models corresponding to each dependent variable in traditional table format.

As we predicted (H1b) exposure to a *conspiracy frame* directed toward carbon capture significantly lowered respondents' *general support* for the technology (Figure 3) and willingness to support *investments* into it (Figure 4). In line with our expectation, those who read the conspiracy rhetoric attacking carbon capture, with or without a source cue linking this information to Vice President Gore, showed significantly less support for its development ($p < .01$) and for investments into it ($p < .01$). Those who had read the conspiracy frame were nearly 1-point less likely to *support* carbon capture relative to the control condition and over three-quarters of a point less likely to support investment in this technology.[7]

[7] The substantive magnitude of the difference in beliefs can be interpreted by the beta coefficients reported in Figure 3, which quantify differences in support for carbon capture on the 7-point response scale as a result of condition assignment. Those who read the scientific report

Also as predicted (H2b), respondents who were exposed to positive scientific consensus information indicated *greater general support* for the development of carbon capture technologies to fight climate change (p=.01). This treatment effect was significant with or without a source cue linking the information from the report with former Vice President Al Gore, and for all partisan subgroups (Figure 3). We also predicted that exposure to the scientific consensus message would result in relatively more support *for investments* into carbon capture technologies as a way to fight climate change. We found this effect either in the presence or absence of a source linking the information with Al Gore ($p < .01$) and for all partisan groups, although the magnitude of the treatment effect is smaller than what is reported for general support for carbon capture (Figure 4).

[*Insert Figure 3 and Figure 4 here*]

In support of our prediction (H3), the competing frames about carbon capture cancelled out the main effects of each treatment when they were presented in isolation with one exception (see Figure 3 and Figure 4): the positive and significant effect of the scientific information with no source in competition with the conspiracy rhetoric with no source resulted in *increased support* for carbon capture (p = .02, all respondents, Figure 3). However, there are clear differences in responses to the competitive framing conditions for both *general support* and *support for more investments* based on partisanship. In the competitive framing conditions, Democrats are more swayed by the conspiracy frame compared to the scientific consensus report, showing less general support for carbon capture or investment in it. This may be a reflection of the generally more favorable view of the fossil fuel industry and its activities by

about carbon capture linked with Gore (*Sci Report Gore Source*), for instance, were roughly three-quarters of a point on a 7-point scale (b=.73, $p < .001$) more supportive than those in the control condition.

Republicans than by Democrats as reflected in a survey conducted by the Pew Research Center (Funk & Hefferon, 2019). Similarly, for Republicans, the positive scientific information overpowers the conspiracy rhetoric directed toward the technology, again probably a reflection of prior attitudes of Republicans that favor upstream technological interventions as opposed to behavioral adjustments to climate change (Goldwyn & Clabough, 2020; Palm et al., 2020).

We also asked respondents the extent to which they believed carbon capture technologies were a deception promoted by the oil industry to increase profits (Figure 5). Respondents were far more likely to believe that carbon capture is a deception promoted by the oil industry if they had seen the conspiracy frame, regardless of whether or not it had a source cue ($p < .01$).

[*Insert Figure 5 here*]

Democrats who had seen the conspiracy rhetoric were far more likely than other partisan groups to display higher scores indicating that carbon capture is a deception. The conspiracy frame had a significant effect on Independents in the sample, but it did not differentiate treated Republicans from the control group as to whether carbon capture is a deception. Additionally, respondents presented with scientific information from the report with or without the Gore source cue were less likely to believe that carbon capture technologies are a deception promoted by the oil industry for profits ($p < .01$).

Discussion/Conclusion

Conspiracy rhetoric surrounding matters related to scientific issues can increase belief in a conspiracy theory (e.g., Jolley & Douglas, 2014b; Uscinski et al., 2016; Swami et al., 2013). Yet only a few studies have examined the presence of a conspiracy theory effect in the domain of environmental communication (e.g., Jolley & Douglas, 2014a; van der Linden, 2014). We extended this line of research by evaluating the impact of exposure to conspiracy rhetoric

directed at the NCA4 focused on the effects of climate change in the US (Study 1) and at a novel climate engineering technology (Study 2). In the case of general beliefs about the impact of climate change on society in Study 1, issues that have been discussed for decades, neither conspiracy rhetoric nor a linkage with a partisan source had much of an impact. In Study 2 where a relatively new and unfamiliar technology is described, information presented to respondents had a sharper effect. This tells us something important about *when* conspiracy rhetoric may be most influential and exert the most impact on audiences – that is, prior to when people have developed a well-formed belief toward an issue. The results are rather profound in that they cut against a popular narrative: that exposure to conspiracy rhetoric strongly influences people across contexts.

The results from both studies also contribute to an improved understanding of potential ways to combat climate conspiracy rhetoric that is harmful and poses a threat to humans and societies (Douglas & Sutton, 2015). Any attempt to refute a climate conspiracy theory by providing "scientific information" may not seem likely to be an effective strategy given the likelihood that this would be dismissed as part of the conspiracy itself (Bolsen & Druckman, 2018b). However, in Study 1 and Study 2, we find clear and independent evidence that scientific consensus messages can overpower and combat different forms of climate conspiracy rhetoric. This effect was evident in Study 1 among Republicans in our sample in looking at the impact of the scientific information from the NCA4 report pitted against conspiracy rhetoric attacking it. We found that they become more concerned about the negative effects that will result in the US due to future climate change in a competitive messaging context. The results from Study 2 also show that communicating scientific consensus information about the benefits of CCS neutralizes the conspiracy theory effect that we observed when these claims were encountered in isolation.

Again, the most pronounced positive effect of the consensus information was observed among Republicans. Taken together, the results lend support to the GBM's general framework (Lewandowsky et al., 2013; van der Linden, 2015): communicating a novel form of a consensus scientific message about climate change can be impactful on traditionally skeptical audiences and counteract the climate conspiracy effect.

Belief in conspiracy theories and receptivity to conspiracy rhetoric also has been linked with political partisanship (e.g., Berinsky, 2015; Miller et al., 2016; Pasek et al., 2014; Uscinski et al., 2016). Efforts to provide information that refutes a conspiracy are "often unsuccessful" due to the "stickiness" of conspiratorial beliefs and partisan attachments (Uscinski et al., 2016, p. 59). Partisans are more likely to believe in a conspiracy theory, and be more accepting of conspiracy rhetoric, when it attacks the out-party. In support of these findings, we found in Study 1 that Republicans who were exposed to conspiracy rhetoric attributed to President Trump attacking the NCA4 report's conclusions reduced their belief in human-caused climate change. We note, however, that this effect emerged in only one instance – that is, when conspiracy rhetoric was encountered in a non-competitive messaging context and when an in-party source cue was present. We observed similar results in Study 2: all respondents reacted as we hypothesized to either a conspiracy message or scientific message about CCS; however, in the competitive framing conditions, Republican respondents were the group most persuaded by the scientific consensus information, even when the information was attributed to an out-party leader. This accentuates a key point: broad claims about the impact of conspiracy theories or strategies to combat them need to be tempered with a more nuanced assessment of context.

The *content* of the experimental treatments we employed in both studies had a more pronounced effect than the *sources* to which the information was attributed. When scientific

information and conspiracy messages deal with subjects about which the general public is less familiar, in this case carbon capture technology, the messages have a much stronger impact than when the subject matter is one about which the respondents may have already formed strong opinions. This may suggest that "inoculation" about potentially misleading communication techniques with respect to less-familiar aspects of climate change may be effective in these circumstances and merits further examination (Compton et al, 2021; Cook et al., 2017; Maertens et al., 2020).

Finally, the sources chosen for these studies were based on realistic news stories and actual statements from partisan leaders surrounding the NCA4 report and CCS technologies. In addition, the treatments were administered in a "short article" and included language that highlighted additional considerations beyond conspiracy rhetoric that may also have played a role in shaping respondents' beliefs. Future work should explore how different ways of presenting information linked to a broader range of sources may impact an audience's receptivity to different types of scientific information or climate conspiracy theories. The studies we designed necessarily focused on a limited range of climate conspiracy theories and on the short-term impact of exposure to distinct types of rhetoric at a single point in time in a specific context where competitive scientific information was present. More work is needed to understand whether the effects we observed generalize across populations and contexts. It also will be important to document the persistence of any *conspiracy theory effect* in future studies by including an assessment of individuals' beliefs over time. Given the harmful and dangerous effects that the dissemination of conspiracy theories about climate change can have on public support for action to address this problem, a more nuanced understanding of the impact of this rhetoric is urgent.

References

Baxendale, A. (2018). Fraud, free speech and fossil fuel: lessons from Big Tobacco for Big Oil. *Environmental Claims Journal* 30(2), 207-130.

Bayes, R., Druckman, J. N., Goods, A., & Molden, D. C. (2020). When and how different motives can drive motivated political reasoning. *Political Psychology*, *41*(5), 1031-1052.

Bayes, R., & Druckman, J. N. (2021). Motivated reasoning and climate change. *Current Opinion in Behavioral Sciences*, *42*, 27-35.

Bayes, R., Bolsen, T., & Druckman, J. N. (2020). A Research Agenda for Climate Change Communication and Public Opinion: The Role of Scientific Consensus Messaging and Beyond. *Environmental Communication*, 1-19.

Bellamy, R., Lezaun, J., & Palmer, J. (2019). Perceptions of bioenergy with carbon capture and storage in different policy scenarios. *Nature Communications*, *10*(1), 1-9.

Benegal, S. D., & Scruggs, L. A. (2018). Correcting misinformation about climate change: The impact of partisanship in an experimental setting. *Climatic Change*, 148(1–2), 61–80.

Bolsen, T., & Druckman, J. N. (2018a). Do partisanship and politicization undermine the impact of a scientific consensus message about climate change? *Group Processes & Intergroup Relations*, *21*(3), 389-402.

Bolsen, T., & Druckman, J. N. (2018b). Validating conspiracy beliefs and effectively communicating scientific consensus. *Weather, Climate, and Society*, *10*(3), 453-458.

Bolsen, T., & Palm, R. (2019). Motivated reasoning and political decision making. In *Oxford research encyclopedia of politics*.

Bolsen, T., Palm, R., & Kingsland, J. T. (2019a). Counteracting climate science politicization with effective frames and imagery. *Science Communication*, *41*(2), 147–171.

Bolsen, T., Palm, R., & Kingsland, J. T. (2019b). The impact of message source on the effectiveness of communications about climate change. *Science Communication*, *41*(4), 464–487.

Bolsen, T., & Shapiro, M. A. (2018). The US news media, polarization on climate change, and pathways to effective communication. *Environmental Communication*, *12*(2), 149-163.

Broecks, K. P., van Egmond, S., van Rijnsoever, F. J., Verlinde-van den Berg, M., & Hekkert, M. P. (2016). Persuasiveness, importance and novelty of arguments about Carbon Capture and Storage. *Environmental Science & Policy*, *59*, 58-66.

Brunsting, S., Upham, P., Dütschke, E., Waldhober, M. D. B., Oltra, C., Desbarats, J., ... & Reiner, D. (2011). Communicating CCS: Applying communications theory to public perceptions of carbon capture and storage. *International Journal of Greenhouse Gas Control*, *5*(6), 1651-1662.

Chong, D., & Druckman, J. N. (2007). Framing theory. *Annual Review of Political Science*, 10, 103–126.

Compton, J., van der Linden, S., Cook, J., & Basol, M. (2021). Inoculation theory in the post-truth era: Extant findings and new frontiers for contested science, misinformation, and conspiracy theories. *Social and Personality Psychology Compass*, *15*(6), e12602.

Cook, J., Lewandowsky, S., & Ecker, U. K. (2017). Neutralizing misinformation through inoculation: Exposing misleading argumentation techniques reduces their influence. *PloS one*, *12*(5), e0175799.

Corner, A., & Pidgeon, N. (2015). Like artificial trees? The effect of framing by natural analogy on public perceptions of geoengineering. *Climatic Change*, *130*(3), 425-438.

Douglas, K. M., & Sutton, R. M. (2015). Climate change: Why the conspiracy theories are dangerous. *Bulletin of the Atomic Scientists*, *71*(2), 98-106.

Douglas, K. M., Uscinski, J. E., Sutton, R. M., Cichocka, A., Nefes, T., Ang, C. S., & Deravi, F. (2019). Understanding conspiracy theories. *Political Psychology*, 40, 3–35.

Druckman, J. N. (2001). The implications of framing effects for citizen competence. *Political Behavior*, 23(3), 225–256.

Druckman, J. N., & McGrath, M. C. (2019). The evidence for motivated reasoning in climate change preference formation. *Nature Climate Change*, *9*(2), 111-119.

Egan, P. J., & Mullin, M. (2017). Climate change: US public opinion. *Annual Review of Political Science*, 20, 209–227.

Ehret, P. J., Van Boven, L., & Sherman, D. K. (2018). Partisan barriers to bipartisanship: Understanding climate policy polarization. *Social Psychological and Personality Science*, 9(3), 308–318.

Einstein, K. L., & Glick, D. M. (2015). Do I think BLS data are BS? The consequences of conspiracy theories. *Political Behavior*, *37*(3), 679-701.

Gibbins, J., & Chalmers, H. (2008). Carbon capture and storage. *Energy Policy*, 36(12), 4317–4322. https://doi.org/10.1016/j.enpol.2008.09.058

Goertzel, T. (2010). Conspiracy theories in science. *EMBO Reports*, 11, 493–499.

Goldberg, M. H., van der Linden, S., Ballew, M. T., Rosenthal, S. A., Gustafson, A., & Leiserowitz, A. (2019). The experience of consensus: Video as an effective medium to communicate scientific agreement on climate change. *Science Communication*, *41*(5), 659–673.

Goldwyn, D. L. & Clabough, A. (2020). What's at Stake for Energy in the 2020 Election: An Update. https://www.jstor.org/stable/resrep26786

Haltinner, K., & Sarathchandra, D. (2018). Climate change skepticism as a psychological coping strategy. Sociology Compass, 12(6), e12586.

Harder, A. (2018). Al Gore: Technology capturing CO2 emissions is "nonsense." *Axios*. https://www.axios.com/al-gore-technology-capturing-co2-emissions-nonsense-c1e5e230-0ffb-4b5c-ba24-8bcdfd78e7d3.html

Hofmeister, J. (2010). *Why We Hate the Oil Companies: Straight talk from an energy insider*. St. Martin's Press.

I.P.C.C. (2018). *Global warming of 1.5 C. An IPCC Special Report on the Impacts of Global Warming Of*, *1*. 5°*C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. et al. (eds.)]. World Meteorological Organization, *Geneva, Switzerland.*

Jolley, D., & Douglas, K. M. (2014a). The social consequences of conspiracism: Exposure to conspiracy theories decreases intentions to engage in politics and to reduce one's carbon footprint. *British Journal of Psychology*, 105(1), 35–56.

Jolley, D., & Douglas, K. M. (2014). The effects of anti-vaccine conspiracy theories on vaccination intentions. *PloS one*, *9*(2), e89177.

Jones, C. R., Olfe-Krautlein, B., Naims, H., & Armonstrong, K. (2017). The social acceptance of carbon dioxide utilization: A review and research agenda. *Frontiers in Energy Research*, *5*(11). https://doi.org/10.3389/fenrg.2017.00011

Kahan, D. M., Jenkins-Smith, H., Tarantola, T., Silva, C. L., & Braman, D. (2015). Geoengineering and climate change polarization: Testing a two-channel model of science communication. *The ANNALS of the American Academy of Political and Social Science*, 658(1), 192–222.

Kahlor, L. A., Yang, J., Li, X., Wang, W., Olson, H. C., & Atkinson, L. (2020). Environmental risk (and benefit) information seeking intentions: The case of carbon capture and storage in Southeast Texas. *Environmental Communication*, *14*(4), 555-572.

Klaus, G., Oswald, L., Ernst, A., & Merk, C. (2021). Effects of opinion statements on laypeople's

acceptance of a climate engineering technology. Comparing the source credibility of researchers, politicians and a citizens' jury. *Journal of Science Communication*, *20*(1), A03.

Lewandowsky, S., Cook, J., Oberauer, K., Brophy, S., Lloyd, E. A., and Marriott, M. (2015). Recurrent fury: Conspiratorial discourse in the blogosphere triggered by research on the role of conspiracist ideation in climate denial. *Journal of Social and Political Psychology*, 3(1), 142–178.

Lewandowsky, S., Gignac, G. E., & Vaughan, S. (2013). The pivotal role of perceived scientific consensus in acceptance of science. *Nature Climate Change*, 3(4), 399–404

Maertens, R., Anseel, F., & van der Linden, S. (2020). Combatting climate change misinformation: Evidence for longevity of inoculation and consensus messaging effects. *Journal of Environmental Psychology*, *70*, 101455.

MacKay, B., & Munro, I. (2012). Information warfare and new organizational landscapes: An inquiry into the ExxonMobil-Greenpeace dispute over climate change. *Organization Studies*, 33(11), 1507–1536. https://doi.org/10.1177/0170840612463318

Miller, J. M., Saunders, K. L., & Farhart, C. E. (2016). Conspiracy endorsement as motivated reasoning: The moderating roles of political knowledge and trust. *American Journal of Political Science*, 60, 824–844.

Moon, W. K., Kahlor, L. A., & Olson, H. C. (2020). Understanding public support for carbon capture and storage policy: The roles of social capital, stakeholder perceptions, and perceived risk/benefit of technology. *Energy Policy*, *139*, 111312.

National Academy of Sciences, Engineering and Medicine (2018). Consensus Study Report: Negative Emissions Technologies and Reliable Sequestration: A Research Agenda. Washington DKC, National Academies Press. https://www.nap.edu/resource/25259/Negative%20Emissions%20Technologies.pdf

Nisbet, M. C. (2009). Communicating climate change: Why frames matter for public engagement. *Environment: Science and policy for sustainable development*, 51(2), 12–23.

Oliver, J. E., & Wood, T. J. (2014). Conspiracy theories and the paranoid style(s) of mass opinion. *American Journal of Political Science*, 58, 952–966.

Palm, R., Bolsen, T., & Kingsland, J. T. (2020). "Don't Tell Me What to Do": resistance to climate change messages suggesting behavior changes. *Weather, Climate, and Society*, *12*(4), 827-835.

Pasek, J., Stark, T. H., Krosnick, J. A., & Tompson, T. (2015). What motivates a conspiracy

theory? Birther beliefs, partisanship, liberal-conservative ideology, and anti-Black attitudes. *Electoral Studies, 40,* 482-489.

Pianta, S., Rinscheid, A., & Weber, E. U. (2021). Carbon Capture and Storage in the United States: Perceptions, preferences, and lessons for policy. *Energy Policy*, *151*, 112149.

Raimi, K. T. (2021). Public Perceptions of Geoengineering. *Current Opinion in Psychology*.

Raimi, K. T., Maki, A., Dana, D., & Vandenbergh, M. P. (2019). Framing of geoengineering affects support for climate change mitigation. *Environmental Communication*, 13(3) 300-319. https://doi.org/10.1080/17524032.2019.1575258

Rutjens, B.T., van der Linden, S. & van der Lee, R. (2021). Science skepticism in times of COVID-19. *Group Processes & Intergroup Relations,* 24(2), 276-283.

Sun, Y., Li, Y., Cai, B. F., & Li, Q. (2020). Comparing the explicit and implicit attitudes of energy stakeholders and the public towards carbon capture and storage. *Journal of Cleaner Production*, *254*, 120051.

Sunstein, C. R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures. *Journal of Political Philosophy*, 17(2), 202–227.

Swami, V., Pietschnig, J., Tran, U. S., Nader, I. W., Stieger, S., & Voracek, M. (2013). Lunar lies: The impact of informational framing and individual differences in shaping conspiracist beliefs about the moon landings. *Applied Cognitive Psychology*, *27*(1), 71-80.

Tabor, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science*, 50(3), 755–769.

Tcvetkov, P., Cherepovitsyn, A., & Fedoseev, S. (2019). Public perception of carbon capture and storage: A state-of-the-art overview. *Heliyon*, 5(12). https://doi.org/10.1016/j.heliyon.2019.e02845

Tesler, M. (2018). Elite domination of public doubts about climate change (not evolution). *Political Communication*, 35(2), 306–326.

US Global Change Research Program, (2018). Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II. U.S. Global Change Research Program, Washington DC.

Uscinski, J., Douglas, K., & Lewandowsky, S. (2017). Climate change conspiracy theories. *Oxford Research Encyclopedia of Climate Science*. https://doi.org/10.1093/acrefore/9780190228620.013.328

Uscinski, J. E., Klofstad, C., & Atkinson, M. D. (2016). What drives conspiratorial beliefs? The

role of informational cues and predispositions. *Political Research Quarterly*, *69*(1), 57-71.

Uscinski, J. E., & Olivella, S. (2017). The conditional effect of conspiracy thinking on attitudes toward climate change. *Research & Politics*, *4*(4), 2053168017743105.

van der Linden, S. (2015). The conspiracy-effect: Exposure to conspiracy theories (about global warming) decreases pro-social behavior and science acceptance. *Personality and Individual Differences*, 87, 171–73.

van der Linden, S. (2021). The Gateway Belief Model (GBM): A review and research agenda for communicating the scientific consensus on climate change. *Current Opinion in Psychology*.

van der Linden, S., Leiserowitz, A., & Maibach, E. (2019). The gateway belief model: A large-scale replication. *Journal of Environmental Psychology*, *62*, 49–58.

van der Linden, S., Leiserowitz, A., Rosenthal, S., & Maibach, E. (2017). Inoculating the public against misinformation about climate change. *Global Challenges*, *1*(2), 1600008.

Van Prooijen, J-W. (2019). Belief in conspiracy theories: Gullibility or rational skepticism. In *The Social Psychology of Gullibility*. Routledge, 391-332.

Whitmarsh, L., Xenias, D., & Jones, C. R. (2019). Framing effects on public support for carbon capture and storage. *Palgrave Communications*, *5*(1), 1-10.

Condition	Headline	Prediction/ Question
Control	None (Baseline condition)	
Conspiracy	**Fake Science Again Serves Far-Left Agenda**	(H1a; H1b)
Scientific report	**New Federal Climate Assessment Report Released**	(H2a; H2b)
Conspiracy & Scientific report	**Debated Federal Climate Assessment Report Released**	(H3)
Conspiracy with source cue	**Trump Argues Fake Science Again Serves Far-Left Agenda**	(H4a)
Scientific report with source cue	**Trump Releases Federal Climate Assessment Report**	(H4a)
Conspiracy with source cue & scientific report	**Debated Federal Climate Assessment Report Released** (President Trump referenced in the text)	(H4a)

Table 1. Design for Study 1

Condition	Headline	Prediction/ Question
Control	None (Baseline condition)	
Conspiracy	**Carbon Capture Is Turning Out to Be Just Another Scam**	(H1b)
Scientific report	**Carbon Capture Technology May Be A Silver Bullet to Stop Climate Change**	(H2b)
Conspiracy & Scientific report	**Debated Technology May Be A Silver Bullet to Stop Climate Change**	(H3)
Conspiracy with source cue	**Gore Argues Carbon Capture Turning Out to Be Just Another Scam**	(H4b)
Scientific report with source cue	**Gore Argues Carbon Capture May Be A Silver Bullet to Stop Climate Change**	(H4b)
Conspiracy with source cue & scientific report	**Debated Technology May Be A Silver Bullet to Stop Climate Change** (Vice President Gore referenced in the text)	(H4b)

Table 2. Design for Study 2

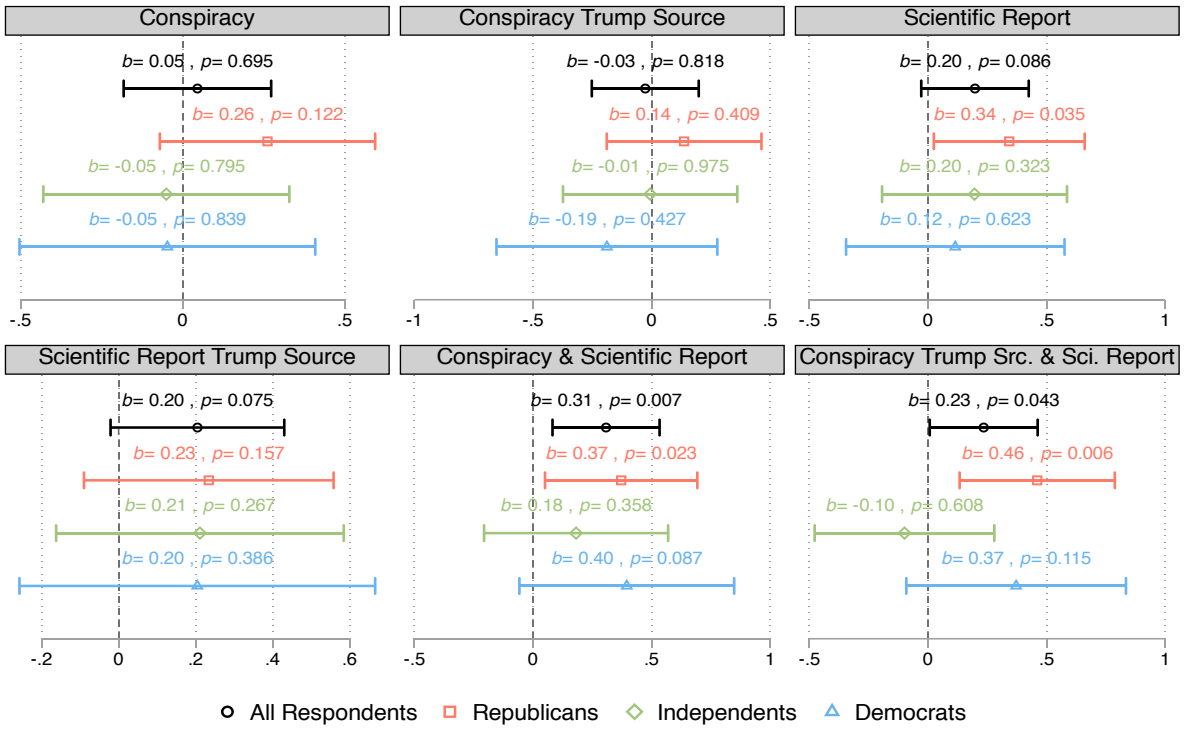

Fig. 1. Perceived Negative Effects of Climate Change. Dots are coefficient estimates with error bars representing the 95% confidence interval. The "All Respondents" markers, colored in black, are estimates from a model using the full sample. Models restricted to Republicans only, Independents only, and Democrats only are colored in red, green, and blue, respectively. All restricted models use co-partisans in the Control group as the reference category. All significance estimates are from two-tailed tests. A complete table of results is available in the Appendix.

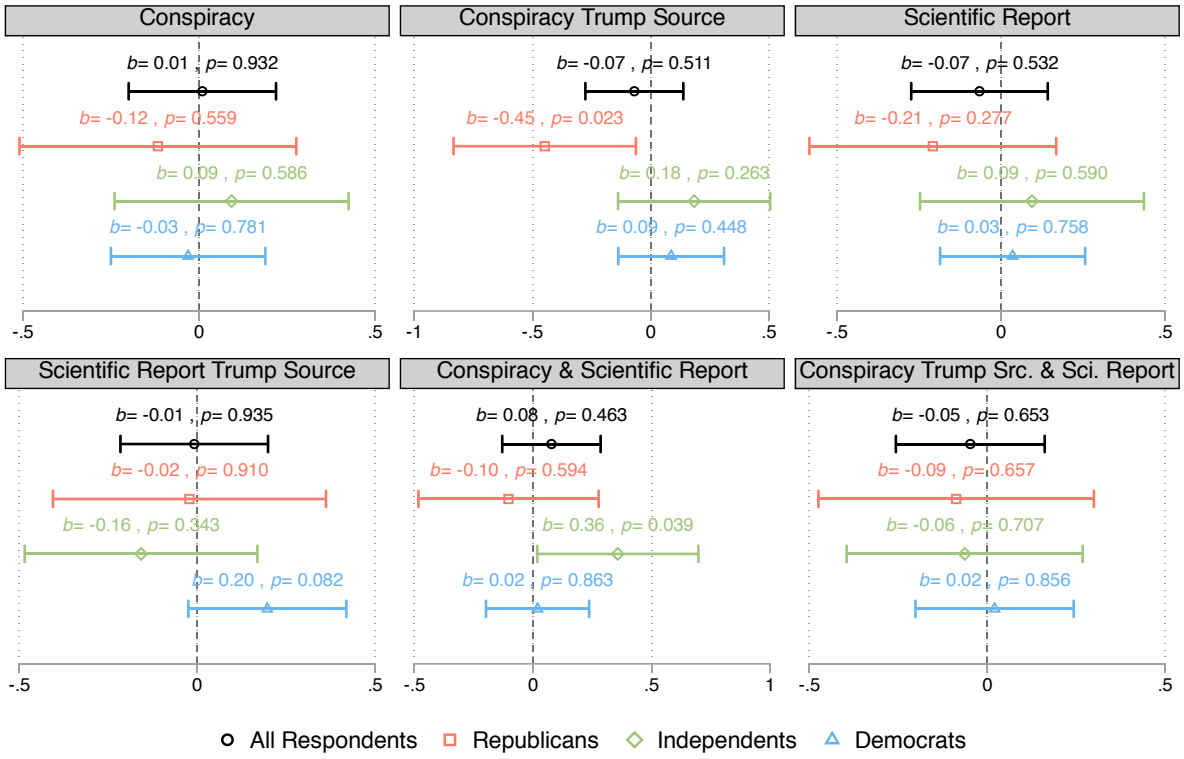

Fig. 2. Perceived Risks of Climate Change. Dots are coefficient estimates with error bars representing the 95% confidence interval. The "All Respondents" markers, colored in black, are estimates from a model using the full sample. Models restricted to Republicans only, Independents only, and Democrats only are colored in red, green, and blue, respectively. All restricted models use co-partisans in the Control group as the reference category. All significance estimates are from two-tailed tests. A complete table of results is available in the Appendix.

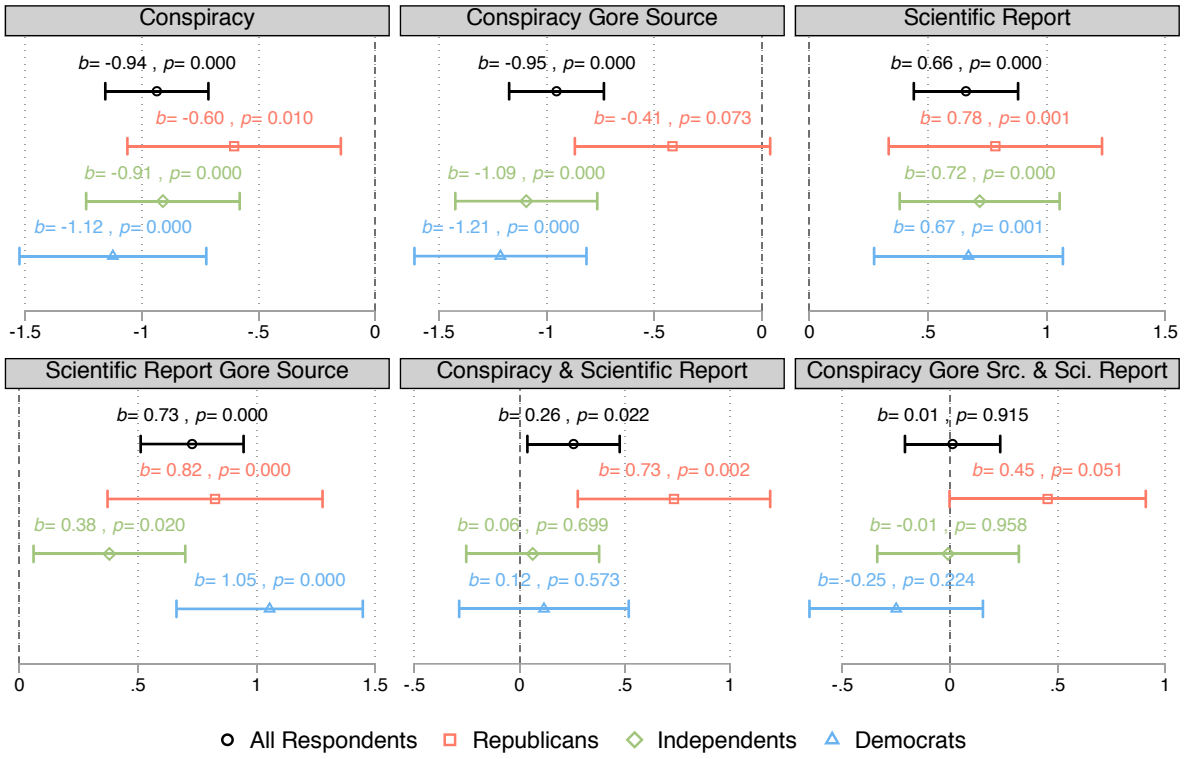

Fig. 3. Support Carbon Capture. Dots are coefficient estimates with error bars representing the 95% confidence interval. The "All Respondents" markers, colored in black, are estimates from a model using the full sample. Models restricted to Republicans only, Independents only, and Democrats only are colored in red, green, and blue, respectively. All restricted models use co-partisans in the Control group as the reference category. All significance estimates are from two-tailed tests. A complete table of results is available in the Appendix.

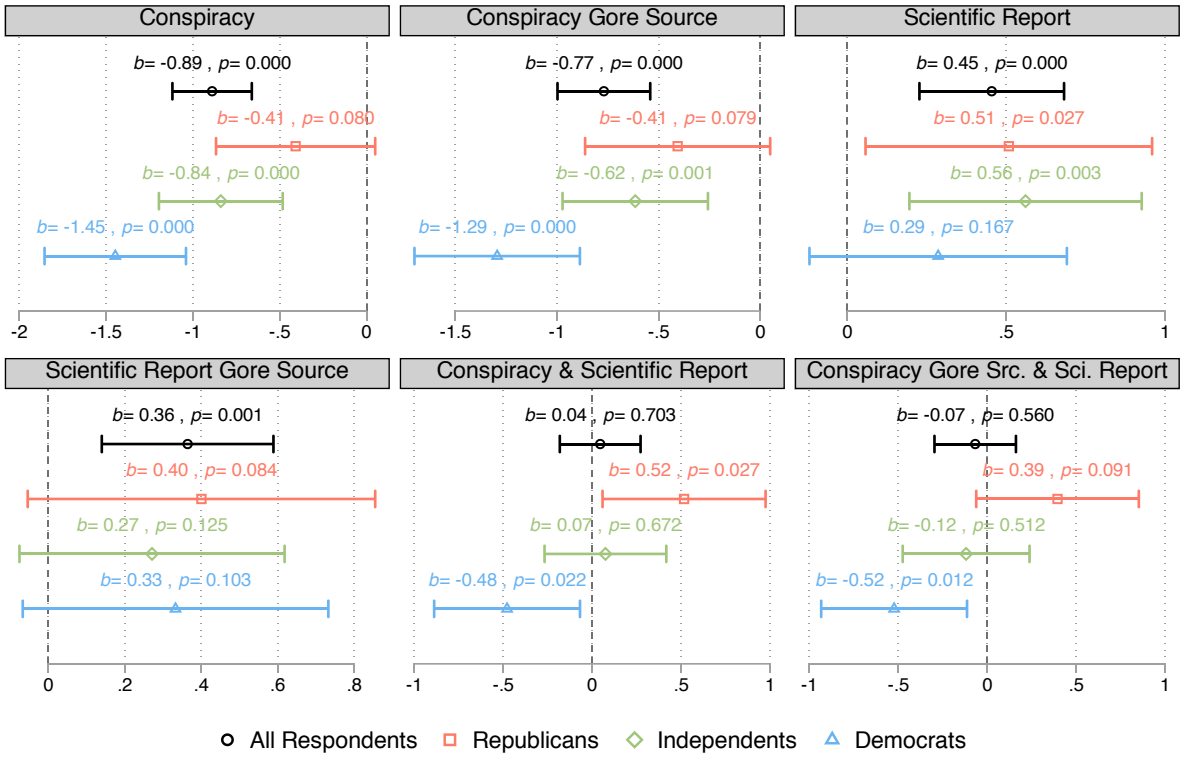

Fig. 4. Invest in Carbon Capture. Dots are coefficient estimates with error bars representing the 95% confidence interval. The "All Respondents" markers, colored in black, are estimates from a model using the full sample. Models restricted to Republicans only, Independents only, and Democrats only are colored in red, green, and blue, respectively. All restricted models use co-partisans in the Control group as the reference category. All significance estimates are from two-tailed tests. A complete table of results is available in the Appendix.

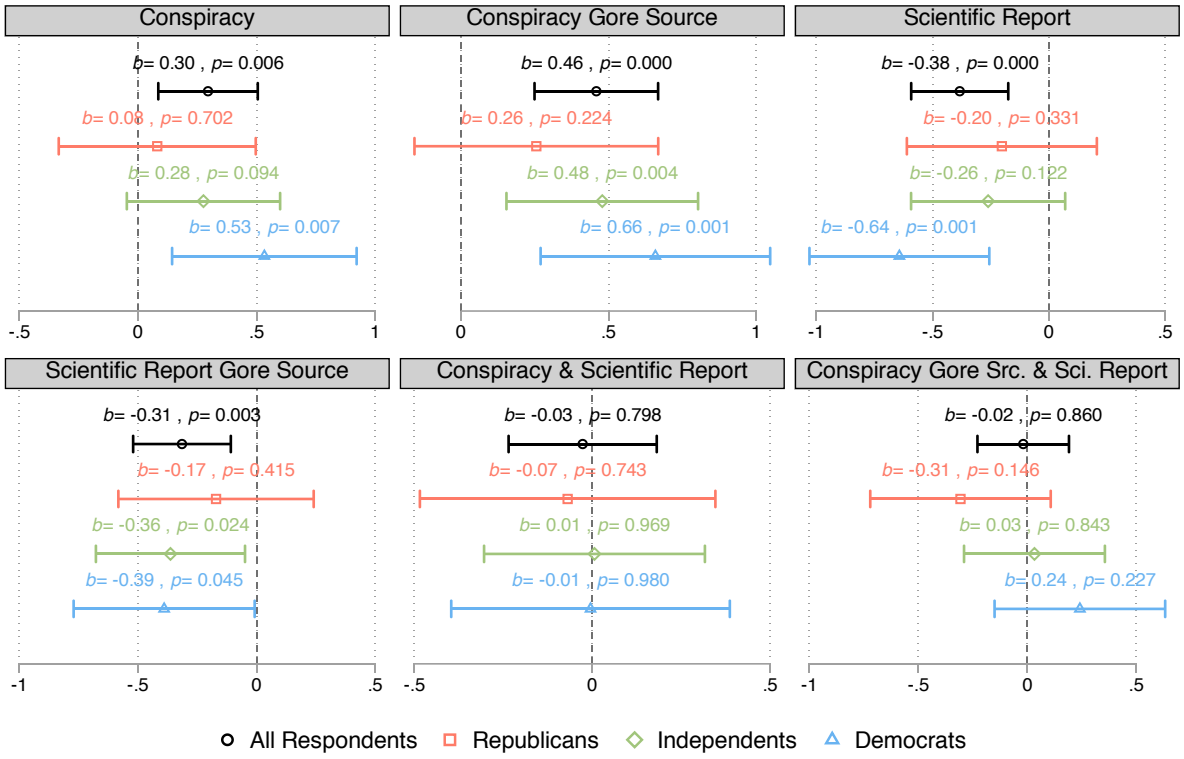

Fig. 5. Carbon Capture is a Deception. Dots are coefficient estimates with error bars representing the 95% confidence interval. The "All Respondents" markers, colored in black, are estimates from a model using the full sample. Models restricted to Republicans only, Independents only, and Democrats only are colored in red, green, and blue, respectively. All restricted models use co-partisans in the Control group as the reference category. All significance estimates are from two-tailed tests. A complete table of results is available in the Appendix.