

Do Hostile Media Perceptions Lead to Action? The Role of Hostile Media Perceptions, Political Efficacy, and Ideology in Predicting Climate Change Activism

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Abstract

This study joins a growing body of research that demonstrates the behavioral consequences of hostile media perceptions. Using survey data from a nationally representative U.S. sample, this study tests a moderated-mediation model examining the direct and indirect effects of hostile media perceptions on climate change activism. The model includes external political efficacy as a mediator and political ideology and internal political efficacy as moderators. The results show that hostile media perceptions have a direct association with climate activism that is conditioned by political ideology: Among liberals, hostile media perceptions promote activism, whereas among conservatives, they decrease activism. Hostile media perceptions also have a negative, indirect relationship with activism that is mediated through external political efficacy; however, this relationship is conditioned by both ideology and internal political efficacy. Specifically, the indirect effect manifests exclusively among conservatives and moderates who have low internal efficacy. Theoretical, normative, and practical implications are discussed.

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Discourse surrounding controversial, partisan issues is often fraught with accusations of media bias. That is, individuals on one side of a contentious debate claim that the media are unfair to their point of view, while those on the other side claim the same. This tendency for individuals who feel strongly about an issue to view media coverage of that issue—regardless of its objective content—as biased against their position is referred to as the hostile media effect (Vallone, Ross, & Lepper, 1985). Research over the last several decades has demonstrated this phenomenon to be robust across a wide variety of issues and contexts, including U.S. election campaigns (Dalton, Beck, & Huckfeldt, 1998), the Israeli-Palestinian conflict (Vallone et al., 1985), genetic modification of food (Gunther & Schmitt, 2004), physician-assisted suicide (Gunther & Christen, 2002), and stem-cell research (Hwang, Pan, & Sun, 2008), among others.

Much of the extant research has focused on identifying the conditions under which hostile media perceptions occur and the psychological mechanisms that explain these perceptions (e.g., Gunther & Schmitt, 2004; Schmitt, Gunther, & Liebhart, 2004). We know less, however, about the behavioral manifestations of the hostile media effect: Do hostile media perceptions activate partisans and motivate democratic participation, or do they lead to disillusionment and disengagement? Several recent studies have begun to address this question, demonstrating that hostile media perceptions can promote political participation—specifically discursive actions aimed at correcting the bias perceived in the media (Ho et al., 2011; Hwang et al., 2008; Rojas, 2010). At the same time, studies have documented conditions under which hostile media perceptions detract from traditional political participation (Ho et al., 2011) and even inspire retaliation against the democratic system in the form of violent protest (Tsftati & Cohen, 2005).

One limitation of this research, however, is that it assumes these effects will manifest similarly for all ideological groups. However, in a divisive political climate, such as the contemporary United States, this may not be a reasonable assumption. Because political identity is more salient in such an environment, not only might this make hostile media perceptions more likely, but it also may exacerbate tendencies for strong partisans and ideologues to act in accordance with their political identities. The current study addresses this limitation by extending the existing research on hostile media perceptions and political participation to the context of climate change, a highly polarized issue in the United States (McCright & Dunlap, 2011). Using nationally representative survey data, we demonstrate how the direct effect of hostile media perceptions on climate change activism manifests differently among liberals and conservatives.

We focus on climate change activism—that is, participation aimed specifically at mitigating global warming—rather than general climate change related participation. In so doing, we join several recent studies focused on modeling the predictors of climate change activism (Lubell, Zahran, & Vedlitz, 2007; Roser-Renouf, Maibach,

Leiserowitz, & Zhao, 2014). Although our study does not account for activism directed *against* climate change mitigation policies, we suspect that this type of activism is relatively rare. Activism implies a push for change—in this case, the enactment of new policies to reduce the carbon emissions that contribute to climate change. Given that those who oppose such policies are likely content with the status quo, which does not currently include stringent emissions reduction policies, they have little incentive to engage in activist behavior. Indeed, in the survey data used for this study, we found that less than 2% ($n = 14$) of the sample reported that they contacted government officials to oppose action on climate change. This suggests that activism around the issue of climate change is, by and large, conducted in support of mitigation policies. Accordingly, we focus on how the relationship between hostile media perceptions and activism in support of climate change mitigation policies varies among liberals and conservatives.¹ Throughout the article, the term *climate change activism* is used to refer to activism in support of climate mitigation policies.

We also consider the routes through which hostile media perceptions may influence climate change activism among liberals and conservatives. Prior studies (Finkel, 1985; Niemi, Craig, & Mattei, 1991; Rosenstone and Hansen, 2003; Verba & Nie, 1972) have shown that citizens are more likely to participate in politics when they have both internal political efficacy, or feel personally competent in the political realm, and external political efficacy, or believe that the government will be responsive to their demands. Accordingly, previous research has examined external political efficacy as a mediator of the relationship between biased media perceptions and political participation (Ho et al., 2011). We expand on that work by also considering the moderating effects of both political ideology and internal political efficacy. Specifically, we test a moderated-mediation model that examines the indirect effect of hostile media perceptions on climate change activism through external efficacy as conditioned by political ideology and internal efficacy.

To our knowledge, this is the first study to explore the conjoint role of hostile media perceptions, political ideology, and political efficacy in motivating action aimed explicitly at addressing climate change in the political sphere. This is a particularly important contribution, given that effective climate change mitigation rests in large part on convincing the public to pressure politicians to pass policies that address the issue (Ockwell, Whitmarsh, & O'Neill, 2009). Ultimately, our results demonstrate that climate change activism is influenced by a complex set of relations between hostile media perceptions, internal and external political efficacy, and political ideology, with important theoretical, practical, and normative implications.

Hostile Media Perceptions and Issue-Based Activism

Trust in the news media at large has been declining among the American public over the last several decades (Ladd, 2012). In the context of climate change, just 37% of Americans report that they somewhat or strongly trust the mainstream media as a source of information (Leiserowitz, Maibach, Roser-Renouf, Feinberg, & Howe, 2012). Moreover, consistent with the hostile media phenomenon, Kim (2011) has

demonstrated that people tend to view media coverage of climate change as biased against their own views on the issue. Such hostile media perceptions are thought to be the result of ego involvement with an issue (Perloff, 1989); when people feel strongly about an issue and find it personally important, they process information about that issue through a distorted lens. Specifically, they become more likely to categorize the balance of views expressed by the media as disagreeable or hostile to their own position (Schmitt et al., 2004). In the United States, climate change is a politically contentious issue, with liberals and Democrats more likely to believe in global warming and support political actions to address it, while the reverse pattern is true among conservatives and Republicans (McCright & Dunlap, 2011). It is thus an issue that should be particularly likely to inspire hostile media perceptions along ideological lines.

Claims of media bias from politicians and pundits also are thought to contribute to public perceptions of media bias (Ladd, 2012; Watts, Domke, Shah, & Fan, 1999). The effect of elite political cues on hostile media perceptions likely is exacerbated in the fragmented U.S. media environment (Ladd, 2012). For example, conservative media personalities routinely accuse the mainstream media of a liberal bias (e.g., Jamieson & Cappella, 2008), whereas, on the left, organizations such as Media Matters track what they see as conservative bias across a variety of media and issues, including climate change. These conditions provide a ripe context for studying hostile media perceptions and their relationship with climate change activism.

There are several reasons why hostile media perceptions are likely to promote political participation and activism. First, hostile media perceptions are a response specifically to information sources that are perceived to reach a wide audience and ostensibly exert a broad influence on public opinion (Gunther & Liebhart, 2006). For example, a newspaper article, but not a student essay, has been found to elicit hostile media perceptions (Gunther & Liebhart, 2006). In turn, when people perceive the media are hostile to their views, they also are more likely to believe that the majority public opinion diverges from their own (Gunther & Chia, 2001; Hwang et al., 2008). This perceived incongruity can motivate a desire to speak out and participate in order to influence and redirect public opinion toward one's own views (Scheufele & Eveland, 2001). Indeed, Rojas (2010) found that hostile media perceptions and the belief that the media exert a disproportionate effect on others encourage people to correct for these perceived biases by engaging in expressive political action in both the online and offline spheres. Although this appears to contradict the spiral of silence theory (Noelle-Neumann, 1974), which predicts that people who perceive their opinions to be in the minority will be *less* likely to speak out, hostile media perceptions are most pronounced among highly involved partisans (Perloff, 1989)—or the so-called “hard-core” individuals who are certain of their opinions and thus speak out regardless of the perceived opinion climate (Matthes, Morrison, & Schemer, 2010).

Ho et al. (2011) likewise found that perceptions of media bias were positively and directly linked to political participation related to the issue of stem-cell research. They argued that hostile media perceptions are a component of “issue public” membership (Converse, 1964), whereby individuals are especially interested and invested in a particular issue and, as such, feel compelled to participate to influence the climate of

opinion and to rally support for their views. Perceptions of a hostile media are likely to activate these participatory inclinations. If the media are viewed as hostile and capable of influencing the public at large, this creates a greater perceived need for issue-focused partisans to get involved and take actions such as contacting public officials, joining a demonstration, or signing a petition.

Hostile media perceptions also may fuel activism by stimulating negative emotional reactions toward the media (Hwang et al., 2008). Hwang et al. (2008) termed this “media indignation,” which arises from the sense that biased media are a form of injustice and are the result of deliberate manipulation by powerful interest groups. Across three different issues, Hwang et al. found that hostile media perceptions increased people’s willingness to engage in discursive activities aimed at amplifying their own views in the public sphere—such as discussing the issue with others, doing issue-related volunteer work, and meeting with elected officials—and this relationship was mediated by media indignation.

Based, then, on existing theory and research, we expect that perceptions of a hostile bias in media coverage of climate change will be positively related to climate change activism; however, in an advance over previous research, we propose that this link will depend on one’s ideological predispositions. This expectation follows from a growing body of work that finds that, within the American electorate, not only are liberals and conservatives increasingly polarized (e.g., Carmines, Ensley, & Wagner, 2012), but there also are fundamental differences in how they process and respond to political stimuli (e.g., Dodd et al., 2012; Graham, Haidt, & Nosek, 2009).

Specifically, we expect that the positive relationship between hostile media perceptions and climate activism will be isolated among political liberals. This is because the climate change issue public—that is, the segments of the American public who are “alarmed” or “concerned” about global warming—are disproportionately comprised of liberals (Maibach, Roser-Renouf, & Leiserowitz, 2009). Conservatives, on the other hand, tend to be “dismissive” or “doubtful” of climate change (Maibach et al., 2009). It stands to reason that hostile media perceptions will activate those for whom the issue is salient and concerning, in this case, liberals. On the other hand, among those who are more apathetic or skeptical toward climate change, climate activism should become less likely as a result of hostile media perceptions.

By the same logic, there is also a possibility that hostile media perceptions will mobilize conservatives to *oppose* climate action, but as noted earlier, this type of activism was extremely rare in our data. It is thus more likely that hostile media perceptions will lead conservatives to avoid *any* form of activism that could serve to publicize the issue of climate change. In their prior research on the hostile media effect, Gunther and Chia (2001) noted that there may be a certain class of controversial issues for which media attention is welcomed by partisans on only one side of the issue, whereas partisans on the other side think the attention is overblown and unwarranted. Consistent with this idea, conservatives and Republicans are especially likely to say that the threat of climate change is exaggerated by the news media (Gallup, 2014). Thus, they may avoid activist behavior simply because they do not want to draw more attention to the issue of climate change. Liberals and Democrats, on the other hand, tend to feel that

the threat of climate change is underestimated by the news media (Gallup, 2014) and may be more motivated to engage in activities to help raise the issue's profile.

Moreover, Ladd (2012) has found that people who distrust the media are more resistant to new information about public affairs and instead rely on their predispositions to form their political beliefs and guide their political behaviors. In the present context, this means that perceptions of a hostile media bias should reinforce liberals' predispositions to promote action to address climate change and conservatives' predispositions to reject such action. Similarly, just as social identity provides a filter through which people perceive media (Perloff, 1989), once media coverage is deemed hostile, this likely reinforces one's initial social identity by strengthening feelings of affinity with members of one's own group and feelings of hostility toward the other group (see Slater, 2007). This, too, may make it especially likely that individuals will act in a way that is consistent with their predispositions and social or political identities. Thus, we expect that hostile media perceptions will promote climate activism among liberals, while decreasing it among conservatives:

Hypothesis 1 (H1): The relationship between hostile media perceptions and climate change activism will be positive among liberals and negative among conservatives.

External Political Efficacy as an Intervening Variable

In addition to the direct effect of hostile media perceptions on activism, it is also possible that hostile media perceptions will *indirectly decrease* political participation through its effects on external political efficacy. Scholars generally agree that political efficacy is comprised of two different dimensions: a self-oriented concept, known as internal efficacy, and a system-oriented concept, known as external efficacy (Balch, 1974; Converse, 1972). As Craig, Niemi, and Silver (1990) described, internal political efficacy refers to "beliefs about one's own competence to understand and to participate effectively in politics" (p. 290). External political efficacy, on the other hand, refers "to beliefs about the responsiveness of government authorities and institutions to citizen demands" (p. 290).

Both forms of efficacy have been found to motivate political participation (e.g., Finkel, 1985; Niemi et al., 1991; Rosenstone and Hansen, 2003; Verba & Nie, 1972); however, because one is inward-looking and the other is outward-looking, they have different antecedents. For example, internal efficacy is more strongly related to psychological involvement, political interest, and knowledge, whereas external efficacy is more strongly related to political trust (Craig et al., 1990; Morrell, 2003; Niemi et al., 1991). Because external efficacy reflects attitudes about the responsiveness of the political system, it is particularly likely to be affected by hostile media perceptions. Specifically, hostile media perceptions are likely to *undermine* external political efficacy. This is because hostile media perceptions signify a belief in the failure or shortcomings of a major institution of American democracy—the news media—to accurately report on issues such as climate change due to structural biases that favor dramatic, personalized, and fragmented coverage (W. L. Bennett, 2009; Hart &

Feldman, 2014) and/or vulnerability to powerful special interests (Hwang et al., 2008). It is possible that such a belief—particularly when driven by concerns about the influence of special interests—will translate into a similar lack of faith in other democratic institutions—namely, government institutions and actors. Indeed, several studies have found that trust in media and trust in government go hand-in-hand (S. E. Bennett, Rhine, Flickinger, & Bennett, 1999; Jones, 2004). Furthermore, Tsfatı and Cohen (2005) found that hostile media perceptions decreased trust in democracy, indirectly through media trust, and Ho et al. (2011) found that perceived media bias decreased external political efficacy, indirectly through trust in government. Although Ho et al. found that perceived media bias negatively affected external political efficacy in a general political context, they did not find this relationship to be significant in the specific context of stem-cell research. This discrepancy may be due to the fact that their study did not account for the possibility that ideology conditions this relationship, despite stem-cell research being an ideologically driven issue (Nisbet, 2005). The present study addresses this possibility.

Specifically, we expect that hostile media perceptions will be negatively related to external political efficacy; however, we propose that these effects will be moderated by political ideology such that the negative relationship will be stronger among conservatives than liberals. This, we believe, is owing to the current political environment surrounding global warming and, in particular, the congruence between the perceived direction of the hostile media bias among most conservatives (i.e., they likely see it as biased in favor of climate concern and action) and the position of the Obama administration toward global warming. While, at the time of the present study, the Obama administration had yet to pass meaningful legislation to address global warming, President Obama had indicated that fighting climate change is a priority and has overseen new regulatory standards such as the Environmental Protection Agency's restrictive greenhouse gas emissions caps for power plants (The White House, Office of the Press Secretary, 2013). If, as we have argued, perceptions of a hostile media bias will inspire mistrust and skepticism toward the institution of government, this should be especially likely among those for whom the party controlling the White House is already seen as relatively hostile. Moreover, although climate change remains a divisive issue in the United States, the balance of public opinion is on the side of climate change concern (Leiserowitz, Maibach, Roser-Renouf, Feinberg, & Howe, 2013), and the overwhelming majority of scientists agree that global warming is happening, is caused by humans, and requires urgent action (Intergovernmental Panel on Climate Change [IPCC], 2013). Thus, conservatives, who tend to doubt the reality of global warming, represent the minority of public (and scientific) opinion on global warming. Tsfatı (2007) found that when minority groups perceive the media as hostile, this contributes to further perceptions of political alienation. Taken together, this suggests that hostile media perceptions will exacerbate feelings among conservatives that their interests are underrepresented or ignored by the government:

Hypothesis 2 (H2): The negative relationship between hostile media perceptions and external political efficacy will be stronger among conservatives than among liberals.

While hostile media perceptions are likely to have a negative relationship with external efficacy, external efficacy is expected to have a positive impact on climate change activism. This positive relationship should be especially pronounced among liberals, who tend to be relatively concerned about climate change (Maibach et al., 2009; McCright & Dunlap, 2011). Higher concern coupled with higher perceptions of external political efficacy may provide liberals with a stronger push to engage in climate change activism, by arming them with the sense that their action actually might make a difference. On the other hand, even if conservatives believe that the government will be responsive to their concerns, this is unlikely to inspire action to address an issue that they tend not to consider a serious problem (Maibach et al., 2009; McCright & Dunlap, 2011). Thus, we propose the following:

Hypothesis 3 (H3): The positive relationship between external political efficacy and climate change activism will be stronger among liberals than among conservatives.

Prior research that has considered external political efficacy as a mediator in the relationship between hostile media perceptions and political participation (Ho et al., 2011) has not considered the role played by internal political efficacy. The current study attempts to address this research gap. Although internal political efficacy, which reflects one's own self-concept in the domain of politics, is unlikely to be directly affected by hostile media perceptions, it is a consistent predictor of political participation (e.g., Finkel, 1985; Niemi et al., 1991; Rosenstone and Hansen, 2003), including environmentally oriented activism (Lubell, 2002). Moreover, as described below, prior research has found that internal and external efficacy interact in their effects on participation (Pollock, 1983; Shingles, 1981). We thus propose internal political efficacy as an additional moderator of the relationship between external political efficacy and climate activism.

Theoretically, it seems unlikely that people will participate in politics if they lack internal efficacy; that is, if they do not feel capable of participating or they do not believe in themselves as a competent political actor. Thus, while citizens who are externally efficacious, in that they believe that the government will be receptive to their efforts, are more likely to participate, this should be especially true when citizens are also confident in their own ability to act. Previous research that has examined the combined effects of internal and external political efficacy has found that individuals who are high in both factors are "complete participants" across a range of conventional political activities, whereas those low in both are fully disengaged from political life (Pollock, 1983, p. 404). At the same time, however, prior studies have found that those with high internal and low external efficacy are particularly likely to participate in the relatively high effort, policy-directed activities we consider here, such as contacting a government official and volunteering for an issue-related organization (Pollock, 1983; Shingles, 1981). When internal efficacy is high and external efficacy is low, people are less inclined toward allegiant or dutiful forms of citizenship such as voting and instead turn to communicative acts designed to influence the direction of

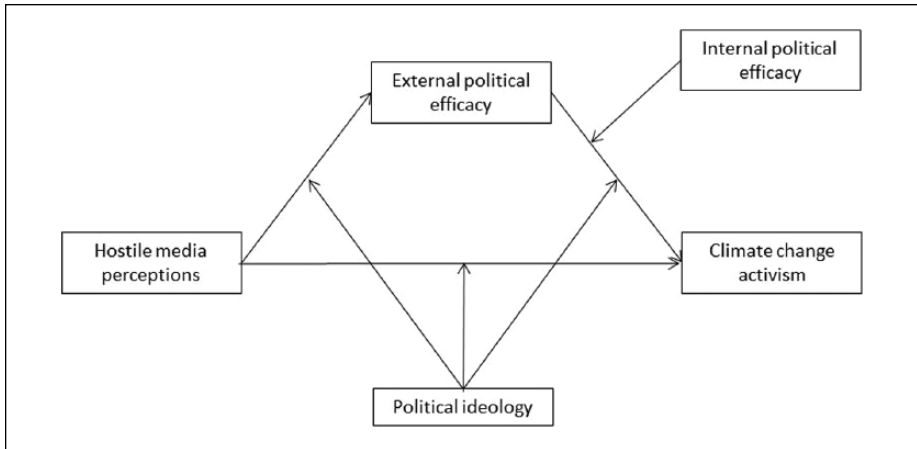


Figure 1. Proposed conceptual model.

public discourse and policy-making. In the latter case, low external efficacy is thought to create a perceived need to act; that is, if individuals believe government officials will not be responsive or will not do what is required on their own accord, they will feel compelled to engage in activities aimed at increasing government awareness and action (Gamson, 1968; Pollock, 1983; Shingles, 1981). Taken together, these findings suggest an important interaction between internal and external efficacy in their effects on climate change activism. Specifically, when internal efficacy is high, activism should be high, regardless of the level of external efficacy. Thus, external efficacy will be most predictive of activism when internal efficacy is low.

Hypothesis 4 (H4): The positive relationship between external political efficacy and climate change activism will be stronger among individuals who have lower levels of internal political efficacy and weaker among those who have higher levels of internal political efficacy.

Finally, if H2, H3, and H4 are supported by the data, this suggests that hostile media perceptions will decrease climate change activism indirectly through its effects on external political efficacy; however, this mediation effect will be conditional on political ideology and internal efficacy. This informs our final hypothesis:

Hypothesis 5 (H5): There will be a negative indirect effect of hostile media perceptions on climate change activism via external political efficacy that will be conditional on political ideology and internal political efficacy.

See Figure 1 for a conceptual model of the proposed hypotheses. As shown in the figure, external efficacy serves as a mediator—a causally intervening variable via

which the independent variable (hostile media perceptions) influences the dependent variable (activism; see Hayes, 2013). Ideology and internal efficacy function as moderators, such that the strength of the path between external efficacy and activism is expected to vary across values of ideology and internal efficacy. Ideology also is expected to moderate the respective paths between hostile media perceptions and both external efficacy and activism.

Method

Data for this study come from a survey of 1,000 Americans conducted in late October and early November 2011. Participants were members of a nationally representative, online panel maintained by Knowledge Networks. Knowledge Networks recruits its 50,000-member panel using random digit dialing and address-based sampling. The use of this dual sampling strategy covers both listed and unlisted phone numbers, telephone, non-telephone, and cell-phone-only households. Panelists complete an average of two 5- to 20-minute surveys per month for which they receive small incentives, in the range of US\$4 to US\$6. Those without a home computer receive a free netbook and Internet service to ensure that segments of the population without computers are represented in the panel. The survey had a completion rate of 65.1% and a cumulative response rate of 6.2%.² The sample was 47% male, 74% White, with a mean age of 47.37 ($SD = 17.00$) and an average of 13.89 years of education ($SD = 2.64$). Median annual household income was US\$50,000 to US\$59,999.

Measures

Climate change activism was assessed by asking respondents to indicate the frequency with which they had engaged in two actions over the last 12 months: (1) volunteered with or donated money to an organization working to reduce global warming, and (2) written letters, emailed, or phoned government officials about global warming. Response options ranged from 1 “never” to 5 “many times (6+),” with “don’t know” responses coded as missing. For the second item, a follow-up question asked respondents to indicate whether, when they contacted a government official, they urged the official to take action to reduce global warming or not to take action to reduce global warming. Just 14 respondents indicated the latter. Because we were interested in measuring activism directed at mitigating climate change, these 14 respondents were recoded as “never” (1) on this item. Responses to the two items were averaged together ($r = .58, p < .001; M = 1.28, SD = 0.69$).³

Our measure of *hostile media perceptions* consisted of two items, adapted from Hwang et al. (2008). Respondents were asked to indicate their level of agreement, where 1 = strongly disagree and 4 = strongly agree, with the following two statements: “Media coverage of global warming is biased against my views on the issue” and “Media coverage of global warming is distorted by powerful interest groups.” Responses were averaged together ($r = .50, p < .001; M = 2.70, SD = 0.73$).

Drawing from Craig et al. (1990) and Morrell (2003), *internal political efficacy* was measured with four items that asked respondents to indicate their level of

agreement, where 1 = strongly disagree and 5 = strongly agree, with the following statements: "I think that I am better informed about politics and government than most people"; "I consider myself to be well qualified to participate in politics"; "I feel that I have a pretty good understanding of the important political issues facing the country"; and "I feel that I could do as good a job in office as most people" (Cronbach's $\alpha = .87$; $M = 3.01$, $SD = 0.96$).

External political efficacy was measured with a single item that asked respondents to indicate their level of agreement, where 1 = strongly disagree and 4 = strongly agree, with the following statement: "Public officials don't care much what people like me think about global warming" (see Niemi et al., 1991). Responses were reverse coded for analysis, so that higher scores indicate greater efficacy ($M = 2.12$, $SD = 0.81$).

Political ideology was measured by asking respondents if they see themselves as liberal or conservative, where 1 = *very liberal* and 5 = *very conservative* ($M = 3.16$, $SD = 1.04$).

Several variables expected to associate with hostile media perceptions, efficacy, and climate change activism served as controls in our analyses. These included global warming belief certainty, personal importance of global warming, perceived understanding of global warming, attention to news about global warming, frequency of discussion about global warming, and preferred media source for public affairs information (i.e., broadcast, print, or Internet). Measurement of these control variables is described in the appendix. Control variables also included gender, race, income, age, and education.

Missing Data

As is typical in survey data, some people did not respond to one or more questions used in the analyses. To reduce the amount of missing data, we used a hot deck imputation procedure (Myers, 2011). To impute nonresponses, the rows (i.e., respondents) of the survey data file were randomly permuted within sex, income, and education. Any respondent missing on a given variable was assigned the value of the respondent with the same sex, income level, and years of education nearest to him or her in this randomly permuted data file. In other words, nonresponses were assigned a response by randomly sampling without replacement from the distribution of the responses to the item with missing data from those individuals with the same sex, income level, and education. Most respondents (85.1%) did not require any imputation, and no variables required imputation on more than 7.1% of the cases.

Analysis

We tested our hypotheses using the SPSS PROCESS macro developed by Hayes (2013). The PROCESS macro uses an ordinary least squares (OLS) regression-based path analytic framework to test the proposed conditional direct and indirect effects (see Figure 1). It provides a bootstrapped confidence interval (CI) for the indirect

effect of hostile media perceptions on climate change activism via external political efficacy, accounting for the conditional effects of both political ideology and internal political efficacy and controlling for all exogenous variables. As a test of mediation, bootstrap methods are considered superior to alternative approaches such as the Sobel test or causal steps approach (Hayes, 2013). Following Hayes's (2013) recommendations, the bootstrap analysis was conducted with 10,000 iterations and bias-corrected estimates. The reported indirect effects may be interpreted such that if the lower and upper 95% CIs are either both below or both above zero, there is a statistically significant indirect effect, whereas if the lower and upper CIs include zero, there is not a significant indirect effect.

Results

Table 1 presents the results for two OLS regression analyses: the first predicting external political efficacy from hostile media perceptions, political ideology, and the interaction between hostile media perceptions and ideology, as well as the control variables; and the second predicting climate change activism from hostile media perceptions, ideology, external political efficacy, internal political efficacy, interactions between hostile media perceptions and ideology, between external efficacy and ideology, and between internal and external efficacy, along with the control variables. Variables were mean-centered prior to computing the interaction terms, which permits interpretation of the coefficients for the individual variables that comprise the interaction terms at the mean of the other variables that make up the interaction (Hayes, 2013).

We first consider the direct effect of hostile media perceptions on climate change activism (H1). As predicted, there was a significant negative interaction between hostile media perceptions and political ideology (unstandardized $B = -.08$, $p < .01$; see second column of Table 1). This indicates that the association between hostile media perceptions and activism was positive among liberals but negative among conservatives (see Figure 2).⁴ Using the PROCESS macro, the Johnson-Neyman technique (see Hayes & Matthes, 2009) was employed to determine where on the ideology continuum the effect of hostile media perceptions shifts from statistically nonsignificant to significant. The Johnson-Neyman technique mathematically derives the "regions of significance" for the conditional effect of hostile media perceptions, which represent values within the range of the moderator variable (i.e., ideology) in which the association between hostile media perceptions and activism is statistically different from zero. The significance region was determined to be <2.60 and >4.72 . For example, among people who identified as somewhat liberal (i.e., ideology = 2), the direct effect of hostile media perceptions on climate change activism was positive and significant ($B = .12$, $SE = .05$, $p < .01$), whereas among people who identified as very conservative (i.e., ideology = 5), the direct effect of hostile media perceptions on climate activism was negative and significant ($B = -.13$, $SE = .06$, $p < .05$). For moderates and weaker conservatives, the direct effect was nonsignificant. These results support H1.

We turn next to a test of H2, which predicted that hostile media perceptions would be negatively related to external political efficacy, and especially so among

Table 1. OLS Regression Results Predicting External Political Efficacy and Climate Change Activism.

	External political efficacy	Climate change activism
	<i>B</i> (<i>SE</i>)	<i>B</i> (<i>SE</i>)
Control variables		
Age	−.001 (.001)	−.0005 (.001)
Gender (male)	.02 (.05)	−.06 (.04)
Race (White)	−.02 (.05)	−.12 (.05)**
Education	.02 (.01)*	.008 (.009)
Income	.005 (.006)	−.01 (.005)*
Issue importance	−.02 (.03)	.07 (.03)*
Global warming certainty	−.02 (.01)	.006 (.01)
Perceived understanding	.01 (.04)	.06 (.03)
News attention	−.06 (.03)	.02 (.03)
Discussion frequency	.01 (.03)	.19 (.03)***
Preferred news media source ^a		
Broadcast	.05 (.06)	.05 (.05)
Print	.02 (.08)	.08 (.07)
Conceptual variables		
Hostile media perceptions	−.48 (.03)***	.03 (.03)
Political ideology (Cons. = high)	.04 (.03)	−.08 (.02)***
Hostile media perceptions × Ideology	−.08 (.03)**	−.08 (.03)**
External political efficacy		.02 (.03)
External efficacy × Ideology		.02 (.03)
Internal political efficacy		.04 (.02)
External efficacy × Internal efficacy		−.05 (.02)*
Constant	−.10 (.18)	.61 (.17)***
<i>R</i> ²	.21	.20
<i>N</i>	983	983

Note. Unstandardized regression coefficients are reported. Variables were mean-centered prior to computing the interaction terms. OLS = Ordinary least squares.

^aInternet is the reference category.

p* < .05. *p* < .01. ****p* < .001.

conservatives. The data support this hypothesis. Looking to the first column of Table 1, there was a significant negative interaction between hostile media perceptions and political ideology ($B = -.08, p < .01$). Using the PROCESS macro to probe the interaction, we found that the association between hostile media perceptions and external efficacy was negative and significant regardless of ideology, but the strength of this association increased as conservatism increased (see Figure 3).⁵ For example, among conservatives (i.e., ideology = 4), the effect of hostile media perceptions on external

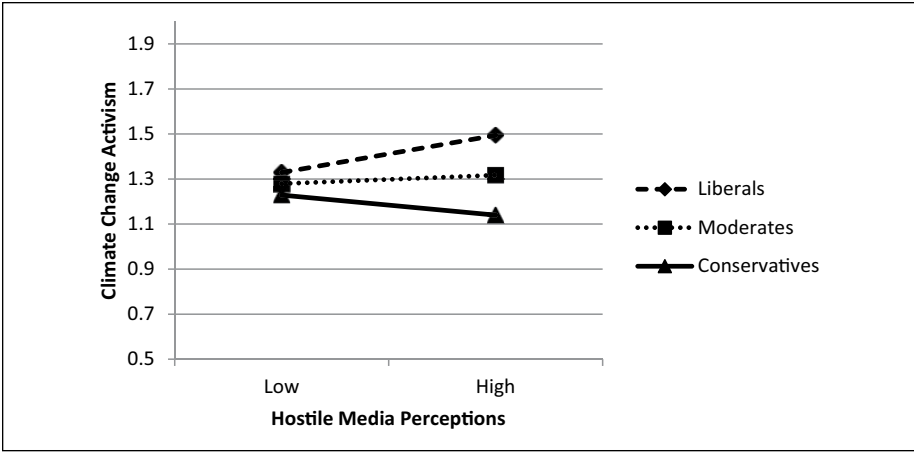


Figure 2. Interaction between hostile media perceptions and political ideology in predicting climate change activism.

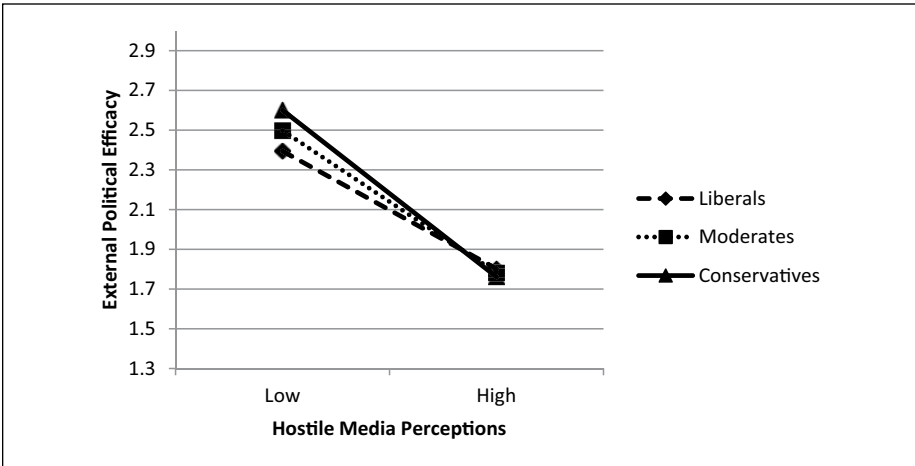


Figure 3. Interaction between hostile media perceptions and political ideology in predicting external political efficacy.

efficacy was $-.55$ ($SE = .04$, $p < .001$); among liberals (i.e., ideology = 2), the effect was $-.39$ ($SE = .05$, $p < .001$).

Turning now to the effect of external political efficacy on climate change activism, we see from the second column of Table 1 that the interaction between external political efficacy and ideology was not significant ($B = .02$, $p = ns$). Thus, H3 was not supported. In support of H4, there was a significant negative interaction between external efficacy and internal efficacy ($B = -.05$, $p < .05$). Figure 4 shows that this interaction

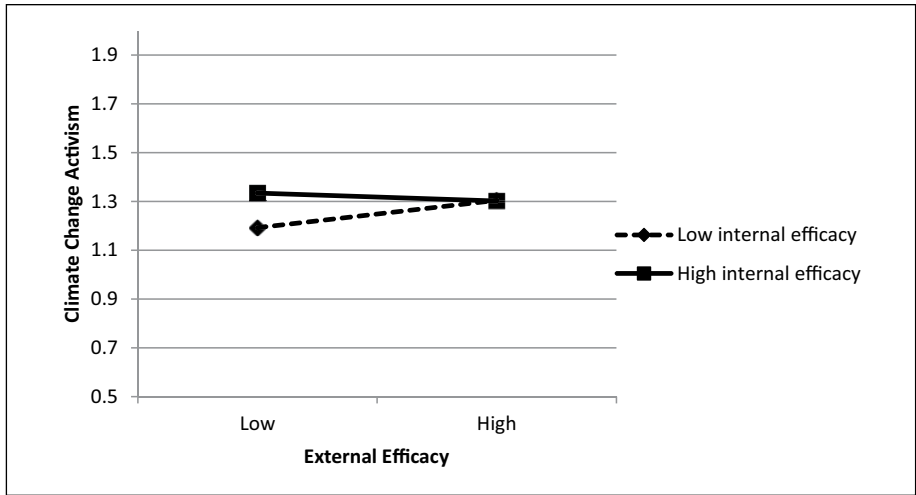


Figure 4. Interaction between hostile media external political efficacy and internal political efficacy in predicting climate change activism.

was consistent with predictions, in that there was a positive association between external efficacy and activism at low levels of internal efficacy; when internal efficacy was high, activism was relatively high, regardless of external political efficacy.⁶ The Johnson-Neyman technique indicated that the cut-off for statistical significance is 1.98; thus, when internal efficacy is below this value, the association between external efficacy and activism is positive and significant. When internal efficacy is above this value, external efficacy is not significantly related to activism.

Finally, Table 2 reports the bootstrapped indirect effect of hostile media perceptions on climate activism via external efficacy at various values of political ideology and internal efficacy. In support of H5, the results confirm that the indirect effect is conditional on ideology and internal efficacy. Specifically, the indirect effect is negative and significant (i.e., the 95% CI does not include zero) only for moderates and conservatives who have low internal efficacy. For these groups, hostile media perceptions *decrease* climate change activism through external political efficacy. Specifically, the estimated indirect effect for moderates with low internal efficacy is $-.03$, boot 95% CI = $[-.070, -.006]$; the indirect effect for conservatives with low internal efficacy is $-.05$, boot 95% CI = $[-.106, -.004]$. For all other combinations of ideology and internal efficacy, the 95% CI includes zero, and the indirect effects are thus not significant.

Discussion

Taken together, our results provide a nuanced view of the relationship between hostile media perceptions and climate change activism. We find that hostile media perceptions are directly associated with climate change activism but that this is moderated by

Table 2. Conditional Indirect Effect of Hostile Media Perceptions on Climate Change Activism via External Efficacy at Values of Political Ideology and Internal Political Efficacy.

Political ideology	Internal political efficacy	Indirect effect (boot SE)	Boot 95% CI
Liberal	Low	-.021 (.017)	[-.0582, .0085]
Liberal	Medium	-.003 (.018)	[-.0403, .0311]
Liberal	High	.015 (.023)	[-.0324, .0608]
Moderate	Low	-.034 (.016)	[-.0700, -.0061]
Moderate	Medium	-.011 (.012)	[-.0370, .0118]
Moderate	High	.011 (.017)	[-.0250, .0439]
Conservative	Low	-.049 (.025)	[-.1057, -.0043]
Conservative	Medium	-.023 (.016)	[-.0564, .0071]
Conservative	High	.003 (.015)	[-.0270, .0038]

Note. For ideology and internal efficacy, respectively, “moderate”/“medium” values correspond to the sample mean, “liberal”/“low” values correspond to one standard deviation below the mean, and “conservative”/“high” values correspond to one standard deviation above the mean. Bootstrapped standard errors and confidence intervals were computed using 10,000 bootstrap samples. Bold text is used to denote significant effects. CI = confidence interval.

political ideology (H1). That is, among liberals, hostile media perceptions are positively related to activism, whereas among strong conservatives, this relationship is negative. Among weak conservatives and moderates, hostile media perceptions have no direct relationship with activism. We further show that hostile media perceptions decrease external political efficacy for all ideological groups; however, this negative relationship is strongest among conservatives (H2). The relationship between external efficacy and activism is, in turn, moderated by internal political efficacy: When internal efficacy is high, activism is relatively high regardless of the level of external efficacy; however, when internal efficacy is low, external efficacy is positively associated with activism. These two moderated links translate into a conditional indirect effect of hostile media perceptions on climate change activism through external political efficacy. We find that hostile media perceptions decrease climate activism through external efficacy but only among political moderates and conservatives who have low internal political efficacy (H5).

Only one of our proposed hypotheses was not supported. Contrary to predictions, political ideology did not moderate the link between external political efficacy and climate change activism (H3). One explanation for this is that if conservatives feel that the government—which, at least in the executive branch, has expressed concern for and intentions to take action on climate change—is, in fact, responsive to their interests on climate change, they might be just as likely as their liberal counterparts to engage in climate activism. Another possibility, given the interaction between internal and external political efficacy, is that political ideology is involved in a three-way interaction with internal and external efficacy rather than moderating external efficacy alone. We conducted a post hoc analysis to test for this possibility, but the three-way

interaction between ideology, internal efficacy, and external efficacy was not significant. Thus, the effect of external political efficacy on climate change activism appears to depend only on internal political efficacy and not on political ideology.

These results contribute to a growing body of research which illustrates that perceptions of media bias have important consequences for political attitudes and behavior (Ho et al., 2011; Hwang et al., 2008; Rojas, 2010; Tsfati & Cohen, 2005). This study also deepens our theoretical understanding of these effects by examining the interactions between hostile media perceptions, political ideology, and external and internal political efficacy in predicting activism. In particular, the results highlight the importance of accounting for ideological differences when examining the political effects of hostile media perceptions. For example, we find that hostile media perceptions directly motivate political action to reduce climate change, but only among those ideological groups who are predisposed to such action—in this case, liberals. In contrast, among strong conservatives, hostile media perceptions are associated with less climate activism. Thus, hostile media perceptions may reinforce political identities and prompt ideologues to rely more heavily on their predispositions to guide their behavior (see Ladd, 2012), thereby diminishing the possibility of bipartisan activism on the issue. Hostile media perceptions also had a robust negative relationship with external political efficacy; however, this was strongest among conservatives. This suggests that perceived media bias is most debilitating to perceptions of government responsiveness for groups who are already at odds with the party or ideology in power.

Our results also highlight the important role political efficacy plays in motivating political action to address climate change and, in particular, the combinations of internal and external efficacy that are most productive for participation. Consistent with prior research (e.g., Pollock, 1983), we found that the highest levels of activism occur among those with high internal efficacy, regardless of external efficacy. However, we also found that when internal efficacy is low, external political efficacy can increase activism, such that a combination of low internal and high external efficacy yields a level of activism comparable with when internal efficacy is high. In this case, belief in the government's responsiveness appears to help compensate for any doubts about one's own competency as a political actor. Thus, at least when it comes to the issue of climate change, it is only when *both* types of efficacy are low that activism is particularly suppressed.

From a practical standpoint, it is first important to recognize that climate change activism is low, overall, in the study sample, regardless of hostile media perceptions, efficacy, or ideology. Still, our results suggest that cueing hostile media perceptions may be an effective way to boost climate activism, albeit incrementally, among liberals. Given that elite political rhetoric about media bias drives public perceptions of media bias (Ladd, 2012; Watts et al., 1999), this lends greater weight to the efforts of Media Matters and other organizations, advocates, and political actors who draw attention to bias and misinformation in the media. This strategy, however, is not without its drawbacks. For example, in this study, hostile media perceptions discouraged some political moderates from engaging in climate change activism due to the mediating influence of external political efficacy. For organizations working to address climate change through political action, moderates are an important, persuadable

constituency (Maibach, Roser-Renouf, & Leiserowitz, 2008), who could be discouraged from participating as a result of hostile media perceptions. Still, the negative indirect effects on participation among moderates were isolated among those with low internal political efficacy. Thus, any engagement strategy based on increasing hostile media perceptions should also aim to bolster internal political efficacy. Although political efficacy often is characterized as a stable psychological trait (e.g., Verba & Nie, 1972), several studies have shown that internal efficacy can be increased as the result of successful participation (Valentino, Gregorowicz, & Groenendyk, 2008) and civic education (Pasek, Feldman, Romer, & Jamieson, 2008). In the context of climate change, Hart and Feldman (2014) pointed to internal efficacy as an important message-level variable with the potential to influence political behavior. Possible approaches to increase internal efficacy include providing behavioral models of successful political engagement around climate change, offering tools—such as letter-writing templates—that help build citizens' self-confidence in the political sphere, and/or using persuasive messages to boost individuals' belief in their capacity to participate effectively (Bandura, 1997).

From a democratic perspective, the effects of hostile media perceptions are also a double-edged sword. We find that hostile media perceptions mobilize some groups while deactivating others. Thus, with a polarized issue such as climate change, widespread perceptions of a hostile media bias may mean that only certain voices, rather than a plurality, will be heard. Also, if actions are motivated on the basis of a perceived hostile media bias, which is an inherently negative and divisive phenomenon, this may fuel partisan flames and contribute to extreme rhetoric and an unwillingness to compromise with those on the other side.

At the same time, we find a strong negative association between hostile media perceptions and external political efficacy across all ideological groups, a finding that also has mixed ramifications for democratic engagement. On one hand, we see that as long as internal efficacy is high, low external efficacy does not discourage activism. Moreover, decreased external efficacy may inspire productive forms of activism outside the realm of conventional politics, such as in the consumer arena or in the form of nonviolent political protest (Pollock, 1983). On the other hand, prior research has found that low levels of external efficacy are associated with a decrease in dutiful forms of political participation such as voting (Pollock, 1983). And although the negative association between hostile media perceptions and external efficacy only decreased activism among moderates and conservatives with low internal efficacy, over time, the perpetuation of hostile media perceptions could contribute to a more widespread erosion of faith in government and democracy to the point that it becomes difficult to convince the public to engage in government-oriented actions. To that end, Tsfaty and Cohen (2005) found that under certain circumstances, hostile media perceptions encourage individuals to operate outside the democratic system and engage in violent protest.

Finally, these results complement recent investigations into how best to communicate about climate change (e.g., Hart, 2011; Myers, Nisbet, Maibach, & Leiserowitz, 2012). While these studies often measure outcome variables such as emotional

response or individual behavior change, research has typically not examined how different types of climate change messages may impact hostile media perceptions—a factor that the present study suggests is important to consider. As recent scholarship has suggested that the effects of climate messages may vary according to the audience's ideological orientations (e.g., Hart & Nisbet, 2012), future research may benefit from examining whether these impacts extend to hostile media perceptions. If such message effects are found, research examining media coverage of climate change (e.g., Feldman, Maibach, Roser-Renouf, & Leiserowitz, 2012) could then analyze how messages that may amplify or attenuate hostile media perceptions are represented in the public sphere.

There are, of course, limitations to this study that should be kept in mind. First, as with any cross-sectional research, we cannot make unequivocal claims about causality. Future research will want to test the causal propositions we outline here using experimental and longitudinal methods. Second, because our measure of climate change activism was specific to promoting action to reduce climate change, our analysis did not directly account for individuals, particularly conservatives, who may have engaged in political activities that *opposed* action to address climate change. As noted, however, our survey question measuring the frequency with which respondents had contacted government officials about climate change included a follow-up question that asked respondents to clarify the nature of this contact; less than 2% of the sample indicated that they had contacted an official to push for *less* action on climate change. One reason for this relatively low level of participation may be that at the time of our survey, there was no major pending climate legislation to oppose. Even so, our analysis may have underestimated the effects of hostile media perceptions on climate change-related activism among conservatives. For example, it may be that conservatives are more likely to lobby officials and join groups that are focused on reducing government intervention, in general, rather than reducing intervention on climate change specifically. At the same time, we considered only one type of conventional political activism (i.e., volunteering and contacting). We did not examine nonconformist political activity such as protesting, activism in the consumer realm such as boycotting and buycotting, and online discursive activities such as blogging and commenting. It may be that hostile media perceptions motivate conservatives to participate on the issue of climate change in these other ways, or that our overall pattern of findings—as well as overall levels of activism—would look different if our dependent variable captured a different type of participation. Our analysis also excluded other potential mediators and moderators, such as trust in government. In addition, whereas our measures of hostile media perceptions, external political efficacy, and activism were issue-specific, our measure of internal political efficacy was general. Given that context-specific measures of efficacy do a better job of predicting political participation than general measures (Wollman & Stouder, 1991), we may have somewhat underestimated the influence of internal efficacy. A final limitation is that we relied on a single item to measure external political efficacy. To avoid the well-known psychometric limitations of single-item measures, future research in this area would benefit from a multi-item scale.

In conclusion, this study demonstrates that hostile media perceptions are not just an academic curiosity but have important behavioral implications that bear on the health and vibrancy of our political democracy, as well as our planet. Meaningful action to mitigate climate change will likely require grassroots political engagement at levels much higher than what we see currently (Ockwell et al., 2009). While hostile media perceptions may help activate liberals, who tend to be sympathetic to the climate change cause, they may further alienate and disengage those who are predisposed to be dismissive or doubtful about global warming. Although our findings pose both normative and strategic dilemmas, we now at least have a better understanding of these dynamics and can anticipate the likely consequences of hostile media perceptions for certain groups and under certain conditions. Future research may continue to ply these relationships using alternative methods and extend the questions asked here to other controversial policy issues and forms of political participation.

Appendix

Measurement of Control Variables

Global warming belief certainty. Certainty about the occurrence of global warming was measured on a 9-point scale ranging from 1 = *extremely sure that global warming is not happening* through 5 = *don't know* to 9 = *extremely sure that global warming is happening* ($M = 6.28$, $SD = 2.27$).

Personal importance of global warming. Respondents indicated how important global warming is to them personally, where 1 = *not at all important* and 5 = *extremely important* ($M = 2.70$, $SD = 1.08$).

Perceived understanding of global warming. Respondents indicated how well informed they feel personally about global warming, where 1 = *not at all informed* and 4 = *very well informed* ($M = 2.58$, $SD = 0.74$).

Global warming news attention. Respondents indicated how much attention they pay to news stories about global warming, where 1 = *none* and 4 = *a lot* ($M = 2.41$, $SD = 0.91$).

Global warming discussion. Respondents indicated how often they discuss global warming with their friends and family, where 1 = *never* and 4 = *often* ($M = 2.07$, $SD = 0.83$).

Preferred news media source. Respondents indicated which of the following media sources they turned to most often to keep up with current news and world events: Internet, television, radio, print newspapers, and magazines. Three dummy variables were computed to represent preferences for broadcast (television and radio; 65.4%), print (newspapers and magazines; 12.9%), and the Internet (21.7%).

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Notes

1. By specifying the direction of activism, we depart somewhat from prior research examining the relationship between hostile media perceptions and general, issue-based participation (e.g., Ho et al., 2011). However, although we focus on activism in support of a particular outcome (i.e., climate change mitigation), we do so measuring the same types of political behaviors included in prior work on participation, such as contacting a government official and donating time or money to an issue-related organization. Also, as discussed earlier, by measuring activism in support of climate change, we are likely capturing the primary way in which people participate on the issue of climate change. Thus, while there are likely to be some differences in the predictors of participation as a function of the climate change issue context, the theoretical relationships between hostile media perceptions, efficacy, and participation should hold regardless of whether the goal of citizens' participation is measured or not.
2. For more information about response rates for online panels, see Callegaro and DiSogra (2008).
3. Although our measure of climate change activism is consistent with how environmental and climate change activism has been measured in other studies (e.g., Lubell, Zahran, & Vedlitz, 2007; Roser-Renouf, Maibach, Leiserowitz, & Zhao, 2014), it relies on only two indicators whereas previous studies of political participation often include a larger battery of items. This was a consequence of efforts to minimize survey costs and respondent burden. We specifically asked about "contacting" and "volunteering" because these activities are representative of relatively high effort, policy-directed activities around climate change, and are more common than other types of environmental activism, such as participating in a rally or protest (see Lubell et al., 2007). Although we may not have captured the full range of political activities that citizens engage in with regard to climate change, the reliability of these two indicators is high across ideological groups (liberals $r = .56$, $p < .001$; moderates $r = .63$, $p < .001$; conservatives $r = .42$, $p < .001$), suggesting that the indicators work approximately equally well for conservatives and liberals. The measure also demonstrates construct validity: It is associated with other variables with which it theoretically would be expected to relate, such as political discussion ($r = .34$, $p < .001$) and issue involvement ($r = .31$, $p < .001$), but not so highly as to suggest these are measuring the same concept. These correlations also hold across ideological groups (issue involvement: liberals $r = .38$, $p < .001$, moderates $r = .22$, $p < .001$, conservatives $r = .23$, $p < .001$; discussion: liberals $r = .42$, $p < .001$, moderates $r = .33$, $p < .001$, conservatives $r = .20$,

- $p < .001$).
4. Figure 2 plots the predicted values for climate change activism generated from the regression equation reported in Table 1. All covariates were set to their sample means. For hostile media perceptions, "high" and "low" values correspond to one standard deviation above the sample mean and one standard deviation below the mean, respectively. For political ideology, "moderates" correspond to the sample mean, "liberals" correspond to one standard deviation below the mean, and "conservatives" correspond to one standard deviation above the mean.
 5. Figure 3 plots the predicted values for external political efficacy generated from the regression equation reported in Table 1. All covariates have been set to their sample means. For hostile media perceptions, "high" and "low" values correspond to one standard deviation above the sample mean and one standard deviation below the mean, respectively. For political ideology, "moderates" correspond to the sample mean, "liberals" correspond to one standard deviation below the mean, and "conservatives" correspond to one standard deviation above the mean.
 6. Figure 4 plots the predicted values for climate change activism generated from the regression equation reported in Table 1, excluding the nonsignificant interaction between external efficacy and political ideology. All covariates have been set to their sample means. For both internal and external efficacy, "high" and "low" values correspond to one standard deviation above the sample mean and one standard deviation below the mean, respectively.

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