



ORIGINAL ARTICLE

The connections—and misconceptions—between the public and politicians over climate policy: A social psychological perspective

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Abstract

We review findings from social psychology and related fields to examine the bidirectional relationship between the public—what are their views about climate change and the need for policies to address the climate crisis—and the politicians who are making (or not making) climate policy and beholden to electoral constraints. We illustrate social psychological pressures that influence policy support and their relevance to how policies emerge from coordinated action and how barriers impede policy progress. We review two factors that have been the focus of research within communication, political science, and psychology and that are relevant to how climate policies are promoted (or undermined): activists and the media. We examine the process by which activists amplify and transmit the preferences of the public to politicians, and how research on persuasion and social norms helps understand how this effect can be amplified or diminished. We also describe how the media environment can amplify or diminish the roles of the public and the politicians in influencing each other. As the world confronts the climate crisis, research from social psychologists, environmental psychologists, political scientists, and communication scholars has examined the interrelations between the public, politicians, media, and activists, but largely in a disconnected way. The current paper provides a social psychological framework to integrate these approaches and, in so doing, suggest new directions for research and theory-guided ways to influence policy around climate change.

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INTRODUCTION

The United States released its Fifth National Climate Assessment (<https://nca2023.globalchange.gov>) as this paper was being written. In starker terms than previous assessments, the fifth iteration stated that people were experiencing the effects of climate change across the country—and, indeed, across the globe—including extreme weather events, prolonged heat waves, unrelenting nighttime temperatures, droughts, wildfires, and other climate-related damages. These ongoing impacts impose large-scale (and rapidly increasing) economic costs and exacerbate social and economic inequalities. The impacts of climate change are no longer abstract, distant threats experienced in other places or in the future. Rather, they have become part of everyone's lived experience.

To appreciate these impacts, we invite the reader to engage in a brief exercise. First, think about (or search online for) whatever climate-related disaster is going on right that you are seeing in the news. The climate-related disasters in the news at this moment (September 2023)¹ include NASA announcing that the past summer was the hottest summer on record (Fox et al., 2023), while in the United States, Hurricane Lee is gathering steam off the coast of Florida, not long after Hurricane Idalia slammed into the state with a massive storm surge. One recent headline captures the situation and sentiment of the moment: “The Rapid Intensification of Hurricane Lee is a Warning: Fueled by warm water and humidity, hurricanes can quickly turn into life-threatening monsters. Get ready for more of this phenomenon as the planet warms” (Simon, 2023). Not long after this warning appeared, the life-threatening monster did appear in the form of Hurricane Otis, which killed at least two dozen people in Mexico—and startled scientists with its dramatic and rapid increase in force (Kolbert, 2023). Internationally, within the past month of this writing, Libya estimated that between 6000 and 11,000 people have died due to the floods that came from catastrophic flooding and the failure of dams (Whitehead, 2023). So—exercise one—think about a current or recent climate disaster.

Second, think about (or search online for), how well, or not well, society (be it a state, a nation, or a global organization) is actually addressing the climate crisis. Again, as of this writing, the United Nations (UN) just released its 2023 “stocktake,” an update on how collectively countries are addressing the goals made in the 2015 Paris agreement. The assessment, again, is well captured in a recent headline: “Climate Report Card Says Countries are Trying, but Urgently Need Improvement” (Plumer, 2023b). The article notes that while the rise in greenhouse gasses has slowed, efforts are not enough to avoid “calamity.” Current projections according to the UN report, assuming all nations make their greenhouse gas reduction pledges, are for ~2.5°C of warming by the year 2100, far beyond the 1.5° target that scientists estimate will keep climate disasters “manageable.”

This sobering exercise (which the authors of this paper engage in regularly; we suspect many readers do some version of this as well) illustrates several aspects of the broader context surrounding climate policy that informs our social psychological analysis. First, while the details of the particular climate disasters people are facing at a given moment change, there is now an almost constant threat somewhere of loss of life, property, and the ability to work and create community, and, increasingly, this threat is somewhere in close geographical proximity. By the time this article is being read, new climate-related disasters are certain to have occurred, and the effect of the events mentioned at the start of this paper may have faded from memory, just as memories of the disasters of 2022 including Hurricane Ian in the United States (the third most costly disaster in American history to that point; Smith, 2023) and the devastating floods that killed over 1700 and destroyed millions of homes in Pakistan (Butt, 2023) may have faded too. Attention to any particular disaster for most people is transient while the cumulative impact of the number of people impacted is growing at (what should be) an alarming rate.

¹ Of course, by the time this is read, it will be (perhaps long) past this date and this disaster may or may not have been disastrous. That's the point. Readers are welcome/encouraged to check out <https://tinyurl.com/BriefClimateExercise> to enter a climate change disaster and how society is addressing the climate crisis.

Second, despite the urgent need to create policies at the local, national, and international level that can “address the climate crisis,” collectively, society is in the words of Antonio Guterres, the United Nations Secretary-General, in his address to the UN in September 2023 falling “abysmally short” in addressing the climate crisis (Sengupta, 2023). Amplifying this message in the United States, during that very meeting of the UN, climate activists protested in New York City’s financial hubs such as Wall Street and the Federal Reserve Bank to “End Fossil Fuels Now” (Liber, 2023; Noor, 2023).

Third, what is even meant by the phrase *address the climate crisis* is constantly changing as the public and policymakers learn more from climate science and from economic and policy science and policy priorities (and possibilities) change with the political climate. The primary focus on the mitigation (no longer prevention) of climate change effects has expanded to include a greater focus on adaptation and coping with climate disasters, necessarily so, as the world has failed to take actions to stay below 1.5°. This change is reflected in the policies that psychologists and other social scientists study in their research as well, from policies that put a price on carbon (e.g., carbon tax or cap and trade policy) that focus solely on how to reduce carbon emissions to mitigate the potential damage of a warming planet (Dietz et al., 2007; Ehret et al., 2018; Van Boven et al., 2018) to climate change adaptation strategies such as evacuation in response to floods (Bubeck et al., 2012; Spaccatini et al., 2022; Spence et al., 2011), infrastructure improvements to prevent flooding or power grid disruptions (Le et al., 2023), developing and building technologies to remove carbon at scale (Shrum et al., 2020), or coping with drought by using recycled water (Nemeroff et al., 2020), policies that take as a given climate disasters and seek to legislate more adaptive solutions.² Because policies shift constantly, the approach we take in this paper is to not review any particular policy extensively, but rather to identify psychological processes relevant to a range of policies, identifying common psychological barriers to passing and effectively enacting climate policies.

A fourth facet of this exercise is that politics is never far from the surface. That is, the policy responses to climate disasters, both mitigation and adaptation, need to work through a particular political system, and with that comes the struggle between polarized ideological perspectives that have come to define many political systems, particularly the United States (Cole, Gillis, et al., 2023). This political polarization stems from, broadly speaking, two sources. First, there are the ideological differences between liberals and conservatives that lead them to take differential views on the climate crisis (Hornsey & Fielding, 2020; McCright & Dunlap, 2003). Due to their ideological resistance to solutions that require government intervention, for example, conservatives are more likely to exhibit what has been termed “solution aversion” to minimize the threat of climate change (Campbell & Kay, 2014; liberals exhibit such motivated inferences about other issues, it should be noted, minimizing the threat of problems because of ideological resistance to particular solutions; see, for example, Chu et al., 2021). Second, there are relatively nonideological factors that drive polarization due to basic processes of social identity and intergroup conflict. The tendency to falsely polarize existing group differences (Ferbach & Van Boven, 2022), for example, helps to maintain the distinction between the ingroup and the outgroup, a process that has implications for the ability to form consensus and support climate policies in a bipartisan fashion (Van Boven et al., 2018). And this polarization impacts not only the legislative support of climate policies by politicians and the public but also their implementation.

Consider how environmental policies within the United States vary tremendously from state to state, with different renewable energy policies that include tax incentives for promoting cleaner energy as well as rules and regulations that mandate emissions targets from different carbon-producing entities (Menz & Vachon, 2006). The implementation of these policies varies as a function of many factors, including partisanship of political leaders. In one study, investment in renewable energy was positively associated with having more Democratic legislators within a state (Delmas & Montes-Sancho, 2011; see also Marshall & Burgess, 2022). Nationally, the largest climate change legislation that the United

² It should be noted that this transition within the research literature has been slow, as reviews show that the predominant policies being examined focus on are mitigation policies, with much more work needed on adaptation policies (Bechtoldt et al., 2021; Tam et al., 2021; van Valkengoed & Steg, 2019).

States has ever passed, the Inflation Reduction Act was accomplished on a complete party-line vote, as zero Republican members of Congress voted in favor of the act (Tamborrino & Siegel, 2023). And while the passage of the Inflation Reduction Act, along with the CHIPs (Creating Helpful Incentives to Produce Semiconductors) and Science Act and the Bipartisan Infrastructure Laws in 2022 (the latter two did receive bipartisan support) are major policy achievements towards supporting the energy transition away from fossil fuels in the United States, their implementation will occur within a polarized political context confronting many of the challenges we outline here (Burgess et al., 2023). Moreover, although the proportion of renewable (relative to fossil fuel) energy is increasing, the amount of nonrenewable energy is also increasing; that is, even ambitious policies that increase the share of “clean” energy may not be enough to reach net zero emissions without more substantive policy change that help developing countries transition to renewable energy even as they increase their total energy consumption (Wetzel et al., 2023). According to estimates by the U.S. Energy Information Administration, in 2022 renewable energy production and consumption was about 13% of total, but both production and consumption were at or near historic highs (EIA, 2022). Increasing the proportion of renewable energy will not bring the United States closer to net zero if consumption of carbon-emitting fossil fuels also continues to increase.

In short, (1) the climate crisis is upon us; (2) enacted climate policies are thus far insufficient; (3) the policies being proposed and implemented themselves are constantly changing to meet the evolving challenges (both climate challenges *and* political challenges); (4) the difficulty of achieving bipartisan agreement on climate policy within the United States has led to inaction in an evenly divided government. With this backdrop, we review findings from social psychology and related fields to examine the bidirectional relationship between the public—what are their views about climate change and the need for policies to address the climate crisis—and the politicians who are making (or not making) climate policy and beholden to electoral contingencies.

Our goal is to explain why it is so difficult to make genuine policy progress, what are some of the social pressures that lead policies to unravel, and how policies can potentially emerge from coordinated action. Thus, we seek to understand the subjective construal of people, both lay citizens and political leaders and ask what factors amplify or diminish the impact of each agent on the other, adopting a Lewinian perspective from social psychology (Lewin, 1951) that views sociopolitical systems as “tension systems,” whereby an equilibrium exists between compelling and restraining forces. These forces are sustained, in part, through activists and the media, which also serve as potential levers for change. We will describe a case study of how climate change activists attempt to transmit the desires of the public to politicians, and how research on persuasion and social norms helps understand how this effect can be amplified or diminished. Second, we will examine how the media environment can amplify or diminish the roles of the public and the politicians in influencing each other. Activists and the media, then, provide additional forces that can inhibit (or promote) change in policy and foster connections, and disconnections between the public and politicians. A schematic of these four interacting agents (public, politicians, activists, and media) can be seen in Figure 1. The public and politicians both influence each other in ways that can be moderated by activists and the media and are affected through their perceptions of the views of their respective groups.

This paper complements the recently published piece in this journal by Hornsey and Fielding (2020), which focused on understanding the origins of skepticism regarding human-caused climate change and the sources of inaction among people who recognize the reality of anthropogenic climate change. The earlier paper considered how, for example, conservative ideology and free-market worldviews underlie climate skepticism and resistance to substantive climate policy. The authors also considered the sources of inaction among people who believe in climate change, with an emphasis on barriers to individual climate-mitigating actions such as household energy use. The present paper focuses on the interrelations between the public, politicians, media, and activists as barriers to enacting large-scale climate policy.

We focus in particular on the way these factors interact within the United States. We do so, cognizant that climate change is a global issue and that psychological approaches—as well as climate

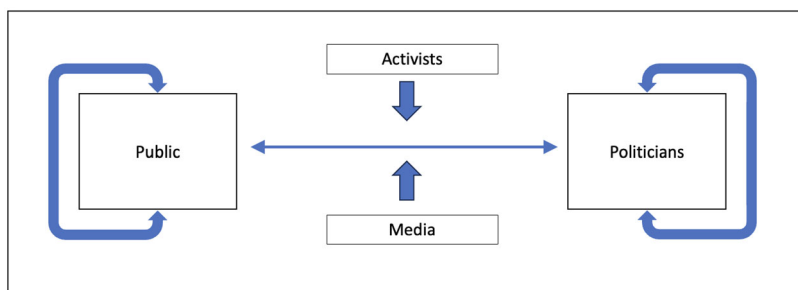


FIGURE 1 Organizing framework of paper—how do the views of the public about a focal issue—climate change policy—get reflected in the policy-making decisions of politicians. The public and politicians are both influenced by their perceptions of the views of their respective groups. The bidirectional relationship between the public and politicians is impacted (amplified or diminished) by climate activists and the media.

policies—need to reflect this (Eom et al., 2019; Lacey et al., 2018). Indeed, researchers have strived to examine partisan influences across different countries to identify what may be unique about the United States and what may be more general (see Cole et al., 2022; Flores et al., 2022; Garcia-Rada & Norton, 2020; Judge et al., 2023). We focus on the United States both because of the unique role that the United States has in leading (Parker & Karlsson, 2018) or stalling (Tollefson, 2017) international climate policy, and the strong role that political polarization has within the country. The United States, moreover, may soon be in the minority of developed countries that do not place a price on carbon at the federal level; according to the International Monetary Fund, 49 countries currently have plans that put a price on carbon, and another 23 countries are considering carbon-pricing plans (The Economist, 2023).

Political intransigence on climate policy in the 21st century is a departure from the bipartisan progress on environmental issues in the United States during the latter half of the 20th century; Democrats and Republicans previously worked together to enact laws to protect the environment, such as the Clean Air Act and the creation of the Environmental Protection Agency in the 1970s. And yet, the American political system has struggled at a national level when confronting climate change. Moreover, as the United States is one of the world's largest carbon emitters (Union of Concerned Scientists, 2018), and a country where polarization on climate policy is particularly acute and impactful, there is an urgent need to understand what can be done to support, enact, and implement effective climate policy within the American cultural context. Thus, we focus on the United States and climate change policy in this paper—with a recognition that some of the issues raised here may be less applicable in less polarized countries, or those with different forms of government, but may become more applicable over time to other nations to the extent that the climate crisis exacerbates polarization within their countries as well.

THE PUBLIC AND CLIMATE POLICY

Conventional explanations have held that intransigence and political polarization on climate policy were reflections of the stark partisan differences in climate change belief among the public; Republicans oppose climate policy because they are skeptical that human activity has caused climate change (DeNicola & Subramaniam, 2014; Kahan, 2012). Yet, research has shown that the majority of Americans across both political parties believe that climate change is happening, poses a risk to human life and prosperity, and is caused by human activity (Van Boven et al., 2018). Agreement across Republicans and Democrats is particularly high when survey questions include descriptions of what climate change is rather than simply using the terms “global warming” or “climate change” (Motta et al., 2019) and when survey items refer to statements of fact (e.g., climate change is happening) rather than statements that reflect comparisons (e.g., climate change is a major policy priority) (Cole, Ehret,

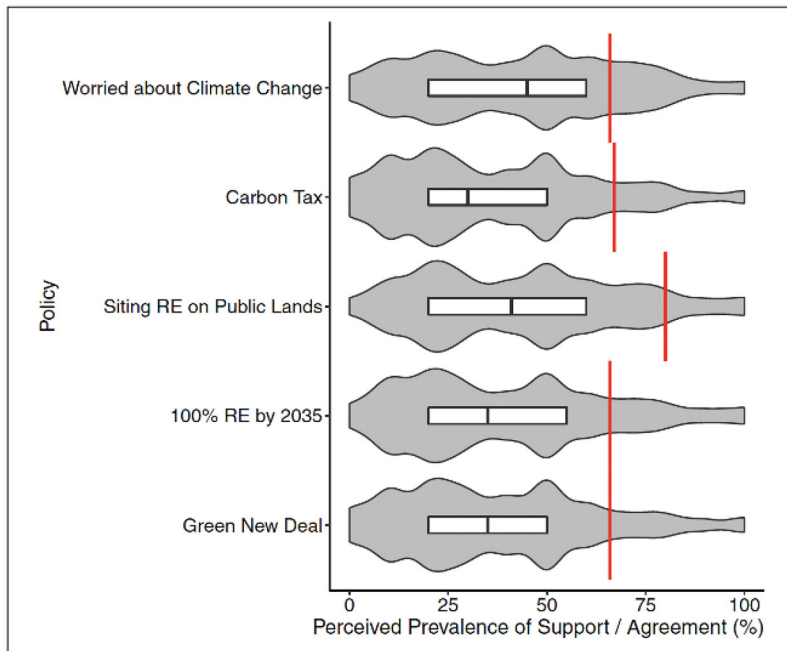


FIGURE 2 From “Americans experience a false social reality by underestimating popular climate policy” (Sparkman et al., 2022). The actual levels of concern and policy support are represented by the red vertical line, based on polling results. The box plots indicate the middle 50% of the sample.

et al., 2023). The consensus view that climate change is happening, caused by human activity, and a major threat is, of course, consistent with the assessments of climate scientists (IPCC, 2021; van der Linden et al., 2015), as well as the views of people around the world. A Pew poll in 26 countries, for example, showed that most people in most countries see climate change as a major threat (Fagan & Huang, 2019; Poushter et al., 2022).

Moreover, people dramatically *underestimate* the extent to which others are concerned about climate change and support climate policy, and this underestimation can dampen reported support for climate policy (Mildenberger & Tingley, 2019; Sparkman et al., 2022). In our organizing framework in Figure 1, this is represented by the recursive arrow pointing from the public to the public; people form their own opinions about climate change, in part, based on their perceptions of the opinions of other people. Figure 2 shows results reported in a paper from Sparkman and colleagues (2022) with over 6000 Americans that compare their estimates of Americans’ views and support for climate policies with the actual levels of support. The actual level of support was obtained from the Yale Program on Climate Change Communication (Howe et al., 2015; Leiserowitz et al., 2021), a program that conducts regular national surveys to obtain estimates of Americans’ support for different policies.

The figure illustrates that the majority of Americans (66%, the top red bar) are worried about climate change. However, most Americans vastly underestimate this shared concern, as on average, they believe that less than half (43%) of their fellow Americans are worried about climate change. When it comes to policy support, the majority of people (66%), overall, are supportive of climate policies, such as a “a renewable energy standard that mandates 100% electricity generated by renewable energy (RE) in the near term” (p. 3), whereas they perceive that less than half (39.5%) of Americans support such a policy (Sparkman et al., 2022). In sum, the authors estimate that 80–90% of Americans underestimate the true level of concern about climate change as well as the popular support that would be there for the types of transformative energy policies that are needed.

This underestimation of climate policy support has important consequences. Research shows that perceived support, and in particular, perceived support of one's political ingroup (i.e., fellow Democrats or Republicans) is predictive of voters' own climate policy support (the extent of which will inform politicians and policymakers setting the climate policy agenda). Thus, a causal recursive process may occur whereby second-order beliefs about support for climate change policy undermine policy support and action (Mildenberger & Tingley, 2019). This process has been observed in a series of studies in our labs where perceived ingroup support for policies designed to reduce carbon emissions (e.g., at the state or national level) has been measured (Ehret et al., 2018) or manipulated (Cole et al., 2022). Across both operationalizations, perceived support of one's ingroup for a policy predicts one's own policy support and how much one prioritizes climate policy relative to other policy goals (Cole et al., 2022). What people perceive as normative within their group shapes the construal of the very policy itself, and in turn, one's support of it (Lewin, 1951). Ideological polarization in climate change beliefs (e.g., that global warming is happening, that it is human-caused) is sharply reduced, for example, among people who have a stronger social consensus that other people recognize the reality of human-caused global warming (Goldberg et al., 2020).

Underestimating climate beliefs has consequences for social debate as well. People who underestimate the climate beliefs of others are more likely to silence themselves for fear of being sanctioned (Geiger & Swim, 2016), something that has been observed with other contentious political issues (Van Boven, 2000). Thus, more accurate assessments of the public may lead to greater policy support by individuals, one of many ways that social norms can be both a barrier to addressing climate change, as well as part of the solution (Miller & Prentice, 2016; Nolan, 2021; Sparkman et al., 2021; Tankard & Paluck, 2016).

The underestimation of support for climate policy in the public has additional consequences for equity and climate justice. The environmental beliefs paradox identified by Pearson and colleagues (2018) shows that those in the United States who are most vulnerable to climate change and environmental impacts—nonwhites and lower income people—are the groups of people who are most concerned about climate change and the environment. Yet, the underestimation effect, or inaccuracy of people's second-order beliefs about climate change, is particularly pronounced when people are estimating the climate concerns of nonwhites and lower income people. That is, the U.S. public, as a whole, underestimates dramatically the extent to which these groups are concerned about the environment; this occurs in large part because people possess stereotypes about those who are environmentally concerned as being white and affluent, which could negatively impact the forming of diverse climate coalitions (Pearson et al., 2018; Tsai & Pearson, 2022).

Explanations offered for the underestimation of support for climate policy in the public as a whole include the idea that the overall effect is driven primarily by conservatives opposed to the policies who are demonstrating a false consensus bias in thinking that other conservatives will oppose the policies in great numbers (Sparkman et al., 2022). Our own research suggests an additional possibility: the underestimation of support for climate policy is driven by the implied party that is most likely to introduce such policies (Van Boven et al., 2018). In the organizing framework depicted in Figure 1, this is represented by the arrow going from politicians to the public. People may reasonably assume that policies designed to address climate change were introduced by Democratic politicians (Marshall & Burgess, 2022), and thus estimate that Republican voters (nearly half of the electorate) would be less likely to support such Democratic policies—not because they disagree with the policy but because they disagree with the political party that proposed the policy. That is, a major barrier to bipartisan support for carbon policies may be that political elites communicate cues about how people (within a community) *should* evaluate climate policy and thus guide the construction of public attitudes (Van Boven & Sherman, 2021).

Consider the results from a study conducted with a large national sample of Americans. Participants evaluated either a cap and trade policy or a revenue-neutral carbon tax policy, each policy designed to put a price on carbon and reduce carbon emissions (Van Boven et al., 2018). (Those two policies were chosen because traditionally, the cap and trade policy was advocated by more liberal

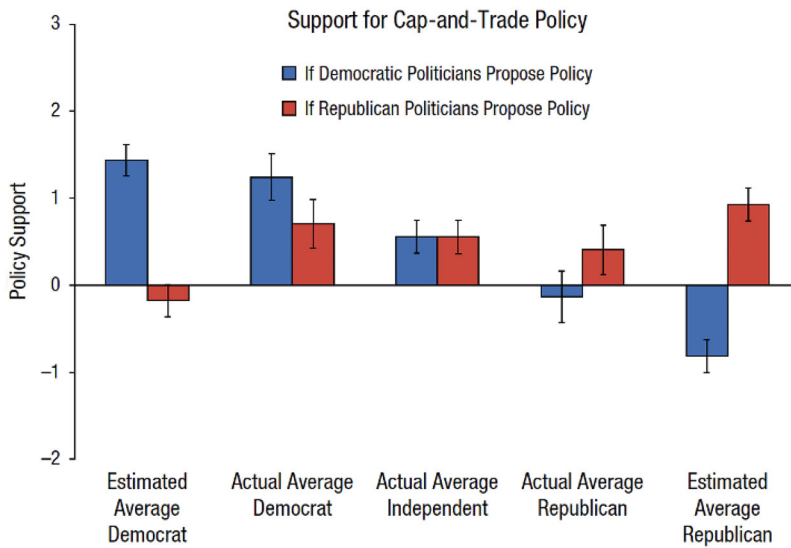


FIGURE 3 From “Psychological barriers to bipartisan public support for climate policy” (Van Boven et al., 2018). The Y-axis indicates the support (personal and estimated) of Democrats, Independents, and Republicans for a Cap & Trade Policy ostensibly proposed by Democratic or Republican (randomly assigned) politicians. Policy support reflects agreement (−3 = strongly disagree, 0 = neither agree nor disagree, +3 = strongly agree) that respondents personally supported the proposal and legislation based on the proposal. Error bars represent 95% confidence intervals.

economists and policymakers, whereas the revenue-neutral carbon tax was advocated by more conservative economists and policymakers). The policy was framed as either being supported by Democrats in Congress (and not Republicans) or Republicans in Congress (and not Democrats). Participants evaluated whether they would support the policy and estimated the average support of Republicans and Democrats.

Figure 3 illustrates what has been termed the “Party Over Policy” effect (Cohen, 2003) and is described as “The Depressing Psychological Theory That Explains Washington,” by Ezra Klein (2014). Focusing on the middle three sets of columns, we first note the main effect of partisan identity, such that Democrats on average were much more supportive of the policy than Republicans, with Independents in between. This main effect was further qualified by an interaction between partisan identity and who proposed the policy. Democratic voters were more supportive of the same policy (a cap and trade policy; similar findings obtained for a carbon tax) when it was proposed by Democratic politicians than by Republican politicians, whereas Republican voters were more supportive of the policy when it was proposed by Republican politicians than if it was proposed by Democratic politicians (Van Boven et al., 2018). Independent voters were not influenced by the manipulation. These findings point to the possibility that there are some portions of the public who identify as Republicans and are willing to support climate policy when it is proposed by “their side.”

These findings partly reflect that people do not have well-formed beliefs about policy and thus defer to their elected representatives when making decisions (Zaller, 1992). However, it should also be acknowledged that people dispute that this is how they themselves should evaluate policies as good citizens. When we asked participants themselves, they overwhelmingly reported that policy decisions should be driven more by the content of the policy than the political identity of those who proposed it (Van Boven et al., 2018). Identity-driven partisan framing effects such as these are not limited to the United States but also occur in other countries (Kousser & Tranter, 2018; Harring & Sohlberg, 2017), and regarding other issues such as COVID-19 policy for which there was not as strong a preexisting partisan divide (Flores et al., 2022).

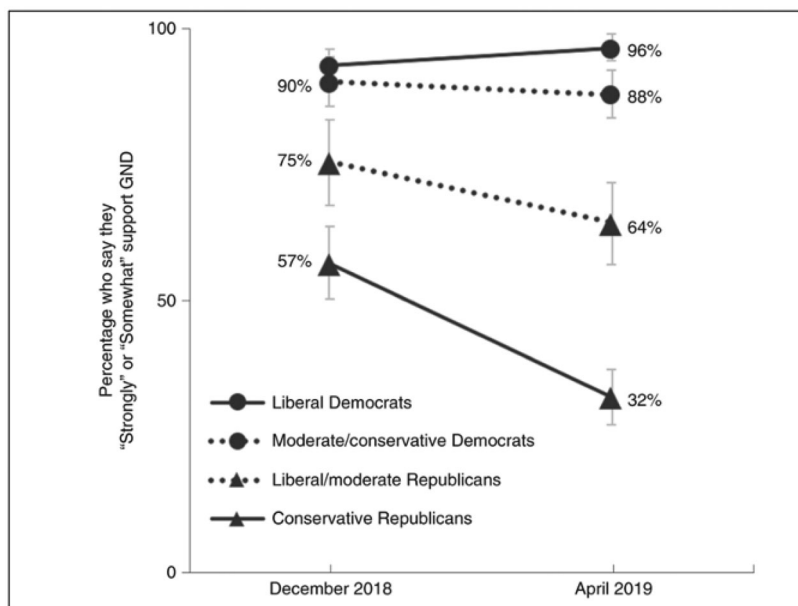


FIGURE 4 From “The development of partisan polarization over the Green New Deal” (Gustafson et al., 2019). Change in the percentage of registered voters who indicate support for the Green New Deal after the given description from December 2018 (shortly after introduced) to April 2019 (when there was greater discussion among politicians about it) as a function of personal partisanship. Error bars represent 95% confidence intervals.

Moreover—as strongly as people are influenced by which party introduced the policy in their own policy support, they perceive that the impact of such partisan cues on other people to be *even stronger*. The outer two columns in Figure 3 illustrate that people perceive even stronger effects of partisan framing than actually exists. Statistical mediational analyses suggest, as noted above, that these perceptions of the ingroup drive people’s individual support for the policy (Cole et al., 2022; Ehret et al., 2018; Van Boven et al., 2018; Van Boven & Sherman, 2021). In short, despite strong public consensus within the United States that climate change is a serious risk and that people are concerned, the amount of support for climate policy that politicians are likely to hear from their constituents is muted by the power of (perceived) polarization.

The impact of partisan frames has thus been clearly observed in experiments that have orthogonally manipulated policy content and partisan framing. It has also been observed in experiments on actual ballot initiatives, such as Initiative 732, a Washington State ballot initiative featuring a carbon tax in 2016 (Ehret et al., 2018) and in a naturalistic longitudinal study on the Green New Deal conducted in 2018–2019 (Gustafson et al., 2019). The latter study, conducted with a nationally representative sample of American voters, showed initial bipartisan support for components of the Green New Deal. However, as time went on, and the policy came to be associated with prominent Democratic politicians such as Alexandria Ocasio-Cortez, Republican opposition to the policy increased (see Figure 4).

In sum, what is driving the polarization of public attitudes toward climate policy in the United States are not just differences in climate change beliefs of the public; it is also that people act in accordance with what they view as the norm of their ingroup, a norm that is influenced by the national political environment. Public opinion on climate policy, rather than being fixed and based on specific policy content, is constructed in the moment as people are processing information and what that information communicates about socio-political identities.

POLITICIANS AND CLIMATE POLICY

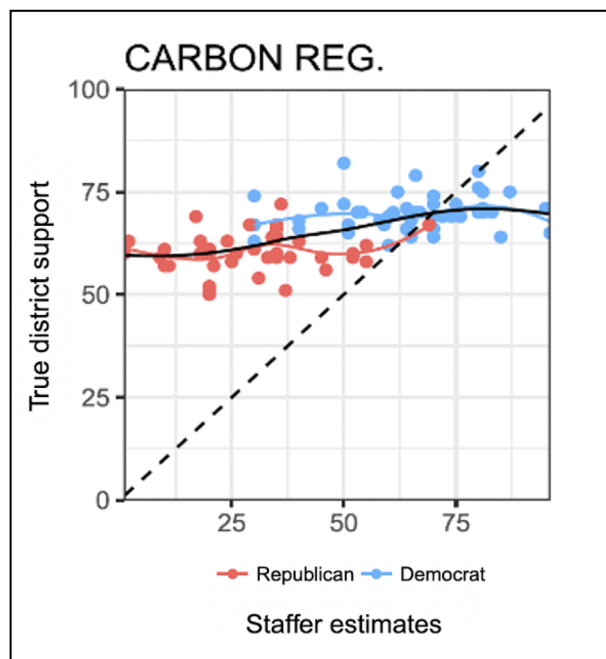
The preceding section illustrates how leaders and partisan cues influence the public's evaluation of climate policy. This section turns to the forces impacting the decision-making of politicians themselves. As part of our program of research, we have conducted interviews with politicians showing the constraints they experienced in promoting climate policy, both within their political parties and to the public as a whole (Van Boven et al., 2018). One sentiment expressed by a former Republican Member of Congress Mickey Edwards was that politicians are highly attuned to social norm pressures, just as citizens are, and that making it clear that there is a support (within each party) for climate change policy could make a difference. Social consensus across the parties matters because it diminishes the normative power that extremists exert, as Congressman Edwards described in our interview (Van Boven et al., 2018):

If people became more aware that this is not just a little circle of crazies on the left or on the right ... but if it were more commonly seen that really Republicans and Democrats both kind of feel this way (support climate policy), I think that frees you up to not be worried about being an outlier. Nobody wants to be an outlier—nobody (p. 502).

Research in political science has identified both the impact of perceived norms on politicians as well as politicians' biases in understanding what those norms are. Anderson and colleagues (2020), in their book, *Rejecting Compromise: Legislators Fear of Primary Voters*, reported an interesting series of studies. First, they conducted a survey of voters, asking them about their preference for their legislators finding compromise—in particular, “half-loaf” compromises that move a policy somewhat closer to what is the legislator's preferred outcome, but not all the way. They found that voters, even primary voters, generally approved of legislators who supported such compromises. The only people who did not support such compromise solutions were single-issue voters on that particular issue, a group that composed a distinct minority of the sample. Yet, when the researchers presented the bill compromise in hypothetical form to a large sample of state legislators and asked them to anticipate their voters' responses, the majority of state legislators said that their primary voters would want them to kill that bill. In a survey, 72% of state legislators thought they would receive some or a lot of retribution if they supported the compromise bill (Anderson et al., 2020). Politicians act in anticipation of that potential retribution in ways that at times lead them to shift away from supporting climate policy. For example, in 2009, Senator John McCain, who had previously introduced bipartisan climate change legislation, shifted his position on climate change when faced with a far-right primary challenge (Anderson et al., 2020; Rosenbluth & Shapiro, 2018).

Anderson and colleagues present evidence that legislators inaccurately perceive primary voters (as a whole) as holding the views of the most extreme, single-issue primary voters (hence, legislators “fear” of primary voters). Single-issue primary voters could, of course, be impactful in a competitive primary, and there are other reasons why legislators would be sensitive to their views. There are clear cases where incumbents are “primaried,” losing their seat to a primary challenger (as the example of Republican Congressman Robert Inglis who was primaried after coming out in support of a conservative climate change policy; see Inglis, 2012; Van Boven et al., 2018); these examples are likely to be highly cognitively accessible to legislators and their staffs. Legislators may be likely to lose single-issue voters if they do compromise (which they may hear about) while they may be unlikely to lose primary voters if they fail to compromise. And it may be difficult to predict with (statistical) confidence the relative size of these two groups of primary voters. So, for risk-averse legislators, a safe stance is to not compromise, and lose no (or few) votes. Extending to the situation of climate policy, this analysis suggests that climate activists could have an outsize influence if they increased the cognitive accessibility of their stances by communicating to their legislators that they will support them in a primary election if they do support climate policy (particularly if their views, collectively, can counteract single-issue primary voters). If the accurate views of the primary electorate are more

FIGURE 5 From “Legislative staff and representation in Congress” (Hertel-Fernandez et al., 2019). The Y-axis indicates the actual support for limiting carbon dioxide emissions within each the jurisdiction, and the X-axis is Congressional staffers’ estimates of their constituent support within that same jurisdiction. The majority of the points that are higher than the diagonal indicate the underestimation by staffers of their constituents for regulating carbon.



widely known (and if they in fact are more likely to support compromise), then legislators may feel freer to support, rather than reject compromise (Anderson et al., 2020).

Of course, politicians with a long history of not supporting climate policy may be resistant to such information, as it may be challenging to compromise on identity-defining issues, even if one thinks it is best in the long run (Cohen et al., 2007). Social psychological perspectives on communicating across partisan divides in such a context are relevant. Research suggests approaches that could be effective at reducing resistance, such as creating an affirming context to reduce defensiveness (Sherman & Cohen, 2006) and encouraging politicians to focus on their longer-term legacy and how it could influence generations to come (Sherman et al., 2021; Syropoulos et al., 2023).

When considering climate policies, other research also finds that Congressional offices have a distorted perception of constituent opinion (Hertel-Fernandez et al., 2019). In one study conducted with U.S. Congressional staff members, it was found that the vast majority (78%) underestimated the support of their constituents for limiting carbon dioxide emissions in their jurisdictions (see Figure 5). Along the Y axis is an estimate of the overall public support for the carbon policy (Howe et al., 2015). Along the X axis are Congressional staffers’ estimates of their constituent preferences for carbon regulation. In general, the correlational pattern is weak—neither Democratic nor Republican staffers’ estimates of their constituents were driven by the actual view of their constituents.

That is—the staff members who advise U.S. Congress systematically misestimated the opinions of their constituents. Follow-up surveys suggest that Congressional staffers underestimate the climate support of their constituents to a greater extent when the staffers rely on conservative and business groups for their policy information (Hertel-Fernandez et al., 2019).

In our research (Van Boven et al., 2018), we provided participants with an opportunity to contact their member of Congress directly to advocate on behalf of the climate policy that they read about. Figure 6 illustrates the findings for participants who read about a Cap-and-Trade policy (similar findings emerged for a Carbon Tax Policy). As can be seen, voters were more likely to send an email to their member of Congress in support of the policy, when it was proposed by a member of their political ingroup—Democrats were more likely to contact their representative when it was Democrats

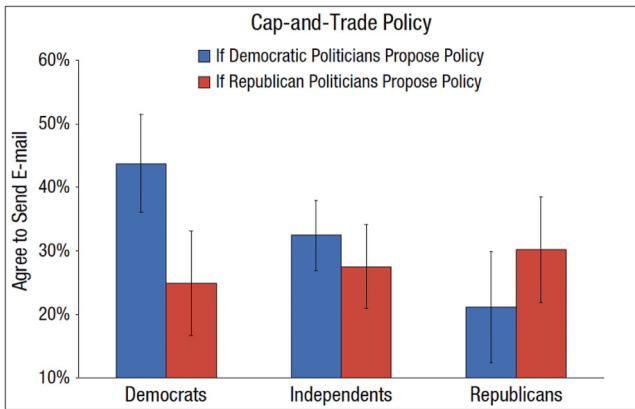


FIGURE 6 From “Psychological barriers to bipartisan public support for climate policy” (Van Boven et al., 2018). Willingness of Democrats, independents, and Republicans to send an email to their congressional representative to support a Cap-and-Trade Policy, presented separately for policies ostensibly proposed by Democratic and Republican politicians. Error bars represent 95% confidence intervals.

who proposed the policy and Republicans were more likely to contact their representative when it was Republicans who proposed the policy.

These partisan patterns of communication may entrench polarization to the extent that politicians hear only (or primarily) from their same-partied constituents after proposing a bill (e.g., in response to a Democratic climate policy, politicians will hear more from Democratic than Republican voters). A second point that may contribute to politician underestimation is that most people did not send emails (despite the experimental context reducing most barriers to do so), even if they supported the policy. That is, there is a higher threshold for direct communication (email) than for reporting supportive attitudes. If politicians mistake scant behavior (e.g., receiving few emails) for policy opposition, they will underestimate overall policy support, perhaps explaining a source of underestimation that exists across many studies. The lack of direct feedback from constituents may lead politicians to underestimate the overall support in the public. In addition, those who are willing to send emails and contact their congressional offices may be unrepresentative and contribute to the biased views that legislative staff have of their constituents (as illustrated above in Hertel-Fernandez et al., 2019).

An important question for researchers examining how legislators (and staff) think about their constituents is how they assess the different risks they are taking by overestimating versus underestimating support for a particular issue. Research on counterfactual thinking is relevant here. For conservative legislators, it may be riskier to overestimate constituents’ support for climate policy than to underestimate constituents’ support. Anger from (Republican) constituents who oppose climate policy may have more negative consequences for election prospects than the disappointment from (Republican) constituents who support climate policy, particularly if they are the most vocal members of the voting public. People tend to overestimate how harshly they will be judged for their failures (Savitsky et al., 2001), and the asymmetric feedback that politicians receive is likely to augment this bias. Consequently, public support from conservative climate supporters (the proportion of Republican participants (~30% in Figure 4, far right column)), such as those who indicated willingness to contact their Republican legislator who supported a climate policy could be an important counterweight.

Our portrait of politicians has focused on their inaccuracy at estimating the environmental concern and policy support of the public and how this might affect their own policy support. But there is an important distinction that was raised in our interviews with politicians that have informed our own research—and that is the difference between support for environmental policy in isolation and the prioritization of environmental policy above all other issues. In our interview with Congressman Mickey Edwards, he pointed this out by contrasting the focus that he had as a policymaker with the focus that environmental supporters take. He noted, “Well, we (politicians) do understand that there’s a climate problem. We do understand that it is harmful, but...This (policy) is not all benefit and no cost.... [W]e’re looking at weighing the cost versus the benefit Cole et al., 2022, p. 2–3.” That is—politicians may not be responding to the support among the public in the abstract because

they are focused on what people are prioritizing most and the trade-offs that they perceive between environmental policy (e.g., greater regulation) and other factors, such as, economic growth.

Trade-offs such as these between addressing climate change and addressing other issues can dissuade politicians from prioritizing climate policy. In 2020, 72% of Americans recognized that climate change is happening and 75% supported the regulation of carbon dioxide emissions (Marlon et al., 2020). Thus, while the majority of Americans may be concerned about the threat of climate change (e.g., Sparkman et al., 2022), it may not be a priority *relative to other issues*; indeed, a recent Pew poll placed it at 17 out of 21 issues nationally (Pew, 2021), with only 37% of Americans saying climate change policy should be a top priority for politicians. Research we have conducted on the impact of social norms on policy prioritization shows the important role of ingroup norms on how much people prioritize climate policy over other issues (Cole et al., 2022). The disconnect between overall support and prioritization of climate policy provides an opportunity for other agents (politicians, media) to minimize the impact of the overall support by suggesting it is more important to address other issues, such as the economy.

The discussion in this section has thus far considered how politicians perceive public opinion. It is also important to consider how the public responds to politicians' actions—and research suggesting that enacting climate policy would increase subsequent public support for it. In research discussed above, people supported climate policy more when learning that politicians from their partisan ingroup supported rather than opposed those policies (Ehret et al., 2018; Van Boven et al, 2018). A natural extension is that enacting such climate policy would exert even greater influence on public opinion because such decisions made by political elites can influence public attitudes. For example, the Supreme Court decision in favor of same-sex marriage increased perceived norms regarding support for gay marriage (Tankard & Paluck, 2017). In another study, the staggered enactment of same-sex marriage laws across states predicted staggered reductions in anti-gay implicit bias in those states (Ofosu et al., 2019). These studies show how policy actions taken by political elites—the Supreme Court and state legislatures—can influence perceived norms and public attitudes that might, in turn, expand the affordances of public opinion that shape political elites' decisions (Casillas et al., 2011; Jacobs et al., 1998). Whether the same pattern would occur for climate policy remains an open question, although some evidence suggests that people who learn about state or federal enactment of climate policies of renewable energy standards perceive greater public support for those policies (Cole, Ehret, et al., 2023; see also Syropoulos et al., 2024).

The enactment of climate policy can also influence the public by shifting reference points and defaults and through processes of adaptation and reframing. For example, policies that increase prices of fossil fuel consumption such as gasoline and mandate reduced sales of gasoline-powered vehicles while providing incentives for renewable energy, electric vehicles, and heat pumps both directly impact incentives and change people's expectations about the expense of these products. Although people adapt quickly to changes in circumstances (Frank, 2012; Loewenstein & Ubel, 2008) and respond quickly to changes in reference points (Kahneman et al., 1991) and defaults (Thaler & Sunstein, 2003), they underestimate the magnitude and speed of these responses (Gilbert et al., 1998). Both the public and politicians may underestimate how quickly and comprehensively people would become accustomed to new climate policies. These processes suggest that enacting climate policies may influence public opinion to further support those policies to a greater extent than was indicated by surveys prior to enactment.

This question requires stronger evidence and is likely dependent on clear communication of the existence and impact of the policies. Research in Canada and Sweden suggests that many citizens are unaware of carbon tax rebate programs and, once they are made aware, report limited support for such programs (Mildenberger et al., 2022). Note, however, the important difference between attitudes toward a component of climate policy and preferences people display when they contemplate giving up the benefits provided. Citizens might experience loss aversion when they consider giving up carbon tax rebates, even if they do not report favorable attitudes toward those rebates (Van Boven et al., 2000). That is, psychological processes may make legislation more popular after it has passed because people

react negatively to the potential loss of a benefit (even if they were not in favor of the benefit in the abstract and before they received it). Longitudinal panel data support this interpretation in considering responses to the Affordable Care Act, as people responded to the policy change threat by becoming more concerned about losing their healthcare, leading to greater policy support for an existing policy (Mettler et al., 2023).

In sum, politicians are influenced by perceived norms—but they can be inaccurate in these perceptions and thus their judgments are untethered from reality in ways that may make them (and their staffers) less supportive of compromise (Anderson et al., 2020) and climate policy (Hertel-Fernandez et al., 2019). We next explore two other factors that contribute to—or can combat—these misperceptions: activists and the media.

ACTIVISTS AND CLIMATE POLICY

Citizen activists play an important role in connecting the primary interconnected agents—the public and politicians. Activists can translate the broad concerns of the populace about the climate crisis to policymakers and potentially elevate it on the political agenda, in part through direct action, and in part through attracting media attention. The high visibility of activists can also distort the concerns of the public to the extent that their views are not representative. In this section, we examine the dynamic between citizen activists and the decision-makers they seek to influence and review psychological research relevant to advocating for climate legislation.

We consider two types of activists and describe the social psychology research on their impact. The first type of activists are highly visible—such as Greta Thunberg (Sabherwal et al., 2021) and Extinction Rebellion (Castiglione et al., 2022), and are typified by activists leading public protests that garner large amounts of media attention. The second type is more behind the scenes, such as citizen activists who lobby individual members of Congress to influence climate policy (Sherman et al., 2021). We investigate the different mechanisms by which they both energize the populace and transmit their impact to policymakers.

The strikes inspired by the Swedish environmental activist Greta Thunberg, who was named *Time Magazine's* Person of the Year in 2019 (Alter et al., 2019), were some of the largest demonstrations of collective action to ever try to put pressure on policymakers to end fossil fuels and address climate change. The all-ages strike that took place in September 2019, included over 4,000,000 people around the world according to advocates' estimates (Barclay & Resnick, 2019). Such a clear demonstration of support can elevate climate onto the agenda of the media and communicate to policymakers that the base of supporters is larger and more willing to take behavioral action, perhaps, than they estimate. And research has shown how radical flank activists against fossil fuels within the green movement can shift the discourse of the climate change debate. For example, Bill McKibben and the activist organization 350.org pressured major universities to cease their investments in fossil fuels. Textual analyses suggest that policies favored by liberals, such as a carbon tax, gained increased attention and legitimacy following advocacy of these more radical ideas, which themselves, did not gain more favorability (Schifeling & Hoffman, 2019).

Research has examined the impact of awareness of Greta Thunberg on pro-environmental actions, such as attending a climate rally or voting for a candidate because of their position on global warming (Sabherwal et al., 2021) to try to assess to what extent there is a measurable “Greta Thunberg Effect.” That is, the research addressed whether there is a discernible impact of one of the most prominent climate change activists on motivating climate action. In a nationally representative sample in the U.S., familiarity with Greta Thunberg predicted pro-environmental action intentions, controlling for potential third variables that could explain this relationship such as political ideology and support for climate activism. Mediation analyses suggest that this occurs because of a greater sense of collective efficacy that developed among those most familiar with Greta Thunberg (Sabherwal et al., 2021). The correlational nature of these findings makes it difficult to assess causal claims, although they

suggest that large public movements may enable people to feel a greater sense that their actions make a difference.

This collective efficacy may be augmented by the perception that protesting and supporting climate policy aimed at eliminating fossil fuels is normative (i.e., relatively common), due to the high visibility of activists and the people that follow them. In a study of partisan framing (Ehret et al., 2018) that highlighted whether different climate organizations (e.g., Sierra Club, Audubon Society) and political figures support or oppose a 2016 Washington State initiative that would put a price on carbon, the manipulation led to increased perceived norms that the ingroup supported or opposed the policy. The sense of more people supporting a policy may motivate people to directly impact the political system by voting for politicians with stronger climate policies. The nature of the activist group is also key to consider—whether they are radical or moderate; recent experimental work indicates that the presence of the radical group that employs violence can make people more supportive of a moderate environmental group, particularly if they have some sympathy for the cause (Dasch et al., in press).

This remains an open question, however, as some experimental research has found that extreme actions (e.g., blocking highways to support animal rights) led to reduced popular support for these movements. Extreme actions are more likely to fall outside of people's latitude of acceptance (Eagly & Telaar, 1972), and are therefore more likely to fall short of changing public attitudes than more moderate actions. An additional issue is what role these prominent activists play in energizing action among the public, as collective efficacy is an important antecedent of collective action (van Zomeren et al., 2008). It may be that the public broadly supports general "calls to action," which can shift social norms, whereas more extreme actions that damage property or directly impose upon others—whether blocking transportation, destroying fossil-fuel equipment, or splattering paint on artwork—provoke reactance among the general public against apparent extremists. These extreme actions could also distort views of public opinion by making it seem that they are more representative of the broader group of one particular side of the issue (e.g., environmentalists) when they are, in fact, an extremist minority. Activists may be most effective when their actions are not too extreme (Feinberg et al., 2020).

A second approach to climate activism is direct engagement through meetings with political representatives in a systematic manner to advocate for particular legislation—the approach of citizen climate lobbyists who have created organizations to combat the influence of corporate lobbyists. To try to understand directly the phenomenon described earlier, where politicians underestimate the climate concerns of their constituents, we conducted a study of how activists communicate directly with policymakers (Sherman et al., 2021). We collaborated with a federated national climate advocacy organization in the United States that focuses on advocating for national policies to address climate change through nonpartisan education of Congressional offices. Members of this organization engage in activities designed to promote climate policy. They write letters to the editor, meet with local city officials, and twice a year meet with every single member of Congress and/or their staff to try to persuade them to support particular climate legislation.

Before sharing findings (see Sherman et al., 2021 for more details), we review the path by which this organization came to be a part of our research. To publicize some of the findings reviewed above—that there is greater agreement across political divides that climate change exists and is a threat (Van Boven et al., 2018)—we wrote an opinion article in the *New York Times* (Van Boven & Sherman, 2018). One goal of this article was to present research that counteracts some of the focus in the media on polarized responses to climate change by emphasizing findings showing that, as the title indicated, "Actually, Republicans do believe in climate change." The research (Van Boven et al., 2018) identified some of the psychological barriers that prevent more widespread support for climate policy, and in the op-ed, we described the work of citizens who also try to dispel inaccurate norms and promote the idea, directly and with members of Congress, that there is strong support for climate policy in their jurisdictions.

The organization then contacted us as researchers, and we conducted a study designed to both educate members of the organization about social psychological approaches to persuasion (e.g.,

emphasizing norms, creating an affirming context), as well as assess the extent to which citizen lobbyists use such strategies, and how effective they perceive them to be in communicating to politicians (Sherman et al., 2021). One strategy focused on social norms, and the study assessed whether, and to what extent, participants would present information to the members of Congress about the normative support for climate policy within the constituency, to dispel misinformation. Prior to going to Congress to meet with their legislators' office, approximately 70% of participants said they intended to use that strategy of presenting normative information (what was termed "Being a Trusted Messenger" in the study because it emphasized conveying veridical information about constituent support), and they predicted that it would be moderately effective. Importantly, they reported using this strategy with politicians across the ideological spectrum. They reported using it equally among politicians that they estimated were supportive and those that they estimated would not be supportive of the climate policy they were advocating. This may be in response to training from the organization about the social psychological evidence documenting the success of social norms approaches to changing attitudes and behaviors (Miller & Prentice, 2016; Nolan, 2021; Tankard & Paluck, 2016).

A second strategy, which was the one that most participants (86%) said they intended to use was establishing shared values of optimism, relationships, integrity, and being nonpartisan, and was based, in part, on social psychological ideas from self-affirmation theory (Sherman & Cohen, 2006; Sherman et al., 2023) that creating an affirming context can reduce potential defensiveness in situations of intergroup conflict. The activists predicted that this strategy would be moderately effective as well, but when reflecting on how their session went with the member of Congress, there was a strong positive correlation such that they reported using it more with those whom they thought were more likely to support the climate policy than with those that they thought would be opposed to it. Thus, the intuitions of the activists for when to use affirming strategies were inconsistent with what is identified as likely to produce the strongest impact in the literature. Research indicates that defensiveness is more likely when people are threatened, and that is when affirmation is likely to lead to the biggest change in attitudes and behavior (Cohen & Sherman, 2014). Conversations with members of the organization suggested that they recognized that affirmation could be an effective strategy with people for whom the climate policy may evoke defensiveness (i.e., those not strongly in favor of the climate policy). However, they had greater difficulty in bringing themselves to affirm common ground with those who disagreed with them, perhaps because of affective polarization—the knowledge of the dislike that partisans have towards political outgroups (Judge et al., 2023).

These findings suggest an important avenue for future research is to understand the social psychological barriers for climate advocates to pursue what they perceive as the most effective strategies. The difficulty of creating an affirming context with ideologically opposed legislators may be more potent in the moment than activists anticipated (Van Boven et al., 2012; Van Boven et al., 2013). Or, conversely, when confronted with an ideologically opposed legislator, activists might default to fact-based informational arguments about climate change—which are unlikely to be compelling in the face of legislators' well-worn motivated reasoning. Understanding these barriers could be useful to inform social psychological strategies to reduce and overcome them, such as better appreciating the difficult but passing challenges of awkward conversations (Epley et al., 2022; Kardas et al., 2022). If activists' objectives are to convey public concern about climate change to politicians, it would be informative, both theoretically and practically, to understand what impedes and facilitates those objectives.

To sum up, activists such as Greta Thunberg and Extinction Rebellion seek to amplify the public's concerns and in so doing apply added pressure to policymakers and politicians, as well as conveying and reinforcing perceived social norms that the public is concerned about climate change and supports climate policy; adding pressure may communicate urgency and electoral consequences, and they may also make moderate groups more appealing by comparison (Dasch et al., *in press*). Climate activists who meet directly and often out of the public eye with politicians (more specifically, Congressional offices) as in the study we conducted seem to take a less confrontational and more affirming approach that may remove a restraining force of defensiveness in garnering support, while at the same time communicating urgency and broad support for policy (Sherman et al., 2021). That one of these approaches

receives much more attention than the other is a reflection, in part, of what the media focuses on. We turn to that next.

MEDIA AND CLIMATE POLICY

Coverage of climate change and climate disasters in the media plays an important role in setting the agenda for the public. We consider two aspects of climate coverage in particular—the focus on climate-related disasters, which have the capacity to raise the urgency of addressing climate change via policy, and the coverage of climate change policy debates itself. As scholars of agenda-setting have noted (e.g., Pralle, 2009), climate change and climate policy are on the agenda of many countries, but the position on the agenda relative to other issues varies and is influenced by the decisions of media companies (Boykoff & Yulsman, 2013). Factors that contribute to this relative position of the agenda also include the coverage of climate change-related disasters. For example, it has been shown that imagery that focuses on an acute instance of climate change disaster (e.g., a house being swept away by rain and floods) is more likely to generate perceptions of risk and behavioral intentions to address the risk than other imagery (e.g., maps or pictures of storm surge; Rickard et al., 2017; see also O’Neill et al., 2013). Public attention is fickle, however, and other events can shift where climate change is on the agenda. During COVID, climate change sharing on social media decreased dramatically (Spisak et al., 2022), but then increased during periods of climate disasters (widespread fires). Attention of the public averts from climate change when other social issues become prominent (McDermott, 2022; Rauchfleisch et al., 2023).

The coverage of climate change in the media also shapes how people think about policy to address it. Media narratives that have focused on the extremes of climate change denialism and extreme advocacy have served to exacerbate perceived differences (Dunlap et al., 2016), fostering the increased perceived polarization described earlier in the paper. Chinn and colleagues (2020) conducted a content analysis of all major news articles on climate change between 1985 and 2017, drawing on 11 major newspapers in the United States and selecting all articles that mentioned and had content related to climate change (approximately 64,000 articles). They found that coverage of climate change has been both politicized and polarized. The mentions of scientists in the articles in conjunction with global warming decreased over time as the mentions of politicians in conjunction with global warming increased, suggesting that the scientific discourse is being replaced in contemporary media with the political discourse (Chinn et al., 2020). And they note that the nature of the discourse expressed by Republican and Democratic politicians has changed over time as well, becoming more different from each other, in part as climate change became more of a litmus test for Republican politicians (McCright et al., 2014) who became more resistant to domestic policy proposals and international agreements to reduce carbon emissions (Nisbet, 2009).

There are a number of aspects of journalism that lead to increased polarization of environmental issues. One issue is that journalism tends to personalize stories by highlighting drama and conflict rather than broader economic or social factors (Boykoff & Boykoff, 2007). The personalization of climate impacts may have the unintended consequence of being more easily dismissed by those who are opposed to climate action. Upon reflection, most people know that anecdotal evidence falls short of the standards of scientific evidence, and opponents of climate policy may selectively apply this motivated skepticism to dismiss such stories (Bayes & Druckman, 2021; Druckman & McGrath, 2019). In one study, anecdotal (compared with scientific) evidence reduced climate uncertainty, primarily among conservatives who were low in need for cognition, suggesting that conservatives with a higher need for cognition were less swayed by anecdotal stories (Hinnant et al., 2016).

A related media tendency is to provide “balance,” even if there is overwhelming consensus on the side of climate change (as opposed to climate denial) although this has been changing in response to the worsening climate crisis (Boykoff & Boykoff, 2004; Brüggemann & Engesser, 2017). A psychological bias that contributes to the representation of polarization in the media is the motivated and

partisan use of conditional probabilities (Van Boven et al., 2019), whereby people focus more on the relatively larger fraction of Republicans among climate skeptics (Van Boven et al., 2018), rather than the smaller, but less newsworthy, fraction of climate skeptics among Republicans. As we observed in data that we collected in a national survey, among climate skeptics, who were a relatively small proportion of the sample (e.g., 14% in 2016), Republicans vastly outnumbered Democrats (71% vs. 13%); however, using the very same data, we observed a relatively modest difference between the proportion of Democrats (89%) and Republicans (63%) who believe in climate change (Van Boven et al., 2018). The focus on the vast proportion of climate skeptics who are Republican in the media over the years may be one contributing factor to the overall underestimation of climate support that is frequently observed (Sparkman et al., 2022).

As acceptance of global warming and concern have increased in recent years (Leiserowitz et al., 2023), an important question is what has led people to change their minds about global warming. While there are limits to people's introspective ability to determine what caused a change, one of the biggest predictors was learning more about global warming (Ballew et al., 2022). The media also played a large role, with attention to Fox News being associated with negative opinion change related to global warming for Republicans, whereas attention to CNN was associated with positive opinion change among both Republicans and Democrats (Ballew et al., 2022). For example, in its coverage of the Green New Deal, Fox News coverage was much more negative than other networks (Bhatti et al., 2022). This pattern of results is not surprising given that Fox has historically taken a much more skeptical view about climate change than CNN or MSNBC (Feldman et al., 2012).

Recent polling shows that younger conservatives are much more open to the human causation of climate change and think that the government should do more to combat it. As a 2020 Pew poll reported:

Striking differences...emerge within the GOP when it comes to energy issues. Millennial and Gen Z Republicans are more likely than Baby Boomer and older Republicans to say the nation should prioritize developing alternative energy sources over expanding the production of fossil fuels (79% vs. 55%). And younger Republicans are much less inclined than their elders to favor expanding offshore drilling, coal mining, and hydraulic fracturing. For example, 45% of Millennial and Gen Z Republicans support increased use of offshore drilling, compared with 73% of Boomer and older Republicans. (Funk & Tyson, 2020).

Consider, for example, what Fox News, which hosted the first Republican presidential debate for the 2024 race, chose to feature prominently in an early question. They played a vivid, personal video from Alexander Diaz, a conservative college student who is a politics major from Catholic University in Washington, D.C. After Fox News detailed the climate change disasters over the summer of 2023, Diaz asked: "How will you as both president of the United States and leader of the Republican Party calm their fears that the Republican Party doesn't care about climate change?" (Bustillo, 2023). This type of focus of the media has the potential to attenuate perceived differences in the public between the parties on climate change by highlighting the growing divide within the conservative movement on whether and how to confront the realities of climate change.

In contrast to the media coverage of conservative climate activists in 2023 (e.g., Alexander Diaz at the Republican presidential debate), consider the coverage of conservative climate activists in 2013. Congressman Robert Inglis, who lost in a primary vote after coming out in support of climate change policy, was featured in publications and podcasts more popular with people on the left, such as *This American Life* (Glass, 2013) and the *New York Times* (Morello, 2010). When we interviewed Inglis (Van Boven et al., 2018), he suggested his popularity among Democratic politicians (and more liberal media outlets) was because he confirmed their "belittling view of Republicans: Typically it's, 'Isn't this great? This guy confirms all of our hunches about how dumb conservatives are. See they

tossed him out and he seems smart and so we're all smart together and aren't [Republicans] dumb?" (p. 501)" A question for future research on political communications is how, and whether, the tenor of media coverage on climate change in conservative outlets will change to reflect the view of younger conservatives who are more concerned with climate change.

Researchers and organizations such as Pew play an important role in communicating the changing levels of support for climate change policy. The Yale Program on Climate Change Communication (Leiserowitz et al., 2023) regularly publishes updates on the increasing proportion of Americans who believe in climate change and support climate policy. Recently, coverage of the Sparkman et al. (2022) paper that compared perceived support with actual support from the Yale Program has appeared in an array of media outlets. Domestically, *The Hill* (Guzman, 2022), noted that "Americans underestimate the popularity of climate change action among their peers: 'In all cases, Americans failed to understand that a strong majority of fellow Americans support climate policy, instead, estimating it to be a minority.'" The popular media is thus picking up on the idea (which has long been studied in academic fields including social psychology and political science) that it is important to report on (and potentially dispel) the "underestimation" effect which may lead to greater climate action. An opinion piece in *The Guardian* (Matei, 2022) noted: "Polling shows that U.S. voters favor climate bills—yet assume fellow Americans don't: Part of the key to collective action may be to overcome the 'false social reality' that makes us assume no one else cares about the climate." That is, figures in the media may play a role in fostering connections instead of misconnections between the public and politicians by promoting more accurate views of public opinion on climate change.

Thus, efforts by researchers and activists to communicate via the media the way that norms are changing to support climate change policy may lead to greater support for climate change policy (Sparkman et al., 2022). Research from our lab and others has been examining how to communicate expert opinion about policy and has shown that it can have depolarizing effects on political judgments (Flores et al., 2022; van der Linden, 2021). That is, we have shown that whereas politicians polarize, presenting consensus expert opinion can depolarize (Cole et al., 2022; Flores et al., 2022). This scientific expert consensus opinion can serve other important functions. As van der Linden et al. (2019) have argued for in the Gateway Belief Model, increasing perceptions of scientific consensus on climate change can lead to greater change in attitudes and support for climate policy. Importantly, communicating the scientific consensus has shown, in some research, to be effective at promoting support for public action among climate change deniers and disbelievers (van der Linden et al., 2019). By leveraging both descriptive norms and appeals to expertise, statements such as "97% of climate scientists agree that human-caused climate change is happening" offer people an opportunity to correct or update their beliefs, and this has been shown to increase support for public action (van der Linden, 2021). Although this is one promising direction for communication about climate change, it should be noted that other scholars have disputed elements of the model (Dixon et al., 2023) and have found that presenting overwhelming evidence of scientific consensus can cause reactance among conservatives. Communicating emerging consensus opinions to the public is thus an important topic for further investigation.

To sum up, the public, politicians, and activists all learn the positions of each other, in part, through what is presented in the media. Much public discourse emphasizes the media's role in distorting public opinion and political behavior regarding climate change and climate policy—distortions that are seen to impact other people more than oneself (Dahlstrom & Rosenthal, 2018; Davison, 1983; Perloff, 1999). Yet research continues to explore the way that information from the public, politicians, and activists presented in the media can serve both a polarizing as well as depolarizing role in shaping climate policy. While the media can certainly amplify pressure and polarization by highlighting extremity, researchers have also identified means by which media outlets could reduce pressure and enable the views of the broader public to be transmitted more clearly to impact politicians and the policies they promote.

POLICY AND RESEARCH RECOMMENDATIONS

Our analysis has been inspired by theorizing of Lewin (1951) on tension systems, whereby an equilibrium exists between compelling and restraining forces (see Ross & Nisbett, 2011 for discussion). The constancy observed in the inability to have major bipartisan climate legislation in the United States (Van Boven et al., 2018), for example, could be interpreted as reflecting a tension system where increased compelling forces (citizen activists' attempts to change politicians' actions) may be offset by increased restraining forces (corporate lobbyists' influence on politicians). One of the key insights derived by Lewin (1951) in the tension systems idea is that "For any type of social management, it is of great practical importance that levels of quasi-stationary equilibria can be changed in either of two ways: by adding forces in the desired direction, or by diminishing opposing forces (p. 470)."

We have reviewed the psychological processes of various actors—public, politicians, activists, and the media—whose interacting and recursive actions comprise key parts of a Lewinian tension system (as depicted in Figure 1). One implication is that enacting climate policy will be most effectively furthered in contexts where behavioral "plasticity" or changeability is relatively high and when increased compelling forces are accompanied by reduced restraining forces. That is, it is the relation of these forces, not their absolute value, that shapes behavior. An important implication of this view is that the enactment of policies will be most likely to succeed when public attitudes are relatively changeable (such as those toward new sustainability technologies that are relatively novel and held with less certainty) and compelling forces (such as financial incentives to adopt new technologies like electric vehicles and heat pumps) can be met with reduced restraining forces (such as ease of requesting incentives and delivering incentives upfront rather than requiring consumers to front the cost). The example of the Green New Deal discussed earlier illustrates these dynamics (Gustafson et al., 2019). The basic policy ideas were broadly supported before the policy was tied to partisan cues, and this partisanship became amplified by the media (Bhatti et al., 2022), after which public opinion became sharply polarized, which undermined the likelihood of policy enactment.

The Lewinian tension system is not only useful for analyzing the potential enactment of climate policy but also for analyzing how policies might be successfully constructed. A simple but critical point is that if compelling forces (incentives to adopt new technology such as induction stovetops) are met with increased restraining forces, such as sociocultural attachment to natural gas stoves, which make for salient media articles focusing on what could be lost, (e.g., the ban of gas stoves leading to threats to Korean barbecues; Harris, 2022), the compelling forces to elicit behavior change must be stronger. Policy analysis often focuses on assumptions about the response to incentives without accounting for the totality of forces within the system—and without appreciating that in a Lewinian tension system, financial incentives that encourage a particular behavior are likely to be offset by non-financial incentives that resist behavior change. The current framework may be useful in this regard because it highlights that climate activists can help politicians understand the public's noneconomic compelling and restraining forces, channeling information from the public to politicians. Activists through their work and their coverage by the media can also make the public aware of policy changes, possibly reducing restraining forces, and channeling influence from policymakers to the public.

The National Resource Defense Council (NRDC), for example, has highlighted ways in which frontline communities could effectively utilize provisions of the Inflation Reduction Act (Olmedo, 2023). The act established the Greenhouse Gas Reduction Fund of 27 billion dollars with 70% of funds required to be spent in low-income and disadvantaged communities. Local governmental organizations are publicizing these benefits to their constituents as well, showing how the efforts of Congressional representatives who passed the legislation can be felt for individuals and businesses. To take one example, the Dane County (WI) Office of Education and Climate Change has detailed instructions for constituents to utilize the tax benefits, rebates, and grants provided by the IRA (<https://daneclimateaction.org/what-you-can-do/federal-funding>). Several other environmental organizations, such as the Clean Air Task Force (<https://www.catf.us/us/implementation/resources/>), have

been actively publicizing how these resources are available and can be used for deployment of zero-emissions technologies across high-emission industries (e.g., for media coverage, see Puko, 2023; see also Nerkar & Ngo, 2023).

Indeed, climate activists have a critical, if underappreciated, role in conveying information to the public about policymakers' activities and the nature of policies that are enacted—or those that politicians fail to enact. We noted earlier that politicians, at times, misperceive public opinion, which arguably contributes to a modest, at best, correlation between public prioritization and policy action. Yet, it is also true that the public lacks awareness of policymakers' actions (or inactions) and of the nature of policies that are passed. In a study described earlier, most people were unaware of the returned revenue of a revenue-neutral carbon tax (Mildenberger et al., 2022). In a survey regarding the Inflation Reduction Act passed in 2022, 57% of registered voters said they heard only “a little” or “nothing at all” about the major climate policy (Ballew et al., 2023). When informed about the details of the policy, that “the law authorized \$391 billion for developing clean energy and addressing global warming, including tax incentives and rebates to help consumers and businesses buy energy-efficient appliances, solar panels, electric vehicles, etc.” as well as that it is “projected to help the U.S. reduce its carbon pollution 40% by 2030” and will be “paid for by closing loopholes” (Leiserowitz et al., 2023) nearly 70% of registered voters said they supported it. This pattern illustrates that activists have an essential role to play in making the public aware of enacted climate policies, especially when those policies carry direct benefits for the public.

In addition to increasing awareness, the actions and interactions of public, politicians, media, and activists impact the success or failure of climate policies. The passage of climate policies by Congress is but the first step of funding and implementing the policy, the success of which requires continued engagement by these actors (Burgess et al., 2023). The Inflation Reduction Act is now funding energy-transition initiatives such as consumer incentives and expansion of energy transmission infrastructure to deliver clean energy that meets increased consumer demand. The effects of this law are being seen, as we once again consider the latest news on coping with the climate crisis. Within the United States, a plant in California just recently (as of this writing) became the first American commercial operation to pull carbon from the air, using direct carbon capture to vacuum greenhouse gas emissions from the atmosphere (Plumer, 2023). And internationally, on the eve of a summit meeting in California between President Joseph Biden and President Xi Jinping, the United States and China agreed, “to ‘pursue efforts to triple renewable energy capacity globally by 2030.’ That growth should reach levels high enough ‘so as to accelerate the substitution for coal, oil and gas generation’... Both countries anticipate ‘meaningful absolute power sector emission reduction’ in this decade” (Friedman, 2023). Time will tell whether and to what extent these and other initiatives will have sufficient impact to mitigate the damage arising from climate change.

Moreover, these initiatives and developments may themselves, if the past is prologue, be met with challenges of partisan identity-based intransigence that have been described in this paper. Even voters who favor climate legislation in the abstract may oppose permitting to expand necessary infrastructure in their backyards (Petrova, 2013; Ruhl & Salzman, 2023). These voters may well lobby politicians to oppose the local infrastructure expansion needed to execute the projects necessary to make carbon-emission targets, inciting activists' anger and attracting media attention. As the public, activists, media, and politicians all adapt to new climate realities, being able to anticipate emerging tensions between relevant actors, to understand underlying social psychological processes, and to identify means to reduce those tensions may ultimately be required to support the passage of climate policy and its successful implementation.

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