Psychological Barriers to Bipartisan Public Support for Climate Policy

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Abstract

Psychological scientists have the expertise—and arguably an obligation—to help understand the political polarization that impedes enactment of climate policy. Many explanations emphasize Republican skepticism about climate change. Yet results from national panel studies in 2014 and 2016 indicate that most Republicans believe in climate change, if not as strongly as Democrats. Political polarization over climate policy does not simply reflect that Democrats and Republicans disagree about climate change but that Democrats and Republicans disagree with each other. The results of a national panel experiment and of in-depth interviews with four former members of Congress suggest that Democrats and Republicans—both ordinary citizens and policymakers—support policies from their own party and reactively devalue policies from the opposing party. These partisan evaluations occur both for policies historically associated with liberal principles and politicians (cap-and-trade) and for policies associated with conservative principles and politicians (revenue-neutral carbon tax). People also exaggerate how much other Democrats and Republicans are swayed by partisanship. This foments false norms of partisan opposition that, in turn, influence people's personal policy support. Correcting misperceived norms of opposition and decoupling policy evaluation from identity concerns would help overcome these seemingly insurmountable barriers to bipartisan support for climate policy.

Keywords

climate change, environment, social cognition, judgment, intergroup relations, attitudes, application, policy

If I proposed something that was literally word for word in the Republican Party platform, it would be immediately opposed by eighty to ninety percent of the Republican voters. And the reason is not that they've evaluated what I said. It's that I said it.

—President Barack Obama (Remnick, 2016)

In my first six years in Congress from 1993 to 1999, I had said that climate change was hooey. I hadn't looked into the science. All I knew was that Al Gore was for it, and therefore I was against it.

—Republican Representative Robert Inglis (2015)

Climate change is the environmental issue of our time—if not the economic, social, and humanitarian issue of our time. "Climate change represents an urgent and potentially irreversible threat to human societies and the planet" (United Nations, 2015). Evidence regarding the reality of climate change and its consequences continues to accumulate (Intergovernmental Panel on Climate Change, 2014). Yet the United States has failed to enact national climate policy under both Democratic (Clinton and Obama) and Republican (Bush and Trump) presidential administrations. Although news about current events in U.S. climate policy can change rapidly, Congress has been unwavering in its failure to act. Why?

Under the 2015 Paris Accord, the United States and 195 of the world's countries pledged to reduce carbon dioxide emissions, the largest source of climate changing greenhouse gasses (Hansen et al., 2006). China, presently the world's largest emitter of carbon emissions, is implementing a cap-and-trade program to meet this pledge (Boden, Andres, & Marlang, 2011; Lee, 2015). Under President Obama, the United States pledged to reduce greenhouse gas emissions below

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Table 1. Four Members of Congress Interviewed About the Political Barriers to Climate Policy in the United States

Interviewee	Congressional service	Current position
Robert (Bob) Inglis, Republican	U.S. representative, South Carolina, 4th congressional district, 1993–1999; 2005–2011	Executive director, RepublicEN
Mickey Edwards, Republican	U.S. representative, Oklahoma, 5th congressional district, 1977–1993	Vice president and program director, Aspen Institute
David Skaggs, Democrat	U.S. representative, Colorado, 2nd congressional district, 1987–1999	Independent consultant; lawyer
Timothy (Tim) Wirth, Democrat	U.S. representative, Colorado, 2nd congressional district, 1975–1987; U.S. senator, Colorado, 1987–1993	Vice chairman of the board, United Nations Foundation and The Better World Fund

2005 levels. President Trump reversed course in 2017. He pledged to withdraw the United States from the Paris Accord and to roll back many Obama administration executive actions. The volatility of presidential stances highlights the importance of congressionally legislated national climate policy.

Understanding and overcoming the barriers to climate policy will require a broad research effort across the social-behavioral-psychological sciences. Public stances toward climate policy exist in a system with interrelated cultural, economic, political, and structural barriers (McKibbin & Wilcoxen, 2002; Moser & Ekstrom, 2010). This dynamic system comprises people with all of their cognitive, emotional, social, and behavioral complexity. Psychological scientists therefore have the expertise—if not an obligation—to help policymakers, social scientists, and the broader public understand psychological barriers to enacting climate policy (Pearson, Schuldt, & Romero-Canyas, 2016).

Our focus is on the social and political psychological factors that foment political polarization over climate policy. Our intention is not to forge new psychological theory but to examine how psychological processes discovered in previous research can be understood in the context of the broader social, economic, and political systems that influence climate policy. We summarize the results of two studies that used large national panels that examine ordinary Democrats' and Republicans' belief in climate change and their attitudes toward specific climate policies.[1]

We also offer observations from in-depth interviews we conducted with four former members of the U.S. Congress (see Table 1): Representative Mickey Edwards (Republican, Oklahoma, 1977–1993), Representative Robert Inglis (Republican, South Carolina, 1993–1999, 2005–2011), Representative David Skaggs (Democrat, Colorado, 1987–1999), and Senator Timothy Wirth (Democrat, Colorado, representative 1975–1987, senator 1987–1993). We asked politicians to react to our survey results and to discuss the psychological and political factors that affect politicians' behavior regarding climate

policy in the United States. All four members of Congress were involved in debates over climate policies such as cap-and-trade and carbon tax. All four attempted to navigate political conflict over climate policy in Congress, among their constituents, and within themselves.

Are Republicans Skeptical of Climate Change?

Conventional explanations hold that Republicans oppose climate policy because most Republicans are skeptical about the reality of human-caused climate change (DeNicola & Subramaniam, 2014; Kahan, 2012; Lizza, 2010; Skocpol, 2013). Such skepticism—which, of course, contradicts overwhelming scientific evidence (Intergovernmental Panel on Climate Change, 2014)—is shaped by narratives from conservative media and political elites. These narratives have been shaped by vested interest groups such as the oil and gas industry (Mayer, 2016). For example, even as the ExxonMobil Corporation's internal communications and peer-reviewed publications widely acknowledged the reality, risks, and solvability of anthropogenic climate change, the corporation attempted to sow doubt in public communications by, for example, purchasing "advertorials" in *The New York Times* (Supran & Oreskes, 2017). If ordinary Republicans believe that climate change does not exist, is not a threat, and cannot be fixed, Republican policymakers are, not surprisingly, unwilling to support climate policy (Holcombe, 2006).

Representative Inglis's experience illustrates these electoral concerns. Inglis represented a heavily Republican district in South Carolina. During his first congressional stint (1993–1999), he was a vocal climate skeptic. During his second congressional stint, Inglis was persuaded by family members to publicly acknowledge the reality of climate change. Inglis conveyed his son's implorations: "I'll vote for you, dad, but you're gonna clean up your act on the environment."[2] Having previously opposed a cap-and-trade climate policy, Inglis proposed an alternative revenue-neutral carbon tax

(Inglis & Laffer, 2008). He was then soundly defeated in the 2010 primaries by a staunch Tea Party conservative. "I committed various heresies against the Republican orthodoxy. . . . [I said] that climate change is real, and let's do something about it" (Inglis, 2012).

Following conventional explanations, psychological scientists have focused on understanding the psychological reasons for skepticism about climate change (Gifford, 2011; Ross et al., 2016; Swim et al., 2009; van der Linden, Maibach, & Leiserowitz, 2015). For example, climate change does not personally affect many people (Rudman, McLean, & Bunzl, 2013), it is difficult to imagine the impacts of climate change (Risen & Critcher, 2011), the injustice of climate change threatens beliefs in a just world (Feinberg & Willer, 2011), the most devastating consequences are psychologically distant (Hardisty & Weber, 2009; Spence, Poortinga, & Pidgeon, 2012), people are averse to negative economic consequences of addressing climate change (Campbell & Kay, 2014), and people may perceive their political tribes as prescribing climate skepticism (Kahan, 2015). Most profound, perhaps, is the enormous human capacity to rationalize and reduce the dissonance and threats to self-evaluation that arise from past failures to address climate change (Festinger, 1957; Ross et al., 2016; Sherman & Cohen, 2006; Steele, 1988). Acknowledging the reality of climate change and its threat to humans entails grappling with previous inaction. It may be psychologically easier to deny climate change. Understanding these psychological processes can help science communicators and policymakers persuade skeptics that climate change is real, thereby reducing opposition to climate policy (Clayton et al., 2015; DeNicola & Subramaniam, 2014). However, understanding skepticism is only part of the explanation for the United States' failure to enact climate policy.

Solely blaming the failure to enact climate policy on climate skepticism falls short as a full explanation in two ways. First, as we describe later, most ordinary people—including most ordinary Republicans—believe in climate change. Second, as we elaborate later, people's stances toward climate policy are strongly shaped by political partisanship, not simply by their belief in climate change.

There is mounting evidence that most Republicans—like most Democrats and independents—believe in anthropogenic climate change. We conducted two surveys with diverse national panels in September 2014 and in October–November 2016 (Ns = 1,056 in 2014 and 1,065 in 2016; see Table S1 in the Supplemental Material available online). After reading a definition of climate change and global warming based on Environmental Protection Agency statements, respondents reported their agreement with four statements: that

climate change is happening, that human activity is largely responsible for climate change, that it threatens humans, and that reducing greenhouse gas emissions would reduce climate change. Consistent with conventional explanations, Democrats believed in climate change more strongly than did Republicans and independents (Fig. 1; Clayton et al., 2015; DeNicola & Subramaniam, 2014; Kahan, 2012; McCright & Dunlap, 2011; see Table S2 in the Supplemental Material). Nevertheless, in both surveys, most Republicans believed in climate change.

Republicans' average overall agreement with the four statements was above the neutral midpoint (see also Davenport & Connelly, 2015; Maibach et al., 2013). Although all three groups agreed that climate change was happening more strongly than they agreed with the three other statements, agreement with each individual statement was above the neutral midpoint (see Fig. 2 and Table S2 in the Supplemental Material).

We also categorized respondents as climate-change believers, skeptics, or undecided on the basis of their average agreement relative to the neutral scale midpoint (see Table S2 in the Supplemental Material). Most Republicans believed in climate change (70% and 63% in 2014 and 2016, respectively), along with most independents (78% and 70%, respectively) and most Democrats (93% and 89%, respectively). We observed similar results in the 2016 American National Election Study, a nationally representative survey of approximately 4,200 respondents. Most Democrats (90%), independents (84%), and Republicans (69%) agreed that global warming "has probably been happening" more than they agreed it "probably hasn't been happening." And the majority of Democrats, independents, and Republicans (89%, 85%, and 71%, respectively) agreed that, assuming it was happening, human activity was either equally or mostly responsible for global warming, in addition to natural causes.

If Republican belief in climate change seems stronger than expected, that's because it is. We asked respondents in our 2016 survey to estimate how much the average Democrat and average Republican believed in climate change (–3 = *strongly disagree*, 0 = *neither agree nor disagree*, +3 = *strongly agree*). People generally underestimated Democrats' and Republicans' belief in climate change. But they underestimated Republican belief in climate change ($M_{estimated} = 0.15$; $M_{actual} = 0.67$) more than they underestimated Democratic belief in climate change ($M_{estimated} = 1.61$; $M_{actual} = 1.88$). Republicans themselves underestimated Republican belief in climate change ($M_{estimated} = 0.41$), even though they estimated other Republicans more accurately than did Democrats ($M_{estimated} = -0.05$) and Independents ($M_{estimated} = 0.03$). Democrats, in contrast, did
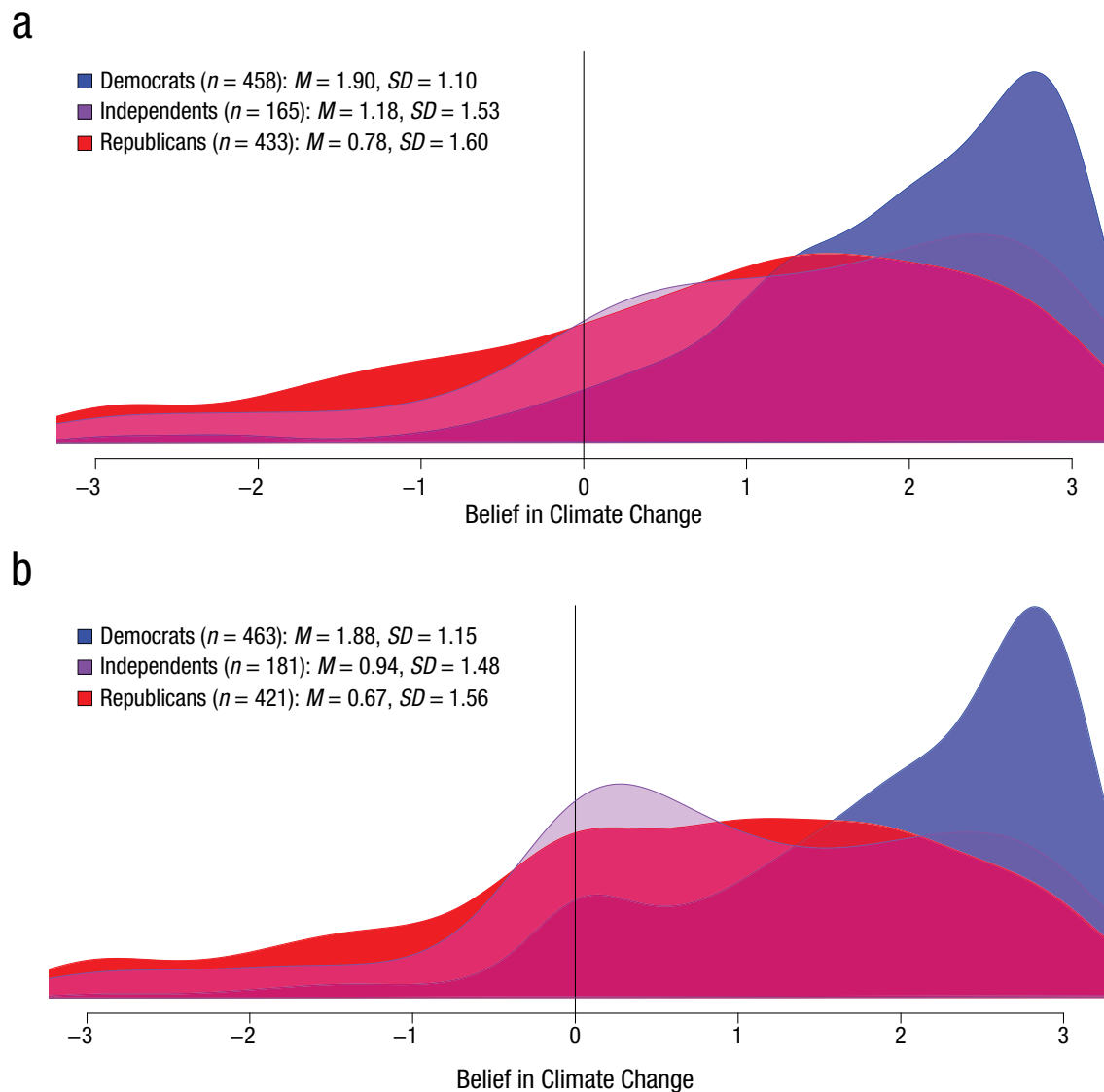
a

b

Fig. 1. Belief in climate change among Democratic, Republican, and independent respondents in (a) October 2014 and (b) October–November 2016. Belief reflects average agreement (−3 = *strongly disagree*, 0 = *neither agree nor disagree*, +3 = *strongly agree*) with four statements: "climate change is happening"; "climate change poses a risk to human health, safety, and prosperity"; "human activity is largely responsible for recent climate change"; and "reducing greenhouse gas emissions will reduce global warming and climate change" (αs = .91 and .92 for 2014 and 2016, respectively). Average agreement was significantly greater than the neutral midpoint for Democrats, independents, and Republicans.

not underestimate Democratic belief in climate change ($M_{estimated}$ = 1.91). Even though Democrats and Republicans estimated their own political group's belief in climate change more accurately than they estimated the opposing political group, Republicans nevertheless underestimated other Republicans' belief in climate change.

Why do people underestimate Republican belief in climate change? Media coverage that emphasizes polarization between Democrats and Republicans may be partly to blame. Among the relatively small fraction of climate skeptics (15% and 14% of the samples in 2014

and 2016, respectively), the differences between Democrats and Republicans are stark (15% vs. 71%, respectively, in 2014; 13% vs. 71%, respectively, in 2016). This contrasts with the more modest differences between Democrats and Republicans in the proportion that believes in climate change (93% vs. 70%, respectively, in 2014; 89% vs. 63%, respectively, in 2016). In emphasizing greater differences, the media also emphasizes the relatively large fraction of Republicans among climate skeptics (71% in both the 2014 and 2016 samples), rather than the smaller, but less newsworthy, fraction of skeptics among Republicans (26% and 25% in 2014
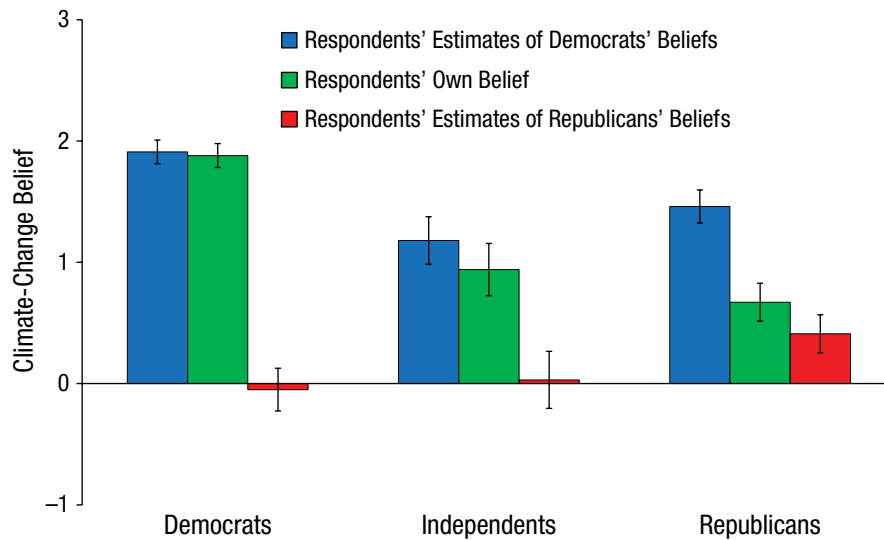
Fig. 2. Estimated and actual average belief in climate change among Democratic, Republican, and independent respondents in October–November 2016. Respondents estimated average agreement (−3 = *strongly disagree*, 0 = *neither agree nor disagree*, +3 = *strongly agree*) with the four statements regarding climate change as summarized in Figure 1. Error bars represent 95% confidence intervals.

and 2016, respectively). "If it bleeds, it leads," the saying goes, particularly among the "new media" such as online and cable news programs (Baum & Groeling, 2008; Levendusky & Malhotra, 2016a). The sharper differences between Democratic and Republican skeptics are more newsworthy than duller differences between average Democrats and average Republicans (Sherman & Van Boven, 2014).

These patterns present a puzzle. If most Democrats and most Republicans believe in climate change, why have Republicans opposed climate policy? The problem, it appears, is not that Republicans are skeptical of climate change. The problem is that Republicans are skeptical of Democrats—and Democrats are skeptical of Republicans.

Partisans Place Party Over Policy

In an article titled "The Depressing Psychological Theory That Explains Washington," Ezra Klein (2014) wrote, "Oftentimes when we think we're engaged in reasoned policy discussion we're actually engaged in complex efforts to rationalize the direction in which our tribal affiliations are pushing us." Psychologists have long known that people evaluate policies based not only on what the policies are but on whom they represent—so much that partisanship can override considerations of policy content (Cohen, 2003; Druckman, Peterson, & Slothuus, 2013; Lupia & McCubbins, 1998; Zaller, 1992). In the seminal experimental demonstration of this "party over policy" effect, liberal and conservative

university students were randomly assigned to read either a generous or a stringent welfare policy (Cohen, 2003). The policy was ostensibly supported, depending on random assignment, by either 95% of House Democrats (and 10% of Republicans) or by 95% of House Republicans (and 10% of Democrats). Regardless of whether the policy was generous or stringent, liberal students favored the Democratic policy and opposed the Republican policy, whereas conservative students favored the Republican policy and opposed the Democratic policy.

Placing party over policy results from a constellation of psychological processes. People rely on partisan cues so that they can be similar to their own political group (Iyengar, Sood, & Lelkes, 2012; Russell, 2014) and be dissimilar to the opposing political group (Mackie, 1986). People also engage in motivated political reasoning, applying extra skepticism to claims from the opposing party than from their own party (Kahan et al., 2012; Knowles & Ditto, 2012; Taber & Lodge, 2006). Placing party over policy can also reflect rapidly formed, automatic, nonconscious associations (Smith, Ratliff, & Nosek, 2012). And because policies are subject to interpretation, people construe them such that their own side's ideas naturally seem superior to ideas from the opposing side (Cohen, 2003; Griffin & Ross, 1991; Ross & Ward, 1996).

Abetting these processes is a previously unexamined possibility that people exaggerate how much partisanship influences other Democrats and Republicans (Levendusky & Malhotra, 2016b; Pronin, Berger, &

Molouki, 2007; Robinson, Keltner, Ward, & Ross, 1995; Westfall, Van Boven, Chambers, & Judd, 2015). These exaggerated perceptions of oppositional partisan norms, in turn, influence people's personal policy support (Miller & Prentice, 2016). Democrats and Republicans may be swayed by partisanship because they think other Democrats and Republicans are swayed by partisanship.

We suggest that political polarization on climate policy largely reflects the tendency to place party over policy—or, in this case, a tendency to place party over planet. Our interviews with former members of Congress revealed that as climate change became more closely associated with prominent Democratic politicians (e.g., Vice President Al Gore), Republican disagreement dramatically increased. As Senator Wirth put it, "If you are interested in climate change, that means you're supporting Al Gore."

Polarization over climate policy thus partly reflects Democrats' and Republicans' vested psychological interests in disagreement per se.[3] This analysis implies that if the tables were turned—if Republican rather than Democratic politicians proposed a climate policy—ordinary Democratic support for climate policy would falter and Republican support would increase. Given that these tables are unlikely to turn in the foreseeable future, we used the more controlled world of psychological experiments to test this prediction.

After reporting their belief in climate change, respondents in the 2014 panel read about a carbon pricing policy that had ostensibly been proposed in Congress (see the Method section of the Supplemental Material). Depending on random assignment, some people read about a cap-and-trade policy, whereas others read about a revenue-neutral carbon tax (Baker et al., 2017; Conniff, 2009). Cap-and-trade policies have been prominently associated with Democratic politicians and liberal thinkers. Senator Wirth and other Democratic politicians, for example, had advocated cap-and-trade to reduce carbon emissions, noting that similar policies had successfully reduced sulfur dioxide and nitrogen oxides that caused "acid rain." The policy would mandate a cap on overall carbon emissions, award allowances to emit carbon, and establish a market for trading the allowances. Republican Representative Inglis voted against cap-and-trade legislation in 2009, explaining in a PBS interview, "I think it's a big tax increase. It grows government; it decimates American manufacturing; it's hopelessly complicated" (Inglis, 2012).

A revenue-neutral carbon tax, in contrast, has emerged as a leading idea among some conservative political elites (Baker et al., 2017; Inglis & Laffer, 2008; Schultz & Becker, 2013). The policy would tax carbon emissions, incentivizing firms to reduce emissions. These would be offset by a "tax swap" to reduce overall taxes. The policy

would mitigate conservative concerns about mandatory government caps and increased regulatory complexity while appealing to traditional conservative values of reducing regulation without growing the size of government (Baker et al., 2017; Conniff, 2009; Lizza, 2010; Metcalf, 2009; Mooney, 2015). After coming to recognize the reality of climate change, Inglis proposed "a revenue-neutral tax swap where we would reduce taxes on payroll [and] shift the tax to carbon dioxide and revenue-neutral rates that the government wouldn't grow" (Inglis, 2012).

In our experiment, we crossed the description of a cap-and-trade or carbon tax policy with an experimental manipulation of partisan framing. Depending on random assignment, some respondents read that Democratic members of the House of Representatives proposed the policy and Republican representatives opposed it. Other respondents read that Republican representatives proposed the policy and Democratic representatives opposed it. This strong partisan framing represents current political reality, in which it is rare for one party to strongly support a politicized policy without the other party strongly opposing it (Layman, Carsey, & Horowitz, 2006). After reading the policy and its partisan framing, respondents reported how much they personally agreed with the policy proposal and how much they would support legislation based on the proposal, averaged into an index of policy support.

Respondents placed party over policy. Their personal policy support was substantially influenced by whether their own party or the opposing party proposed the policy (see Table S4 in the Supplemental Material). Figure 3 shows that the party-over-policy effect emerged strongly for both cap-and-trade (a) and carbon tax (b) policies. Democratic respondents supported the carbon pricing policies more, on average, when Democratic politicians proposed them ($M = 1.45$) than when Republican politicians proposed them ($M = 0.85$). Republican respondents supported the policies more when Republican politicians proposed them ($M = 0.67$) than when Democratic politicians proposed them ($M = -0.07$).[4] Although respondents generally supported revenue-neutral carbon tax policy slightly more ($M = 0.89$) than the cap-and-trade policy ($M = 0.56$), Democrats and Republicans did not differ in their relative support for the two policies, and the effect of partisan framing did not differ between the two policies.[5]

To be sure, Democrats and Republicans were polarized in their support for climate policy. But the magnitude, if not the direction, of polarization was moderated by whether Democratic or Republican politicians proposed the policy, not by the content of the policy itself.

Partisan framing also influenced civic action. Respondents indicated whether they would send an e-mail to their congressional representative supporting the policy (see Fig. 4, Table S5 in the Supplemental Material).
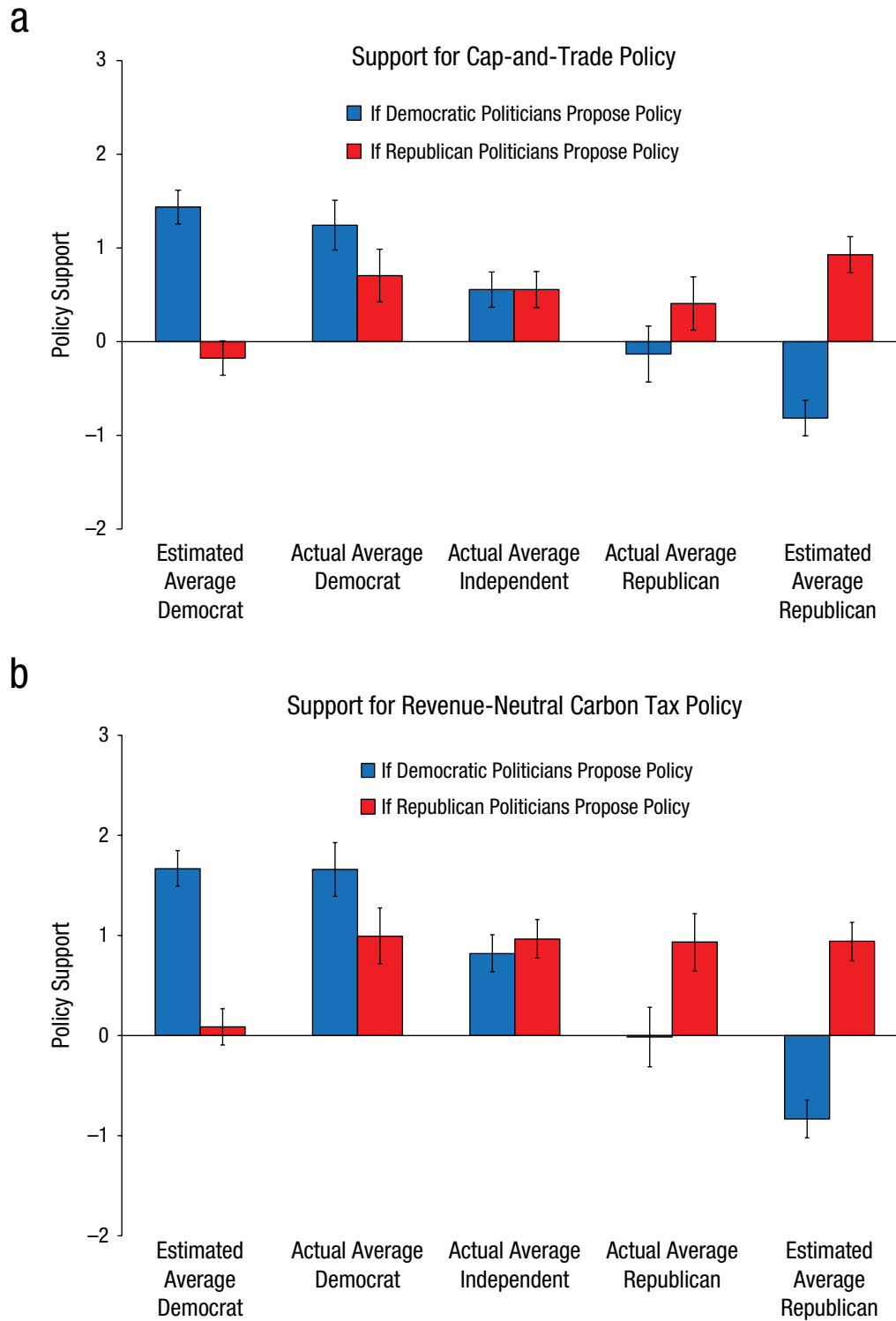
Fig. 3. Support (personal and estimated) of Democrats, Republicans, and independents for (a) a cap-and-trade policy and (b) a revenue-neutral carbon tax policy, presented separately for policies ostensibly proposed by Democratic and Republican politicians. Policy support reflects agreement (−3 = *strongly 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.
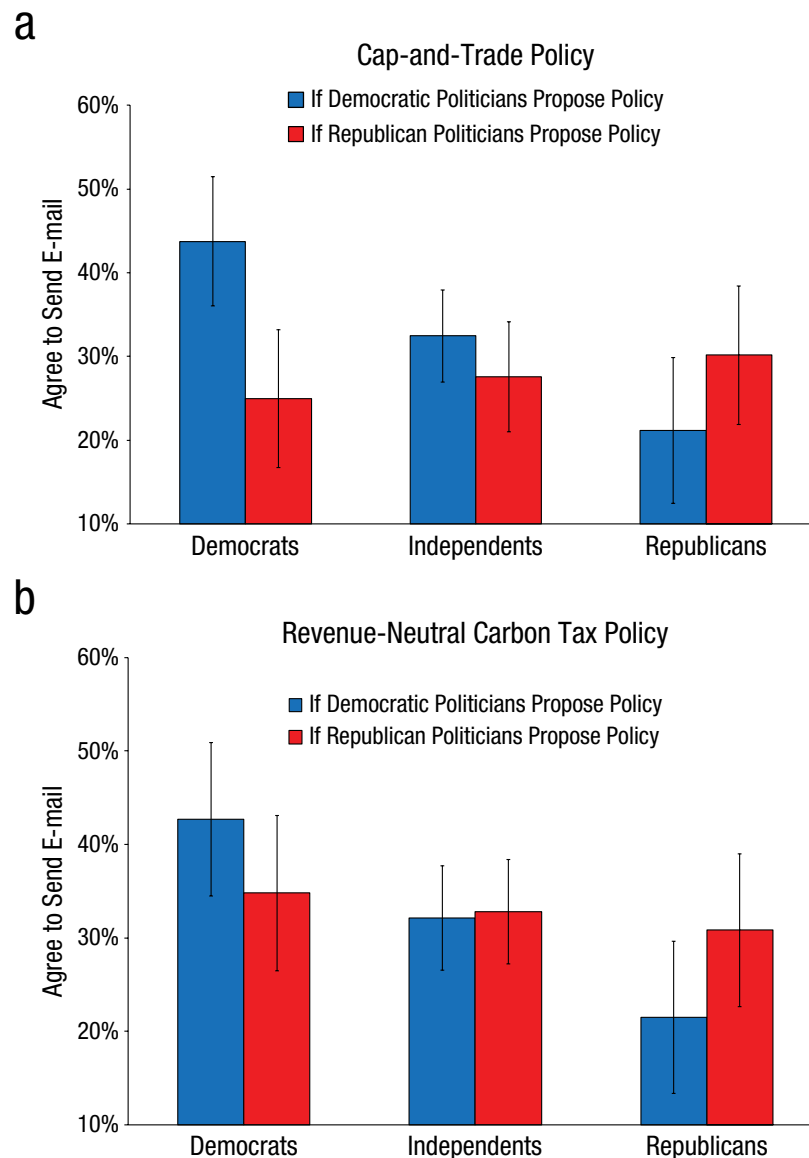
a

Cap-and-Trade Policy

b

Revenue-Neutral Carbon Tax Policy

Fig. 4. Willingness of Democrats, independents, and Republicans to send an e-mail to their congressional representative to support (a) a cap-and-trade policy and (b) a revenue-neutral carbon tax policy, presented separately for policies ostensibly proposed by Democratic and Republican politicians. Error bars represent 95% confidence intervals.

Democrats were more likely to send an e-mail when Democratic politicians proposed the policy (43%) than when Republican politicians proposed the policy (30%). And Republicans were more likely to send an e-mail when Republican politicians proposed the policy (30%) than when Democratic politicians proposed the policy (22%).

Partisan patterns of communication can profoundly influence policymakers. These findings suggest that in response to a Democratic climate policy, members of Congress will receive vastly more supportive communications from Democratic constituents than from Republican constituents. This pattern may bolster Democrats' preexisting support for the policy. But hearing from Democratic voters may carry little weight with Republican politicians and might even backfire. Partisan patterns of communication might entrench polarization but are unlikely to change minds.

Now, some have argued that it is normatively defensible for ordinary citizens to rely on cues from partisan elites to evaluate policies (Druckman et al., 2013; Zaller, 1992). Ordinary people do not have the expertise to evaluate policies so following the lead of political elites may be individually rational, especially if party leaders

typically support policies that reflect citizens' own values (Gigerenzer, 1998; Todd & Gigerenzer, 2007). Even if individually rational, however, placing party over policy exacerbates partisan conflict per se.

For many contentious partisan issues—such as abortion rights, congressional redistricting, and voting rights regulation—there is some strategic logic in reactively devaluating policies simply because the opposing political party proposes them (Maoz, Ward, Katz, & Ross, 2002; Ross, 1995; Taber & Lodge, 2006). Gains for the opposing side often entail losses for one's own side. Reactive devaluation makes less strategic sense for climate change, however. The adverse consequences of climate change are suffered by both Democrats and Republicans. And mitigating climate change would have bipartisan benefits. Climate change is not zero-sum.

Furthermore, ordinary people believe that placing party over policy reflects poor citizenship. We asked respondents to consider what it means for "you, personally, to be a good citizen" and to report how much (1 = *not at all*, 7 = *very much*) two factors should influence their policy evaluations: "partisan political considerations—the position of Democrats and Republicans" and "personal policy considerations—the content of a policy." The vast majority of respondents (86%) believed that policy content ($M = 6.27$) should influence their policy evaluation more than partisan considerations ($M = 3.65$); only 5% thought that partisan considerations should carry more weight than policy content. Although some scholars might argue for the rationality of relying on partisan cues, it injects arbitrary partisan conflict to political discussions and is at odds with ordinary people's personal values.

Exaggerated Partisan Opposition

As much as people are personally swayed by partisanship, they expect partisan influence to be even stronger among other Democrats and Republicans. People generally exaggerate partisan opposition, thereby overestimating political polarization between Democrats and Republicans (Levendusky & Malhotra, 2016b; Maoz et al., 2002; Pronin et al., 2007; Robinson et al., 1995; Ross, 1995; Taber & Lodge, 2006; Sherman, Nelson, & Ross, 2003; Westfall et al., 2015). Whereas people see their own stances as grounded in careful, dispassionate, and nonideological analysis, they see others' stances as blatantly partisan, often reflecting careless, ideological thinking (Pronin, Gilovich, & Ross, 2004; Ross & Ward, 1995; Van Boven, White, Kamada, & Gilovich, 2003). In other words, people exaggerate how much partisans reactively devalue the opposing side's ideas.

We asked respondents in the 2014 study to estimate how much the "average Democrat" and the "average Republican" agreed with the same policy descriptions and partisan framing that respondents themselves considered, using the same scales on which respondents indicated their own agreement (see Fig. 3). Respondents slightly exaggerated how much their fellow Democrats and Republicans would support policies from their own political party (estimated $M_{\text{Democrat}} = 1.55$, actual $M_{\text{Democrat}} = 1.45$; estimated $M_{\text{Republican}} = 0.93$, actual $M_{\text{Republican}} = 0.67$). To a much larger degree, respondents exaggerated reactive devaluation by partisans on the other side. Respondents substantially underestimated Republicans' support for Democratic policies (estimated $M_{\text{Republican}} = -0.82$, actual $M_{\text{Republican}} = -0.07$) and Democrats' support for Republican policies (estimated $M_{\text{Democrat}} = -0.05$, actual $M_{\text{Democrat}} = 0.85$; Fig. 3; see Table S6 in the Supplemental Material). Thus, even though Democrats and Republicans were themselves swayed by partisan framing, they exaggerated how much the degree to which partisan framing would influence others' policy support.

The exaggerated partisan opposition helps explain why people place party over policy. A moderated-mediation analysis (Hayes, 2013; Muller, Judd, & Yzerbyt, 2005) indicated that among Democratic respondents, the effect of partisan framing on their estimates of other Democrats mediated the effect of partisan framing on their personal policy support; this indirect effect was larger (−0.89) than the indirect effect through estimates of Republicans (0.17; see Fig. S1 in the Supplemental Material). Among Republican respondents, the effect of partisan framing on their estimates of other Republicans mediated the effect of partisan framing on their personal policy support; this indirect effect was larger (1.11) than the indirect effect through estimates of Democrats (−0.21; see Fig. S1). These results suggest that partisan considerations influence people's support for climate policy both directly and indirectly. Democrats and Republicans are polarized in their support for climate policy partly because they expect that other Democrats and Republicans are polarized on climate policy (Ehret, Van Boven, & Sherman, 2018).

Exaggerated partisan opposition, moreover, creates strong social norms of partisanship. Partisans might refrain from publicly supporting policies they privately support if they believe doing so would contradict their partisan peers (Miller & Prentice, 2016; Prentice & Miller, 1996; Van Boven, 2000). Of particular relevance is that people falsely perceived that Republicans oppose Democratic climate polices ($M = -0.82$, the low blue bar in Fig. 3) when Republicans were actually neutral toward those policies ($M = -0.02$). For Republicans, voicing support for Democratic climate policy would be seen as opposing both Republican elites and ordinary Republicans.

The theme of Republican norms against supporting climate policy ran through our interviews with members of Congress. In a near textbook example of the pluralistic ignorance that can result from political correctness (Van Boven, 2000), Inglis relayed the following about a talk he gave at a House Republican conference in Utah:

> I spoke. You could see the wheels turning. . . . You know they have a need because in Salt Lake City there's this inversion problem and the air is bad and they want to solve it. . . . So you call for questions. No questions and the reason is . . . you know there's gonna be a loudmouth in the crowd who's gonna jump down the throat of anybody who raises his hand and outs themselves as believing . . . but privately people . . . say, "Yeah, yeah, we gotta do something about that." . . . So it's just that the loudmouth norms everybody into compliance with what has become the orthodoxy.

Policymaker Psychology

Political disagreement over climate policy occurs within a dynamic social-economic-political-psychological system that includes elected politicians, political lobbyists, media (both real and fake news; Lazer et al., 2018), foreign governments, and the laws and incentives that govern interactions between these entities. Senator Wirth put it well:

> American politics is very messy. American politics is not full of straight lines. It's not full of formulas. It's not full of the way in which a textbook might say you get parties to do this and agreements to do that. That's not the way [climate policy] is going to happen.

Our conversations with former members of Congress provide insight into the psychology of policymakers, their relations with ordinary citizens, and how they have tried to navigate the fraught and messy system in which climate policy must be enacted. Three themes emerged. First, policymakers are subject to the same polarizing processes as ordinary citizens—the same pulls of partisanship, the same anxieties about being a respected, valued member of their in-group, and possibly, the same misperceptions of their peers' private partisan opposition. Politicians are subject to tensions between, on one hand, wanting to serve their constituents and country in the best way possible and, on the other hand, being pulled by partisanship. Senator Wirth disputed the idea that politicians vote based strictly on personal beliefs:

> It's not that people believe or don't believe. I mean, if you think that members of Congress cast their votes based upon what they believe, first and foremost, that is, I believe, an incorrect assumption. They cast their votes based on where their constituents are.

Second, politicians, like ordinary people, are quick to blame the other side for polarizing climate change. Democratic Congressman Skaggs offered the following analysis:

> The real eruption of anti-intellectual and anti-scientific phenomena within the Republican Party [was] the Gingrich emergence as Speaker and the '94 election. Before that point . . . there were a lot of environmental Republicans, if you will, that I was able to talk with. . . . The action that was taken by the Gingrich administration of the House was to defund the Office of Technology Assessment. . . . That had broader implications than just climate questions but was the sort of knowing disarmament of Congress from its intellectual capacity . . . because rigorous information typically gets in the way of political objectives.

The two former Republican congressmen we spoke with, meanwhile, suggested that Democratic politicians alienate many Republicans and trivialize their concerns. Congressman Edwards described how Democratic presidential candidate Hillary Clinton came across to coal miners: "Think of Hillary to the coal miners. 'We're gonna shut down the coal mines and put coal miners out of work.' This is what a lot of people hear." And Congressman Inglis suggested that current Democratic politicians supported him not because he proposed a carbon pricing policy but 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?'"

Third, policymakers, unlike ordinary people, have their jobs on the line, which amplifies the psychological processes that fan the flames of partisan disagreement (Baekgaard, Christensen, Dahlmann, Mathiasen, & Petersen, 2017). Elected officials whose positions are contingent on support from the public, other elites, and moneyed interests are particularly attuned to the partisans who vote in primaries and the potential donors who support their campaigns. Congressman Skaggs described the landscape that politicians now face:

> It's true for both parties. . . . A very red district produces . . . a disposition toward very red nominees

that then get elected to House and Senate. [These] in turn become the effective coalitions . . . for purposes of electing leadership, which in turn become the . . . dominant influencers of what kinds of bills come out of committee, and who gets appointed to what committees, and the machinery of policy development or rejection.

Social Psychological Interventions to Overcome Partisan Barriers

Such political entrenchment can make the barriers to enacting climate policy seem insurmountable. Yet we have suggested that Republican skepticism about climate change is exaggerated; that partisan disagreement over climate policy is somewhat arbitrary, reflecting reactive devaluation; and that people place party over climate policy partly because they misperceive their peers' partisan opposition. Psychological scientists can help navigate a path toward bipartisan support for climate policy. To be effective, these interventions should simultaneously target multiple parts of the system, lest changes to one part of the system (such as personal attitudes) be met with increased resistance by other parts of the system (such as misperceived social norms). Our analysis suggests a multifaceted triplet of approaches to remove barriers.

First, exaggerated estimates of partisan opposition can be corrected through careful communication that most Democrats and most Republicans believe in climate change, and that most Democrats and Republicans do not oppose the other side's ideas. Our finding that exaggerated partisan opposition partly explains the party over policy phenomenon implies that correcting such exaggeration would reduce partisanship's unwanted influence. Correcting misperceived social norms undermines their power, particularly when those norms mischaracterize one's own group (Goldstein, Cialdini, & Griskevicius, 2008; Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008; Prentice & Miller, 1993; Schroeder & Prentice, 1998; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Congressman Edwards said:

> 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, I think that frees you up to not be worried about being an outlier. Nobody wants to be an outlier—nobody.

Second, decoupling identity concerns from climate policy could reduce partisans' concerns about expressing and protecting group affiliation. Avoiding culturally "loaded" language, referring to *skeptics* rather than *deniers*, and referring to *climate change* rather than *global warming* can reduce the salience of partisan identities (Kahan, 2012; Schuldt, Roh, & Schwarz, 2015). Identity concerns can also be lessened by inviting people to affirm other aspects of personal identity. Inviting people to affirm the self by reflecting on core, nonpolitical values has reduced partisan disagreement on a range of political topics, from beliefs about abortion and the efficacy of capital punishment (Cohen, Aronson, & Steele, 2000), to the role of U.S. foreign policy as a potential cause of terrorism (Cohen et al., 2007), and to the evaluation of (then candidate) Barack Obama's debate performance (Binning, Sherman, Cohen, & Heitland, 2010; Sherman, Brookfield, & Ortosky, 2017). Pointedly, self-affirmation has even led people to recognize that climate change poses a great risk to humanity and to feel more capable of making a difference in addressing climate change (Sparks, Jessop, Chapman, & Holmes, 2010; van Prooijen & Sparks, 2014).[6]

Finally, the contentiousness of climate policy means that successful interventions must navigate conflict resolution. Sustained personal contact between Democrats and Republicans is central to this process (Kelman, 1995, 1997, 2005), particularly when coupled with more realistic social perceptions and reduced defensiveness. Personal contact enables partisan opponents to build trust and to balance divisive discussions with discussions of shared interests. Congressman Skaggs reported this "somewhat apocryphal vignette":

> A Republican and a Democrat that hadn't gotten along with each other very well while we were on the floor and in committee, showing up for [social events] with family—and it was very important that we had spouses and kids along. . . . I've got my 6-year-old in my arms and So-and-So has got his little boy in his arms . . . and they play with each other just fine. It immediately establishes, as you say, that commonality.

Another facet is the use of multitrack conflict resolution, including citizen groups, nongovernmental organizations, and even academics who collaborate with policymakers (Davies & Kaufman, 2003; Ross, 2013). As an example of how this might work, consider the Citizens Climate Lobby (https://citizensclimatelobby .org). The Citizens Climate Lobby is a bipartisan climate advocacy group of citizens and congressional representatives who join as Democrat-Republican pairs to minimize lopsidedness. A *New York Times* article (Bornstein, 2017) described how the Citizens Climate Lobby took an affirming approach when meeting with a Republican congressional representative. They expressed to the representative their "appreciation for his service in Iraq and

in the State Senate before mentioning anything about climate change." In response, the Republican congressman said, "I just have to say, you guys are not normal. You're smiling, you're saying nice things about me. That's not what people like you do when you come into my office." The congressman's reaction—he signed on to the group—demonstrates the importance of affirming common goodwill and establishing personal connection.

As an even broader model of reducing partisan rancor, consider Congressman Edwards' efforts. He regularly convenes meetings of junior politicians from both parties. These budding policymakers discuss broad ideas and philosophy—all outside of current political debates—to find common values, build trust, and appreciate their shared future. "You begin to trust the other person to have views that are sincerely held and that this person is an honest, caring person, who doesn't want to see our cities flooded and doesn't want to see calamity."

Conclusion

The results of our panel studies and our conversations with former members of Congress highlight two prominent social-political-psychological barriers to bipartisan support for climate policy: People support the same policies when proposed by their own party more strongly than when proposed by the other party, and people exaggerate how much other Democrats and Republicans are swayed by partisanship, which creates potent, but false, norms of partisan opposition. As with virtually all other aspects of the climate challenge, these psychological barriers are daunting and require a systematic understanding of the individual within a multilevel context (Pearson et al., 2016).

Andrew Revkin once wrote a *New York Times* column titled "An Inconvenient Mind." He noted that "a large part of the climate challenge is not out in the world . . . but inside the human mind" (Revkin, 2010). Revkin referred to what was, at the time, widespread skepticism about climate change. Such skepticism has abated. But the climate challenge still lies in the human mind—in the processes that polarize partisan attitudes toward climate policy. By helping to understand these processes, psychological scientists can help navigate the political path forward toward solutions.

Action Editor

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Supplemental Material

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Notes

1. Detailed reports of the methods and analysis are provided in the Supplemental Material; relevant data and analysis scripts are available on Open Science Framework (https://osf.io/rpy2g).
2. Nonreferenced quotations are from the in-depth interviews.
3. Environmental issues have not historically been as polarizing as they have become. The Environmental Protection Agency was famously established under the Nixon administration. As recently as 2008, Republican presidential candidate Senator John McCain pledged legislation to address climate change. And there was strong bipartisan support for the clean air act amendments during the George H. W. Bush administration.
4. Throughout, we report adjusted means from overall models with predictors including respondent party identification, partisan framing condition, type of carbon pricing policy, the timing of questions regarding normative beliefs, and their interactions. Adjusted and raw means differ by less than 3%. Partisan differences appear to be larger for Democratic policies (Ms = 1.45 and −0.07 for Democratic and Republican respondents, respectively) than for Republican policies (Ms = 0.85 and 0.67 for Republicans and Democrats, respectively). We are cautious about overinterpretation of this pattern because we cannot discern whether this pattern reflects more polarized reactions to Democratic proposals in general (recall that in 2014, Democrats were the minority party in the House during Obama's Democratic presidential term) or to the particular combination of Democratic proposals to address climate change through carbon pricing.
5. The party-over-policy effect emerged even when we controlled for respondents' belief in climate change and the interaction with partisan framing (see the Party Over Policy subsection of Results in the Supplemental Material). That is, partisan framing influenced Democrats and Republicans because of their partisan identities, not because of any differences in climate-change belief.
6. Care must be taken, of course, not to inadvertently link self-affirmation and partisan stances, or else self-affirmation can

increase rather than decrease partisanship by increasing defensiveness (van Prooijen, Sparks, & Jessop, 2013).

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