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Epistemic Communities and Public Support for the Paris Agreement on Climate Change

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Abstract

We study how informing the public about the views of international policy experts shapes public support for international cooperation. Using survey experiments, we test whether variation in levels of support among experts with differing types of domain-specific knowledge can shape public support for a recent and politically salient international treaty: the UNFCCC COP21 Paris Climate Agreement. Our results show that the public is, under certain conditions, deferential to the views of experts, with respondents reporting increasingly higher levels of support for the COP21 agreement as support among experts increased. In addition, we provide suggestive evidence that domain-specific expertise matters: When it comes to support for the COP21 agreement, the public is most sensitive to the views of climate scientists, while exposure to the views of international relations and international economics experts have less dramatic and less consistent effects. Despite these results, we find that it is exposing the public to information about opposition to a proposed treaty among members of relevant epistemic communities that has greatest and most consistent effects. Our findings thus provide new insight into the conditions under which epistemic communities can shape public support for particular policy alternatives.

Keywords

international cooperation, public opinion, environmental politics, survey experiments

What role can policy experts play in shaping support for international cooperation? Is public opinion on international cooperation sensitive to the views of policy experts on issues related to international cooperation? Historically, the public and political leaders have been thought to yield to the views of subject matter experts (Haas 1992b). Currently, when the "death of expertise" (Nichols 2017) and "fake news" are highlighted both as a threat to democratic norms and wielded as a political cudgel, the effectiveness of cues from policy experts may be muted. Furthermore, as concerns about "backlash effects" or shifts in opinion away from counter-attitudinal information (Nyhan and Reifler 2010) rise, experts on the policy problems that global cooperation is meant to address may question the usefulness and be concerned about the potentially counterproductive effects of sharing their expertise with the public and policy makers.

We therefore ask, can policy experts or epistemic communities (ECs)—groups of individuals with an "authoritative claim to policy relevant knowledge" in a given policy domain (Haas 1992b)—affect public support for particular policy alternatives? And to what extent does the level of consensus among EC members affect their ability to do so? The answers to these questions, especially in the context of ascendant anti-globalization political movements, are still undefined. This is the case despite a large literature on the role of political and societal elites in shaping public opinion. There is strong evidence, for example, that a long list of elites, including religious leaders (Adkins et al. 2013), elected political leaders (Bolsen, Druckman, and Cook 2014), journalists (Groeling and Baum 2009), political party leaders (Lenz 2013), and celebrities (Marsh, Hart, and Tindall 2010), can shape and mobilize public opinion on issues for which they may have little or no domain-specific knowledge. However, we are on less sure footing when it comes to understanding public reactions to the views of policy experts and ECs on some of society's most pressing problems. This is, ironic since scholars have long argued that ECs are uniquely situated to provide credible

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and actionable insight into the causes and consequences of—and solutions to—emerging global public goods problems like reducing nuclear proliferation (Adler 1992), protecting the ozone layer (Haas 1992a), and forestalling anthropogenic climate change (Allan 2017).

In this paper, we draw on both the elite cuing and ECs literatures to develop expectations about how, in sharing their views publicly, groups of elites with specialized and policy-relevant knowledge can affect mass support for particular policy alternatives. Our expectation is that the influence of ECs is conditional both on the level of domain-specific knowledge that the public believes the group to have and on the group's prevailing policy preferences.

We test these expectations using an original survey experiment designed to measure the effect of the views of different ECs on public opinion in the context of the highly politicized policy debate over continued U.S. participation in the COP21 climate agreement. We focus on this case because the agreement was politically salient and had a genuinely uncertain future when we were designing and fielding our survey. While President Obama had signed the agreement, there was some debate (in the media, if not in legal circles) over whether the agreement needed Congressional approval. The 2016 Presidential election added to uncertainty about the agreement's future because while Hillary Clinton supported the agreement, Donald Trump vehemently opposed it. This case thus allows us to gauge the effect of exposing the public to information about the views of different types of knowledge experts on support for a politically salient and strongly contested international agreement.

Our study relies on a experimental manipulation in which we present respondents with results from a fictional survey of scholars of climate science, international relations (IR), or international economics (IE) about their support for the United States joining the COP21 agreement.[1] We randomly vary the level of support among scholars so that some respondents learn that scholars overwhelmingly support the agreement, while other respondents learn that scholars are overwhelmingly opposed to it. In a third treatment group, respondents learn that scholars are split. We then ask respondents to report their own level of support for the agreement. Following the experiment, we provided respondents with a full debrief which provided information on the Paris agreement, anthropogenic climate change, and, where available, the actual views of experts on these issues.

The results that we report below show that relative to a control group that received no information about the views of experts, respondents who learned that experts are opposed or split on the agreement were less likely to support it, with those in the opposed treatment being least supportive. While those learning that scholars support the agreement were more supportive of the agreement than those in the control group, the estimated effect size was small and not distinguishable from zero. This stepwise pattern of results is consistent with a public that is deferential to the expertise of scholars, but not unconditionally so. We also find suggestive evidence that domain expertise matters: The public is most receptive to information about the views of climate scientists.

We make three contributions. First, we test theories of ECs and policy change with implications for public opinion at the individual level. We argue that endorsements from ECs contain important "knowledge cues" that signal to the public the level of specialized knowledge that members of the EC have about a specific policy. Consistent with past work on ECs, we argue that a given EC will be most effective in moving the public when the public perceives them as having domain-specific and policy-relevant knowledge on a given issue and when there is broad agreement among the community on the relative merit of a particular policy option.

Second, we show that efforts to educate the public about the views of policy experts can have important effects on support for particular policy alternatives. Increasingly, social scientists are asked to "bridge the gap" between the academy and the public by writing op-eds, blogging, or otherwise engaging with the public and policy makers. In general, these calls are premised on the belief that these audiences will respond productively to learning about the wisdom or folly of particular policy alternatives from experts. The specialized issue domain knowledge that scholars possess and the relative professional independence that they enjoy ostensibly make their views and recommendations on public policy questions more reliable and credible than those of partisan actors, industry lobbyists, or other interested parties. There is concern, however, that perceptions of scholars as ivory tower elites who are out of touch with the practical realities of policy implementation may cause the views of scholars to be discounted or ignored (Nichols 2017; Walt 2012). In contrast and consistent with other recent work, we find that informing the public about the views of ECs toward a given policy proposal generally moves public opinion in the direction of the views of experts. On average, those exposed to a treatment condition in which they learned that an EC opposes a given policy are less likely to support the policy than those assigned to a control condition which provided no information about EC views. This effect is most dramatic and consistent when the EC in question has domain-specific knowledge about the issue at hand.

Third, we provide evidence that even for a politically salient issue like the COP21 climate agreement in the midst of a presidential election, there is little evidence of

"backlash" effects. Consistent with other recent research on the relative rarity of "backlash" effects (Guess and Coppock 2018), we find that the public tends to move in the direction of expert opinion regardless of their ideological predispositions. At the same time, our results show that the public may be particularly swayed by negative information, as others have found (Soroka 2014), and that this is especially the case when this negative information is delivered by groups with plausible claims to expertise on the issue at hand.

ECs and Public Opinion

Elites and Public Opinion

Scholars have long studied how the public comes to support or oppose different policy options. This work demonstrates that the public is generally ignorant of all but the most high-profile details of political events and the implications of particular public policies (Kinder 1998), allowing political elites to play a definitive role in shaping public opinion on a wide array of public policy issues (Zaller 1992). This ignorance may be a rational response to the high costs of gathering and evaluating information about politics and public policy (Downs 1957). However, the public is rather savvy in its evaluation of information from different sources. As Lupia and McCubbins (1998) argue, two factors, perceived commonality of interest and perceived relative expertise, determine a given source's ability to influence opinion. This is because the public is aware that political elites have incentives to mislead or misrepresent for political gain. The public relies on contextual cues to differentiate between information from political elites who share their underlying political values and those that do not (Cohen 2003; McCright and Dunlap 2013). But commonality of interest is not enough. The public must also believe that the source in question has the knowledge needed to make informed decisions. The public, therefore, also differentiates based on the perceived credibility of the source (Druckman 2001).

In the context of foreign affairs, scholars have shown that partisan cuing has important effects on support for the use of force (Berinsky 2009), but the power of informational cues declines dramatically for foreign policy issue areas in which there are pre-existing partisan divides among the public (Guisinger and Saunders 2017). This result is also consistent with broader findings on cultural cognition, where individuals filter new information through cultural or partisan lenses to reinforce prior beliefs rather than update based on new information (Kahan 2015; Kahan et al. 2012). For that reason, even when elites are presenting information from a position of expertise, the perception of a lack of commonality of interest appears to moderate the intended effects.

Still, political elites enjoy clear informational advantages—expertise—over the public when it comes to considering public policies. Because of their ignorance on how policy decisions might affect them individually or their broader community, members of the public take cues from the endorsements of political elites who have made investments in information about the policy's likely effect. The public appears to appreciate their informational disadvantage, especially in the context of foreign policy (Levendusky and Horowitz 2012). As a result, the public responds to new information provided by elites about the consequences of particular policies by moving their policy preferences to be more consistent with that suggested by the new information (Bullock 2011; Druckman, Peterson, and Slothuus 2013; Nicholson 2011).

The cuing dynamics described above exist, to varying degrees, for a variety of other kinds of societal elites. Evidence suggests that elite actors as diverse as religious leaders (Adkins et al. 2013), journalism outlets (Groeling and Baum 2009), celebrities (Marsh, Hart, and Tindall 2010), and even international institutions (Gelpi et al. 2011) can all have important effects on public support for particular policies. We argue that ECs can shape opinion because they enjoy—and are perceived by the public as enjoying—significant informational advantages over not just the public but also other elites.

ECs—groups of individuals with an "authoritative claim to policy relevant knowledge" (Haas 1992b, 3) in a given policy domain—have played an important role in spurring and shaping the emergence of cooperation in the post-War II era. In the broadest terms, the ECs approach focuses on the role of transnational networks of issue area experts in providing policy makers with actionable and policy-relevant information about issues of which there is little public awareness and/or understanding (Cross 2013; Haas 1992b). The influence of ECs arises from their informational advantages over policy makers. Just as the public delegates the costly task of information gathering to political leaders, political leaders themselves often delegate this task to communities of issue area experts. The costs of generating accurate predictions about the effects of different policies increase as uncertainty about the scope of the problem and the structure of potential solutions increase. To avoid paying these increasing costs directly, policy makers turn to EC members (Adler 1992).

Nearly all the existing works on ECs, especially within the IR literature, focus on how ECs inform and effect the interests of society through their interactions with incumbent policy makers.[2] It is our contention that the same informational advantages that give EC influence with policy makers should grant them similar influence with the public. As we show below, the public perceives climate scientists as having much more knowledge about

climate science than other kinds of societal elites including journalists and members of Congress. Members of ECs signal this expertise with important markers that distinguish them from other kinds of, often politically motivated, elites. For example, during public appearances, an EC member might be identified as being affiliated with a prestigious issue-specific think tank or research institute or with an issue-relevant academic department at a college or university. Likewise, the EC member is likely not identified as being affiliated with a partisan or ideological group and thus some semblance of political independence is implied. These markers help reinforce perceptions that the individual has specialized and credible knowledge about the topic at hand and is using that knowledge, rather than political or ideological motives, to inform their policy commentary or recommendations.

The influence of ECs may be moderated by at least two factors.[3] First, the advantages conferred upon ECs by their access to specialized and policy-relevant information may be offset by perceptions among the public that ECs are motivated by ideology or partisanship. If a policy has been polarized along ideological or partisan lines (Guisinger and Saunders 2017), the public may view EC advocacy for that policy as stemming from their ideological or partisan preferences rather than their expertise on the issue. From the public's perspective, there may be observational equivalence between scholars of climate science publicly supporting efforts to address climate change for ideological reasons and supporting those same policies for reasons related to their expertise (Gross and Simmons 2014; Hart and Nisbet 2012; Kahan 2013). Kotcher et al. (2017) use experiments to show that these dynamics likely do not dominate—advocacy by scientists ranging from simply highlighting new research on a policy problem to specifically endorsing a particular policy has little, and in most cases, no effect on the credibility of scientists among the public.

Second, ECs may be limited in their ability to influence public opinion because the primary channels through which their views are often communicated may not faithfully represent those views. For example, members of the climate science EC have called for scientists to engage with the public directly (Anderegg et al. 2010; Oreskes and Conway 2010) because the news media has historically failed to communicate the fact that climate scientists are nearly united in their belief that climate change is happening, it is caused by humans, and can be corrected if the right public policies are adopted (Boykoff and Boykoff 2004). We sidestep this concern in our experiment by providing information about average levels of EC support for a proposed international agreement in the form of results from a survey. Previous work shows that beliefs about the causes and effects of climate change (Kerr and Wilson 2018; Lewandowsky, Gignac, and Vaughan 2013) or action to address it (Ding et al. 2011) are correlated with knowledge that the EC is, in fact, in consensus on those issues. Moreover, evidence suggests that small deviations from consensus can have large effects on support (Aklin and Urpelainen 2014). The above discussion yields our first hypothesis:

> **Hypothesis 1**: Epistemic influence: Expert opinion on international agreements will move the public in the direction of that opinion.

While we expect ECs to influence public opinion, it is useful to consider whether the public distinguishes between ECs with different levels of expertise on an issue. Recall from above that a key insight from the EC literature is that EC influence originates from their ability to use their expertise to reduce uncertainty over the outcomes of various policy alternatives. ECs are thus valuable to policy makers because they may have already paid some or all of the costs relating to evaluating competing policy proposals. One implication of this result is that for any given policy question, EC influence over policy makers should grow as their claims to domain-specific policy-relevant knowledge grows. This implies that cues from ECs with domain-relevant knowledge should be more persuasive to the public than cues from ECs with less relevant knowledge and expertise.

Of course, domain-relevant expertise possessed by ECs about particular policy issues may be a liability and not an asset. Political elites and members of the public opposed to a given policy, for example, might justify rejecting or ignoring EC endorsements or denouncements by focusing on dimensions of the policy problem over which the EC in question has little or no expertise. In the extreme, different ECs might be pitted against one another because they prioritize different dimensions of a given policy problem (Sarewitz 2004, 390–93). This is, in part, precisely because ECs are defined by their shared expertise on particular issues and this narrow focus could potentially be used to discount the EC's support or opposition to a proposed policy as unrealistic or narrow-minded. In considering an international climate agreement, for example, the public may have concerns beyond the agreement's ability to arrest or reverse anthropogenic climate change. Members of the public may care about the economic costs of an agreement, the number and types of countries involved, how the burden of the agreement is distributed among signatories, or the penalties imposed on those who cheat (Bechtel and Scheve 2013; Tingley and Tomz 2014). Domain-relevant expertise, under these conditions, could have counterproductive implications for the persuasive power of EC cues. While future work could focus on disentangling the potentially cross-cutting effects of specialized expertise on the persuasive power,

we focus here on the prior question of if, on balance, the public finds cues from ECs with domain-specific knowledge any more persuasive than cues from ECs with less domain-relevant expertise. This leads to our second hypothesis:

> **Hypothesis 2:** Domain-relevance: The public will distinguish between experts with domain-specific knowledge and those without domain-specific knowledge.

Thus far, we have argued that ECs can influence public support for international cooperation by sharing their views, but have said little about why this may be the case. The EC literature suggests that a key way in which experts influence policy outcomes is by providing credible information about the likely costs and benefits of different policy alternatives. However, this information is normally targeted at policymakers. Our expectation is that the public will rely on ECs for similar reasons. We anticipate that the public will take endorsements or denouncements of particular policies as implying that the likely benefits of the proposed policy outweigh the costs. This parallels work in the public opinion literature in which the public delegates the task of information gathering to individuals who share their interests and who have the knowledge needed to effectively evaluate new information (Lupia and McCubbins 1998). Previous research suggests that the public tends to prefer agreements that distribute burdens across nations and have limited net costs to their home country (Bechtel and Scheve 2013; Tingley and Tomz 2014). And recent observational work shows that beliefs about the level of consensus among climate scientists about the reality of climate change are correlated with beliefs about the costs of climate change and the feasibility of reversing it (Ding et al. 2011). Our contention is that the public uses the views of ECs to draw inferences about the likely balance of those costs and benefits to their country as a whole.

This yields our third and final hypothesis:

> **Hypothesis 3:** Informational shortcuts: Learning about the level of support among ECs for given policy will affect beliefs about the costs and benefits of that policy.

Case Selection and Research Design

The Case of ECs and Climate Change: COP21

We test our arguments using cuing experiments designed to recover estimates of the ability of ECs to influence public support for the Paris Climate Agreement among the U.S. public. A few points about our selection of the case of climate change and the use of experiments are worth making. First, the issue area of climate change is structurally suited to testing our theory. ECs have helped construct the issue of climate change as a scientific fact and policy problem (Allan 2017) and, because of its complexity, ECs are better equipped to make predictions about the likely effects of particular climate policy proposals than either political leaders or the public themselves.

Second, the case is also somewhat of a "hard test" of our argument. While the issue area of climate change is characterized by significant information asymmetries between ECs, on the one hand, and political leaders and the public, on the other, the particulars of the Paris Climate Agreement were also hotly contested during the U.S. presidential campaign in 2016, when our survey was in the field. As such, to the extent that the public is less receptive to the views of experts on politically polarized policies (Guisinger and Saunders 2017), the effects that we identify ought to be muted.

Third, previous work documents the role media plays in both framing the debate, but also in how scientific expertise is presented on the issue of climate change (Boykoff and Boykoff 2004; Feldman et al. 2012). Because ideology causes individuals to choose media sources that do not challenge their prior climate beliefs, any observational study looking to determine the role of EC consensus would be subject to selection bias, with the media curating their version of EC consensus, and individuals curating their news consumption to match their prior beliefs.

Finally, our focus on a particular policy and not more generic efforts or proposals to address climate change generates space for plausible disagreements among members of ECs. While many respondents are likely aware that there is widespread agreement among, for example, climate scientists about the need to address anthropogenic climate change, it is plausible that they might not all agree that a particular treaty aimed at addressing climate change should be enacted. For example, some may disagree with the structure of the agreement or feel that the agreement does not go far enough.[4]

Our experimental design is summarized in Figure 1. We fielded the survey twice. First, we recruited a sample of approximately 1,100 individuals in the United States drawn from Amazon.com's Mechanical Turk service in Spring 2016. Second, we replicated the experiment on a larger and more diverse sample of approximately 2,500 individuals recruited by Survey Sampling International (SSI) in Summer 2016. While both are samples of convenience, experimental studies fielded on MTurk and SSI tend to return effects that are similar in magnitude and direction to national probability samples.[5] We asked SSI to place quotas on race, income, region, and education to ensure that our sample included a broad cross section of the U.S. public.[6]

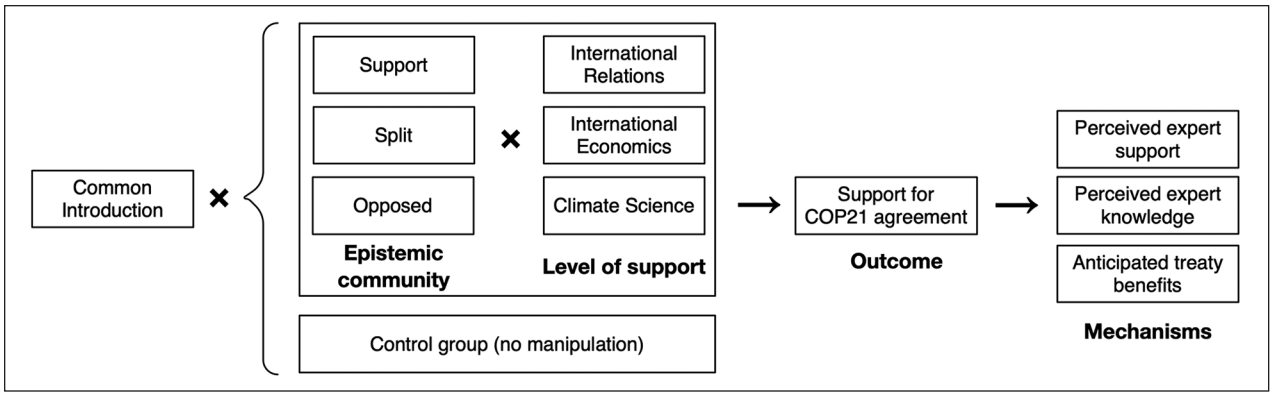

Figure 1. Experimental design.

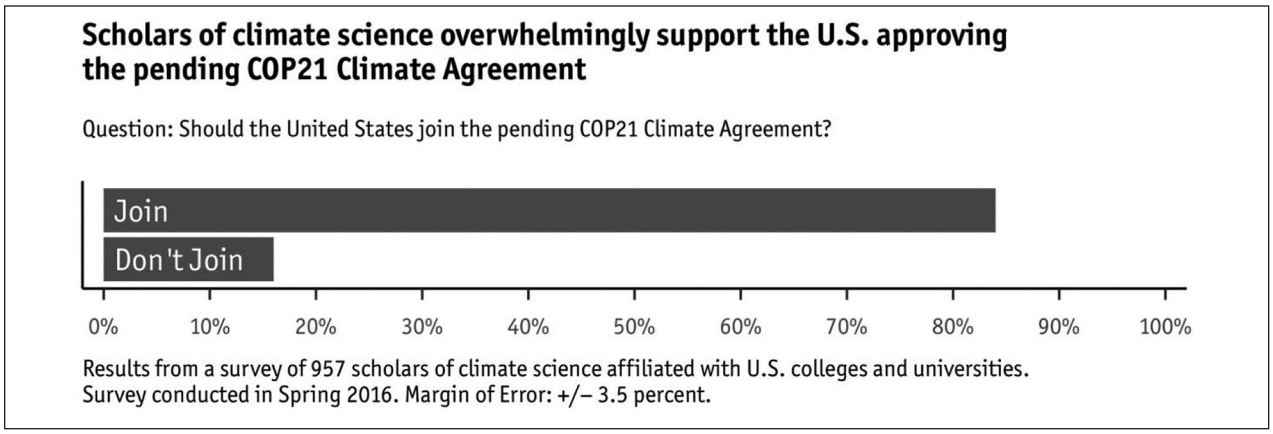

Figure 2. Example of how respondents learned about the results of our fictional survey.

All respondents received a common introduction that read,

> The U.S. Congress is currently debating whether or not to approve the COP21 Climate Change Agreement. The agreement is between the United States and a number of other countries. It is designed to help the member countries slow climate change.

We then randomly assigned respondents to either a control condition or one of nine treatment conditions. We presented respondents in the treatment conditions with the results of a fictional survey of scholars at U.S. colleges and universities and randomly varied two aspects of the fictional survey results. First, we varied the level of consensus among scholars over the question of whether or not the United States should approve the COP21 climate agreement. We randomly set the level of consensus among scholars as high in favor of the agreement, high in opposition to the agreement, or split over the agreement. In the control condition, respondents saw no information regarding scholar support for the agreement, only the common introduction mentioned above. Second, we varied the identity of the scholars represented in the survey results. We told respondents that the results represented the views of scholars of climate science, IE, or IR. An example of the manipulation presented to respondents can be seen in Figure 2. To avoid multiple comparisons when analyzing the issue area–specific results, we assigned each control respondent an issue area as well. While this was invisible to the respondent, it provides us with an independent pool of control respondents for each issue area. Following the manipulation, we asked respondents, "Do you support or oppose the United States joining the proposed agreement?" The response options formed a seven-point scale ranging from "support a great deal" to "oppose a great deal" with "neither support nor oppose" anchoring the center.

Results

We begin by assessing whether or not the manipulation had the expected effect on perceptions of EC support for

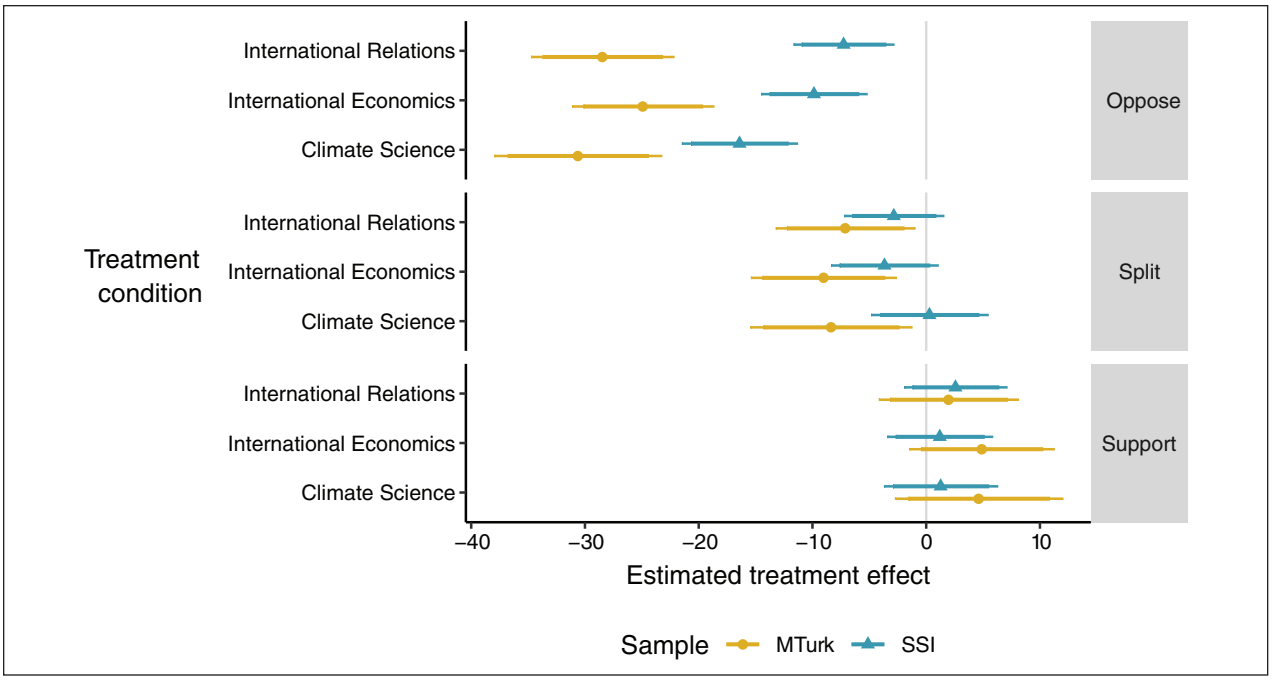

Figure 3. Estimated effect of treatment on perceptions of support for treaty approval in each EC relative to control condition.
EC = epistemic community; SSI = Survey Sampling International.

COP21. To measure the extent to which the treatment affected beliefs among respondents about support for the COP21 climate agreement among each of the EC communities, we followed the treatment with a set of questions about support for joining the agreement among different types of elites. The groups included each of the treatment ECs.[7] The question read,

> What is your best guess as to how the following groups of individuals feel about joining the pending international COP21 agreement? Use the slider scale to indicate the percentage of individuals in each group that you think support the U.S. joining the agreement.

The slider allowed respondents to select any integer between 0 and 100.

We plot the estimated effect of treatment on perceptions of support for COP21 by EC groups in Figure 3.[8] In this figure, the dots represent point estimates, the thicker bar the 90 percent confidence interval (CI), and the thinner bar the 95 percent CI. While the manipulation did not always move respondents relative to the control condition, perceptions of EC support for COP21 do generally vary in the expected ways to the level of EC support. Consistent with our expectations, respondents in the oppose treatment reported lower levels of perceived EC support for the agreement in both of our samples. Averaging across the three ECs, the oppose treatment reduced perceived EC support for the climate agreement by 29.06 ($t = 12.53$, $p < .000$) percentage points among MTurk respondents and by about 11.06 percentage points ($t = 7.55$, $p < .000$) among SSI respondents. The effects were more mixed in the split treatment. While those in the MTurk sample were moved by the split treatments, those in the SSI sample were not. Again, averaging across the three EC treatments, the split treatment reduced perceptions of EC support for the climate agreement by 8.21 percentage points among MTurk respondents ($t = 4.07$, $p < .000$) and by just 2.23 ($t = 2.36$, $p = .105$) percentage points among SSI respondents. We observed no statistically significant effect relative to the control group in the support treatment in either sample, but we note that the point estimates were all in the expected direction.

Our inability to manipulate perceived levels of EC support for the agreement in a positive direction is worth a moment's discussion. One explanation for this could be ceiling effects in which respondents come to the survey already believing that climate scholars exhibited high levels of support for COP21 and so our support manipulation may have provided little new information. There is some evidence of this in our data. In the MTurk control group, for example, the mean response to our question about the proportion of climate scholars who support COP21 was about 87 percent. The same figure in our SSI sample was about 74 percent. The ceiling effect explanation is frustrated somewhat when we look to the other two ECs. Respondents came to us with much lower ex ante

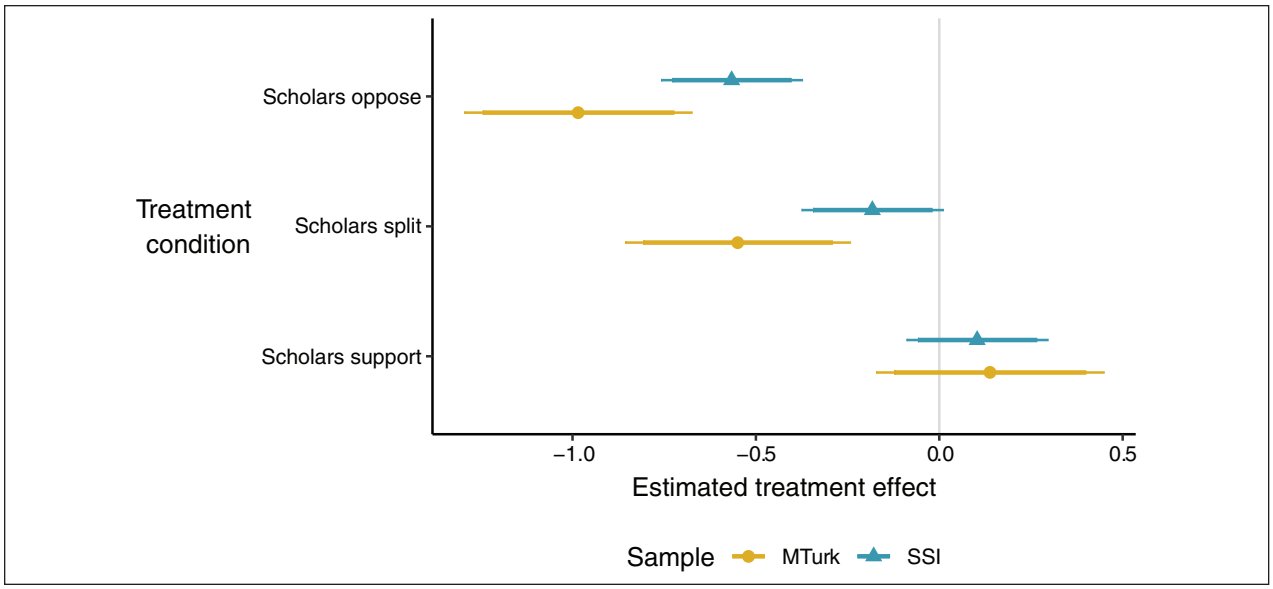

Figure 4. Estimated treatment effect of scholar views on support for COP21 climate agreement.
SSI = Survey Sampling International.

estimates of support for COP21 among scholars of IE and IR. In the MTurk sample, respondents' mean level of perceived support for COP21 among IR scholars was about 66 percent, while the same figure for scholars of IE was about 53 percent. In the SSI sample, these figures were about 61 and 57 percent, respectively. Despite respondents coming to the experiment without strong expectations that international economists or IR scholars supported COP21, we find little evidence of significant updating occurring among respondents assigned to the support treatment conditions.

Given these results we suspect that another factor, negativity bias, is also or even primarily at play. Both here and throughout the rest of the paper, we consistently find that the opposition treatments had much larger and consistent effects than our support treatments. Negativity bias—a tendency to be more sensitive to potential losses than to potential gains—is endemic to human behavior (Baumeister, Bratslavsky, and Finkenauer 2001) and has powerful effects on opinion formation (Soroka 2014). As we note in our concluding discussion, this kind of negativity bias may help us make sense of why efforts to undermine public support for action on climate change have been so effective. Negativity bias puts potential constraints on the ability of ECs to positively influence public support for climate cooperation by emphasizing the benefits of addressing climate change.

Effect of Treatment on Respondent Support for COP21

Having seen where we are best able to manipulate beliefs about EC support, we now estimate the effect of respondents learning about the level of support for the COP21 agreement among scholars on the support for the COP21 agreement among respondents. We present the results from both samples graphically (Figure 4) and in the form of a regression analysis (Tables 6 and 7 in the supplemental appendix).

The results are broadly in line with Hypothesis 1. In both samples, the "scholars oppose" and "scholars split" treatments decreased support for the agreement. In the SSI sample, support for COP21 was about .56 (95% CI = [0.76, 0.37]) points lower on our seven-point scale among those assigned to our oppose group than among those assigned to the control group. This represents about an 8.6 percentage point reduction in the number of respondents reporting that they support the COP21 agreement a great deal, a moderate amount, or a little ($t = 3.74$, $p < .000$). Support for COP21 among those assigned to the "scholars split" treatment for the SSI sample was about .18 (95% CI = [0.38, 0.01]) points lower on our seven-point scale than among those in the control. In terms of the overall effect on support for COP21, this represents a much more modest 1.6 percentage point reduction in the number of respondents reporting that they support the COP21 agreement a great deal, a moderate amount, or a little ($t = .745$, $p = .460$).

For the MTurk sample, the results were stronger and again in the expected direction. Among those in the oppose treatment for the MTurk sample, support for COP21 was about .98 (95% CI = [1.29, 0.675]) points lower than among those assigned to the control group. This represents a 12.5 percentage point reduction in support ($t = 3.47$, $p < .000$). Support for COP21 among those assigned to the "scholars split" treatment for the

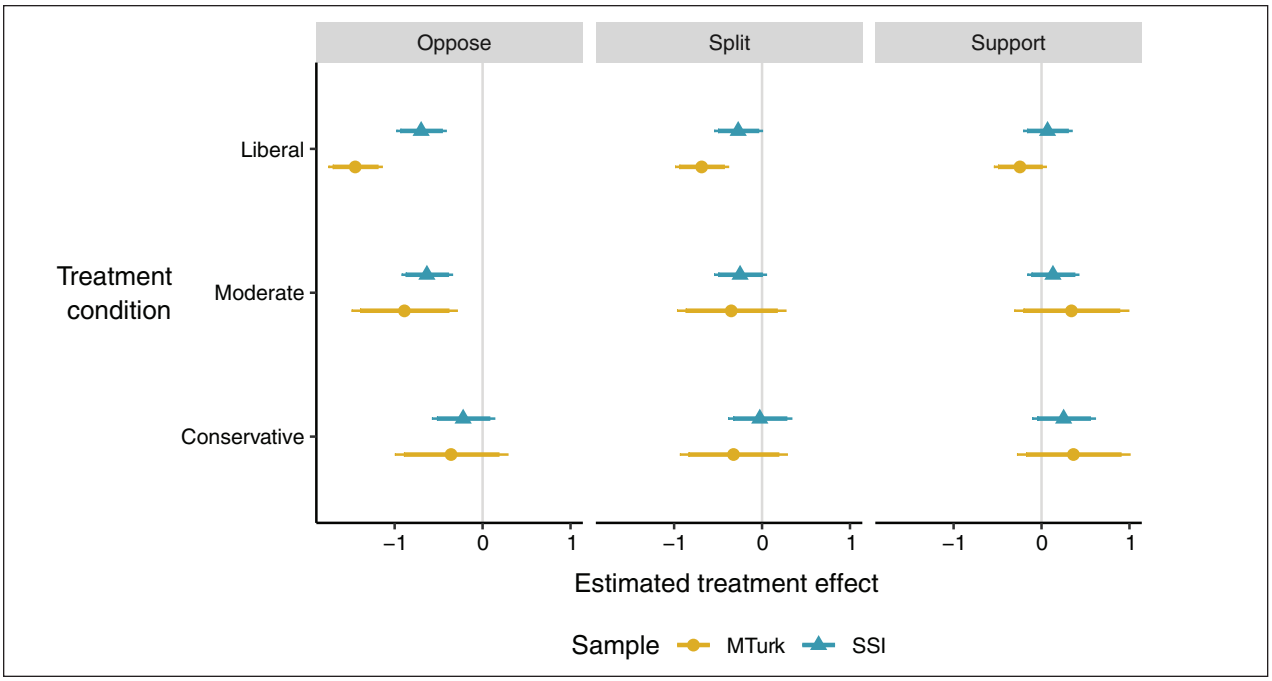

Figure 5. Effect on support for COP21 by ideology and treatment condition.
SSI = Survey Sampling International.

MTurk sample was about .55 (95% CI = [0.86, 0.24]) points lower than among those in the control group, representing roughly a 4.57 percentage point decrease in support ($t = 1.36$, $p = .174$).

While the estimated effect of the scholars support treatment is positive for both samples, it is not statistically significant. These initial results suggest that the public is responsive to the views of scholars on international policy issues as Hypothesis 1 predicts. Still, we need to qualify this by acknowledging that EC influence is much greater when the EC opposes a given policy proposal and when they adopt a position that is inconsistent with the public's ex ante beliefs. The research design that we employ here does not allow us to definitively disentangle these two explanations, but some of the results presented in our discussion of backlash effects below are consistent with a significant role for the public's ex ante beliefs.

Consistent with other recent research (Guess and Coppock 2018), we see little evidence of "backlash" effects in our data. The "backlash" argument holds that people rebel against counter-attitudinal endorsements by adopting more extreme policy stances (Lord, Ross, and Lepper 1979). Backlash would manifest as follows: those opposed to policies to combat climate change ex ante come to express less support for those policies after learning that elites favor them, while those in favor of policies to combat climate change ex ante come to express more support for those policies after learning that elites oppose them. There is a well-documented ideological divide on climate action in the United States in which conservatives tend to oppose policies to address climate change, while liberals tend to support them (McCright and Dunlap 2013). The backlash hypothesis would anticipate ideological conservatives responding to EC endorsements of COP21 by reducing support for the agreement or ideological liberals responding to an opposition to COP21 among ECs by increasing their support for the agreement.[9] We do not observe this. Instead, our manipulations push respondents in the direction of the EC cue regardless of their ideological disposition. Figure 5 illustrates how our treatments impacted respondents based on their self-identified political ideology.[10] We find that even for self-identified conservatives, who have the lowest ex ante levels of support for the COP21 agreement in our sample, the scholar support treatment moved approval in a positive direction.[11] We stress that we cannot rule out that this positive effect among conservatives is due to chance alone. What we can say, however, is that even for a politically contentious issue like the COP21 climate agreement, we see no evidence that expert endorsements have counterproductive effects on policy debates. Taken together, the results discussed above and the lack of backlash across the ideological spectrum documented here suggest conditional support for Hypothesis 1. The public is responsive to the views of ECs, but this is the case most definitively in situations where the EC expresses opposition. We see no evidence that the EC pays any kind of

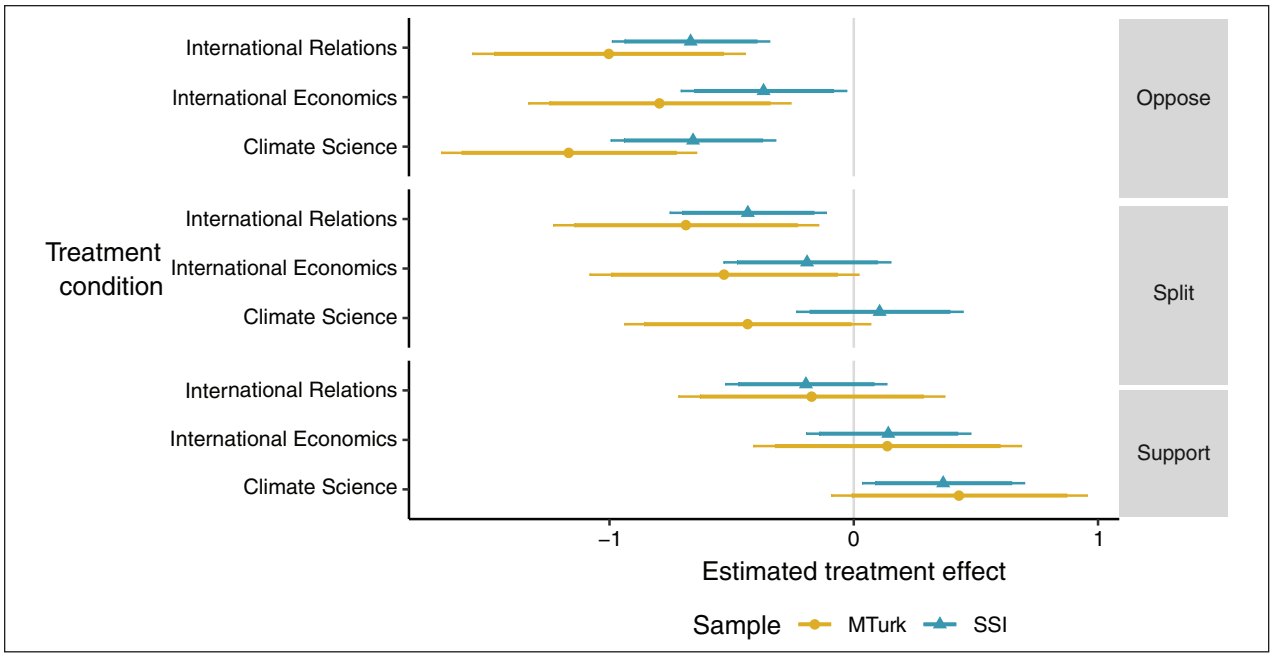

Figure 6. Estimated effect of scholar type and level of support on COP21 approval among respondents.
SSI = Survey Sampling International.

cost for endorsing particular policies even among those pre-disposed to oppose them.

Turning to the effect that domain expertise has on the magnitude of the treatment effects, we find evidence suggestive of the dynamics predicted by Hypothesis 2. To see this, consider the estimated treatment effects for each combination of the manipulations relative to the control group which are presented graphically in Figure 6 and regression form in Tables 6 and 7 in the supplemental appendix. We see that moving from the support condition to the oppose condition is most dramatic and most consistent when the EC has specialized knowledge about the issue area in question. Respondents were thus most responsive to the views of the EC that has the most straight-forward claim to expertise on the issue at hand just as Hypothesis 2 anticipated. We take this result as evidence that the public recognizes the unique knowledge that certain groups of experts have in their domain.

In the oppose treatment condition, for example, respondents were substantially less supportive of the agreement relative to both the control condition and to the other scholar conditions. For the SSI sample, respondents in the climate scholars oppose condition were about 0.66 points less supportive of the COP21 climate agreement than those in the control condition, while those in the climate scholars support condition were about 0.37 points more supportive of the COP21 climate agreement compared to those in the control condition. Respectively, this is about a 12.55 percentage point decline ($t = 2.96$, $p = .003$) and an 8 percentage point increase ($t = 2.226$, $p = .027$) in respondents reporting any support for joining COP21. In the MTurk sample, respondents in the climate scholars oppose condition were about 1.17 points less supportive of the agreement than those in the control, while those in the climate scholars support condition were about 0.43 points more supportive. This results in a 15.7 percentage point decrease ($t = 2.41$, $p = .0169$) and a 9.96 percentage increase ($t = 1.88$, $p = .0614$) in respondents who support the COP21 agreement, respectively. Overall, respondents were less swayed by the views of scholars of IR and IE. While the oppose treatments generated negative and statistically significant effects for both groups of scholars, the support treatment did not.

We gain some additional insight again by inspecting treatment effects across the range of respondent ideology. These results do not suggest that domain expertise is interacting with our EC cues in a way that causes conservatives to ignore or rebel against climate scientists. In fact, the evidence suggests that when climate scientists support the agreement, conservatives become more supportive of the COP21 agreement.[12] We observe no similar dynamic for those who were exposed to the views of economists or IR experts. This may in part be due to the fact that conservatives have a lower baseline level of support for these sorts of international agreements. The fact that climate scientists in particular can be convincing in increasing support, and that the other ECs do not have similar effects, is noteworthy.

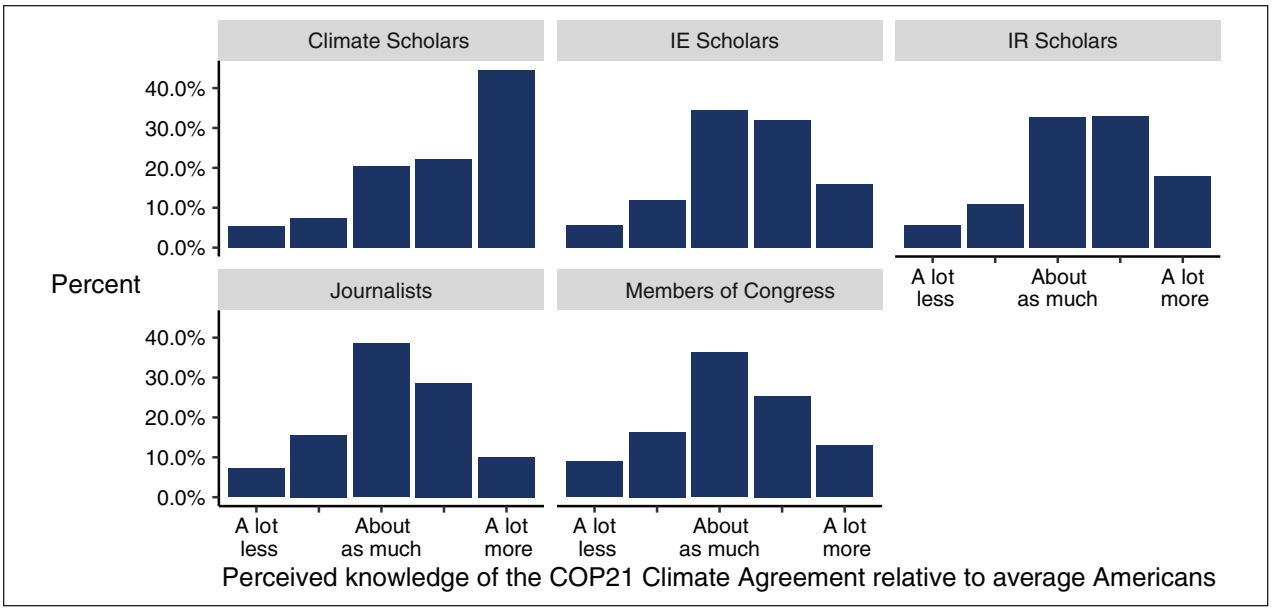

Figure 7. Perceived knowledge of COP21 agreement by knowledge elite grouping.
IR = international relations; IE = international economics.

Why is the Public Responsive to the Views of ECs?

At the outset we argued that the public perceives ECs as having knowledge and expertise advantages and so EC support or opposition to a given policy proposal serves as an informational shortcut to understanding the likely benefits or costs of that proposal. Following treatment and our measurement of the dependent variable, we asked two other questions that enable us to test this argument directly.

We asked respondents to report their perceptions of how much different groups of elites likely know about the COP21 climate agreement.[13] The question read, "Compared to the average American, what is your best guess as to how much knowledge the following groups of individuals have about the COP21 Climate Agreement?" We allowed responses on a five-point scale ranging from "A lot less than the average American" to "A lot more than the average American." We asked respondents to report their perceptions for our three ECs as well as two other important sets of elites: members of Congress and journalists. The results, in Figure 7, illustrate that respondents believe scholars have a higher level of knowledge about COP21 than the general public, members of Congress, and journalists. The average level of perceived scholarly knowledge is 3.60 on our five-point scale (95% CI = [3.57, 3.64]). This is over a point higher than would be expected if respondents perceived scholars as having the same level of knowledge about COP21 as the average American. Furthermore, average perceptions of scholarly knowledge of COP21 are .43 points higher ($t = 21.01$, $p < .000$) than perceptions of the level of knowledge of members of Congress and .41 points higher ($t = 23.15$, $p < .000$) than perceptions of the level of knowledge of journalists.[14]

In addition, lending strong support to Hypothesis 2, the public appears to differentiate between scholars with different kinds of expertise. The public perceives climate scholars as having the highest level of knowledge about COP21. On our five-point scale, climate scholars received an average score of 3.93 (95% CI = [3.88, 3.98]). This was .53 points higher than the average score for scholars of IE ($t = 24.22$, $p < .000$) and .46 points higher than scholars of IR ($t = 22.55$, $p < .000$). These results are consistent with our argument that the public perceives some types of ECs as having knowledge that is more relevant to particular kinds of policy questions. Notably, the perceived level of knowledge did not depend on treatment assignment.

We also asked respondents in both samples a general question about whether joining the Paris Climate Agreement would help or hurt the United States. The question read, "If the United States approves the pending COP21 Climate Agreement, do you think it would help or hurt the United States?" The response options were a seven-point scale that ranged from "Help a great deal" to "Hurt a great deal." We plot the estimated effect of treatment on perceptions of COP21's effect on the United States in Figure 8.[15]

Consistent with the logic of Hypothesis 3, the results show that the oppose treatment reduced expectations that

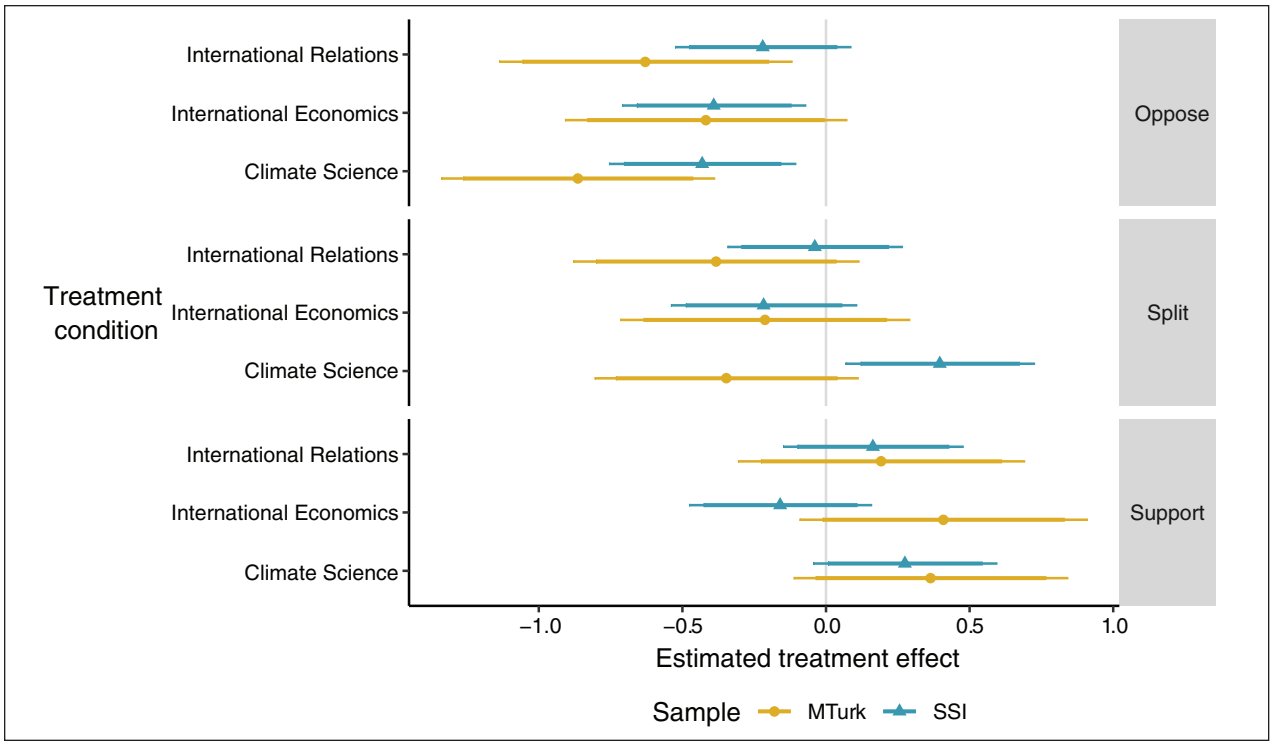

Figure 8. Estimated effect of treatment on expectations that the COP21 agreement will benefit the United States by scholar type.
SSI = Survey Sampling International.

the COP21 agreement would help the United States. In contrast, we see less support for Hypothesis 3 in the results for when the ECs are split or support the agreement. Results from the two samples were largely consistent with the exception of the climate scholars split condition reducing expectations that the agreement would help the United States for the MTurk sample, and increasing expectations for the SSI sample. The negative estimated effect on for the MTurk sample makes sense in light of the results presented above, but the positive and statistically significant effect for the SSI sample is puzzling.

In sum, the public has strong ex ante beliefs that climate scientists are more informed about climate science than both political leaders and other ECs, but we find more limited evidence in support of the notion that endorsements and denouncements lead the public to update their expectations about the likely costs and benefits of a given policy.

Discussion

In this paper, we test theories of EC influence on public opinion. We use experiments to demonstrate that communicating expert opinion to the public can have important impacts on public support for particular policies even in the context of a highly contentious international policy issue like the Paris Climate Agreement. We argued that the public responds to the views of experts because they perceive experts to be more knowledgeable than other elites about the policy issues at hand and that experts will use that knowledge to advocate for policies that are broadly beneficial to the country as a whole.

We tested our argument using a survey experimental manipulation in which we exposed respondents to fictional surveys of policy experts and found some support for our overall argument. We show that the effect of exposing the public to expert opinion is most dramatic when the experts are united in their opposition to a proposed policy. We found less evidence that sharing the views of scholars can affect the public's views when scholars are divided in their opinions or united in their support. Our analysis shows that two factors may account for these divergent effects. First, we find some evidence that the public came to us with relatively high ex ante expectations that experts supported the COP21 climate agreement and so the support treatments conveyed relatively little new information. And second, we find evidence of a persistent negativity bias (Soroka 2014). Even when their ex ante expectations about support for COP21 among experts are at more middling levels (as in the case of perceptions of COP21 among IR and IE scholars), we

find that the public is more sensitive to declarations of opposition from experts than they are to declarations of support. Future work on related questions could disentangle these effects by constructing hypothetical scenarios in which experts offered endorsements and denouncements of policies over which the public's ex ante expectations of support among experts varied systematically.

We also found suggestive evidence that the public is more responsive to experts who are marked as having knowledge relevant to the policy question at hand. While we do not want to over-interpret small differences, the magnitude of the effect of moving from the scholars support to the scholars oppose treatment condition was largest for climate scholars. In addition, we found that the public estimates that climate scholars know more about climate science than either IR scholars or scholars of IE. Our research design, in which we compared the influence of climate scientists to that of IR scholars and economists, is a hard test of this kind of domain-relevance hypothesis. Future work on this domain-relevance issue might clarify the relative influence of a broader community of experts by comparing their influence to other groups who might be active in the political debate on climate change policy but have less plausible claims of expertise (e.g., celebrities, political leaders, media personalities).

We find qualified support for our informational shortcuts argument. We tested one aspect of this by looking for respondents to update their beliefs about the net benefits of the climate agreement after learning about the views of experts on the agreement. Those in the oppose treatments generally reduced their expectations that the agreement would help the United States, but we did not find analogous movements in the split or support treatments. This effect is consistent with our discussion of negativity bias above. Future work might advance our understanding of these dynamics by asking respondents to report the expectations about the costs and benefits of the agreement separately.

Our results have important implications for the study of public opinion in the context of IR and for scholars wishing to use their expertise to advocate for particular policy outcomes. First, our results suggest that the public is willing to update their policy preferences in response to learning about the views of experts on those same policies, but that this willingness may be subject to constraints imposed by negativity bias and by pre-existing beliefs about the views of experts on highly politicized policies. As we note above, our support treatment did not increase support for the Paris Climate Agreement, but we also find that individuals in our samples came to us with the perception that support for COP21 among experts was high. This, combined with the fact that the split and opposed treatments lowered support for the agreement, suggests a public that is both broadly aware of what some kinds of experts think about relevant policy issues and is broadly responsive to new information about the views of experts. These two effects may help explain why efforts to undermine perceptions of expert consensus on climate change and other issues have been so effective in recent years. A public that is sensitive to the potential costs of an agreement and who is primed to believe that policy experts will favor the agreement is likely to be more sensitive to efforts by individuals or groups who read as experts and who herald flaws in proposed public policies.

On the flip side, however, our results suggest that communicating expert consensus has few risks and comes with significant potential rewards. Indeed, we find evidence that worries about a "backlash" against expertise may be overwrought. Even on a polarized issue like that of the Paris Climate Agreement, informing the public about the views of experts causes the public to move in the direction of those expert views regardless of the ex ante policy opinions of the public. While more research is needed on the prevalence of backlash effects, especially on international policy questions with significant domestic political costs, our expectation is that similar results would exist in other issue areas and on policy questions of lower political salience. Indeed, our findings mirror that of other recent work showing that there is little evidence of backlash in the United States even on contentious issues like gun control, capital punishment, and the minimum wage (Guess and Coppock 2018). Of course, lack of evidence is not evidence of absence. Future work might refine our knowledge of backlash as it relates to public support for international cooperation by introducing partisan cues (Maliniak et al. 2019) and/or by specifically focusing efforts on studying large samples of respondents drawn from sub-populations in which we expect to observe backlash effects (e.g., How do conservatives respond to learning that democratic leaders support a climate change agreement?). While backlash may not be prevalent among members of the public, it could still have important political implications if it is prevalent among those with power over public policy. As such and more to the overall point of our efforts to understand the politics of expertise, scholars could focus their efforts on understanding how policy makers and practitioners respond to similar kinds of informational cues (Maliniak et al. 2020). For example, studying under what conditions ECs choose to make their case to policy makers directly or to instead "go public" with open letters, petitions, ad buys, and other forms of mass engagement.

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Supplemental Material

Supplemental materials and replication materials for this article are available with the manuscript on the *Political Research Quarterly* (PRQ) website.

Notes

1. Our study was approved by the institutional review boards of the institutions at which the authors were employed when the survey was in the field. Since we provided fictitious information to respondents, we included a post-survey debrief which informed respondents that we included fictional information and then provided Internet links to information about the views of economists, climate scientists, and international relations (IR) scholars on climate change. See Supplemental Appendix A.4 for the complete text of the message.
2. For exceptions, see the climate communication literature. In that literature, a key way in which climate scientists are presumed to influence climate policy is by influencing public opinion. See Anderegg et al. (2010) and Oreskes and Conway (2010).
3. An important third factor moderating the effectiveness of epistemic communities' (ECs) consensus is their representation in the media. Feldman et al. (2014) present a spiral model where individuals self-select into media frames that support or refute the science of climate change and find that the effect of increasing the skepticism of the science of climate change is also likely to increase one's commitment to and consumption of conservative media.
4. In 2016, a group of 11 leading climate scholars published an open letter arguing that the Paris agreement is inadequate (Bawden 2016).
5. See Supplemental Appendix A.1 for a discussion of the suitability of online convenience samples like those recruited via MTurk and Survey Sampling International (SSI) for testing social science theories.
6. See Tables 1 and 2 in Supplemental Appendix A for comparisons between the demographic composition of our samples and the American Community Survey.
7. In the control group, we find that our respondents, on average, believe that about 70 percent of climate scientists support COP21. In a similar setup, Lewandowsky, Gignac, and Vaughan (2013) report that respondents believed, on average, that roughly 70 percent of climate scientists agreed on the anthropogenic nature of climate change.
8. See full results in Tables 4 and 5 in the supplemental appendix.
9. Backlash effects and negativity bias are different. The former makes predictions about the direction of treatment effects conditional on pre-existing beliefs, while the latter anticipates that treatments emphasizing opposition or costs will have larger effects.
10. See Tables 8 and 9 in the supplemental appendix for complete results. In Figure 5, we see that support for COP21 among liberals in the MTurk sample declined in the face of the support treatment. The average level of perceived support among scholars of climate science for the COP21 agreement among our liberal MTurk respondents was about 90 percent, suggesting that the support treatment—which put support for COP21 among climate scholars at around 85 percent—may have caused a significant portion of ideological liberals to update their perceptions about support for COP21 among climate scholars in a *negative* direction.
11. The average level of support for COP21 among conservatives assigned to the control condition was 3.78 in our SSI sample and 3.67 in our MTurk sample on our seven-point scale. This is about a point lower than moderates and more than two points lower than liberals in both samples. Thus, across the ideological spectrum, our measure of support for or opposition to COP21 does not appear to be censored; there is room for these groups to express either more support or more opposition to the agreement.
12. See Table 9 in Supplemental Appendix B.
13. We focus on results SSI sample because it is more representative of the public at large, and this analysis is descriptive, not experimental. A similar analysis among our MTurk respondents reveals even more confidence in experts relative to the public and other elites.
14. The analysis in Tables 10 and 11 in the supplemental appendix show that treatment did not generally affect perceptions of EC issue knowledge.
15. Tables 12 and 13 in the supplemental appendix display the regression table for this analysis.

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